Development of Digital Teaching Materials Through Canva and Book Creator for College Students of Elementary Education

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Abstract

This research focuses on developing digital teaching materials using Canva and Book Creator specifically for elementary education students at the State Islamic University of Sayyid Ali Rahmatullah Tulungagung. Using a Research and Development (R&D) model, the process unfolds across five key stages: analyze, design, develop, implement, and evaluate. During the analysis stage, it was discovered that 72% of students found traditional materials unappealing, 64% deemed them irrelevant, and 68% felt they did not promote critical thinking. In the design phase, the emphasis was placed on crafting interactive and visually engaging resources, including infographics, videos, and quizzes. As the development stage progressed, teaching resources were validated by design, content, and materials experts. In the implementation phase, 118 students participated in two sessions with pre-test and post-test assessments. The results were encouraging, showing an increase in the average score from 56.53 to 82.50 (N-Gain Score: 0.82). Notably, 82% of students reported that the digital materials were more engaging, while 76% indicated that the interactive features enhanced their comprehension. The evaluation phase revealed that these digital teaching materials significantly improved student understanding and motivation. Feedback from students and lecturers has pointed to areas for further enhancement, such as improving visual quality and integrating more interactive quizzes and instructional videos. Overall, this study underscores the effectiveness of digital teaching materials in boosting learning engagement and supporting their integration into contemporary educational practices.

INTRODUCTION

The development of the digital world brings significant challenges in the realm of education, forcing education activists to continue to innovate and adapt to rapid changes. This challenge involves demands to be wiser in utilizing digital technology to increase the benefits and success in the world of education (Khoiriyah et al., 2022). Madrasah Ibtidaiyah Teacher Education (PGMI) has a strategic role in improving the quality of children of the golden age, and therefore, an interesting and creative approach is needed to provide an optimal learning experience (Churiyah et al., 2022). In this context, the development of digital teaching materials is very relevant. Learning materials' increasing diversity and complexity demand continuous efforts to create innovative, interesting, and effective teaching materials.

The main problem that is overcome through the development of digital teaching materials is the lack of involvement and understanding of PGMI UIN Sayyid Ali Rahmatullah Tulungagung students in conventional-based learning. Before the development of digital teaching materials, students faced difficulties accessing interesting and interactive materials, so learning tended to be monotonous and less effective. In addition, the limitations of print resources and lecturer-centered learning methods hinder the active participation of students in the learning process. By implementing the Canva and Book Creator applications, the digital teaching materials developed provide solutions in the form of more visual, interactive, and easily accessible materials at any time. This allows students to learn independently, understand concepts better through multimedia elements, and increase their motivation to participate in learning. In addition, implementing this digital teaching material also overcomes the limitations of evaluation methods by providing interactive features, such as quizzes and practice questions, which help measure student understanding more objectively and directly.

In line with that, advancing an increasingly digital world encourages the need to bring creativity to education. Creativity is an added value and an urgent need to address changing learning dynamics. In a fast-paced digital era, the practicality and speed of implementing creativity is the key to success (Arif et al., 2022). Therefore, using Canva and Book Creator applications as tools for developing digital teaching materials is relevant. Both not only provide a means for creativity exploration but can also be integrated easily into the learning environment (Mudinillah & Rizaldi, 2021). Thus, this research proposes the development of digital teaching materials through the Canva and Book Creator applications as an answer to the challenges and demands of innovation in education, making it a real contribution to improving the quality of PGMI learning at UIN Sayyid Ali Rahmatullah Tulungagung.

The selection of the Canva and Book Creator applications in developing digital teaching materials is based on conceptual considerations related to ease of use, design flexibility, and suitability with the learning needs of PGMI UIN Sayyid Ali

Rahmatullah Tulungagung students. Canva was chosen because it offers intuitive design features with various customizable visual templates, allowing teachers and students to create engaging, easy-to-understand teaching materials. Graphics-based designs, infographics, and easy integration of images, text, and icons make Canva a great place to create more visual and engaging presentations and teaching materials.

Meanwhile, Book Creator was chosen because of its ability to develop interactive e-books that support various multimedia formats, such as text, images, audio, and video. This interactive feature allows students to gain a more dynamic learning experience. It is not limited to static texts under multimedia learning principles emphasizing combining various elements to improve comprehension. In addition, Book Creator also creates material more systematically in the form of digital books that can be accessed at any time, supporting more flexible independent learning. The suitability of these two applications with the characteristics of the developed teaching materials lies in the aspects of interactivity, visualization, and accessibility. Students of the elementary education department (PGMI), who prepare themselves as prospective educators, need informative teaching materials that can be applied in their teaching practice in the future. Therefore, digital teaching materials designed with Canva and Book Creator provide a more engaging and applicable learning experience while helping them develop their creativity and technology-based pedagogical skills.

In the PGMI Study Program of UIN Sayyid Ali Rahmatullah Tulungagung, the use of Canva and Book Creator becomes even more important as they are not only practical tools but also enable the development of teaching materials that are responsive to the characteristics of PGMI students and Islamic values. Understanding that children of the golden age require learning approaches that are interesting and appropriate to their cognitive development, using these applications is expected to create more interactive and interesting learning materials for students. Related to developing digital teaching materials, this research raises the importance of continuing creativity and innovation in utilizing the digital world as a learning medium.

Based on research, developing digital teaching materials using the Canva and Book Creator applications has been proven to increase the creativity of PGMI UIN Sayyid Ali Rahmatullah Tulungagung students. The results of the analysis show that after the use of this digital teaching material, there is an increase in student creativity by 25.97%, as measured through a comparison of pre-test and post-test results. This increase in creativity is reflected in several key aspects. Students' visual design skills improve because they can create more aesthetically pleasing and engaging teaching materials by utilizing various design features in Canva. Innovation in the presentation of materials is growing, as Book Creator allows students to combine multimedia elements, such as text, images, audio, and video, in a single interactive platform. In addition, the questionnaire results showed that

87.6% of students felt more motivated and creative in developing learning materials after using this application. They also stated that the interactive features in digital teaching materials help them think more innovatively and flexibly in compiling and presenting information. Thus, digital teaching materials based on Canva and Book Creator function not only as learning aids but also as a means to develop students' creative and innovative thinking skills in designing more attractive and effective teaching materials.

The ever-evolving digital world provides enormous opportunities to enrich the learning process and create more memorable learning experiences (Amrina et al., 2022). Therefore, this research will present practical solutions by combining creativity, technology, and Islamic values in PGMI learning. With various educational challenges in the digital era, the demand for wise use of technology, the crucial role of PGMI in producing the golden generation, the need for the development of teaching materials, and the speed of practicality in the digital world, this research seeks to make a significant contribution to advancing the quality of education at UIN Sayyid Ali Rahmatullah Tulungagung. The development of digital teaching materials is expected to create a better and more empowering learning experience for PGMI students.

Through implementing Canva and Book Creator applications in developing digital teaching materials, this research focuses on improving the quality of learning materials and exploring the potential creativity of PGMI students. Creativity is the center of attention because it not only includes aspects of visual design but also creates opportunities to explore new ideas in the delivery of material and understanding of Islamic religious concepts (Rustiman & Mahdi, 2021). In the view of Islamic education, creativity is not only seen as a technical skill but also as the ability to convey Islamic moral and ethical values effectively (Mucundanyi & Woodley, 2021). Therefore, the use of Canva and Book Creator is directed at developing informative teaching materials based on Islamic moral and ethical principles according to the needs of PGMI students.

The characteristics of the innovative teaching materials developed in this study not only focus on visual aspects and interactivity but also integrate Islamic ethical principles and moral values as part of a technology-based learning approach. This integration is realized through selecting appropriate content, both in the material presented and in the design of its delivery. For example, in Canva, students are encouraged to choose illustrations, colors, and typography that reflect aesthetics. The teaching materials developed using the Book Creator platform have outstanding interactive characteristics. This interactive e-book presents various electronic features, such as video, audio, document links, and a table of contents directly connected to related material pages. The use of Book Creator makes it easier for educators to compile electronic teaching materials that are attractive and easy to use so that students can learn independently without relying too much on

teachers. In addition, the attractive display and systematic presentation of the material increase students' motivation to learn and understand concepts.

The development of digital teaching materials through applications such as Canva and Book Creator has become a significant focus in educational research. Research has shown that these tools can effectively enhance students' learning experience and understanding of various subjects (Khoiriyah et al., 2022). For example, many researchers have shown that using Canva to create interactive math content has improved teachers' skills and creativity in developing learning materials (Anam et al., 2024; Aryanto et al., 2023; Ismail & Sulistyo, 2024).

Similarly to the last research, validation of digital teaching materials created using Flipbooks has shown positive results in improving students' understanding of physics concepts (FTH et al., 2022; Hasriadi et al., 2023). Therefore, incorporating tools such as Canva and Book Creator to develop teaching materials for PGMI UIN Sayyid Ali Rahmatullah Tulungagung students could lead to a more engaging and effective learning experience. In today's digital era, the ability to design and present learning materials engagingly and interactively is an urgent need. Canva, as a graphic design platform, allows students to create visual and aesthetic teaching materials, while Book Creator facilitates the creation of interactive and multimedia-rich e-books. This research also examines how mastery and utilization of these two applications can improve prospective teachers' learning effectiveness and teaching skills. In addition, this study also aims to explore the impact of using digital teaching materials on student motivation and engagement in the teaching and learning process. Thus, this study's results are expected to significantly improve the quality of education and prepare PGMI graduates who are competent in utilizing digital technology in education.

In addition, the sustainability of this digital teaching material development opens up opportunities for further development, including exploring the potential for innovation and adjusting to the needs of student development and technological developments. With an integrated evaluation mechanism, this research can make a sustainable contribution to the progress of the PGMI curriculum and the renewal of relevant learning methods. Thus, this research not only sees the development of digital teaching materials as a response to the challenges and demands of the times but also as a constructive step to create a learning environment that is dynamic, creative, and under Islamic values.

PGMI UIN Sayyid Ali Rahmatullah Tulungagung students faced several obstacles in learning before developing this digital teaching material. The main obstacles identified through surveys and interviews are difficulties understanding the material presented conventionally, lack of involvement in learning, and limited sources of interesting and up-to-date references. Data shows that 72% of students

experience difficulties because the materials provided are not interesting, and 64% feel that the learning theme is irrelevant to the times.

In addition, 68% of students stated that the available teaching materials have been unable to encourage their critical thinking fully. To overcome these obstacles, digital teaching materials based on Canva and Book Creator were developed with a more interactive, visual, and easy-to-access approach at any time. The novelty of this teaching material compared to the previous teaching material lies in several main aspects. First, these teaching materials incorporate interactive multimedia elements, such as videos, infographics, and digital quizzes, not available in the previously used printed or static PDF teaching materials. Second, this teaching material is designed with the principle of blended learning, allowing students to learn independently while collaborating in technology-based discussions

In addition, the latest location of this digital teaching material provides a more personalized and flexible learning experience compared to previous teaching materials, with an offline access feature that allows students to continue learning even though they face internet connection problems. Compared to passive teaching materials, this innovation allows students to be more exploratory and creative in understanding learning concepts. The study's results also show that after implementing this digital teaching material, the average score of the student post-test increased from 56.53 to 82.50, proving its effectiveness in increasing student understanding and engagement.

Through this background, this research provides a solid foundation for designing, developing, and evaluating digital teaching materials with an innovative and responsive approach to the needs of PGMI students at UIN Sayyid Ali Rahmatullah Tulungagung. The research explains three research focuses. The first is How are the Stages of Digital Teaching Material Development through Canva and Book Creator Applications for PGMI Study Program Students at UIN Sayyid Ali Rahmatullah Tulungagung? Then, How is the Feasibility of Digital Teaching Material Development through Canva and Book Creator Applications for PGMI Study Program Students at UIN Sayyid Ali Rahmatullah Tulungagung? How is the Student Response to the Development of Digital Teaching Materials through Canva and Book Creator Applications for PGMI Study Program Students at UIN Sayyid Ali Rahmatullah Tulungagung?

METHODS

This study uses the research and development model method or R&D, which means research and development. The development stage is systematically carried out through five stages: analysis or analysis, design or design, development or development, implementation or implementation, and evaluation (Branch, 2009). The product to be designed in this study is mobile learning-based teaching material

that can be used through a mobile electronic device or personal computer by utilizing a certain software application. The development of digital teaching materials through Canva and Book Creator applications for PGMI students at UIN Sayyid Ali Rahmatullah Tulungagung was carried out with a practical and structured approach. Data collection techniques are carried out with a comprehensive approach to obtain relevant and representative information. Reliability in this study reflects the extent to which the instruments and procedures used are consistent and reliable for measuring the variables under study.

This research involves various parties at each stage of the ADDIE model to ensure the effectiveness of developing digital teaching materials based on Canva and Book Creator. In the analysis stage, this research involved PGMI UIN Sayyid Ali Rahmatullah Tulungagung students, course lecturers, and teaching material development teams. Data is collected through surveys, interviews, and observations to identify learning needs and obstacles faced by students. In the Design stage, the development team structures the teaching materials with visual, interactive, and multimedia elements in mind. Storyboards and content designs are created using Canva to ensure the teaching materials have an attractive and systematic appearance. The Development Stage involved expert validators, namely Isna Nurul Inayati, M.Pd.I (teaching material design expert), Siti Rofiah, M.Pd (material design expert), and Dr. Marita Lailia Rahman, M.Pd.I (material content expert). They assess digital teaching materials' quality, relevance, and effectiveness before they are applied to learning. In the Implementation stage, teaching materials were tested in a class of 118 PGMI students, with an experiment that began with a pre-test and ended with a post-test to measure the effectiveness of using digital teaching materials.

The Evaluation Stage is collected through student questionnaires, lecturer interviews, and pre-test and post-test results. The data was analyzed using the paired sample t-test method and SPSS to determine the improvement of learning outcomes. In addition, content analysis is used to evaluate responses and suggestions from lecturers and students. Through this approach, this research not only produces innovative digital teaching materials but also ensures that products developed based on empirical data and validated by experts are more effective in improving the understanding and skills of PGMI students.

In addition, the field study was carried out directly at the research location to obtain relevant and detailed information related to students' needs and preferences in using digital teaching materials. This research involves observation, interviews, and the dissemination of questionnaires to PGMI students. The purpose of the field study, including observations, interviews, and FGDs, was to understand the real-world conditions on the ground, including the level of convenience and effectiveness of using the Canva and Book Creator apps in creating digital teaching materials. The results of this field study can provide a comprehensive overview of the obstacles

and benefits felt by students, as well as become a strong basis for the development of digital teaching materials that follow the needs and characteristics of PGMI students at UIN Sayyid Ali Rahmatullah Tulungagung.

Literature studies are also carried out in this study, a research method that collects and analyzes relevant literature, including books, journals, scientific articles, and documents related to the educational curriculum. The main focus of this literature study is to understand the concepts, theories, and best practices in developing digital teaching materials and how applications such as Canva and Book Creator can be integrated into the PGMI curriculum.

The questionnaires were also distributed to PGMI UIN Sayyid Ali Rahmatullah Tulungagung students to collect data related to the effectiveness and acceptance of digital teaching materials developed using the Canva and Book Creator applications. Through questionnaires, researchers can obtain direct information about students' experiences in using previous teaching materials, the extent to which the materials help their understanding, and the level of satisfaction with this new teaching method. The questionnaire also aims to identify the obstacles students face during the learning process so that the development of digital teaching materials can be better adapted to the needs and expectations of students.

RESULTS

1. Development of Digital Teaching Materials

The development of digital teaching materials through Canva and Book Creator uses the ADDIE development model, which consists of five stages: analysis, design, development, implementation, and evaluation. The stages in this development process will be explained by the researcher as follows:

a. Analysis

At this stage, the researcher conducts analysis activities using needs analysis. From here, researchers get information about the problems that occur in the field and the potential of the research subjects, namely PGMI students of UIN Sayyid Ali Rahmatullah Tulungagung. Researchers used three needs analysis methods: literature studies, field studies, and questionnaires.

1) Literature

The main findings of the literature study regarding the development of digital teaching materials based on Canva and Book Creator include three main aspects, namely (a) Competencies to be achieved, (b) The material integrated, and (c) The presentation strategy and technology used.

a. Competencies to be Achieved

This digital teaching material was developed to improve the pedagogical competence, digital literacy, and creativity of PGMI students in designing and

presenting teaching materials interactively (Liu et al., 2020). Studies show that digital teaching materials designed with a multimedia and interactive approach can significantly increase students' understanding, engagement, and learning motivation.

b.   Integrated Material

The material in this digital teaching material involves the basic concepts of madrasah education, learning theories, technology-based teaching strategies, and Islamic values (Gutiérrez-Castillo et al., 2023). Studies show that the use of infographics, videos, and interactive elements in digital teaching materials can increase the appeal and effectiveness of the material (Clark-Wilson et al., 2020). In addition, this teaching material incorporates instructional design principles, such as scaffolding structures where students gradually understand concepts from simple to complex levels.

c.   Presentation Strategy and Technology Used

The presentation strategy applied in this digital teaching material emphasizes concept visualization, interactivity, and learning personalization (Fernández-Batanero, 2022). Canva is used to create eye-catching visual designs, while Book Creator allows the integration of text, video, audio, and other interactive elements (Mohanty et al., 2021). In addition, this teaching material is also supported by a blended learning strategy, where teaching materials can be accessed flexibly in face-to-face sessions and online learning.

2) Field Study

The purpose of field studies, including observations, interviews, and FGDs, is to deeply understand the real conditions in the field, including the level of comfort and effectiveness of using Canva and Book Creator applications in making digital teaching materials. The results of this field study can provide a comprehensive picture of the obstacles and benefits students feel and provide a strong basis for developing digital teaching materials that suit the needs and characteristics of PGMI students at UIN Sayyid Ali Rahmatullah Tulungagung.

The field study data analysis results show that PGMI UIN Sayyid Ali Rahmatullah Tulungagung students face several challenges in understanding the lecture material before implementing Canva and Book Creator-based digital teaching materials. One of the main findings was that 72% of students found it difficult to understand the material because the teaching materials used previously were less interesting, with 64% stating that the themes taught were less relevant to the times.

In addition, 68% of students said that the current teaching materials cannot encourage their critical thinking optimally, so a more interactive and innovative approach is needed. The pre-test and post-test results also showed a significant improvement in student understanding after using digital teaching materials. Before

the intervention, the average score of the students' pre-test was 56.53, which then increased to 82.50 in the post-test, with a difference of 25.97 points, indicating the effectiveness of the teaching materials developed.

The Paired Sample T-Test also showed that this improvement was significant (p < 0.05), confirming that the use of Canva and Book Creator has improved the quality of learning. Students also stated that this digital teaching material makes it easier to understand complex concepts, especially because of the visual, audio, and interactive elements. As many as 82% of students want interactive features, such as quizzes and live questions in digital teaching materials, because they are considered to improve their understanding in more depth. In addition, 61% of students feel that flexible access to digital teaching materials is very helpful for them in learning independently.

3) Distribution of Questionnaires to PGMI Students at UIN SATU Tulungagung

PGMI students need digital teaching materials that are easily accessible (61%), with 68% stating that current teaching materials have not encouraged students to function their thinking skills to the fullest. Most respondents (63%) felt that teaching materials presented through Canva and Book Creator could help them understand the concepts taught better. Regarding learning, most students (61%) felt that learning in PGMI has tended to be done with conventional methods. Most respondents (62%) believe that integrating Canva and Book Creator into learning can increase their motivation and interest in learning academic materials. Most (82%) expect interactive digital teaching materials through Canva and Book Creator.

b. Design/Planning

This stage is advanced after the needs analysis stage, where researchers determine the planning of teaching materials. Namely, researchers prepare product designs as teaching materials based on critical thinking. The design here will be used to design products, namely basic qira'ah teaching materials. Researchers carry out the first stage to determine learning objectives and indicators. This is the main source for designing other teaching material components, such as topic selection, teaching method selection, teaching media selection, and question exercises.

The needs analysis results in this study show a significant need to develop digital teaching materials through the Canva and Book Creator applications for PGMI UIN Sayyid Ali Rahmatullah Tulungagung students. Based on data obtained through the questionnaire, the majority of respondents, namely 62%, stated that the application-based digital teaching materials were not yet available. In comparison, 66% of students admitted that they had difficulties in attending lectures, with 72% saying that the main problem lies in the material presented.

In addition, 64% of students consider learning themes to be less interesting and less relevant to the latest developments. Students also indicated a need for more

accessible and interactive digital teaching materials by 61%, with 82% expressing a desire for more dynamic material delivery through Canva and Book Creator. As many as 68% of students feel that the current teaching materials are not enough to encourage them to think optimally, while 63% consider that Canva and Book Creator can help them understand academic concepts.

Furthermore, in the technical aspect, students want the flexibility of file formats so that they can be accessed through various devices and applications 72%, as well as the ease of sharing teaching materials with fellow students and lecturers for discussion 74%. As many as 59% of respondents also underlined the importance of the availability of materials in a language that is easier to understand. These findings indicate the need for innovation in delivering digital teaching materials that are more interesting, accessible, and able to increase student involvement and understanding in the learning process.

Digital teaching materials through Canva and Book Creator apps are designed to facilitate learning more interactively and engagingly. Canva provides a variety of visual templates that can be used to create professionally designed presentations, infographics, and other teaching materials without the need for in-depth graphic design skills. Meanwhile, Book Creator allows teachers and students to create digital books containing text, images, videos, and sounds so that learning materials can be multimedia. By using these two applications, educators can create a more dynamic and engaging learning environment, increase student engagement, and help them understand the material more effectively. In addition, these digital teaching materials can be accessed anytime and anywhere, facilitating the teaching and learning process in the digital era.

1) Learning Objectives

The learning purpose of using Canva and Book Creator-based digital teaching materials is to equip PGMI UIN Sayyid Ali Rahmatullah Tulungagung students with pedagogical competence, digital literacy, and creativity in designing interactive teaching materials. Students are expected to be able to design learning materials that are informative, interesting, and engaging so that they can increase students' motivation and understanding of the learning process.

Another goal is to improve students' technical ability to operate various digital applications to create teaching materials that are more flexible, innovative, and accessible. With the mastery of the Canva and Book Creator applications, students can integrate multimedia elements such as text, images, videos, and audio, which makes the learning process more dynamic and interactive.

Furthermore, using digital teaching materials aims to prepare students as educators who are adaptive to technological developments and can apply digital-based learning methods in the classroom. With this approach, students learn to

create effective teaching materials and develop critical, innovative, and solutive thinking skills in facing the challenges of modern education.

2) Content design

The design of digital teaching material content developed based on Canva and Book Creator is designed to provide a more interactive, visual, and flexible learning experience. The structure of this teaching material consists of eleven units, namely: (1) Cover, (2) Preface, (3) Table of Contents, (4) Foundations of Learning Theory, (5) Teaching Materials, (6) Development of Teaching Materials, (7) Foundations of Development Theory, (8) Factors and Procedures for Development of Teaching Materials, (9) Development of Prints, (10) Development of Non-Prints, and (11) Addition of Quizzes and Interactive Questions at the end of each chapter.

In terms of appearance, the cover of digital teaching materials is designed with a minimalist yet elegant approach, using harmonious colors and clear typography to give a professional impression. The preface and table of contents are also designed with a more straightforward and easy-to-read interface. They are even equipped with interactive links that allow users to access the desired chapters directly.

(a) Before Development   (b) After Development

Figure 1. Sample Page View

For the primary material, each chapter integrates infographics, videos, animations, and interactive elements designed using Canva. In contrast, Book Creator combines all the elements into one more user-friendly digital book. The end of each chapter is equipped with interactive quizzes and reflective questions, which allow students to gauge their understanding directly. In addition, this teaching material also utilizes hyperlink-based navigation features so that students can move between parts of the material more quickly and efficiently. This feature reduces accessibility constraints that are often encountered in printed or PDF based teaching

materials. Overall, the content design of this digital teaching material presents a more dynamic, innovative, and tailored learning experience to the needs of PGMI students, helping them not only understand the material in depth but also develop creativity and digital skills in the learning process.

3) Design learning and evaluation methods on the material

The learning method in developing digital teaching materials based on Canva and Book Creator uses a blended learning approach, combining face-to-face and online learning. The learning process begins with an introduction to the theory of the basic concept of digital teaching material design and the underlying pedagogical principles. Lecturers provide hands-on demonstrations on using the Canva and Book Creator apps and interactive tutorials to help students understand the app's key features.

After the theory session, students take part in a practicum session where they are asked to design their own digital teaching materials. Canva is used to create compelling visual elements. In contrast, Book Creator is used to compose teaching materials in interactive digital books that include text, images, videos, and audio. Students are given individual and group assignments to develop teaching materials based on the concepts they have learned to hone their creativity and technical skills.

The evaluation is carried out through several stages. First is the final product assessment, where the teaching materials that students have made are assessed based on aspects of design, content completeness, and interactivity. Second, students presented their projects in a presentation session to measure their ability to explain the concept and application of digital teaching materials. Third, feedback is carried out from lecturers and fellow students, which allows reflection and improvement on the teaching materials developed.

The digital teaching materials include interactive quizzes and reflective questions as part of technology-based evaluations. This quiz was developed using the Canva and Book Creator features so students can answer questions directly on the platform. Various question formats, such as multiple-choice, short-fill, and drag-and-drop, are designed to increase student engagement and measure their understanding of the material.

4) Designing quiz time and interactive questions on the material

Designing quiz time and interactive questions in digital teaching materials based on Canva and Book Creator aims to increase student engagement and understanding in learning. Quiz time is designed using an interactive feature that allows students to answer questions directly within the platform. The types of questions used include multiple choice, as well as short fills tailored to the material studied. One of the main advantages of this feature is the direct feedback, which is given after students complete the quiz. This helps them understand the mistakes and get a better understanding.
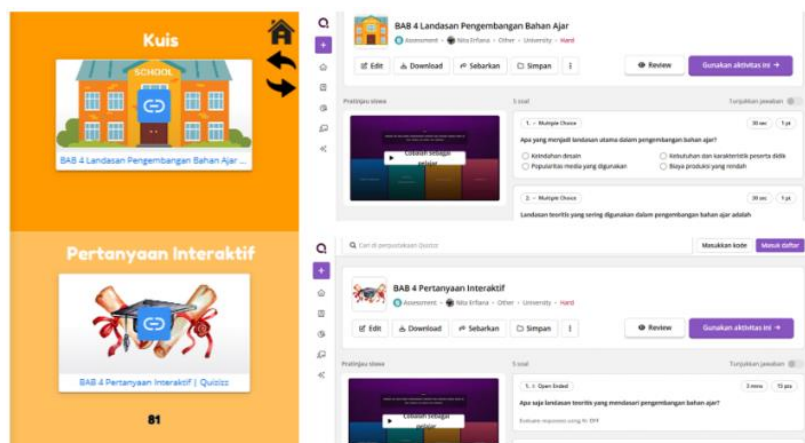
Figure 2. Designing quiz time and interactive questions

In addition, the quiz page display is designed in an attractive and easy-to-navigate style, using harmonious color combinations and visual icons to enhance user comfort. In addition to quizzes, there are also interactive questions in the form of online discussions and group assignments, where students must develop digital teaching materials based on the concepts learned. With this method, they are not only tested in theoretical aspects but also in the application of practical skills.

This approach ensures that students not only understand the theory but are also able to apply it in real life to create innovative and effective digital teaching materials. With this feature, the learning experience becomes more dynamic, fun, and hands-on, thereby increasing student motivation and involvement in the learning process.

c. Development

1) Developing materials

Developing Digital Teaching Material Development materials through Canva and Book Creator Applications for PGMI UIN Sayyid Ali Rahmatullah Tulungagung students is a strategic step to prepare prospective educators ready to face the challenges of the digital era. This material is designed to provide in-depth knowledge of the principles of effective educational design and technical skills in using the two applications. Through a structured curriculum, students are invited to understand how to create engaging and interactive teaching materials, from visual design in Canva that allows the use of creative templates and graphic elements to digital book creation in Book Creator that can combine text, images, video, and audio. The material development process involves practical exercises, case studies, and collaborative projects that allow students to put theory into practice. Thus, students learn to create engaging and effective digital teaching materials and develop critical and innovative thinking skills that are essential in modern education.

a) Learning Objectives

The learning objectives in the Digital Teaching Material Development material through Canva and Book Creator Applications for PGMI UIN Sayyid Ali Rahmatullah Tulungagung students are to equip them with the competencies and skills to create innovative, interesting, and interactive teaching materials. Through mastery of the Canva and Book Creator applications, students are expected to be able to design learning materials that are not only informative but also engaging to increase student motivation and understanding.

In addition, it aims to improve students' technical skills in using digital tools and develop their creativity in designing and presenting information. This learning also aims to prepare students to become educators who are adaptive to technological developments and can apply modern learning methods in the classroom. Thus, PGMI graduates of UIN Sayyid Ali Rahmatullah Tulungagung are ready to face the challenges of education in the digital era and can positively contribute to the world of education.

b) Canva and Book Creator-based teaching materials

The developed teaching materials include eleven units, namely: (1) Cover; (2) Foreword; (3) Table of Contents: (4) Theoretical Foundations of Learning: (5) Teaching Materials; (6) Teaching Material Development (7) Theoretical Foundations of Development (8); Teaching Material Development Procedure Factors; (9) Print Development: (10) Non-Print Development and (11) Addition of quiz and interactive questions at the end of each chapter, as for more details explained as follows:

The teaching materials developed for PGMI UIN Sayyid Ali Rahmatullah Tulungagung students include seven comprehensive units, starting from the first, namely the Cover. The developed cover has a more straightforward and attractive design, emphasizing a modern and elegant aesthetic. With a minimalist approach, the visual elements used are designed not to be excessive but still steal the attention. Harmonious colors and straightforward typography give a professional and clean impression. This design makes it easier for readers to focus on the main content and enhances the overall visual appeal. As a result, the cover can convey the message effectively while maintaining an attractive and contemporary look.

Second, the developed preface has a more straightforward and attractive design. With a minimalist look, this foreword prioritizes simplicity without compromising on aesthetics. The visual elements are designed not to be overwhelming but still give an elegant and professional impression. This design also effectively uses white space, making the text easier to read and understand. In addition, the use of typography or a modern and consistent Montserrat font further reinforces the elegant impression and certainly makes this foreword not only informative but also pleasing to the eye and captivating to the reader.

Third, the developed table of contents has a more straightforward and attractive design than the previous version. It is designed so that users can easily find and access the information they need. In addition, each entry in the table of contents is equipped with a direct clickable link, making navigating to the desired chapter or section easier. With this feature, users no longer need to manually scroll through pages to find the desired chapter, which increases efficiency and convenience in using this document.

Fourth, enter the material, namely the theoretical basis of learning, which provides an understanding of the various learning theories and principles that are the basis for developing teaching materials. Fifth, Teaching Materials explains the types of teaching materials and the criteria for suitable teaching materials. The teaching materials are designed to be very attractive, utilizing various visual and interactive elements to increase student interest and engagement. Researchers found that students are more motivated and eager to learn in the field when the material is presented in an attractive and easy-to-understand format. Using infographics, videos, and animations created with Canva and Book Creator apps, researchers ensured that the content was informative and fun to learn. Direct observation during the pilot showed a significant increase in student participation and comprehension, underscoring the importance of an engaging and dynamic presentation. Learning methods and media

The learning method for Digital Teaching Material Development through Canva and Book Creator Applications for PGMI UIN Sayyid Ali Rahmatullah Tulungagung students uses a blended learning strategy, combining face-to-face and online learning to maximize student understanding and skills. Learning begins with an in-class theory session, where lecturers explain the basic concepts of digital teaching material design and the underlying pedagogical principles. Next, students are introduced to Canva and Book Creator applications through live demonstrations and interactive tutorials.

In the practicum session, students are invited to explore and practice the use of Canva and Book Creator. Canva is used to design the visual elements of teaching materials by utilizing the various templates, graphics, and design tools available. In contrast, Book Creator combines these elements into an interactive digital book, including text, images, video, and audio. Students are given individual and group projects encouraging them to apply the theories and skills learned, resulting in creative and effective digital teaching materials.

2) Practice Questions

Practice questions in the learning method of Digital Teaching Material Development through Canva and Book Creator Applications for PGMI UIN Sayyid Ali Rahmatullah Tulungagung students are designed to effectively test students' understanding and skills through interactive quizzes and questions. These quizzes

are created using the interactive features in the Canva and Book Creator applications, allowing students to answer various types of questions, such as multiple-choice and short-form, directly on the platform. These questions cover the material that has been learned, ranging from the basic theory of teaching material design and application usage to the creation of digital teaching material projects.

With an interesting and dynamic format, these quizzes not only measure students' knowledge but also encourage them to think critically and creatively in solving the questions given. Feedback is given immediately after each quiz so that students can find out their mistakes and correct them immediately. In addition to quizzes, interactive questions are also used in online discussions and group assignments that require collaboration and practical application of the concepts learned.

This approach ensures that students not only understand the theory but are also able to apply it practically in creating effective and engaging digital teaching materials. Thus, the practice questions through interactive quizzes and questions serve as a practical evaluation and learning tool, supporting the overall goal of this development.

The validation was carried out by several teams of experts who were competent in their fields. The expert teams in question were: (1) Isna Nurul Inayati, M.Pd.l as a validator of teaching material design; (2) Siti Rofiah, M.Pd, as a material design expert validator; and finally (3) Dr. Marita Lailia Rahman, M.Pd.I as a content design expert validator.

After the product was approved by the experts and completed the revision, the researcher tested the product in the field to students of the Madrasah Ibtidaiyah Teacher Education Department of UIN Sayyid Ali Rahmatullah Tulungagung which was spread over 3 classes with a total of 118 students. This program aims to determine the validity of the material developed through the results of student questionnaires, along with comments, input, or suggestions.

3) Results of data analysis obtained at the development stage

The results of data analysis at the development stage show that input from expert validators has been systematically implemented to improve the quality of digital teaching materials based on Canva and Book Creator. The validators, consisting of instructional design experts, material design experts, and content design experts, provided several recommendations that the development team has followed up.

From content quality, validators assessed that the teaching materials were per the curriculum and had accurate information. However, there are suggestions to clarify some key concepts and add more contextual examples. Improvements were made by refining the material description and including more relevant supporting illustrations.

In the aspect of presentation, validators suggested improving the presentation structure to be more systematic and easy to understand. Therefore, adjustments were made in the order of delivering the material and adding summaries at the end of the chapter to strengthen student understanding. The validator also emphasized the importance of integrating text and visual media, so some visual elements, such as diagrams and infographics, have been improved.

Regarding language, validators provide input on the readability and consistency of academic terms. Improvements are made by simplifying too complex sentences and harmonizing the terminology used throughout the teaching material. In terms of appearance, validators give high marks to the visual design of teaching materials but recommend choosing colors that are more comfortable for reading over a long period of time, as well as adjusting the font size. Revisions in this aspect include optimizing color contrast, improving font readability, and improving the layout for user convenience.

Overall, the validation results show that the digital teaching materials developed have met academic standards and are suitable for learning. Most aspects are assessed in the very feasible category. In contrast, some aspects that need improvement have been followed up on to ensure the effectiveness of teaching materials in improving the student learning experience.

d. Implementation

At this stage, researchers conducted field experiments to try out products developed based on critical thinking skills. The field test was conducted on Madrasah Ibtidaiyah Teacher Education Department students in the 4th semester of classes A, B, and C with two meetings, starting with a pre-test and ending with a post-test.

At the Analysis stage, educators need to understand the needs of learners, learning objectives, and competencies to be achieved. This can be done through surveys or discussions with learners to determine their preferences for using digital teaching materials. The design stage involves planning the development of teaching materials. Educators should determine the appropriate content, structure, and format for Canva and Book Creator. Educators must also create a storyboard or outline of the materials to ensure a logical and engaging learning flow.

Educators begin developing digital teaching materials at the Development stage using Canva and Book Creator applications. Canva is used to create graphic designs, infographics, and other visual elements that support teaching content. At the same time, Book Creator organizes the content into interactive e-books that are easily accessible to students.

The Implementation stage involves the application of teaching materials that have been developed for students. Educators need to provide instructions for use and accompany and monitor students during the learning process using this digital

teaching material. In addition, educators must be ready to provide technical assistance if students experience difficulties. The Evaluation stage is the process of assessing the effectiveness of digital teaching materials.

The field test was conducted in two meetings, starting with a pre-test and ending with a post-test. It started on March 12, 2024, and ended on March 17, 2024. In the process of testing materials, the trial of digital teaching material development materials through the Canva and Book Creator applications in the field was carried out based on several aspects integrated with the ADDIE method. First, a Needs Analysis is conducted to understand the needs of learners and determine the expected goals and competencies. This includes collecting data through surveys, interviews, or observations to determine learners' preferences and ability levels to use digital technology.

Furthermore, at the design stage, the teaching materials are designed by paying attention to the appropriate structure, content and format. This process involves preparing a storyboard or outline of the material to be developed using Canva and Book Creator, ensuring that the material is easy to understand and interesting for learners. The Development stage involves creating digital teaching materials directly using Canva for graphic design and Book Creator to create interactive e-books. The developed materials were internally tested to ensure their feasibility and suitability before being implemented in the field.

At the Implementation stage, the teaching materials that have been developed are applied in real classes. Learners are given instructions and assistance in using the digital teaching materials. Educators also monitor and provide real-time feedback to overcome technical difficulties that students may face. Finally, the Evaluation stage is conducted to assess the effectiveness of the digital teaching materials. Evaluation includes collecting feedback from learners, assessing learning outcomes, interviews, and directly observing learners' interaction with the teaching materials.

This evaluation data is used to make improvements and refine teaching materials to make them more effective and meet the needs of students in the future. In it, the lecturer presents questions or statements about the current situation that students already know, feel, and experience in real life. Lecturers ask students to express opinions or ideas based on their experience and knowledge.

Table 1. Digital Teaching Material Trial Results

No	Evaluated Aspect	Percentage / Score	Description
1	Students found the material more interesting than conventional teaching materials	82%	Positive response
2	Students felt that interactivity made learning easier	76%	Positive response
3	Students found digital teaching materials easy to use and access on various devices	79%	High usability
4	Students considered navigation intuitive	68%	Room for improvement in visual quality
5	Average pre-test score	56,53	Before using digital materials
6	Average post-test score	82,5	After using digital materials

The results of data analysis during the trial of digital teaching materials based on the Canva and Book Creator applications showed a positive response from PGMI UIN student Sayyid Ali Rahmatullah Tulungagung. Based on the feedback collected through questionnaires and interviews, students assessed that these teaching materials helped improve their understanding of the learning material. As many as 82% of students stated that the material presented was more interesting than conventional teaching materials. In comparison, 76% stated that the interactivity in this digital teaching material made the learning process easier.

Regarding usability, 79% of students feel that digital teaching materials are very easy to use and access on various devices. In addition, 68% of students stated that the navigation in the teaching materials was quite intuitive. However, there was input on improving the quality of visual displays to make them more comfortable to read for a long time. Some students also proposed additional features like interactive quizzes and learning videos to enhance the learning experience.

In terms of effectiveness, the trial results showed a significant improvement in student learning outcomes. The average post-test score of students after using digital teaching materials increased to 82,50, compared to the pre-test score of only 56,53. Statistical tests using paired sample t-tests showed significant differences between the two scores, indicating that using digital teaching materials effectively improved students' understanding and academic skills.

e. Evaluation Stage

Evaluation is carried out at each stage in the ADDIE model to ensure the effectiveness and suitability of Canva and Book Creator-based digital teaching materials in the learning of PGMI UIN Sayyid Ali Rahmatullah Tulungagung students. In the Analysis stage, the evaluation is carried out by collecting data through surveys, interviews, and questionnaires to find out the needs of students for digital teaching materials. The results of the evaluation showed that 72% of students felt that conventional teaching materials were less interesting, and 64% considered the material irrelevant to the times.

The Design stage is evaluated by validating the design of teaching materials, including content structure, visual appearance, and multimedia integration. Expert validators evaluate designs and provide suggestions for improvements before the teaching materials are further developed. At the Development stage, the evaluation was carried out through expert validation from three fields, namely teaching material design, material content, and learning technology. The revision was carried out based on the input of experts, especially in terms of the use of interactive elements and the feasibility of the content of teaching materials.

The Implementation stage is evaluated through field experiments with pre-test and post-test. The results showed an increase in the average score of students from 56,53 to 82,50, with an N-Gain Score of 0,82, which shows high effectiveness. Finally, the Evaluation stage is carried out by collecting feedback from students through questionnaires and interviews and analyzing learning outcomes. This data is used to make further adjustments and developments to improve the quality of teaching materials.

2. Effectiveness of Teaching Materials developed through Needs Analysis

In this study, researchers present data on the effectiveness of teaching materials developed through Canva and Book Creator applications, which have been tested in PGMI classes at FTIK UIN Sayyid Ali Rahmatullah Tulungagung. To assess the effectiveness of the materials developed, the differences in student scores before and after the experiment were analyzed by comparing the pre-test and post-test results. This analysis used the SPSS 24 statistical program. In addition, the results of student responses after the application of the product were also reviewed on a Likert scale. This analysis provides an overview of the improvement of students' critical thinking skills after using the developed digital teaching materials.

3. Student Response Before the Development of Digital Teaching Materials Through Canva and Book Creator Applications

The table shows that the average student response before the development of digital teaching materials through the Canva and Book Creator Applications of the Madrasah Ibtidaiyah Teacher Education Study Program at Sayyid Ali Rahmatullah Tulungagung State Islamic University in the pre-test was 1,89. From the average

value results, it can be seen that the student's response to the lecture material is less. This happens because the method of delivering material is conventional and less interactive. Many lecturers still use printed teaching materials and monotonous presentations, making attracting student interest difficult. Materials presented in printed form or PowerPoint slides often feel monotonous and do not stimulate active student involvement. In addition, the visual limitations and lack of interactive elements make it difficult for students to understand the concepts presented. Ultimately, students feel less motivated and find it difficult to focus on the learning process. The lack of innovation in the delivery of material also causes reduced student participation and enthusiasm in lectures, which ultimately has an impact on learning outcomes that are not optimal.

The attractive and interactive design, which is complemented by audio and video elements, is their main attraction. These features make learning more enjoyable and enhance understanding of the material. Students feel that using this application allows them to access complex information more easily in a visual and auditory way. The presence of multimedia elements in digital teaching materials according to their personal needs makes the learning process more effective and efficient. This positive response shows that developing digital teaching materials based on Canva and Book Creator can meet students' learning needs dynamically and adaptively.

DISCUSSION

1. Needs Analysis Stage

At the needs analysis stage, this study found that PGMI UIN Sayyid Ali Rahmatullah Tulungagung students had difficulties in understanding conventional teaching materials. 72% of students felt that the teaching materials were not interesting, and 64% stated that the materials were irrelevant to the times. In addition, 68% of students feel that the available teaching materials are insufficient to encourage their critical thinking. These findings show that traditional text-based teaching materials without interactive elements are less effective in supporting the learning process. Theoretically, these findings support the cognitive theory of multimedia learning (Mayer, 2005) which emphasizes that comprehension will be better if learning materials are presented in the form of text, images, and interactive elements. Compared to the research conducted (Mujtahid et al., 2021), this study shows that students need a blended learning approach, which allows them to learn flexibly through a combination of digital and conventional methods.

2. Planning Stage

At the design stage, digital teaching materials are designed with visualization, interactivity, and easy navigation in mind. Canva is used to design graphic elements, while Book Creator is used to compose interactive e-books. Each chapter in the

teaching materials is equipped with infographics, videos, and interactive quizzes to improve student understanding. From the perspective of instructional design theory (Dick & Carey, 2009), this approach is in line with the principle of information processing, where learning is more effective if information is processed in a hierarchical and interactive structure. Compared to traditional teaching materials conducted in the research (2020) and Soekamto et al. (2022), which tend to be static, this digital-based design makes students more independent in learning and easier to access materials.

3. Development Stage

The development stage is iterative, with validation by three experts, namely teaching material design experts, material experts, and content experts. Students are provided with intensive training in using Canva and Book Creator to ensure they can use digital teaching materials well. The validation results show that digital teaching materials meet the feasibility standards regarding design, content, and learning effectiveness. This approach is in line with the theory of user-centered design (Pinto-Santos et al., 2022), which emphasizes the importance of understanding user needs and characteristics when developing teaching materials.

Research conducted by (Mohanty et al., 2021) suggests that user-centered design is the key to ensuring that digital products or teaching materials are per technical standards and meet user expectations and needs. In this regard, the research also pays attention to the needs of users (students), who are involved in intensive training using tools such as Canva and Book Creator, which ensures that they can access and use teaching materials effectively.

4. Implementation Stage

At the implementation stage, the teaching materials were tested on 118 PGMI students through two meetings, a pre-test and a post-test. The trial results showed that the average score of students increased from 56,53 to 82,50. With an N-Gain Score of 0,82, which is included in the highly effective category. The implications of these findings support the theory of constructivist learning (Vygotsky, 1978), where students are more active in building their knowledge through technology-based learning experiences. Compared to previous studies from Gutiérrez-Castillo et al., (2023), this study's results show that using interactive elements in digital teaching materials can significantly improve comprehension.

CONCLUSION

At the analysis stage, this study found that college students in elementary education departments had difficulties understanding conventional teaching materials, with 72% stating that the teaching materials were less interesting and 64% feeling that the material was irrelevant to the times. In addition, 68% of

students revealed that the available teaching materials were not enough to encourage their critical thinking

The Design stage involves developing digital teaching materials based on Canva and Book Creator, focusing on concept visualization, interactivity, and access flexibility. The design was created to increase student engagement and provide a more immersive learning experience, with logical material structure, engaging infographics, and interactive quizzes to measure comprehension

In the Development stage, the teaching materials that have been designed are validated by three experts, namely teaching material design experts, material experts, and content experts. The revision process is carried out based on expert input to ensure that the content presented is accurate, effective, and in accordance with academic standards

In the Implementation stage, teaching materials were tested on 118 PGMI students in two meeting sessions, including a pre-test and a post-test. The results of the trial showed that after using digital teaching materials, the average score of students increased from 56,53 to 82,50, with the calculation of the N-Gain Score of 0,82, which is included in the highly effective category.

The theoretical implications of this study are that the use of Canva and Book Creator-based digital teaching materials supports the theory of constructivism, where students are more active in the learning process, as well as the theory of multimedia learning, which emphasizes the importance of combining text, images, and interactive elements in improving comprehension. Meanwhile, the practical implication is that this digital teaching material can be applied as an innovative learning model in various educational technology-based courses and can help lecturers and students develop more flexible, interesting, and effective learning methods in the digital era.

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84

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