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Development of Digital Teaching Materials Using Book Creator on the Topic of Data Presentation in Tables to Improve Problem-Solving Skills

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A B S T R A C T

Mathematics learning in elementary schools is still dominated by printed textbooks and lectures, which leaves third-grade students struggling with data presentation in tables and weakens their problem-solving skills. This study aimed to develop digital teaching materials using Book Creator integrated with Genially, YouTube, and Google Forms, to assess their feasibility and practicality, and to test their effectiveness in improving students' mathematical problem-solving skills. The study used the Research and Development method with the ADDIE model (Analysis, Design, Development, Implementation, Evaluation). Twenty-four third-grade students of SDN Bantarkemang 1, Bogor City, were selected through purposive sampling. Data were collected using expert validation sheets, teacher and student response questionnaires, and problem-solving pretests and posttests, then analyzed using percentages and N-Gain. The materials obtained an average feasibility score of 96% (very feasible), with positive responses of 95% from the teacher and 90% from the students. The average problem-solving score increased from 50 on the pretest to 80 on the posttest, with an N-Gain of 0.77 (high category). The study concludes that the Book Creator-based digital teaching materials are feasible, practical, and effective for improving third-grade students' problem-solving skills in mathematics.

1. Introduction

Twenty-first-century education demands learning that utilizes information technology to create interactive, contextual, and student-centered learning experiences. In line with the implementation of the Merdeka Curriculum, teachers are required to develop learning that encourages critical, creative, and collaborative thinking as well as problem-solving skills through innovative media and teaching materials. In mathematics, problem-solving ability is an essential competence because through this process students

learn to identify information, choose strategies, carry out solutions, and re-evaluate their results. One third-grade elementary school topic that trains this ability is data presentation in tables, namely the activities of collecting, grouping, reading, interpreting, and drawing conclusions from data (Januantika, 2020). This topic is also part of numeracy literacy in Phase B of the Merdeka Curriculum (Islamiati, 2026).

However, the learning is still dominated by textbooks and lectures so that it proceeds in one direction, and the needs analysis in this study shows that students have difficulty interpreting information in tables and solving problems related to data. This difficulty is understandable because elementary school students are at the concrete operational stage and therefore require visual, contextual, and interactive presentation of material.

Various efforts have been made to improve the learning of this topic. Januantika, (2020) reported that the STAD cooperative learning model improved learning outcomes in data presentation in tables, while Adita et al. (2023) developed a diagram board medium so that data became simpler, easier to read, and easier to interpret. Learning models that involve students actively, such as problem-based learning, have also been reported to improve mathematics learning outcomes at the junior high school level (Sari et al., 2025). At the level of approach, deep learning emphasizes an in-depth understanding of concepts through active involvement so that students not only fill in tables but also understand why data need to be presented in tables and use them to solve everyday problems (Efendi et al.,2026; Mutmainah et al., 2025). Contextual activities, such as collecting data on hobbies, favorite foods, or transportation to school, provide meaningful learning experiences (Efendi et al., 2026). Teaching materials developed with scientific and contextual approaches have also been shown to improve mathematical communication skil (Kurnia et al., 2023). Nevertheless, these efforts have not utilized the potential of digital technology, which can present data representations dynamically and give students direct feedback.

Digital teaching materials combine text, images, audio, video, animation, and interactive activities in a single medium so that they are more flexible than printed teaching materials, which tend to be static. Digital teaching materials help students understand the material more easily and comfortably (Magdalena et al., 2023), increase their attention and engagement and support independent, student-centered learning (Umihani et al., 2023). Digital teaching materials developed through the ADDIE model have also been reported to be highly feasible, to receive highly positive responses from students, and to produce a high N-Gain category (Istiqomah et al., 2025). One widely used platform is Book Creator, which allows educators to compose interactive digital books by combining text, illustrations, audio, video, and links that can be accessed through various devices. Previous studies have shown that digital flipbook-based teaching materials improve learning effectiveness. Research by Meidita & Susilowibowo, (2021), suggests that Book Creator-based teaching materials and e-modules meet the criteria of validity and practicality (Depra, 2022; Rachmanisa & Fauji, 2024; Riyadi et al., 2025), and that Book Creator-assisted media are rated highly practical (Putri & Purwaningsih, 2024). Book Creator has also been reported to improve students' understanding, creative thinking skills, and learning outcomes (Ndare et al., 2025; Pangestu et al., 2025; Sakti & Purwowidodo, 2024), and to be effective in integrating various media in a single application (Zutiasari et al., 2025).

Nevertheless, these studies mostly position Book Creator as a single digital book that presents text, images, and audio, and emphasize the feasibility and practicality of the product more than the improvement of problem-solving skills. For the topic of data presentation in tables, such a single medium is inadequate because third-grade students must connect data to real situations, understand the structure of rows and columns, interpret the contents of a table, and then use them to solve word problems. Each of these steps requires a different kind of representational support. Contextual examples connect data to students' experiences, animated videos show the process of arranging data into rows and columns dynamically and can be replayed, interactive quizzes give immediate feedback on errors in reading tables, and essay questions train the complete stages of problem solving. If these elements are separated from the digital book, students must move back and forth between applications, which increases unnecessary cognitive load, even though learning from words and pictures together has been shown to be more meaningful than learning from words alone Integrating all of these elements through links within Book Creator therefore becomes a more crucial solution than a single digital medium.

The novelty of this study lies in the development of Book Creator-based digital teaching materials that integrate four supporting components into a single learning ecosystem, namely links to concrete examples in the school and home environment such as the MBG program and RT/RW elections, animated videos developed by the researchers and uploaded

through YouTube, interactive Genially quizzes that provide direct feedback, and problem-solving essay evaluations through Google Forms that are linked within Book Creator. Unlike previous studies, which generally stop at the validity and practicality of the media, this study also measures the effectiveness of the product on the problem-solving ability of third-grade elementary school students. Based on this description, this study aims (1) to develop Book Creator-based digital teaching materials integrated with Genially, YouTube, Google Forms, and links to contextual examples on the topic of data presentation in tables; (2) to test the feasibility of the product through expert validation and its practicality through teacher and student responses; and (3) to test the effectiveness of the product in improving students' problem-solving ability based on N-Gain scores.

2. Methodology

This study used the Research and Development (R&D) method with the ADDIE development model (Analysis, Design, Development, Implementation, Evaluation). The R&D method was chosen because it aims to produce a product in the form of digital teaching materials that not only meet the aspect of feasibility but also have a level of practicality and effectiveness in improving students' problem-solving ability. The ADDIE model was chosen because it has systematic and flexible development stages and is suitable for developing learning media based on digital technology. The analysis stage was carried out through classroom observation and interviews with the third-grade teacher to identify learning needs, student characteristics, problems faced in the topic of data presentation in tables, and an analysis of the learning outcomes of the Merdeka Curriculum. The results of the analysis became the basis for determining the specifications of the product to be developed. Next, at the design stage, the design of the digital teaching materials was prepared, covering the blueprint, storyboard, material structure, and interface design, as well as the research instruments in the form of validation sheets, response questionnaires, and a problem-solving ability test.

The development stage was carried out by developing digital teaching materials using the Book Creator application integrated with several supporting applications to create a more interactive learning experience. The developed product contains learning materials equipped with links to concrete examples in each sub-topic, animated learning videos published through YouTube, interactive quizzes using Genially, and an evaluation in the form of problem-solving essay questions accessed through Google Forms. After the product was developed, validation was carried out by media experts, content experts, and language experts. The feedback from the validators was used as the basis for revision before the product was tested on students.

The implementation stage was carried out through a limited trial and implementation with third-grade students of SDN Bantarkemang 1, Bogor City. The trial aimed to obtain information on the practicality of using the digital teaching materials based on teacher and student responses, as well as to measure the effectiveness of the product through a pretest and posttest of problem-solving ability. The evaluation stage is the final stage, which aims to evaluate the whole development process and the quality of the product. The evaluation was carried out based on the results of expert validation, user responses, and the results of the analysis of the improvement in students' problem-solving ability. The results of the evaluation were used as the basis for refining the product so that digital teaching materials that are valid, practical, and effective for use in mathematics learning on the topic of data presentation in tables were obtained. The complete flow of the development stages is shown in Figure 1.

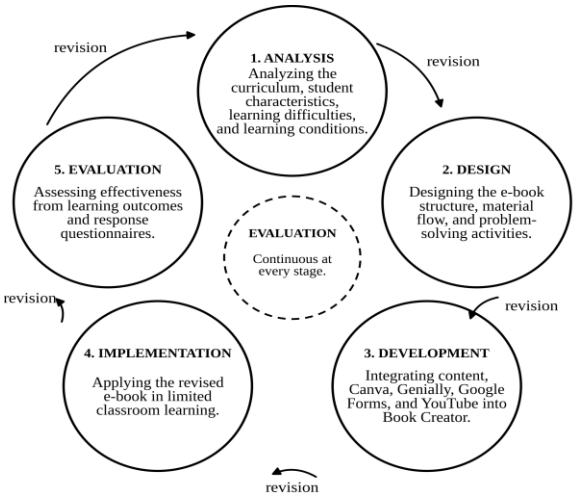


Figure 1. ADDIE Model Diagram

The research subjects consisted of two groups. The first group was the validators, consisting of a content expert, a media expert, and a language expert, who assessed the feasibility of the product. The second group was the third-grade students of SDN Bantarkemang 1, Bogor City, as users of the product, together with the third-grade teacher, who served as the second content validator and assessed the practicality of using the digital teaching materials. The

research data included qualitative and quantitative data. Qualitative data were obtained through observation, interviews, and suggestions from the validators during the development process. Quantitative data were obtained through expert validation sheets, teacher and student response questionnaires, and pretest and posttest results. The problem-solving ability test instrument consisted of [number] essay questions used in the pretest and posttest. The indicators measured refer to the four problem-solving namely understanding the problem, devising a plan, carrying out the plan, and looking back. Scoring used a rubric [explain the score range per item, and the final score was converted to a 0–100 scale. The analysis of feasibility and practicality data used percentage analysis based on the assessment scores of each instrument, while the effectiveness of the digital teaching materials was analyzed using N-Gain scores to determine the level of improvement in students' problem-solving ability after using the developed product. The level of media feasibility was measured using a validation sheet instrument with the following formula:

Feasibility percentage (%)

$$= \frac{\text{Є obtained score}}{\text{Є maximum score}} \times 100\%$$

In addition to feasibility, the level of media practicality was also evaluated using teacher and student response questionnaires with the following formula. Analysis of student and teacher responses: measuring the responses of students and teachers to the teaching that has been carried out using a Likert scale. The Likert scale can measure a person's attitudes, views, and perceptions. 1 = very poor, 2 = poor, 3 = fair, 4 = good, and 5 = very good.

Practicality percentage:

$$= \frac{\text{Є obtained score}}{\text{Є maximum score}} \times 100\%$$

The results of the calculation can then be entered into a qualification table of feasibility levels, as shown in Table 1.

Table 1. Eligibility CriteriaMedia, Language, and Content Score

Criteria	Qualification
0%-20%	Very Unfeasible
21%-40%	Unfeasible
41%-60%	Fairly Feasible
61%-80%	Feasible
81%-100%	Very Feasible

Furthermore, the effectiveness of the improvement in learning outcomes was evaluated quantitatively through the Normalized Gain (N-Gain) test (Wahab et al.,2021), with the following formula:

$$\text{N-Gain} = \frac{\text{Posttest score} - \text{Pretest score}}{\text{Maximum score} - \text{Pretest score}}$$

The determination of the N-Gain score criteria is explained in Table 2 below.

Table 2. N-Gain Score Criteria

N-Gain Value	Classification
>0.7	High
0.3-0.7	Medium
<0.3	Low

3. Results and Discussion

Research Results

Results of Digital Teaching Material Development

The development of the digital teaching materials was carried out using the ADDIE model, which includes the stages of analysis, design, development, implementation, and evaluation. At the analysis stage, it was found that mathematics learning on the topic of data presentation in tables was still dominated by the use of printed books so that students had difficulty understanding the concepts and solving problems that demand problem-solving ability. The results of this analysis became the basis for designing digital teaching materials suited to the characteristics of third-grade elementary school students.

The developed product is a digital teaching material using the Book Creator application, with a template designed through Canva to present the material on data presentation in tables systematically. The strength of the product lies in the integration of several supporting applications in a single digital teaching material. Each sub-topic is equipped with a link to concrete examples that help students understand concepts contextually. In addition, the teaching material is connected to animated learning videos developed by the researchers through YouTube, interactive quizzes using Genially, and an evaluation in the form of problem-solving-based essay questions accessed through Google Forms. This integration of various applications makes Book Creator function not only as a medium for delivering material but also as an interactive digital learning environment that supports students' independent learning.

The following relevant studies were used as references in this study. These references cover digital teaching materials and the Book Creator application in previously conducted research. It is clear that an e-book, as a product of digital teaching materials, can motivate students to understand mathematics more deeply so that it can be developed to improve concrete understanding of the topic of plane figures. In this way, students will be more motivated to learn mathematics.

Therefore, relevant research results are needed, such as the studies below: The study by Ndare et al. (2025) entitled "Development of a Book Creator-Based E-Book for Pancasila Education Learning in Grade IV of Elementary School." This study was motivated by the still limited use of digital technology in the teaching process, which is still dominated by the lecture method and the use of printed teaching materials, resulting in low interest, motivation, and understanding among students.

The aim of this study was to develop a Book Creator-based e-book for Pancasila Education learning in grade IV of elementary school on the topic "The Lifestyle of Mutual Cooperation (Gotong Royong)" and to measure its validity, practicality, and effectiveness. The study used the ADDIE development model, which consists of the stages of analysis, design, development, implementation, and evaluation. Data were collected through validation sheets from media, content, and language experts; teacher and student response questionnaires; and learning outcome tests in the form of a pretest and posttest. The research subjects were grade IV students of SD Negeri 6 Koba and SD Negeri 9 Koba. The validation results showed that the e-book was highly valid, with percentages of 91.2% (media expert), 88% (content expert), and 90% (language expert). Practicality was rated highly practical by teachers and students at the trial and implementation schools, with percentages above 89%. The effectiveness test showed an N-Gain value of 80.97%, which falls into the high and effective category. Thus, this Book Creator-based e-book is valid, practical, and effective for use in grade IV Pancasila Education learning and can increase students' interest, motivation, and understanding.

The study by Depra, (2022), entitled "Development of an Interactive E-Module with the Book Creator Application to Support Differentiated Learning in Grade IV of Elementary School." This study aimed to develop an interactive e-module based on the Book Creator application to support differentiated learning in the grade IV Natural and Social Sciences (IPAS) subject, particularly on the topic of plants as a source of life on earth. The type of research used was Research and Development (R&D) with the ADDIE development model, which includes five stages, namely analysis, design, development, implementation, and evaluation. The results showed that the developed interactive e-module obtained average validity scores of 4.8 for the content aspect, 4.8 for the media aspect, and 4.5 for the language aspect, with an overall average of 4.7, which falls into the "very valid" category. In terms of practicality, the e-module obtained an average score of 5 from educators, 4.75 from students in the small-group trial, and 4.77 from students in the large-group trial, with an overall average of 4.84, which falls into the "very practical" category.

The study by Riyadi et al. (2025) entitled "Development of Digital Teaching Materials Using Book Creator on the Topic of Damaged Environment for Early Phase C of Elementary School." This study used an R&D (Research and Development) approach at Sekolah Dasar Negeri Gang Aut. The research subjects were students of class V-A of Sekolah Dasar Negeri Gang Aut, consisting of 27 students. The study was conducted in the even semester of the 2023/2024 academic year.

The aim of this study was to develop digital teaching materials using Book Creator on the topic of damaged environment and to determine their feasibility. This study used the ADDIE method (Analysis, Design, Development, Implementation, and Evaluation). In this study, validation tests were conducted by experts, namely media experts, language experts, and content experts.

To develop and refine the Book Creator digital teaching materials, responses from students and teachers were needed. The validation results from the media expert obtained a percentage of 94.3% with the criterion very feasible, the language expert obtained a percentage of 100% with the criterion very feasible, and the content expert obtained a percentage of 91.43% with the criterion very feasible. The student response questionnaire obtained a percentage of 80.67% with the criterion very feasible, and the teacher response questionnaire showed a percentage of 82% with the criterion very feasible.

Based on the ADDIE development model, the study began with the Analysis stage. Through observation and interviews with the third-grade teacher of SDN Bantarkemang 1, the main problem was found, namely that students had difficulty in solving abstract mathematical problems, especially on the topic of data presentation in tables. This condition occurred because

of teachers' lack of creativity in using digital teaching materials to make innovative learning, so that mathematics learning was abstract and tended to be boring. As a solution to this problem, a design of digital teaching materials using Book Creator was developed. Next, at the Design and Development stages, the media was developed by creating a storyboard. The visual design of the teaching materials was created using the Canva application, the quizzes were created using the Genially application, the mathematical problem-solving exercises on the topic of data presentation in tables were created using Google Forms, and the Book Creator platform was used to produce digital teaching materials whose output is an e-book that can be accessed by scanning a Book Creator barcode. The cover display of the digital teaching materials and the barcode to access it are shown in Figure 2.



Figure 2. Digital Book Creator Teaching Material Media

Product Validation Results

The feasibility of the product was assessed by four validators consisting of a media expert, a content expert (lecturer), a content expert (teacher), and a language expert. The validation was carried out in two stages so that every piece of feedback from the validators could be used as the basis for refining the product before implementation. The validation results show that the media expert gave a feasibility score of 96%, the content expert (lecturer) 96%, the content expert (teacher) 96%, and the language expert 96%. The overall average percentage reached 96% with the category "Very Feasible," so that the digital teaching materials were declared to meet the aspects of content, presentation, language, and media appearance for use in grade III elementary school mathematics learning. During the validation process, the validators also gave several suggestions to improve product quality, including adjusting the identity on the opening page, improving the layout, consistency of language use, writing of foreign terms, and refining the reference list. All of these suggestions were accommodated through the revision process so that a final product that better suits the characteristics of students and learning needs was obtained. The details of the second-stage validation results are presented in Table 3.

Table 3. Average Total Scores for the Second Phase of Validation

Validator	Items	Max score	Score Obtained	Percentage
Media Expert	15	75	70	96%
Content Expert Lecture	10	50	47	96%
Content Expert Teacher	10	50	47	96%
Language Expert	10	50	47	96%
Average Assessment Percentage				96%

Product Practicality Results

The practicality of the digital teaching materials was measured through student and teacher response questionnaires after the product was used in the learning process. The questionnaire results show that students gave positive responses with a percentage of 90%, while the teacher's response reached 95%, both of which fall into the "Very Good" category. These results show that the digital teaching materials are easy to use, attractive, and able to increase students' engagement during the learning process. The integration of materials, illustrations, animated videos, interactive quizzes, and problem-solving exercises in a single platform provides a more varied learning experience so that students were more enthusiastic about taking part in learning compared with the use of conventional teaching materials.

The student response questionnaire was filled in by 24 third-grade students of SDN Bantarkemang 1 with a total score of 698, equivalent to a percentage of 90%. The teacher response questionnaire was filled in by the third-grade teacher of SDN Bantarkemang 1 and consisted of 10 statements. Statements number 1 and number 6 obtained a score of 3, while the other eight statements obtained a score of 4, so that the total score obtained was 38 out of a maximum score of 40, equivalent to a percentage of 95%. Both results fall into the "Very Good" category.

Product Effectiveness Results

The effectiveness of the digital teaching materials was analyzed using the results of the pretest and posttest of problem-solving ability for 24 third-grade students of

SDN Bantarkemang 1. The analysis results show that the average pretest score of 50 increased to 80 on the posttest. In addition, the N-Gain calculation obtained a score of 0.77, which falls into the high category. This improvement shows that the use of Book Creator-based digital teaching materials made a positive contribution to the improvement of students' problem-solving ability on the topic of data presentation in tables. Based on the results of validity, practicality, and effectiveness, the developed product meets the criteria of digital teaching materials that are feasible for use in mathematics learning in elementary schools. The comparison of pretest and posttest results is presented in Table 4.

Table 4. Comparison of Pretest and Posttest Results for Problem-Solving Ability (n = 24)

Aspect	Pretest	Posttest	Gain
Highest Score	76	100	**+24**
Lowest Score	25	70	**+45**
Average Score	50	80	**+30**
Average N-Gain	0.77		**Gain**
Category	High		

Analysis of Students' Errors

The analysis of students' errors was based on the needs analysis and the pretest results. Before the digital teaching materials were used, the difficulties experienced by students were concentrated in the early stages of the problem-solving. Students had difficulty reading rows and columns correctly, interpreting the information contained in a table, and connecting the numbers in a table to the context of a word problem, so that they could not determine an appropriate solution strategy. These difficulties are consistent with the wide spread of pretest scores, with a lowest score of 25 and an average of 50, which indicate that some students had not yet mastered the stages of understanding the problem and devising a plan, as shown in Table 4.

After the Book Creator-based digital teaching materials were used, the lowest score rose to 70 and the average score rose to 80. Each element of the product addressed these difficulties specifically. Links to contextual examples, such as the MBG program and RT/RW elections, connected the data in tables with situations familiar to students, which helped them understand the information in a problem. The animated video showed step by step how data are collected, grouped, and arranged into rows and columns and could be replayed, which helped students read rows and columns correctly. The interactive Genially quiz gave immediate feedback so that errors in reading tables could be corrected right away. The Google Forms essay questions trained students to work through all four steps, from understanding the problem to looking back at the answer, so that they interpreted the data and drew conclusions in a structured manner. These changes indicate that the visual and contextual elements of Book Creator helped overcome the difficulties students experienced at the pretest stage, which is reflected in the increase of the posttest scores.

Discussion

The development of digital teaching materials using Book Creator in this study shows that the use of digital technology can be an effective alternative in supporting mathematics learning in elementary schools. The developed product obtained the “very feasible” category based on expert validation results, received very good responses from teachers and students, and was able to improve students' problem-solving ability on the topic of data presentation in tables.

These findings show that the development process carried out through the ADDIE model was able to produce a product that suits learning needs and the characteristics of elementary school students. The success of the developed product is inseparable from the needs analysis carried out at the early stage of development. The analysis results show that learning on the topic of data presentation in tables was still dominated by the use of printed books so that students had difficulty understanding concepts concretely. This condition is in line with constructivist theory, which states that knowledge is more easily understood when students gain learning experiences that allow them to build concepts through interaction with various learning resources.

Therefore, the developed digital teaching materials were designed not only to present information but also to provide learning experiences that encourage students to explore the material independently through various interactive activities. One of the main strengths of the developed digital teaching materials is the integration of several digital platforms into a single learning medium. Book Creator is used not only as a container for presenting material but is also connected to various supporting applications, such as Genially for interactive quizzes, YouTube as a medium for presenting animated videos developed by the researchers, and Google Forms as a means of working on problem-solving-based essay questions. In addition, each sub-topic is equipped with links to concrete examples that help students connect mathematical concepts with everyday life situations.

This integration enables students to obtain more diverse, interactive, and flexible learning experiences because all learning activities can be accessed through a single digital teaching material without having to switch between separate media. This finding reinforces the results of previous studies showing that the use of Book Creator can improve the quality of learning through a more interesting and interactive presentation of material. However, this study has different characteristics because it does not only use Book Creator as a medium for presenting digital material but develops a digital learning ecosystem that integrates various supporting applications in a single product.

In this way, students not only read the material but also watch animated videos, work on interactive quizzes, study concrete examples through the available links, and complete problem-solving questions online. This integration provides a more comprehensive learning experience than the use of digital media that functions only as an electronic book.

The results of the study also show an improvement in students' problem-solving ability after using the developed digital teaching materials. This improvement indicates that gradual presentation of material, the use of visual illustrations, contextual examples, interactive activities, and exercises oriented toward problem solving were able to help students understand the concept of data presentation in tables more deeply. This condition supports the view that problem-solving ability does not develop only through routine exercises but also through learning experiences that give students the opportunity to identify problems, understand information, choose solution strategies, and evaluate the results obtained. This view is in line with the finding that learning models that involve students actively in building understanding can improve mathematics learning outcomes (Sari et al., 2025).

The N-Gain of 0.77 (high category) is in the same range as the Book Creator-based e-book in the study by Ndare et al. (2025) which obtained an N-Gain of 80.97%. However, that study measured learning outcomes in Pancasila Education, whereas this study measured mathematical problem-solving ability, which demands a gradual thinking process. Istiqomah et al., (2025) also reported a high N-Gain category of 0.71 for ADDIE-based digital teaching materials for grade V students, accompanied by a student response score of 90%, which is the same as the student response in this study. The studies by Depra, (2022) and Riyadi et al. (2025) stopped at validity and practicality so that they have not shown their impact on higher-order thinking competence. In this respect, this study provides more complete evidence of effectiveness.

The interactive Genially quiz contributed through immediate feedback. Students immediately knew when they had misread a row or column and could try again before the error became a habit. This is in line with the finding of Sakti & Purwowidodo (2024) that interactive presentation of material improves students' understanding. The YouTube animated video contributed by showing the process of collecting, grouping, and arranging data into a table step by step, and it could be replayed according to students' learning speed. This accords with the principle of multimedia learning that a combination of words and pictures better supports understanding. This finding is also in line with Sari et al. (2025) who reported that animation can increase students' enthusiasm. The sequence of the video, the Genially quiz, and the Google Forms essay questions forms a flow of understanding, practicing, and then testing that matches. This flow is presumed to explain the high improvement in scores, including the rise of the lowest score from 25 to 70. However, because this study involved a single group without a control group, the contribution of each feature cannot yet be separated statistically.

The practicality of the product, which obtained a very good category, shows that the digital teaching materials are easy to use by both teachers and students. From the teacher's perspective, this product makes it easier to deliver material because various learning resources have been integrated into a single platform so that learning becomes more efficient. From the students' perspective, the attractive appearance, simple navigation, and presence of various interactive features increase their motivation and engagement during the learning process.

The ease of access to materials, learning videos, quizzes, and evaluations also supports independent learning in accordance with the characteristics of students in the digital era. Theoretically, the results of this study reinforce the concept that the development of multimedia-based digital teaching materials can improve the quality of the mathematics learning process by presenting more meaningful learning experiences. Practically, this study provides an alternative learning innovation for elementary school teachers in developing teaching materials that are not only feasible for use but also able to facilitate the development of students' problem-solving ability. The integration of Book Creator with Genially, YouTube, Google Forms, and links to concrete examples is an

added value that distinguishes this product from digital teaching materials developed in previous studies. Thus, this study contributes to the development of digital technology-based mathematics learning innovations that are more adaptive to the needs of twenty-first-century students.

Nevertheless, this study still has several limitations. The developed product focused only on the topic of data presentation in tables for third-grade elementary school students and was tested in one school. Therefore, further research is recommended to develop digital teaching materials on other mathematics topics, involve a larger number of subjects, and integrate more varied digital technologies so that the effectiveness of the product can be tested on various student characteristics and different learning contexts.

4. Conclusion

This study answers all of the research questions posed. Book Creator-based digital teaching materials on the topic of data presentation in tables were successfully developed through the ADDIE model by integrating links to contextual examples, YouTube animated videos, interactive Genially quizzes, and Google Forms essay questions in a single learning ecosystem. The product was declared very feasible by the media, content, and language experts and received very good responses from teachers and students, so it is classified as practical. The trial with third-grade students also showed that the product is effective in improving problem-solving ability, with a high improvement category. Thus, the research objectives were achieved and this study is considered successful. This success is supported by the integration of various features that help students understand data visually, contextually, and interactively.

Practically, these teaching materials can serve as an example for elementary school teachers in designing contextual mathematics learning based on the Merdeka Curriculum, because the example links and questions can be adapted to the local context and the flow of real context, visualization, practice, and evaluation can be replicated on other topics. Evaluation through Google Forms also makes it easier for teachers to monitor problem-solving ability. This study is limited to one topic, one school, and one group of students. Therefore, further research is recommended to test the product on a larger sample in several schools with a quasi- experimental design with a control group, to examine the contribution of each feature, and to apply it to other abstract mathematics topics such as fractions, measurement, or solid figures

References

Adita, A., Misdalina, & Irawan, D. B. (2023). Pengembangan Media Papan Diagram Pada Materi Penyajian Data Peserta Didik Kelas Iv Sd. *Jurnal Hasil Penelitian*, *8*(2), 155–164. https://doi.org/10.32923/sci.v8i2.4017

Depra, L. (2022). *Pengembangan e-modul interaktif dengan aplikasi Book Creator untuk mendukung pembelajaran berdiferensiasi di kelas IV SD*. In Doctoral dissertation, Universitas Jambi (Number 20, pp. 1–11).

Efendi, Y., Putri, R. M., Putra, A. D., & Pratiwi, A. (2026). Optimalisasi
pembelajaran deep learning pada implementasi Kurikulum Merdeka di sekolah dasar: Analisis literatur. *Jurnal Ilmiah Pendidikan Dasar*, *11*(1), 20–35. https://doi.org/10.23969/jp.v11i01

Islamiati, N., & H. (2026). Analisis Literasi Numerasi Siswa Sekolah Dasar dalam Pembelajaran Matematika Berbasis Kurikulum Merdeka. *Jurnal Pendidikan Guru Sekolah Dasar*, *2*(1), 140–147. https://doi.org/10.66371/jadika.v2i1.79

Istiqomah, F., Hasani, A., & Rosidin, O. (2025). Development of Teaching Materials Based on Local Wisdom Using the PQ4R Method to Improve Reading Comprehension in Grade 5 Students at SDN Panyirapan. *Journal of Education and Learning Research*, *3*(1), 20–28. https://doi.org/10.62208/jelr.3.1.p.20-28

Januantika, A. T. (2020). Peningkatan Keterampilan Menyajikan Data Dalam Bentuk Tabel dan Diagram Batang Melalui Model Pembelajaran Kooperatif Tipe STAD. *Social Humanities and Educational Studies*, *3*(4), 301–307. https://doi.org/jurnal.uns.ac.id/shes

Kurnia, G. A., Anriani, N., & Hendrayana, A. (2023). Pembelajaran matematika melalui pendekatan saintifik untuk meningkatkan kemampuan komunikasi matematis siswa SMK. *Jurnal Penelitian Dan Pengajaran Matematika*, *5*(2), 87–94. https://jurnal.untirta.ac.id/index.php/Tirtamath/article/view/13263

Magdalena, I., Syafinka, A., Mariyam, S., & W. (2023). Pengembangan model bahan ajar digital pembelajaran matematika kelas VI SD. *Jurnal Pendidikan Dan Sains*, *3*(3), 329–335. https://doi.org/10.58578/masaliq.v3i3.963

Meidita, A. C., & Susilowibowo, J. (2021). Pengembangan Bahan Ajar E-Book Berbasis Flipbook sebagai Pendukung Pembelajaran Administrasi Pajak dengan Kompetensi Dasar PPh Pasal 21. *Edukatif: Jurnal Ilmu Pendidikan*, *3*(5), 2217–2231. https://doi.org/10.31004/edukatif.v3i5.784

Mutmainah, N., Adrias, & Zulkarnaini, A. P. (2025). Implementasi pendekatan deep learning terhadap pembelajaran matematika di sekolah dasar. *Jurnal Ilmu Pendidikan Dasar*, *10*(1), 858–871. https://journal.unpas.ac.id/index.php/pendas/article/view/23781

Ndare, N., Putera, R. F., Anita, Y., & W. (2025). Pengembangan e-book berbasis Book Creator pada pembelajaran Pendidikan Pancasila di kelas IV sekolah dasar. *Pendas: Jurnal Ilmiah Pendidikan Dasar*, *10*(2), 321–331. https://journal.unpas.ac.id/index.php/pendas

Pangestu, D., Susanto, R., Lestari, Y. D., Yuliana, C., Lampung, U., Cendana, U. N., Lampung, S. B., & E-mail, U. C. (2025). Implementasi media Book Creator untuk meningkatkan kemampuan berpikir kreatif peserta didik kelas IV sekolah dasar. *Jurnal Pendidikan Sekolah Dasar*, *05*(02), 808–816. https://doi.org/10.31980/caxra.v5i2.3184

Putri, D. A., & Purwaningsih, D. (2024). Pengembangan media pembelajaran matematika berbasis website berbantuan Book Creator SMK kelas X. *Jurnal Dialektika Program Studi Pendidikan Matematika*, *11*(2), 1118–1130. https://journal.peradaban.ac.id/index.php/jdpmat/article/view/2044

Rachmanisa, T. D., & Fauji, I. (2024). Pengembangan Buku Ajar Berbasis Aplikasi Book Creator dalam Pembelajaran Maharah Istima Untuk Madrasah Aliyah `. *Jurnal Ilmiah Ilmu Pendidikan*, *7*(8), 8969–8975. https://doi.org/10.54371/jiip.v7i8.5166

Riyadi, S., Munip, A., Junaidi, A., Buaja, T., Shaddiq, S., & Andriani, N. (2025). Pengembangan bahan ajar digital menggunakan Book Creator pada materi lingkungan jadi rusak fase C awal sekolah dasar. Didaktik. *Jurnal Ilmiah PGSD FKIP Universitas Mandiri*, *10*(3), 214–224. https://doi.org/10.36989/didaktik.v11i03.8051

Sakti, A. B., & Purwowidodo, A. (2024). Pengembangan media pembelajaran Book Creator dalam meningkatkan pemahaman pembelajaran IPA kelas V di SDN 2 Prayungan Nganjuk. *Jurnal Ilmiah Pendidikan Madrasah Ibtidaiyah*, *8*(3), 1395–1405. https://doi.org/10.35931/am.v8i3.3574

Sari, Nurmila Yuanita, P. (2025). Implementation of Problem Based Learning to Improve Students ' Mathematics Learning Outcomes at UPT SMP Negeri 10 Tapung. *Journal of Education and Learning Research*, *3*(1), 29–36. https://doi.org/10.62208/jelr.3.1.p.29-36

Umihani, Nur Wahidin, M., Pujianti, & R. (2023). Pengembangan bahan ajar model discovery learning menggunakan media digital di SMA N 1 Terbanggi Besar. *Jurnal Penelitian Dan Pengembangan Pembelajaran*, *8*(1), 164–172. https://doi.org/10.33394/jtp.v8i1.6433

Wahab, A., Junaedi, J., & Azhar, M. (2021). Efektivitas pembelajaran statistika pendidikan menggunakan uji peningkatan N-Gain di PGMI. *Jurnal Basicedu*, *5*(2), 1039–1045. https://doi.org/10.31004/basicedu.v5i2.845

Zutiasari, I., Rahayu, W. P., Rusmana, D., Isnaini, F., Manajemen, D., Ekonomi, F., & Malang, U. N. (2025). Pemanfaatan Book Creator dalam Pembuatan E-book based Project pada Guru. *Jurnal Karinov*, *8*(3). https://journals.um.ac.id/index.php/karinov/article/view/279

.

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