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Development of E-Book Media Based on the Book Creator Application to Improve the Effectiveness of Science Learning in Grade V of Nan Sabaris Elementary School

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ABSTRACT

This research is motivated by the limited use of interesting and interactive digital learning media in science learning in grade V of Nan Sabaris Elementary School, thus impacting the effectiveness of the learning process and student learning outcomes. This study aims to develop an E-Book media based on the Book Creator application that is valid, practical, and effective for use in science learning. This research is a research and development (R&D) with stages of analysis, design, development, and evaluation. The results of the validity test showed a score of 85.00 for material experts, 90.00 for language experts, and 97.50 for media experts, all of which are in the very valid category. The practicality test by grade V teachers at SDN 17, SDN 15, and SDN 16 Nan Sabaris obtained an average score of 99.16% with a very practical category, while student responses showed very good results. The effectiveness test based on the N-Gain analysis showed values of 0.7694, 0.8000, and 0.7692 with a high category. Thus, Book Creator-based E-Books are suitable and effective for use in science learning in elementary schools.

1. Introduction

In modern education, learning media has become a key pillar in determining the effectiveness of delivering material to students. With the advancement of information and communication technology, the forms of learning media have also undergone significant transformation. Media that once consisted solely of aids such as whiteboards, pictures, and wall posters have now evolved into digital-based media capable of delivering material through various interactive formats (Haniko et al., 2023). According to (Azhar et al, 2024) stated that these advances create new challenges and opportunities for educators, particularly in creating learning

experiences that are not only informative but also visually engaging. These changes further emphasize that teachers are no longer simply transmitters of information but must also act as creative and adaptive learning designers.

The use of innovative and interactive media such as E Books really supports the achievement of these goals, because E Books allow for integration between text, images and multimedia elements that are more interesting for students (Rusdiana & Wulandari, 2022). Learning media can be classified into three types: audio media, visual media, and audio-visual media. Audio media relies solely on sound to convey messages or information. This media is very useful for practicing listening skills, especially for students with an auditory learning style (Intaniasari et al., 2022). Visual media plays an important role in simplifying complex concepts so that they are easier for elementary school students to understand. Lestari et al. (2024) Visual media can help students form mental representations of concepts, which is particularly useful in science learning, which is closely related to natural phenomena, structures, and scientific processes. With the help of visual media, students can connect concepts they struggle to grasp with real objects or events they experience in their daily lives. The same applies to Rahayu (2023) also stated that visual media is effective in building observation and classification skills, which are part of the basic scientific thinking skills that elementary school students must have.

According to LR Jannah et al. (2024) This media has become a popular choice for learning in the digital era. This media usually takes the form of instructional videos, animations, or interactive simulations that not only convey information but also provide a more realistic learning experience. According to Mei Chiew & Abu Bakar (2022) states that audio-visual media provides multisensory stimulation that helps students retain information longer. In the context of science, for example, the use of videos about the water cycle or marine ecosystems can provide a much deeper understanding than text or images. Wandhani & Annisa (2023) emphasized that audio-visual media contributes greatly to building curiosity, critical thinking, and investigative skills.

To address these challenges, a solution emerged in the form of more flexible and adaptable digital-based media, one of which is the e-book. E-books are digital learning media that combine text, images, video, sound, and other interactive elements designed to increase student participation (Setyawan & Faqih, 2023). The same thing is also explained (Puspita et al., 2021) He stated that interactive e-books are very helpful in delivering material in layers, from basic to advanced levels, so they can be tailored to the needs and abilities of different students. Furthermore, e-books also give teachers the freedom to update content according to curriculum developments and local school conditions. One digital platform that supports easy and interactive e-book development is the Book Creator application. Designed specifically for education, Book Creator allows teachers and students to create digital books containing various media such as text, images, video, audio, and hyperlinks in a single, dynamic page view (Norenza, Z., & Zunurahma, 2024). As for (Maryam et al., 2025) emphasized that Book Creator enables the development of collaborative learning media, where students can be directly involved in creating book content as part of a project-based learning process. This certainly strongly

supports the active learning approach of the Independent Curriculum, which emphasizes achieving competencies through exploration and real-world experiences.

Considering the urgency of developing digital learning media, as well as the enormous potential of the Book Creator application to support science and science learning, this research focuses on the development of interactive e-book media based on Book Creator for implementation at SDN Nan Sabaris. It is hoped that this media will not only improve students' understanding of science and science material but also foster their motivation and independence in learning. The use of this media is also expected to be an innovative solution for teachers in presenting learning that is interesting, contextual, and in accordance with the characteristics of 21st-century students (Khawani & Rahmadana, 2023).

The novelty of this research lies in the application of interactive e-book media based on Book Creator for fifth-grade science learning within the Merdeka Curriculum framework, which emphasizes differentiated, exploratory, and interest-based learning. Furthermore, the developed media presents content with modern, colorful, and flexible graphics, enriching the learning experience through animation, audio, and interactivity, which have not been widely utilized in previous research. This e-book not only serves as a means of delivering material but also as a medium capable of increasing learning motivation, active student involvement, and supporting the achievement of the Pancasila student profile (Yogica et al., 2024).

Considering the urgency of developing digital learning media, as well as the enormous potential of the Book Creator application to support science learning, this research focuses on the development of interactive e-book media based on Book Creator to be implemented at SDN Nan Sabaris. It is hoped that this media will not only be able to improve students' understanding of science material, but also foster student motivation and learning independence at SDN Nan Sabaris. Based on the formulated development objectives, this interactive E-Book media based on Book Creator is aimed at producing learning products that are able to optimally support the learning process of fifth grade science at SDN Nan Sabaris so that the media developed meets the criteria of being valid, practical and effective.

2. Methodology

This research is a type of development research or Research and Development (R&D), according to (Setyaningsih & Arini, 2025) This research was designed to produce an innovative educational product that is both relevant and relevant to real needs in the field. The development of this e-book was carried out systematically using the ADDIE model, which stands for Analysis, Design, Development, Implementation, and Evaluation. In the analysis stage, researchers conducted observations and interviews at several elementary schools in the Nan Sabaris Cluster to identify teacher and student needs and uncover the shortcomings of the media currently used. The design stage was then carried out to design the structure and content of the e-book that suited the characteristics of fifth-grade elementary

school students and the science curriculum. Next, in the development stage, the e-book was compiled and developed using the creative features of the Book Creator application. After the media was developed, the implementation stage was carried out by testing the e-book directly in class. The final stage, namely evaluation, was carried out to assess the effectiveness of the media in increasing student learning motivation, both through questionnaires, interviews, and analysis of learning outcomes. Through this approach, the development research conducted not only produced a final product in the form of an e-book but also provided a systematic validation process to ensure that the developed media truly had a positive impact on learning.

The research subjects in this effectiveness test activity involved students and teachers from three elementary schools in Nan Sabaris District. At SDN 17 Nan Sabaris, the number of research subjects consisted of 17 fifth-grade students and 1 teacher involved in the learning process using the developed media. Furthermore, at SDN 15 Nan Sabaris, the number of research subjects consisted of 11 fifth-grade students and 1 teacher who accompanied the learning implementation. Meanwhile, at SDN 16 Nan Sabaris, the number of research subjects involved 18 fifth-grade students and 1 class teacher who acted as a facilitator in the use of learning media. Thus, the total number of research subjects involved in this effectiveness test activity was 46 students and 3 teachers from three different Nan Sabaris elementary schools. The involvement of students and teachers aims to obtain more comprehensive data regarding the effect of the use of the Book Creator application-based Science E-Book media on student learning outcomes.

Research Instruments

Rating Scale

The assessment scale used in this research instrument is a Likert scale with a score range of 1 to 4, which is used to measure the level of assessment of the validators and respondents regarding the quality of the developed Social Sciences E-Book media. This scale was chosen because it can provide a clear and systematic picture of the level of suitability of each indicator assessed in the research instrument. On this scale, a score of 1 indicates the category of poor, which means the indicator assessed has not met the expected criteria. A score of 2 indicates the category of fairly good, which means the indicator has met some of the criteria but still has several shortcomings that need to be improved. A score of 3 indicates the category of good, which means the indicator assessed has met most of the established criteria. Meanwhile, a score of 4 indicates the category of very good, which means the indicator assessed has met all the expected criteria. The use of this scale makes it easier for researchers to conduct a more objective data analysis to determine the level of quality of the developed media (Subhaktiyasa, 2023).

Assessment Indicators

The assessment indicators in this study were adjusted to the aspects assessed by experts. In the material expert validation, the indicators assessed included the

suitability of the material to the curriculum, conceptual accuracy, completeness of the material, and its relevance to learning objectives. In the language expert validation, the assessment indicators included language clarity, the use of good and correct Indonesian language rules, text readability, and the language's suitability to the characteristics of elementary school students. Meanwhile, in the media expert validation, the indicators assessed included design appearance, visual appeal, ease of navigation, layout consistency, and the appropriateness of the use of images, colors, and illustrations in the learning media (Susianti, OM, 2024).

Validation Procedure

The validation procedure was carried out by submitting the Science and Education e-book media along with the assessment instrument sheet to validators consisting of material experts, language experts, and media experts. The validators were asked to provide an assessment of each indicator contained in the validation sheet and provide suggestions and input for product improvement. The validators' assessment results were then analyzed to determine the level of validity of the developed media. The validators' suggestions and recommendations were then used as a basis for revising and refining the learning media before being tested on students in the learning process (Nyoman et al., 2024).

Data Collection

Observation

Data collection in this study was conducted through direct observation at SDN 17, SDN 16, and SDN 15 Nan Sabaris prior to the use of Book Creator-based learning media. Observations were conducted to obtain an initial overview of the implementation of science learning in grade V, especially in terms of the use of learning media, student involvement, and classroom atmosphere during the learning process. Observations were conducted systematically using observation sheets that had been compiled based on learning indicators relevant to the material and objectives of science learning. Researchers observed the teacher's activities in delivering the material, the methods used, interactions between teachers and students, and students' responses to the learning activities.

Interview

Data collection in this study began with interviews conducted directly at SDN 17, SDN 16, and SDN 15 Nan Sabaris. These interviews aimed to obtain initial information regarding the condition of science learning in grade V, particularly regarding the use of learning media before the development and implementation of the Book Creator application-based media. Interviews were conducted with grade V teachers in each school as the main respondents because they have a crucial role in designing and implementing the learning process. Based on the interview results, it was discovered that the current science learning process is still dominated by the use of conventional media, such as sticky pictures on the board, student worksheets, and oral delivery of material by the teacher.

Data Analysis

Validity Data Analysis

Researchers used quantitative data analysis techniques to process the results of the validity and practicality tests of the media they developed. The data obtained consisted of numerical assessments from experts and respondents, making it suitable for analysis using a descriptive statistical approach (Aulia, N., & Akmal, 2024). The analysis process was carried out by classifying the assessment results based on a Likert scale and then presenting them in tabular form for easier understanding. Through this approach, researchers were able to objectively and measurably describe the validity and practicality of the Book Creator media used in science learning in fifth-grade elementary school. The collected media validity assessment results were then thoroughly analyzed for each aspect assessed, such as appearance, content, language, and suitability of the media to student characteristics.

All data was processed and presented in tabular form using a Likert scale, making it easier to interpret the level of media suitability. This presentation also aims to provide a clear picture of the extent to which Book Creator meets the valid criteria as a science learning medium in grade 5 of elementary school. Furthermore, to obtain the final score from the media validity assessment results, calculations were carried out using a modified formula (Hutabri, 2022). This formula is used to process quantitative data from expert assessments, allowing for a numerical assessment of the media's suitability. The formula aims to ensure objective and measurable analysis results, and facilitates researchers in drawing conclusions about the validity of the Book Creator media developed for fifth-grade science learning.

$$V \frac{X}{Y} \times 100$$

Information

V = Validity

X = Maximum Score

Y = Respondent

Validity categories of learning media based on final score calculations. Table 1 presents the validity results categories.

Table 1. Validity Result Category

Presentation	Criteria
86%-100%	Very Valid
76%-85%	Valid
60%-75%	Quite Valid
55%-59%	Less Valid
0-54%	Invalid

Source: (Toma & Reinita, 2023)

For the category of learning media effectiveness based on the final value calculation, Table 3 presents the effectiveness results category.

Table 3. Effectiveness Result Category

N-Gain Range	Effectiveness category
$g \geq 0.70$	Tall
$0.30 \leq g < 0.70$	Currently
$g < 0.30$	Low

Source : (Reinita, & Syahroh, 2024)

3. Results and Conclusion

Data Presentation

Based on the research that has been conducted regarding the development of E-Book media based on the Book Creator application to improve the effectiveness of science learning in grade V of SDN Nan Sabaris, the research results and discussion are obtained that describe the process and achievements at each stage of research and development. The results of this research contain a description of the planning, design, development, and implementation of E-Book media that is adapted to the characteristics of grade V students. In addition, the discussion also highlights the feasibility of the developed media, its ease of use in learning, and its contribution to improving the effectiveness of science learning at SDN Nan Sabaris.

Analysis Stage

This analysis includes a review of the needs of fifth-grade science learning, student characteristics, the suitability of the material to the applicable curriculum, and the condition of supporting digital learning facilities and infrastructure. Furthermore, the analysis also focuses on selecting Book Creator features that can support interactive, easy-to-understand, and engaging presentations for students, ensuring optimal use of the developed e-book and contributing to improving the effectiveness of science learning. The results of this analysis serve as the basis for designing the content structure, appearance, and flow of the e-book to align with the desired learning objectives. With systematic planning, this media development is expected to provide a more meaningful, active, and contextual learning experience for fifth-grade students at SDN Nan Sabaris.

Design Stage

The science learning media is designed in the form of an e-book based on the Book Creator application, which is systematically and attractively arranged to support the learning process in grade V. In its design, the e-book utilizes various features of Book Creator, such as layout settings, selection of font types and sizes, use of varied colors, and language adapted to the developmental level of students. In addition, the e-book is also equipped with supporting visual elements to make the science material easier to understand. Furthermore, the e-book is designed to present

learning materials in a clear and structured manner so that students can easily follow and understand each concept being taught.

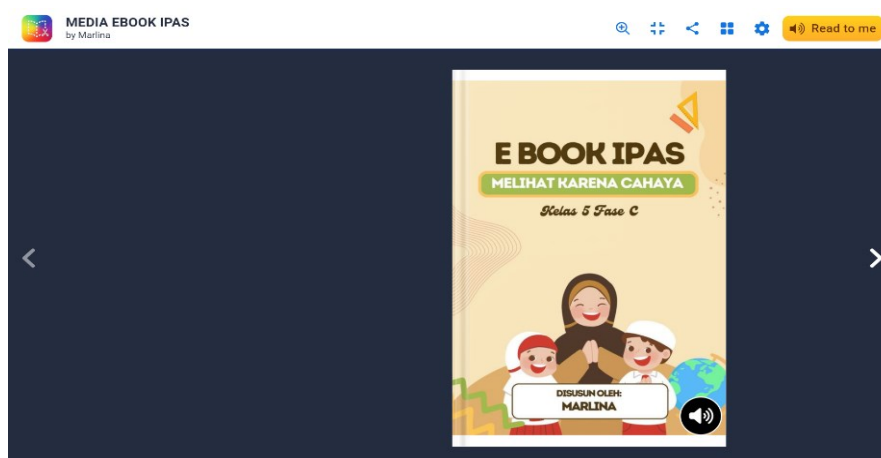


Figure 1. Shows The Cover View of the Book Creator Cover

The media (Figure 1) displays the cover as the initial part of the Science E-Book media which is designed to attract students' attention from the first time it is opened. The cover serves as the main identity containing the title, grade level, and other supporting information that reflects the characteristics of the learning material. The visual design on the cover is arranged with a harmonious combination of colors and illustrations relevant to the Science content, so as to provide an attractive and educational impression. The text layout is made clear and proportional for easy reading and provides information in a concise yet dense manner.



Figure 2. Displays The Introduction And Profile

The media (Figure 2) displays the foreword in the Science E-Book, which is structured to express the researcher's thoughts and reflections on the product development process. In this section, the researcher expresses gratitude to Allah SWT for His grace and blessings, enabling the successful completion of the learning media. The foreword also describes the research process, from the planning stage to the final development stage. Furthermore, the researcher expresses the hope that

the developed Science E-Book will benefit teachers and students. The foreword is written in formal, systematic, and easy-to-understand language. The contents of this section demonstrate the researcher's humility and academic responsibility in completing the scientific work.

The media (Figure 3) displays the teaching materials presented in the Science E-Book, which have been systematically and structured according to the desired learning objectives. Each section of the material is structured based on the learning outcomes of grade V SDN Nan Sabaris, making it relevant to students' needs. The material is presented sequentially, starting from an introduction to basic concepts to a deeper understanding. Furthermore, the material is supplemented with illustrations and contextual examples to facilitate students' understanding of the Science concepts. The presentation structure has also been adjusted to the stages of learning activities planned in the teaching materials. This allows teachers to optimally integrate the E-Book media into the classroom learning process.

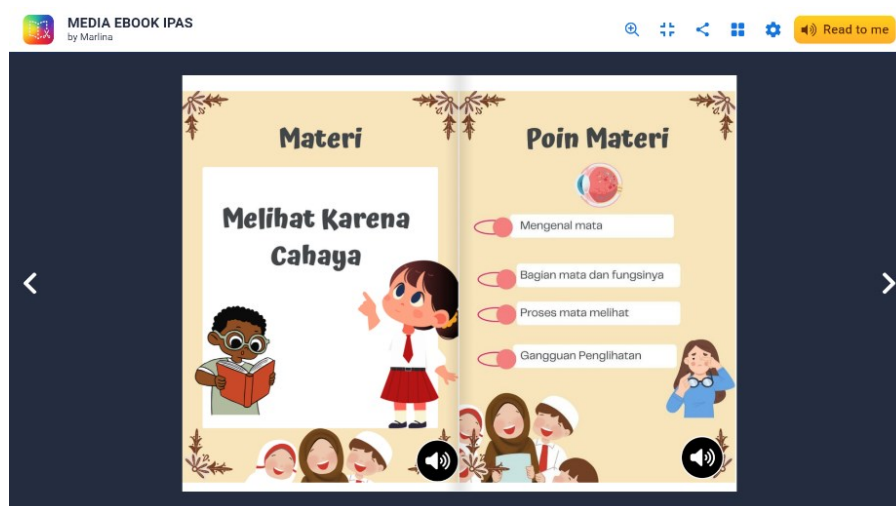


Figure 3. Display of Science Material

The media in (Figure 4) displays an evaluation section that is directly integrated into the Science e-Book and is systematically structured according to the learning material previously studied by students. The questions presented are designed to align with the indicators and learning objectives to reflect the expected competency achievement. This evaluation serves as a measuring tool to determine the level of student understanding of the Science material presented. Furthermore, the evaluation also helps teachers identify the effectiveness of media use in the learning process. The evaluation format used is multiple-choice questions to facilitate students' objective and structured answers. The questions compiled total 10 items with varying levels of difficulty.

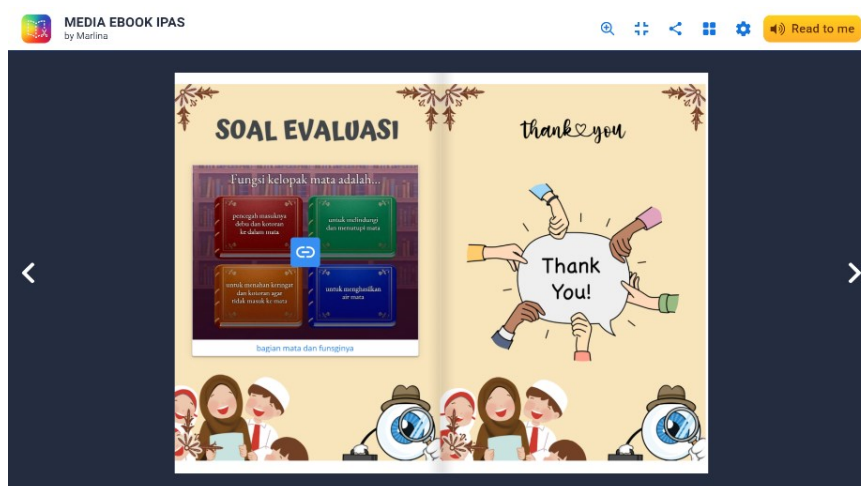


Figure 4. Book Creator Evaluation Questions

The media in (Figure 5) displays an E-Book on Science (IPAS) that is systematically and structured according to the learning material flow in grade V of SDN Nan Sabaris. Each section of the material is arranged based on learning outcomes, making it easier for students to gradually understand the concepts. The page layout is designed attractively with a combination of text, images, and illustrations relevant to the topic being discussed. The language used is simple, communicative, and appropriate to the cognitive development level of SDN Nan Sabaris students. In addition to providing material explanations, this e-book is also equipped with contextual examples close to students' daily lives. The integrated learning video feature helps clarify abstract concepts for easier understanding. The presence of these videos also increases students' interest and motivation to learn because it provides a more interactive learning experience.

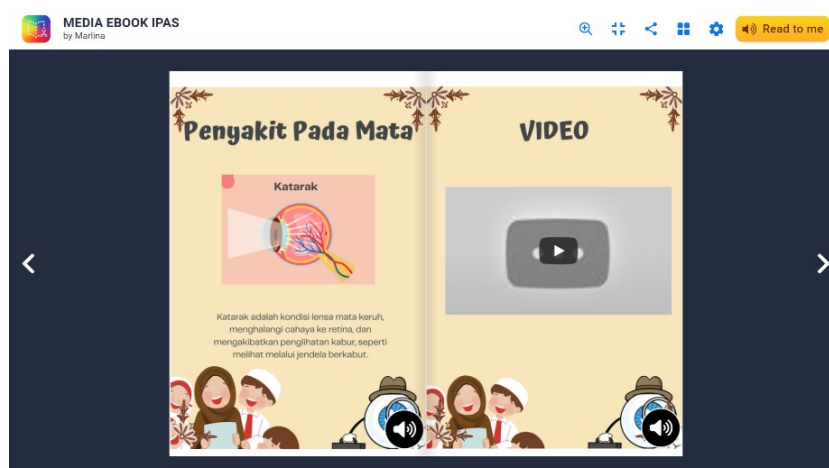


Figure 5. Learning Video Display

Development Stage

The development stage is a further stage that aims to produce a valid and suitable Book Creator application-based IPAs E-Book media for use in IPAs learning in

grade V of SDN Nan Sabaris. At this stage, the IPAs E-Book design that has been prepared in the previous stage is developed thoroughly by paying attention to the suitability of the material content, language use, and media display to suit the characteristics of IPAs learning. In addition, at this stage a validation process is carried out by material experts, language experts, and media experts to ensure the quality of the product developed has met the eligibility criteria. The results of input and suggestions from the validators are then used as a basis for revisions to perfect the IPAs E-Book media to be more effective, interesting, and appropriate to the needs of grade V students of SDN Nan Sabaris.

Implementation Stage

After the media was declared valid based on the results of expert assessments, this research continued to the implementation stage. The implementation stage aims to determine the level of practicality and effectiveness of the developed e-book for learning science based on the Book Creator application when used directly in the learning process in class V of SDN Nan Sabaris. At this stage, the researcher conducted a trial of the e-book media with students through two stages, namely a small group trial and a large group trial. At this stage, the researcher conducted a trial of the E-Book media to students through two stages, namely a small group trial and a large group trial. The small group trial was conducted at SDN 17 Nan Sabaris with a limited number of students, which aimed to see the initial responses of students and teachers to the use of E-Book media, as well as to identify obstacles that might arise during the learning process. Next, a large group trial was conducted at SDN 15 Nan Sabaris and SDN 16 Nan Sabaris to obtain a broader picture of the use of E-Book media in real learning conditions.

Evaluation Stage

The evaluation stage is the stage related to the assessment results of the developed e-book media product for science and natural sciences based on the Book Creator application. At this stage, two types of evaluations are conducted: formative and summative. Formative evaluation aims to determine the quality of the developed e-book media and serves as a basis for determining whether or not revisions to the product are necessary. In this study, formative evaluation was actually carried out in stages at each development stage, starting from the analysis, design, development, and implementation stages. The results of the formative evaluation were obtained through input, suggestions, and assessments from validators, teachers, and students regarding the developed e-book media for science and natural sciences.

Validation Test Results

In this validation process, the validators not only provided assessments in the form of quantitative scores, but also provided various constructive suggestions and input for product improvement. This feedback served as an important reference for researchers in revising the developed Science E-Book media. Thus, the improvements made did not only focus on technical aspects, but also on the quality

of content, language, appearance, and suitability to the characteristics of fifth-grade students at SDN Nan Sabaris. Input from these experts was used as a basis for improving the quality of the media so that it truly met the criteria of being valid, practical, and suitable for use in science learning. After going through the revision stage based on the validation results, the Book Creator media was then analyzed further. The results of the validation tests conducted by the researchers are presented and described in detail in the following section:

Subject Matter Expert Validator

Aspects assessed in the material validity test include the suitability of general information to the curriculum, learning outcomes, and established objectives. The material must be relevant, accurate, and presented in accordance with the characteristics and developmental level of the students. The completeness and accuracy of core components are also considered, including conceptual clarity, depth of discussion, and a coherent and easy-to-understand presentation system. Furthermore, the suitability of learning activities is assessed based on their relationship to the material presented and their ability to support competency achievement and encourage student engagement in the learning process. Table 4 presents the results of the material expert's validity assessment.

Table 4. Subject Matter Expert Validation

No	Assessment Indicators	Assessment Score
1	The suitability of the e-book material based on the Book Creator application with the Independent Curriculum in science learning	4
2	The material in the E-Book Book Creator is able to support the objectives of learning science.	4
3	The description of the IPAS material presented in the E-Book Book Creator is clear and complete.	3
4	The systematic presentation of the IPAS material in the E-Book Book Creator is arranged consistently.	3
5	The E-Book Book Creator media was developed according to students' learning needs in science learning.	4
6	E-Book Book Creator provides students with the opportunity to learn independently according to their respective abilities in science material.	3
7	E-Book Book Creator is in accordance with the IPAS teaching module used	4
8	The contents of the E-Book Book Creator can increase students' knowledge and insight in learning science.	3
9	The videos and images presented in the E-Book Book Creator help students understand the science material.	3
10	The accuracy of the videos and images in the E-Book Book Creator is relevant to the science material.	3
Score		34

Source : (Reinita, & Syahroh, 2024)

Validation results from material experts indicate that the e-book content aligns with the learning outcomes for fifth-grade science and science in the Independent Curriculum. The appropriateness of the material, conceptual depth, and

presentation system reflect the appropriateness of this medium as a learning resource. Fitrianingrum et al, (2025) High material validity ensures that students acquire correct, systematically structured, and relevant learning concepts in everyday contexts. The pedagogical implications of good material validity are crucial in the learning process because appropriate material helps students build conceptual understanding gradually and meaningfully. When material is presented in a structured manner and in accordance with the cognitive development level of elementary school students, students will more easily understand the relationships between the concepts being studied. Therefore, high material validity in science learning media has significant pedagogical implications, namely supporting the creation of a more effective and meaningful learning process and being able to develop higher-order thinking skills in students.

Language Expert Validator

At this stage, the validator assesses the linguistic aspects of the developed learning media. This assessment focuses on the text's readability so that the material presented can be easily understood by students. Furthermore, the validator also examines the clarity of the language used to ensure that the material is delivered clearly and avoids differing interpretations. The appropriateness of language use to applicable linguistic rules is also a key consideration in this assessment process. This aims to ensure that the language used complies with the rules of good and correct Indonesian. Table 5 presents the validity of linguists.

Table 5. Validity of Linguists

No	Assessment Indicators	Assessment Score
1	The shape and size of the letters used in the Book Creator-based E-Book are easy for students to read in science learning.	4
2	The description of the information presented in the Book Creator-based E-Book is easy for students to understand.	4
3	The sentences used in the Book Creator-based E-Book are simple, clear, and easy to understand for fifth grade students.	3
4	The language used in Book Creator-based E-Books is in accordance with the rules of good and correct Indonesian based on EBI.	3
5	Sentences in the Book Creator-based E-Book are appropriate to the language ability level of fifth grade students in science learning.	4
Score		16

Source : (Reinita, & Syahroh, 2024)

Assessments by language experts indicate that the language used in the e-book is communicative, effective, and appropriate for the cognitive development of elementary school students. Clear and unambiguous language helps students understand instructions and materials independently. Sanulita, (2023) From a pedagogical perspective, the use of appropriate, clear, and easily understood language plays a crucial role in supporting the success of the learning process, particularly in the implementation of differentiated learning in elementary schools. Simple, communicative language that is appropriate to the students' cognitive developmental levels allows students with varying literacy abilities to still understand the material presented. Therefore, presenting material in clear,

unambiguous language, accompanied by contextual examples, will help students with both low and high literacy abilities stay engaged in the learning process.

Media Expert Validator

At this stage, the validator conducted a comprehensive assessment of the graphical aspects of the e-book. This assessment included the size of the e-book to ensure it was appropriate and comfortable for students to read. Furthermore, the validator assessed the layout and cover design to ensure it was attractive and provided a positive first impression. The typography on the cover was also examined to ensure its typeface, size, and placement were easy to read. The use of illustrations on the cover was also assessed to ensure it matched the theme of the material presented. Furthermore, the validator assessed the layout of the e-book's contents to ensure they were neatly and systematically arranged. The typography in the contents was examined to ensure readability for elementary school students. Furthermore, the appropriateness of the illustrations or images in the contents was also assessed to ensure they could support a more effective understanding of the science and science material. Table 6 Media expert validity results.

Table 6 Media Expert Validity

No	Assessment Indicators	Assessment Score
1	The layout and display layout of the Book Creator-based E-Book are arranged consistently.	4
2	Compliance of the contents of the Book Creator-based E-Book with the table of contents	4
3	The use of text, images, and videos in Book Creator-based E-Books is presented proportionally.	4
4	The background display of the Book Creator-based E-Book is attractive	4
5	The suitability of images and videos to the content of the material in the Book Creator-based E-Book	4
6	The images and videos presented are able to clarify the material concepts in the Book Creator-based E-Book.	4
7	The cover display of the Book Creator-based E-Book is attractive	4
8	The color selection in the Book Creator-based E-Book is harmonious and attractive.	4
9	The use of a variety of fonts in Book Creator-based E-Books is not excessive.	3
10	Book Creator based e-Book is easy to operate by users	4
	Score	40

Source : (Reinita, & Syahroh, 2024)

Validation from media experts achieved the highest percentage, indicating that the visual design, layout, color combinations, and animation and audio integration were designed to be engaging and interactive. The pedagogical implication is that the media can increase student motivation and active engagement in the learning process. Chairunnisa & Putera, (2025) Engaging and interactive learning has important pedagogical implications for improving the quality of classroom teaching and learning. Learning media designed with engaging visuals, easy-to-use navigation, and interactive presentation of materials can encourage active student engagement throughout the learning process. This engagement not only increases

student participation in learning activities but also helps students understand learning concepts more deeply. According to (Manulang et al, 2023) From a pedagogical perspective, the use of well-designed media can support the creation of student-centered learning, where students not only act as recipients of information, but also as active subjects in constructing their own knowledge. Furthermore, engaging learning media can create a more enjoyable learning atmosphere, thereby increasing student motivation. Thus, the power of learning media design not only functions as an aesthetic element, but also has a strategic role in increasing learning effectiveness, strengthening conceptual understanding, and assisting teachers in delivering material in a more meaningful and easily understood manner by students.

Recapitulation of the validation test results of the E-Book for Science for Grade V Elementary School based on the Book Creator application covers aspects of material, language, and graphics or media. The assessment was carried out by experts to ensure the suitability of the material content with the curriculum, the use of clear and communicative language, and an attractive and easy-to-use media display. The assessment results of these three aspects were then summarized to determine the level of feasibility of the developed product. Based on the expert validation results, the developed E-Book for Science showed a very good level of feasibility so that it was declared suitable for use as a supplementary teaching material in Science learning in Grade V Elementary School. Table 7 presents the results of the validation recapitulation.

Table 7. Recapitulation of Validation Results

No	Validator	Average Validation Score	Category
1	Subject Matter Expert	85.00%	Very Valid
2	Linguist	90.00%	Very Valid
3	Media Expert	97.50%	Very Valid

Practicality Test

The practicality test was conducted after the developed learning media went through a trial stage, both in small and large groups. The instrument used in this practicality test was a questionnaire given to teachers and students. The practicality level of the E-Book media for learning science for grade V of SDN Nan Sabaris, developed using the Book Creator application, can be determined through the analysis of teacher and student responses. The results of this analysis provide an overview of the ease of use, attractiveness of the display, and the usefulness of the E-Book media in supporting the implementation of science learning in grade V. The practicality test data for the E-Book Science media was obtained from primary data collected directly from the fifth-grade teachers of SDN Nan Sabaris who were the subjects of the study, namely teachers from SDN 17 Nan Sabaris, SDN 15 Nan Sabaris, and SDN 16 Nan Sabaris. Table 8 presents the results of the teachers' responses.

Table 8 Teacher Response Results

Grade V Teacher User	Percentage (%)	Category
SDN 17 Nan Sabaris	97.5	Very Practical
SDN 15 Nan Sabaris	100	Very Practical
SDN 16 Nan Sabaris	100	Very Practical
Amount	297.5	
Average	99.16	Very Practical

The practicality test data for the E-Book media for learning science based on the Book Creator application was obtained from primary data collected directly from students through an assessment instrument in the form of a questionnaire. The subjects of the small group trial were fifth-grade students of SDN 17 Nan Sabaris, while the subjects of the large group trial involved fifth-grade students of SDN 15 Nan Sabaris and SDN 16 Nan Sabaris. This practicality test was conducted at the end of the learning session after the E-Book media was used in the science learning process. The assessment was conducted to determine the extent to which the Book Creator media can be used easily, interestingly, and beneficially for students in science learning. Table 9 presents the results of student responses.

Table 9. Student Response Results

School	Percentage (%)	Category
SDN 17 Nan Sabaris	92.58	Very Practical
SDN 15 Nan Sabaris	91.68	Very Practical
SDN 16 Nan Sabaris	93.45	Very Practical

Effectiveness Test

An effectiveness test was conducted to determine the extent to which the use of learning media influences the improvement of student learning outcomes. Effectiveness data in this study were obtained from student learning outcomes measured before and after participating in the learning process using the Book Creator application media developed by the researcher. The measurement of learning outcomes was carried out by administering pre-tests and post-tests to students. Comparisons between pre-test and post-test results were used to determine whether there had been an improvement in student learning outcomes. If there was an increase in scores after using the media, it could be concluded that the media developed had a positive influence on learning outcomes. Thus, this effectiveness test is one of the important indicators for assessing the success of using the Science E-Book media in supporting the learning process. Table 10 presents the results of the effectiveness test.

Table 10 Effectiveness Test Results

Name	Score	Criteria
SDN 17 Nan Sabaris	0.7694	Very Effective
SDN 15 Nan Sabaris	0.8000	Very Effective
SDN 16 Nan Sabaris	0.7972	Very Effective

4. Conclusion

Based on the results of the research and discussion that have been described, it can be concluded that the development of an e-book media for science and natural sciences based on the Book Creator application for grade V of elementary school conducted using the ADDIE model has produced a very valid, very practical, and effective product for use in science and natural sciences learning. The developed e-book media for science and natural sciences has met the eligibility criteria based on the validation results of material, language, and media experts, showing ease of use and obtaining very positive responses from teachers and students, so it is declared practical as a learning medium. In addition, the results of the effectiveness test through a comparison of pre-test and post-test scores and N-Gain analysis show an increase in student learning outcomes in the high category. This study still has several limitations. The product trials were conducted on a limited scale in several schools within one region, so generalizing the research results to a broader context still requires caution. Measurement of media effectiveness focused more on improving cognitive learning outcomes, while affective aspects and process skills have not been analyzed in depth over the long term. Media use is highly dependent on the availability of devices and an adequate internet connection, so its implementation may encounter challenges in schools with limited technological facilities. Thus, the Book Creator-based Science e-book media is able to help create more interesting, student-centered learning, increase motivation and learning activity, and provide a positive impact on the understanding and learning outcomes of Science students in grade V of Elementary School.

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