



## **Developing Picture Storybook Learning Media in Terms of Students' Critical and Creative Thinking Skills**

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**Abstract:** Students' critical and creative thinking skills are important in developing elementary school student's knowledge. However, many still found that elementary school students critical and creative thinking skills are still low. This condition is caused by learning that has not been able to facilitate the learning characteristics of elementary school students, especially in terms of the use of learning media in elementary schools. This study aims to develop picture storybook learning media regarding fifth-grade students' critical and creative thinking skills at Cluster IV Elementary Schools Sintang. The method employed in this study was research and development of the Borg & Gall model with ten stages consisting of: 1) research and information gathering, 2) planning, 3) initial product development, 4) initial field testing, 5) major product revision, 6) main product testing, 7) operational product revision, 8) operational field testing, 9) final product revision, and 10) dissemination and implementation. Data were collected utilizing interview techniques, expert validation, teacher and student response questionnaires, and critical and creative thinking skill test instruments. The results of this study indicate that the development of picture storybook learning media meets the aspects of quality, practicality, and product effectiveness in terms of the critical and creative thinking skills of fifth-grade elementary school students.

**Keywords:** creative thinking, critical thinking, picture storybook

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### **Introduction**

Education is one of the important aspects of the development era (Ayçiçek, 2021). Dumitru (2019) states that the development era requires us to adapt and possess sufficient provisions, including education. This education is done through a continuous learning process (Vidergor, 2017; Wechsler et al., 2018). Learning is aimed at obtaining information and identifying and analyzing the information obtained (Saputro & Mahmudi, 2020; Yusoff & Seman, 2018).

One learning goal in the 2013 Curriculum is to develop thinking skills (Erbilgin, 2019). Thinking skill is the skill with cognitive processes in problem-solving (Álvarez-Huerta et al., 2022; Nganga, 2019). This thinking skill helps students develop critical thinking habits, curiosity, and enthusiasm for learning (Wechsler et al., 2018). The main component of thinking skills includes critical and creative thinking skills (Siburian et al., 2019). Critical and creative thinking skills help students face complex learning challenges (Álvarez-Huerta et al., 2022; Siburian et al., 2019).

Students must master critical thinking skills to gain meaningful learning and understanding (Álvarez-Huerta et al., 2022; Hapsari et al., 2022; Hatcher, 2011). Further, critical thinking skill helps students improve learning outcomes (Halpen, 2014). The characteristics of critical thinking skills include the ability to understand and solve problems, develop skills in asking open-ended questions, and interpret the conclusions of problems (D'Alessio et al., 2019; Dorine, 2019). Facione (2020) states that critical thinking skill increases students' understanding of thematic learning in elementary schools. Students can form and develop critical arguments in textbooks by giving opinions and carrying out a reflective process (Bezanilla et al., 2019; Facione, 2020). This statement is in line with the opinion of

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Ulger (2018), which states that critical thinking skill helps elementary school students understand and remember material that has been studied well.

Another cognitive skill important for the student's learning development is thinking creatively. Creative thinking is the thinking skill of students with the creativity to create something different from previous ideas or works (Sreylak et al., 2022; Ulger, 2018). Creative thinking skill influences students' problem-solving processes (Akpur, 2020; Irwanto et al., 2018; Nganga, 2019). Shively et al. (2018) state that thinking creatively helps students process the information or material being studied. Students can explore the material studied well and find and develop alternative problem-solving (Wulandari et al., 2021).

Creative thinking skill is also closely related to critical thinking skill. Shively et al. (2018) state that students' good critical thinking skills also impact good creative thinking skills. The skill to think critically becomes a stimulus in the development of creative thinking skills (Nawang Sari et al., 2022). Akpur (2020) states that critical and creative thinking skills enable students to identify problems, formulate responses, and provide solutions and conclusions related to the problems.

It was found that elementary school students critical and creative thinking skills were still low, especially in Yogyakarta (Akpur, 2020; Setyawan & Mustadi, 2020). Purwaningsih & Wangid (2021) state that the low level of students' critical and creative thinking is seen when students are passive in participating in the learning process. Students have difficulty giving opinions or ideas about the materials provided (Sulthon et al., 2021; Wulandari et al., 2021). The low level of students' critical and creative thinking causes students' low understanding of concepts related to the materials being studied (Setyawan & Mustadi, 2020; Sulthon et al., 2021).

One contributing factor to students' limited proficiency in critical and creative thinking abilities is the discrepancy between the instructional methods employed by teachers and the individual learning characteristics of students (Fitriyadi & Wuryandani, 2021). Teachers must implement learning that can facilitate students' critical and creative thinking skills (Triwahyuningtyas et al., 2020). Anggito & Sartono (2022) state that a learning process that utilizes learning media can develop and improve students' understanding and ability to receive learning materials. The utilization of learning media can potentially enhance students' abilities in critical and creative thinking. Using picture storybook learning media is an effective approach to fostering the development of critical and creative thinking skills in students.

The picture storybook is a learning media packed with stories and pictures in one unit and has a storyline according to the learning materials (Nurzayyana et al., 2021). This learning media is designed to develop critical thinking skills and creative thinking in elementary school students. The picture storybook combines learning materials in the form of writing and visual images (Parwati et al., 2022). Sari & Wardani (2021) state that the picture storybook learning media facilitates elementary school students to be actively involved in learning and fosters curiosity and enthusiasm in learning. The stimulus given in the picture storybook learning media presentation helps students develop thinking skills and better learning outcomes (Parwati et al., 2022; Sari & Wardani, 2021). To overcome the previously found problems, the researcher researched the development of a picture storybook in terms of the critical and creative thinking skills of fifth-grade elementary school students.

## **Methods**

The present study utilized the research and development approach based on the Borg & Gall model, which consists of ten distinct stages. These stages include: 1) conducting research and gathering relevant information; 2) formulating a comprehensive plan; 3) initiating the development of the product; 4) conducting preliminary field testing; 5) making significant revisions to the product; 6) conducting extensive testing of the main product; and 7) revising the product to ensure operational effectiveness (Gall et al., 2003).

Research data was collected with research subjects of fifth-grade elementary school students of Cluster IV Sintang District, Sintang Regency, West Kalimantan, with a total of 108 students. Data were collected at the field-testing stage, both limited and comprehensive and extensive testing. Limited testing was carried out at Mambok 20 Elementary School with 12 students. The main field testing was carried out at Ladang 18 Elementary School with 21 students. Operational field testing was carried out in two schools, namely Sintang 7 Elementary School, with a total of 50 students as an experimental class

consisting of 25 students in the VA class and 25 students in the VB class and the control class was carried out in Mambok 20 Elementary School with a total of 25 students.

The data collection process involved utilizing various techniques, specifically interviews, questionnaires, and tests. The research study involved the administration of interviews to gather data about the challenges experienced by teachers and students during the educational process. During the preliminary study and information-gathering stages, interviews were carried out with fifth-grade teachers from Mambok 20 Elementary School, Ladang 18 Elementary School, and Sintang 7 Elementary School. The questionnaires distributed were in the form of a closed questionnaire which instructed respondents to choose the answer choices on the statement items which have been formulated. The questionnaire aimed to obtain three main data, including the learning problem questionnaire distributed at the preliminary study and information gathering stages, the expert validation questionnaire distributed at the initial product development stage, and the teacher and student response questionnaire distributed at the field-testing stage. The data was collected using tests to determine students' level of understanding related to critical and creative thinking skills. The tests were carried out in two forms: a multiple-choice test to measure critical thinking skills and an essay test to measure creative thinking skills. The tests were carried out at the beginning before giving treatment and at the end after implementing the learning process using the developed picture storybook learning media.

Data analysis in this study consists of four parts including: 1) data analysis of the preliminary study, 2) data analysis of product development process and quality, 3) data analysis of test instrument testing, and 4) data analysis of product effectiveness. Data analysis of the preliminary study was carried out qualitatively and descriptive-quantitatively. The data from the interviews were analyzed qualitatively, and then conclusions were drawn regarding the problems faced by the teacher in the learning process. Data from the questionnaire for learning media needs were analyzed descriptive-quantitatively to obtain knowledge and information about the percentage of learning media needs. Data analysis of the development process and product quality were obtained from product validation results by a team of experts and student and teacher response data to the developed picture storybook learning media. Data analysis of the development process and the quality of the product being developed were carried out by converting the rating scale score to 5, presented in Table 1 (Widoyoko, 2012).

**Table 1.** Conversion of Rating Scale Score 5

Formula	Average	Classification
$X > \bar{X}_l + 1.8 Sb_i$	$> 4.2$	Very Qualified
$\bar{X}_l + 0.6 Sb_i < X \leq \bar{X}_l + 1.8 Sb_i$	$> 3.4 - 4.2$	Qualified
$\bar{X}_l - 0.6 Sb_i < X \leq \bar{X}_l + 0.6 Sb_i$	$> 2.6 - 3.4$	Quite Qualified
$\bar{X}_l - 1.8 Sb_i < X \leq \bar{X}_l - 0.6 Sb_i$	$> 1.8 - 2.6$	Not Qualified
$X \leq \bar{X}_l - 1.8 Sb_i$	$\leq 1.8$	Very Unqualified

Notes:

$X$ : Scores obtained

$\bar{X}_l$ : Ideal Average =  $\frac{1}{2}$  (Ideal Maximum Score + Ideal Minimum Score)

$Sb_i$ : Ideal Standar Deviation =  $\frac{1}{6}$  (Ideal Maximum Score – Ideal Minimum Score)

According to the data presented in Table 1, the picture storybook learning media product designed for fifth-grade elementary school students demonstrates satisfactory fulfillment of the eligibility criteria for critical and creative thinking skills. Specifically, the product is considered minimally qualified if it achieves a score within the range of 3.4 and 4.2.

Test instrument test data were analyzed using validity and reliability tests. The validity test was done using the product moment interrelation formula, which was carried out with the help of the SPSS application. The results of the validity test analysis of the test instrument meet the valid criteria if  $r_{xy} > r_{Tabel}$ . A reliability test was done using Alpha-Cronbach with the help of the SPSS application. The reliability criteria for this test instrument are presented in Table 2.

**Table 2.** Reliability Criteria

Interval Score	Degree of Consistency
0.00 – 0.20	Very Low
0.21 – 0.40	Low
0.41 – 0.60	Medium
0.61 – 0.80	High
0.81 – 1.00	Very High

Based on Table 2, the test instrument in the form of a critical and creative thinking skill test is declared reliable if it is minimally High with a score range between 0.61 and 0.80.

Data analysis of product effectiveness was conducted to determine the effectiveness of using picture storybook learning media in terms of critical and creative thinking skills of fifth-grade elementary school students in Cluster IV Sintang District. Data analysis on the effectiveness of this product used the independent samples t-test and the Manova test with the help of the SPSS application.

## Results and Discussion

### Introduction and Information Gathering

This stage aims to collect initial research data on the development of picture storybook learning media regarding fifth-grade elementary school students' critical and creative thinking skills. This stage consists of three parts: analysis of media needs, field observations, and literature study related to the research topic. Media needs were analyzed using data from interviews and questionnaires on learning media needs. At this stage, the teachers involved in the interview process were taken from fifth-grade teachers at Sintang 7 Elementary School, Ladang 18 Elementary School, and Mambok 20 Elementary School, Sintang District, Sintang Regency, West Kalimantan. Field observations were carried out to determine the conditions and problems in the field. The final part at this stage was a literature study. The literature study aimed to obtain additional sources related to the research topic, namely the development of picture storybook learning media in terms of fifth-grade elementary school students' critical and creative thinking skills.

The results of the interviews with several teachers in the 3 target schools stated that students' critical and creative thinking skills were still low. This condition occurred when groups of students presented the results of their work, but other students found it difficult to provide feedback or responses related to the materials presented. Nurharyanto & Retnawati (2020) states that this happened because students did not understand the concept of the materials that had been presented. As a result, students became passive in the learning process (Ayçiçek, 2021). Not only that, students also were not able to provide varied answers. Students tended to answer according to the results of the examples provided by the teacher and the results of the sample questions in the textbook. Low motivation, curiosity, and enthusiasm for learning are aspects of this problem (Anggito & Sartono, 2022). Atma et al. (2021) also state that learning motivation stimulates students to develop creative thinking abilities in the learning process.

Meanwhile, another problem was the unavailability of learning media that can facilitate students' learning characteristics, especially critical abilities, and creative thinking skills. Learning media that contain elements of images can stimulate students' motivation and curiosity in learning (Patricia & Zamzam, 2021). This motivation and curiosity are needed to develop elementary school students' critical and creative thinking skills (Atma et al., 2021).

Based on the results of the questionnaires distributed to 100 fifth-grade students in 3 schools in Cluster IV Sintang District, students' critical and creative thinking skills were still low. This condition is indicated by the percentage of the questionnaire results, which are 71.11% of students had difficulty giving opinions when responding to problems, 62.22% of students had difficulty making decisions with rational reasons, and 82.34% of students had difficulty giving varied answers. This problem occurred because problem-solving-based learning has not facilitated students (Irwanto et al., 2018). Problem-solving-based learning can develop students' ability to respond to problems, integrate problem-solving strategies, as well as provide conclusions and answers that vary from the problems given (Akpur, 2020; Irwanto et al., 2018; Nurharyanto & Retnawati, 2020). This problem-solving-based learning can be packed with learning media appropriate to students' characteristics (Triwahyuningtyas et al., 2020).

Fatkhayani & Dewi (2020) state that learning media in the form of images can solve this problem. Therefore, the picture storybook learning media was chosen to facilitate students' critical and creative thinking skills.

The results of the media need analysis questionnaire show that 44% of students strongly agreed and 49% of students agreed if using media in the classroom learning process, 53% of students strongly agreed, and 43% of students agreed if learning media was packed in the form of images, text, and practice questions. Therefore, the researcher developed a picture storybook learning media regarding fifth-grade students' critical and creative thinking skills in Cluster IV Sintang District.

### **Planning**

The planning stage was carried out to determine product development goals and research time allocation. The steps of the planning stage in this study consisted of 1) formulating research objectives; 2) analyzing the learning process of the 2013 curriculum learning process standards at the basic education level; 3) identifying indicators of critical thinking skills of fifth-grade elementary school students; 4) identifying indicators of creative thinking skills of fifth-grade elementary school students; 5) identifying the characters of fifth-grade elementary school students; 6) collecting material resources; 7) drafting a picture story book learning media design and assessment instrument; and 8) planning the implementation of product testing.

The picture storybook learning media is integrated with two subjects, namely Bahasa Indonesia and Science. After the research objectives were formulated, the researcher analyzed the learning process, which was adjusted to core competencies, basic competencies, and learning achievement indicators in line with the learning process in fifth-grade elementary schools.

The next stage was to identify indicators of critical and creative thinking skills. These indicators were needed to complete the material content in the developed picture storybook learning media. These indicators of critical and creative thinking skills will also guide the learning steps in the developed picture storybook learning media.

The developed picture storybook learning media should possess the capacity to support the learning effectively attributes specific to fifth-grade elementary school students. Hence, the procedure of discerning the attributes of elementary school students in the fifth grade was conducted. Following completing the identification process of the characteristics exhibited by fifth-grade students, the subsequent step involved the acquisition of relevant material sources. These sources were intended to serve as references for compiling a picture storybook, which would be utilized as a learning medium. The selection of material sources was tailored to the content of the picture storybook learning media development, which integrates the learning process for fifth-grade students in theme 5, sub-theme 1, and learning 1. The learning media includes illustrated story content, thematic learning content, practice questions, and activities that aim to facilitate the development of critical and creative thinking skills among students.

The next stage involved developing a preliminary design for a picture storybook and formulating research instruments. The design of the picture storybook learning media was tailored to align with the findings of the analysis conducted on the characteristics of students, their core competencies, basic competencies, indicators of competency attainment, and critical and creative thinking skills among fifth-grade elementary school students. After the draft design was developed, the researcher determined the schools that would be the subject tests for the developed product. The developed product tests were conducted at Mambok 20 Elementary School, Ladang 18 Elementary School, and Sintang 7 Elementary School.

### **Initial Product Development**

The picture storybook learning media developed has 2 stories, namely the first series entitled "Tutu" and the second series entitled "Dzaki Pahlawan Danau". This picture storybook learning media was adapted to combine thematic learning of Bahasa Indonesia and Sciences subjects on theme 5, sub-theme 1, learning 1. The initial product development stage included several things, namely 1) reviewing thematic learning materials for fifth-grade theme 5, sub-theme 1, and learning 1 in line with the objectives of developing picture storybook learning media regarding critical and creative thinking skills. Based on this study, the material on ecosystems was selected; 2) designing the composition of the main components of picture storybook learning media which included picture stories in everyday life; 3)

compiling the story script, the characters in the story, storyline, setting (time, place and atmosphere), point of view, message, and presentation of language style; 4) making a concept of the story that will be illustrated; and 5) designing the layout of the picture story book learning media, the layout was designed using the Affinity Designer application. The cover display of the picture storybook learning media is presented in Figure 1.

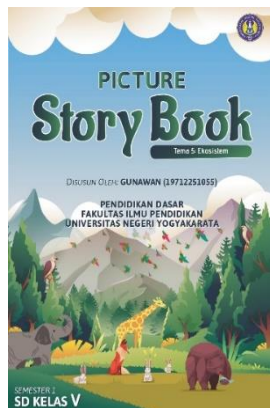


Figure 1. Cover of Picture Storybook

The picture storybook learning media incorporates core and basic competencies aligned with the 2013 curriculum. Specifically, it addresses theme 5, sub-theme 1, and learning 1, focusing on "Ecosystem." This learning resource is intended for use in teaching Bahasa Indonesia and Sciences to fifth-grade students in elementary schools. The display of core and basic competencies in picture storybook learning media is presented in Figure 2.



Figure 2. Core Competencies and Basic Competencies

The cover of series 1 entitled "Tutu" contains the story series title, the author's name, and the university's name, shown in Figure 3.

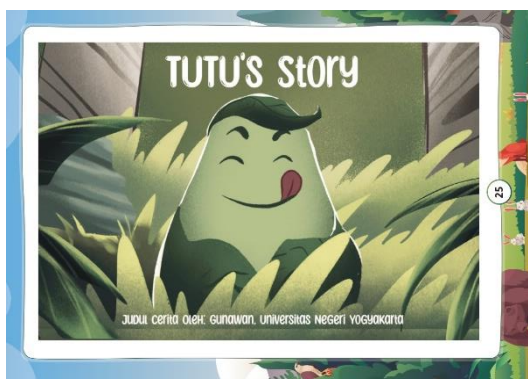


Figure 3. Cover of Series 1

Next, the material pages of this series consist of the grouping of animals and food webs, presented in Figure 4.



Figure 4. Materials of Series 1

The content of the materials on the picture storybook learning media contains the activity page. This activity page aims to develop fifth-grade elementary school students' critical and creative thinking skills. Figure 5 shows an example of an activity page of series 1.

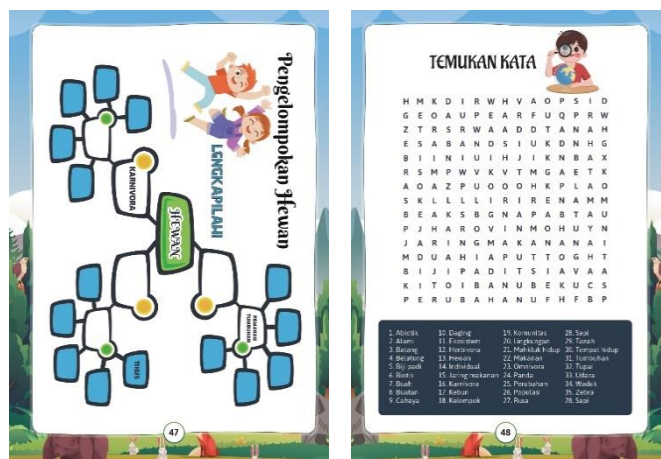


Figure 5. Activity Pages of Series 1

The cover for series 2 entitled "Dzaki the Hero of the Lake" contains the title of the series, the author's name, and the university's name, shown in Figure 6.



Figure 6. Cover of Series 2



Next, the material pages in this series contain the grouping of animals and food webs, presented in Figure 7.



Figure 7. Materials of Series 2

The activity pages in series 2 are presented in Figure 8.



Figure 8. Activity Pages of Series 2

After the draft of the picture storybook learning media design was developed, the next stage was to carry out the initial product draft validation process. The validation was carried out by involving material experts and media experts. The results of the material expert validation are presented in Table 3.

Table 3. The Results of Material Expert Validation

No	Aspect	Score	Criteria
1	Completeness of the content	40	Qualified
2	Facilities of critical thinking skill	16	Qualified
3	Facilities of creative thinking skill	12	Qualified
4	Suitability of practices	28	Qualified
<b>Overall Aspect</b>		<b>96</b>	<b>Qualified</b>

Based on Table 3, the developed picture storybook learning media meets the criteria of "Qualified" to be implemented in facilitating critical and creative thinking skills of fifth-grade elementary school students. For the suggestions related to the picture storybook learning media, the material experts suggest that the clarity of material in facilitating critical and creative thinking skills must appear in every learning activity, and the supporting activity material should be clarified in the book or the attachment section. This is necessary so that the developed learning media can facilitate fifth-grade elementary school students' critical and creative thinking skills.



The results of the validation process conducted by media experts are presented in Table 4.

**Table 4.** The Results of Media Expert Validation

No	Aspect	Score	Criteria
1	Display	48	Qualified
2	Content Accuracy	36	Qualified
3	Practicality	16	Qualified
	<b>Overall Aspect</b>	100	Qualified

Based on Table 4, the developed picture storybook learning media obtains a score of 100 and meets the criteria of “Qualified”. Hence, the developed picture storybook learning media is prepared for implementation in the educational process to enhance fifth-grade elementary school students' critical and creative thinking abilities. As for suggestions for improving the picture storybook learning media, the cover needs to be equipped with target information, for example, fifth-grade elementary school students and the contents of the picture storybook learning media need to be added with evaluation and activities so that the teacher knows how far students have achieved the competence in critical and creative thinking skills.

### Initial Field Testing

The developed product is a picture storybook learning media that met the product quality criteria and was subjected to initial field or limited testing. Initially, the initial field testing was conducted at Mambok 20 Elementary School with 12 test subjects with high, medium, and low levels. Teachers and students were given questionnaires after the product tests were completed. The results of the teacher and student questionnaires were then analyzed to determine the product's effectiveness, identify problems with the product, and obtain input to carry out the process of revising and perfecting the product.

After the initial field testing, teachers and students were given a questionnaire containing 3 aspects, namely language suitability aspects, material suitability aspects, and practicality aspects of picture storybook learning media, which consisted of 20 statement items with a scale of 1 – 5. The results of the teacher questionnaire analysis are presented in Table 5.

**Table 5.** The Results of the Teacher Response Questionnaire on Initial Field Testing

No	Aspect	Score	Criteria
1	Language Suitability	19	Quite Qualified
2	Material Suitability	31	Quite Qualified
3	Media Practicality	12	Quite Qualified
	<b>Overall Aspect</b>	52	Quite Qualified

Based on Table 5, the overall results of the teacher’s response questionnaire analysis in the initial field-testing show that the picture storybook learning media achieved a score of 52 and met the criteria of “Quite Qualified” to be implemented in the learning process in terms of critical and creative thinking skills of Fifth-grade elementary school students.

The response questionnaire given to students contained two aspects: the visual display aspect and the practicality aspect of the picture storybook learning media. The results of the student response questionnaire analysis in the initial field testing are presented in Table 6.

**Table 6.** The Results of the Student Response Questionnaire on Initial Field Testing

No	Aspect	Score	Criteria
1	Visual Display	250	Qualified
2	Media Practicality	371	Qualified
	<b>Overall Aspect</b>	622	Qualified

According to the findings presented in Table 6, the outcomes of the student response questionnaire indicate that all aspects assessed attained a score of 622, thereby satisfying the "Qualified" criteria. The findings suggest that the created picture storybook learning media has the potential to be utilized in the

educational setting to enhance the development of critical and creative thinking abilities among fifth-grade students in elementary schools.

### **Main Product Revision**

After conducting initial field testing, the next step was to revise the product that had been tested. The main product revision was done to obtain better quality learning media through picture storybooks. This main product revision refers to suggestions for improvement from the initial field-testing subjects based on teacher and student response questionnaires. The results of the teacher and student response questionnaire as revision material include: 1) the use of more communicative language, and 2) the display of images or animations in a larger quantity.

### **Main Product Testing**

After revising the main product, the picture storybook learning media was tested again at the main product testing stage. This main product test aimed to obtain results regarding the quality of the developed picture storybook learning media. This quality was seen from the practical aspect of picture storybook learning media regarding fifth-grade elementary school students' critical and creative thinking skills. This main product testing was conducted at Ladang 18 Elementary School for fifth-grade students of as many as 21. The academic qualifications of these students represented high, moderate, and low levels. At this stage, the teacher conducted learning simulations using picture storybook learning media. After the lesson, the researcher distributed questionnaires to teachers and students to determine the practicality of the developed picture storybook learning media.

The practicality analysis was done using the results of the teacher and student response questionnaires on main product testing. The following results of the teacher's response questionnaire are presented in Table 7.

**Table 7.** The Results of the Teacher Response Questionnaire on Main Product Testing

No	Aspect	Score	Criteria
1	Language Suitability	21	Qualified
2	Material Suitability	35	Qualified
3	Media Practicality	15	Qualified
	<b>Overall Aspect</b>	71	Qualified

Based on Table 6, the overall results of the teacher's response questionnaire analysis in the initial field-testing show that the picture storybook learning media achieved a score of 71 and met the "Qualified" criteria for the implementation in the learning process in terms of critical and creative thinking skills of fifth-grade elementary school students.

The results of the student response questionnaire analysis in the initial field testing are presented in Table 8.

**Table 8.** The Results of the Student Response Questionnaire on Initial Field Testing

No	Aspect	Score	Criteria
1	Visual Display	588	Very Qualified
2	Media Practicality	721	Qualified
	<b>Overall Aspect</b>	1309	Qualified

Based on Table 8, the results of the student response questionnaire state that all aspects obtained achieved a score of 1309 and met the "Decent" criteria. These results indicate that the developed picture storybook learning media can be implemented in the learning process by paying attention to suggestions and input received.

### **Operational Product Revision**

At this stage, the researcher made another revision related to the suggestions given by the teacher after having carried out a learning simulation by utilizing the picture storybook learning media at the main product testing stage. This operational product revision aimed to make the product developed in the form of picture storybook learning media more perfect for the implantation in the learning process,

has better quality and can facilitate critical and creative thinking skills of fifth-grade elementary school students.

### **Operational Field Testing**

The revised picture storybook learning media was then implemented in the learning process on a larger and wider scale at the operational field-testing stage. This operational field testing involved two experimental groups, namely, 1 group that used picture storybook learning media and 1 group without using picture storybook learning media. The sample in this operational field testing was selected using cluster random sampling. The implementation of operational field testing aimed to obtain results regarding the effectiveness of using picture storybook learning media in terms of critical and creative thinking skills of fifth-grade elementary school Cluster IV, Sintang District. This operational field testing was conducted in the fifth grade of Sintang 7 Elementary School as an experimental class using picture storybook learning media with 50 students divided into 2 classes. In contrast, the control class of this operational field testing was conducted in the fifth grade of SDN 18 Mambok with 25 students.

The critical thinking skill test results in the experimental and control classes show an increase in the pre-test and post-test average scores, presented in Table 9.

**Table 9.** The Results of N-Gain Score on the Critical Thinking Test

Class	Average Score		N-Gain (%)	Criteria
	Pre-Test	Post-Test		
Control	55.60	60.40	11.53	Not Effective
Experiment	58.00	92.60	81.73	Effective

Based on Table 9, in the control class, the N-Gain score is 11.53%, and the experimental score is 81.73%. According to Hake's criteria, these results indicate that the implementation of picture storybook learning media in the experimental group was declared effective in facilitating critical and creative thinking skills of fifth-grade elementary school students.

The results of the creative thinking skill test are presented in Table 10.

**Table 10.** The Results of the N-Gain Score on the Creative Thinking Skill Test

Class	Average Score		N-Gain (%)	Criteria
	Pre-Test	Post-Test		
Control	75.40	91.60	65.01	Quite Effective
Experiment	77.50	97.20	86.10	Effective

Table 10 shows that the N-Gain score is 65.01% in the control and 86.10% in the experimental classes. Hence, based on Hake's criteria, it can be concluded that the effectiveness of the experimental learning group was classified as effective with the use of picture storybook media, while the control was quite effective.

### **Final Product Revision**

The final product revision aimed to improve the picture storybook learning media, having been tested at the operational field-testing stage. This final product revision referred to the suggestions after its utilization at the operational field-testing stage.

### **Dissemination and Implementation**

Dissemination and implementation were disseminated to disseminate research results in picture storybook learning media regarding the critical and creative thinking skills of fifth-grade elementary school students. Dissemination and implementation were conducted at Cluster IV Elementary Schools Sintang District, including Sintang 7 Elementary School, Ladang 18 Elementary School, and Mambok 20 Elementary School. To allow the product to be utilized and implemented extensively, the researcher also published research results in Reputable National Journals.

The picture storybook learning media for critical and creative thinking skills of fifth-grade elementary school students was developed with 2 stories, "Tutu" and "Dzaki the Hero of the Lake". Learning activities developed in this learning media were equipped with contexts in daily life and

activities that can facilitate students in developing critical and creative thinking skills. The developed learning media contains titles, pictures, illustrations, and knowledge adapted to core competencies, basic competencies, indicators of competency achievement, and indicators of students' critical and creative thinking skills (Álvarez-Huerta et al., 2022). This pictorial learning media can stimulate students' motivation, curiosity, and enthusiasm for learning (Anggito & Sartono, 2022; Atma et al., 2021; Siburian et al., 2019). Some of these affective aspects can help students develop critical and creative thinking skills (Atma et al., 2021). Anggito & Sartono (2022) state that students become more engaged in learning, are more willing to express their opinions, and can conclude problems presented when they use interactive media with engaging images and illustrations.

The development of this picture storybook as a learning media encompasses three key aspects: product quality, practicality, and effectiveness. Product quality assessment is determined through the evaluation conducted by experts in the field of materials and media. According to the findings of the quality analysis conducted by material experts, it was determined that the creation of picture storybook learning media was deemed suitable for enhancing the critical and creative thinking abilities of fifth-grade elementary school students. Comparable findings were likewise derived from the assessment of quality conducted by experts in the media field. The findings of the quality assessment, as determined through the validation process conducted by the media expert, indicate that the learning media has achieved a score of 100, placing it within the "Qualified" category. The findings indicate that the developed picture storybook learning media is deemed suitable for implementation to enhance fifth-grade elementary school students' critical and creative thinking abilities.

Based on the practicality aspect of the product, the results of user responses to picture storybook learning media in this study indicate that picture storybook media products are quite qualified to be used. The picture storybook learning media was then revised according to the suggestions and input given by the users. After the revision, the product was tested on the main field or expanded. After the main field testing was carried out, the teacher and student response questionnaire analysis results stated that the picture storybook learning media was practical to be implemented in the classroom, facilitating the critical and creative thinking skills of fifth-grade elementary school students. This result is in line with the findings of Parwati et al. (2022), which state that the picture storybook learning media, declared feasible by experts, can be continued at the field trial stage. This feasibility also impacts the quality of development products that can facilitate elementary school students critical thinking skills and creative thinking (Sari & Wardani, 2021).

Based on the aspect of product effectiveness in terms of facilitating critical thinking skills, there is a significant increase between the pre-test score and the average value in the experimental class, which is 58.00, while in the control class, the pre-test average value is 55.60, with a difference in the value of 2.40. Meanwhile, the post-test score on the critical thinking skill of the experimental class is 92.60, and the average post-test value of the control class is 60.40, so the difference from the existing values is 32.20. Therefore, based on the results, the difference in pre-test and post-test scores for critical thinking skills in the experimental class or class using picture storybook media is higher than the difference in pre-test and post-test scores in the control class or class not using picture storybook learning media. These results state that the developed picture storybook learning media effectively facilitates fifth-grade elementary school students' critical and creative thinking skills.

### **Conclusion**

Based on the research and development results of picture storybook learning media in terms of critical and creative thinking skills of fifth-grade students at elementary school Cluster IV, Sintang District, it can be concluded that the developed picture storybook learning media met the quality, practicality, and effectiveness of the product. Hence, the product could be implemented to facilitate the critical and creative thinking skills of fifth-grade elementary school students in Cluster IV Sintang District.

The developed picture storybook learning media can serve as a valuable learning tool for implementation in fifth-grade classrooms and other grade levels within elementary schools. In addition, it is worth noting that additional research and development efforts can be undertaken to incorporate the creation of picture storybook learning media with learning models that align with the specific characteristics of elementary school students.

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