



Development of a Picture Book to Enhance Children's Understanding of Flood Disaster Mitigation: Group B2, Al-Hikmah Rusa Kencana Kindergarten, Toili Subdistrict, Luwuk Banggai Regency

Novita Ayu Kristyaningrum*, Fitriana, Sita Awalunisah, Andi Agusniatih

Program Studi Pendidikan Guru Pendidikan Anak Usia Dini, Jurusan Ilmu Pendidikan, Fakultas Keguruan dan Ilmu Pendidikan, Universitas Tadulako, Palu, 94119, Indonesia

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* Corresponding author:

E-mail: novitaayukristyaningrum6@gmail.com

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ABSTRACT

Early childhood education plays a crucial role in fostering children's preparedness for disaster risks, particularly floods, which frequently occur in Toili Subdistrict, Banggai Regency. This study aims to develop a picture storybook as a learning medium to enhance children's understanding of flood disaster mitigation at Al-Hikmah Rusa Kencana Kindergarten. The study employed the Research and Development (R&D) method using the ADDIE model, which includes the stages of analysis, design, development, implementation, and evaluation. The research subjects were 10 children in Group B2. Data collection techniques included observation, interviews, documentation, and expert validation sheets, while data analysis utilized both qualitative and quantitative methods through validity tests and t-tests. The results indicated that the picture book "Raka the Water Hero" received an expert validation score of 87.5% for both content and media, categorized as highly valid. The pilot test results showed an increase in children's understanding of flood disaster mitigation, as evidenced by an increase in the average pre-test score from 7.5% to 92.5% on the post-test, as well as a t-calculated value greater than the t-table value at a 5% significance level. Thus, the picture book is effective as a learning medium for improving young children's understanding of flood disaster mitigation.

1. Introduction

Education is a crucial aspect of national development because it plays a role in shaping the quality of human resources capable of meeting societal demands and advancing the nation (Aji et al., 2023). Education is a conscious and planned effort undertaken by educators to guide students toward achieving predetermined goals (Ali, 2020). Law No. 20 of 2003 on the National Education System explains that Early Childhood Education (PAUD) is an effort to nurture children from birth to

six years of age through the provision of educational stimulation to support their physical and spiritual growth and development, preparing them for further education (Alurmei, 2024). Young children are in a period of rapid development and therefore require learning that is appropriate to their characteristics (Susanto, 2021).

One of the key efforts in early childhood education is instilling knowledge of disaster mitigation, particularly in disaster-prone areas such as Toili Subdistrict, Banggai Regency, which frequently experiences flooding. Knowledge of disaster mitigation needs to be imparted from an early age so that children are prepared for disaster risks. Learning media such as picture storybooks can be used as an effective tool because they can make abstract material concrete and increase children's interest in learning (Prasetyaningtyas et al., 2019). However, observations at Al-Hikmah Kindergarten indicate that the use of picture storybooks on flood disaster mitigation remains limited, resulting in children's understanding of disaster mitigation not yet being optimal. Several previous studies have shown that picture storybooks are effective in teaching disaster mitigation to young children. A study by Kartika (2023) aimed to develop picture storybooks to improve children's understanding of earthquake and tsunami disaster mitigation using the Research and Development (R&D) method with the ADDIE model. The results showed that the developed picture storybooks were valid and effective in improving children's understanding of disaster mitigation.

Husna (2023) study developed a picture book as a learning medium for volcanic eruption disaster mitigation using the Dick and Carey model. The results of validation by language, content, and media experts indicated a high percentage of suitability, and the pretest and posttest results showed a significant improvement; thus, the picture book was deemed effective as a learning medium for disaster mitigation among kindergarten children. Furthermore, Mujriastika (2021) study on the implementation of flood disaster mitigation in the children's book "Yuk Cegah Banjir" using a descriptive qualitative method showed that disaster books can serve as an educational medium for early disaster mitigation, although improvements are needed in language, layout, and illustrations to better align with children's characteristics.

Early Childhood Education (PAUD) is education provided to children aged 0–6 years through the provision of stimuli to support their physical and mental growth and development, so that children are prepared to enter the next level of education. PAUD aims to develop children's full potential including knowledge, skills, and motivation to learn in accordance with their developmental stage (Sari, 2017). Early childhood education is also a conscious and planned effort carried out through educational institutions by providing stimuli that optimally support children's physical and mental development (Syarifudin, 2017). Thus, PAUD plays a crucial role in shaping children's holistic development, encompassing cognitive, social, emotional, language, and spiritual aspects (Susanto, 2018; Arifudin, 2019).

The goal of early childhood education (PAUD) is to develop children's potential from an early age to prepare them for life and help them adapt to their environment.

PAUD aims to nurture well-rounded children who grow in accordance with their developmental stages and are ready to enter elementary school and the next stages of life (Susanto, 2018). Specifically, PAUD aims to develop children's religious, motor, language, cognitive, social, and artistic aspects so they can develop optimally (Ariyanti, 2016). The function of PAUD is to serve as a means of developing children's potential, introducing them to their surroundings, instilling discipline, and providing children with opportunities to learn through play. The principles of PAUD emphasize child-centered learning, learning through play, a conducive environment, integrated learning, the development of life skills, the use of educational media, and learning conducted in a gradual and repetitive manner (Ariyanti, 2016). These principles aim to optimize all aspects of children's holistic development, including religious and moral values, physical and motor skills, cognitive development, language, social-emotional development, and the arts.

Development is a systematic process aimed at creating or improving a product through the application of science and technology to enhance the quality of both the process and the outcome (Ilmiawan, 2018). Development is also defined as an effort to enhance technical, theoretical, and conceptual abilities through planned education and training tailored to specific needs (Ritonga et al., 2022; Dzulfiqar, 2018). Furthermore, development is an educational effort carried out consciously, purposefully, and continuously to foster optimal abilities and personality (Awalla et al., 2018). In the context of education, development focuses on the process of systematically designing, producing, and evaluating learning products so that they can be used effectively in learning activities (Setyosari, 2016). Thus, development can be understood as a planned process to produce learning products that are valid, effective, and in line with the needs of learners.

Picture books are a learning medium that combines stories, pictures, and simple language to spark children's interest in learning and help them understand the story's content through visual illustrations (Krisnawan, 2017). Illustrations in picture books serve to clarify the meaning of the text and help children connect the story with the images, thereby facilitating comprehension and fostering language skills and social interaction (Jannah, 2025). Thus, picture books are an effective medium for children because they present information in a concrete and engaging manner. Picture storybooks are characterized by concise stories, simple language, concepts that are easy for children to understand, and illustrations that support the text (Lestari, 2016; Wahid, 2018). Engaging illustrations help children grasp the story's message more easily and enhance their retention of the presented material.

Picture books are beneficial for fostering an interest in reading, facilitating comprehension of story content, and helping children understand information through visual illustrations (Wisangnuari, 2017). Visual media can make learning materials more concrete, making them easier for children to understand (Utami, 2025; Octaviany, 2025). Therefore, picture books are effective tools for early childhood education. Picture storybooks have advantages, namely that learning is more engaging, they facilitate the delivery of material, and they are easily accessible (Apriatin et al., 2021). However, picture storybooks also have drawbacks, such as

children tending to focus on the pictures and pay less attention to the text, thereby making learning less effective.

Children's understanding of flood disaster mitigation is a process of building awareness and preparedness from an early age through disaster education. Disaster education plays a crucial role in shaping people's mindset to foster a culture of safety, compassion, and readiness in the face of disasters. Children are a group vulnerable to disasters due to their limited understanding and ability to protect themselves; therefore, disaster mitigation education is needed from an early age so that they develop a responsive and vigilant attitude toward disaster risks. A disaster is an event that causes damage, loss, and suffering due to natural phenomena or human activities (Junaedi et al., 2017). Disaster mitigation is a series of efforts to reduce disaster risks and impacts through preventive actions and preparedness before a disaster occurs (Hendarwan, 2017). Legally, disaster mitigation is an effort to reduce disaster risks through physical infrastructure development, public awareness campaigns, and enhancing the community's capacity to cope with disaster threats (Law No. 24 of 2007; Government Regulation No. 21 of 2008).

Floods are a natural phenomenon caused by heavy rainfall, hydrogeological conditions, topography, and uncontrolled human activities that impact the environment (Prajayanti et al., 2023). Floods can result in material losses and loss of life when water runoff exceeds the capacity of rivers and inundates land areas (Adiyoso, 2018). Children are highly vulnerable to disasters due to limited knowledge and preparedness, making disaster mitigation education crucial for enhancing their ability to cope with disaster risks. Picture books play a vital role in improving children's understanding of flood disaster mitigation because they present information visually and engagingly, aligning with the characteristics of early childhood. Picture books can help children understand the concept of flood disasters, their impacts, and the steps to take when facing a disaster through simple illustrations and language. The use of visual media in early childhood education has proven effective because images can concretize abstract concepts and facilitate children's understanding of learning materials.

Through picture books, children can more easily learn about the causes of flooding, the warning signs of flooding, and preventive measures and self-rescue techniques. Picture books can also teach positive behaviors such as caring for the environment, not littering, and following evacuation procedures during a flood. Furthermore, stories presented through illustrations can build children's awareness and preparedness for disasters, enabling them not only to understand the concept of flood disaster mitigation but also to apply it in their daily lives. Thus, picture books can serve as an effective educational tool for enhancing children's understanding of flood disaster mitigation, as they convey information in an engaging and easily understandable manner while fostering behavioral changes toward early disaster preparedness. The objective of this study is to determine the feasibility of picture books in enhancing children's understanding of flood disaster mitigation among Group B2 at Al-Hikmah Rusakencana Kindergarten, Toili Subdistrict, Luwuk Banggai Regency.

2. Methodology

This study employs the Research and Development (R&D) method, which aims to develop and test the feasibility of a picture book as a tool to enhance children's understanding of flood disaster mitigation. Research and Development is a research method used to produce specific products and evaluate their effectiveness in the field of education (Maydiantoro, 2021). The development research was conducted systematically through scientific stages to produce a valid, practical, and effective product. The development model used is the ADDIE model, which consists of five stages: analysis, design, development, implementation, and evaluation. The ADDIE model was developed to design learning systems in a systematic and structured manner so that the resulting product is scientifically accountable (Atikah et al., 2023). This study aims to produce a picture book as a learning medium to improve children's understanding of flood disaster mitigation. This study uses the ADDIE model development design, which includes five stages, namely:

a. Analysis

The analysis phase was conducted through observations and interviews at early childhood education institutions to determine the need for educational materials on flood disaster mitigation. The analysis was carried out to identify the availability of picture books, learning conditions, and children's understanding of flood disaster mitigation.

b. Design

The design phase involves planning the picture book by determining the theme, plot, characters, moral message, and illustrations that are appropriate for young children. During this phase, flood disaster mitigation materials are also developed, covering causes, warning signs, and self-rescue measures.

c. Development

The development phase involves creating a picture book, which includes scriptwriting, illustration, coloring, and story text composition. The finished product is then reviewed by subject matter experts, language experts, and media experts to assess its suitability.

d. Implementation

The implementation phase involved testing the picture book on children in Group B2 at Al-Hikmah Rusa Kencana Kindergarten in Toili Subdistrict, Banggai Regency, to assess the product's effectiveness in improving children's understanding of flood disaster mitigation.

e. Evaluation

The evaluation phase involved revising the product based on the results of expert validation and field testing, resulting in a picture book suitable for use in education.

The study was conducted at Al-Hikmah Rusa Kencana Kindergarten in Toili Subdistrict, Banggai Regency. The research was carried out during the second semester of 2026. The variables in this study consist of:

- Independent variable: Picture storybooks
 - Dependent variable: Children's understanding of flood disaster mitigation
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The subjects in this study were 10 children in Group B2 at Al-Hikmah Rusa Kencana Kindergarten in Toili Subdistrict, Banggai Regency, who participated in the pilot testing of the picture storybook product. The selection of research subjects was based on the need to test the feasibility and effectiveness of picture books as a medium for improving children's understanding of flood disaster mitigation in early childhood. Meanwhile, the object of this study is the flood disaster mitigation picture book developed as an educational tool to enhance children's understanding of the causes, warning signs, and self-rescue measures during a flood disaster.

Data collection techniques in this study were conducted through observation, interviews, documentation, and research instruments. Observations were conducted to identify the need for learning media and to assess the implementation of picture book trials in flood disaster mitigation education (Sugiyono, 2022). Structured interviews were conducted with teachers in Group B2 to obtain information regarding the need for and use of picture books in flood disaster mitigation education. Documentation was used to collect data in the form of photos, videos, and research activity documents from the initial stage through the product pilot test as evidence of the research implementation (Abdussamad, 2021). Additionally, research instruments including expert validation sheets, observation sheets, and evaluation questionnaires were used to assess the suitability of the picture book product (Hardani et al., 2020).

The data analysis techniques used in this study include both qualitative and quantitative methods. Qualitative analysis was derived from observations, interviews, and feedback from validators, which served as the basis for refining and improving the picture book product under development. Meanwhile, quantitative analysis was derived from expert validation using a four-point Likert scale: excellent (score 4), good (score 3), fair (score 2), and poor (score 1). The results of the quantitative analysis were used to determine the suitability of the picture book product in enhancing children's understanding of flood disaster mitigation. Product validity is calculated using the formula:

$$V = \frac{TSEV}{S_{max}} \times 100\%$$

Information:

- V = Validity
- TSEV = Total empirical validator score
- Smax = Maximum score
- 100% = Constant

Table 1. Product Validity Criteria

Percentage	Criteria
75,01% – 100%	Very Valid
50,01% – 75%	Fairly Valid
25,01% – 50%	Invalid
0% – 25%	Very Invalid

A product is deemed suitable for use if it is classified as “moderately valid” or “highly valid.”

3. Result and Discussion

This study was conducted on January 13, 2026, at Al-Hikmah Rusa Kencana Kindergarten in Toili Subdistrict, Banggai Regency. The results of the study indicate that the development of a picture book to enhance children’s understanding of flood disaster mitigation was carried out using the ADDIE model, which includes the analysis, design, development, implementation, and evaluation stages. During the analysis stage, observations and interviews were conducted at Al-Hikmah Rusa Kencana Kindergarten to determine the availability of educational materials on flood disaster mitigation. The analysis results showed that there were no picture books available that discussed flood disaster mitigation, so children needed concrete visual media and simple narratives to understand the concept of flooding. This is consistent with the characteristics of 5–6-year-old children, who are in the preoperational stage and therefore require engaging visual illustrations in the learning process.

During the design phase, the researcher created a picture book titled “Raka the Water Hero,” which presents flood disaster mitigation information through a simple storyline, engaging illustrations, and language that is easy for children to understand. The book was designed with an educational narrative visual concept, measuring 20 × 20 cm with 22 pages, using illustrations from the Canva app and design processing using CorelDraw. The story depicts the character Raka encouraging the community to protect the environment, recognize flood warning signs, perform rescue actions, and enhance preparedness for disasters. During the development phase, the picture book was created through scriptwriting, illustration, coloring, and story text composition, followed by validation by subject matter experts and media experts. The results of the subject matter experts’ validation indicated that the core content, supporting information, visual presentation, and supplementary materials fell into the “good” to “very good” categories; consequently, the product was deemed suitable for use with some revisions based on the validators’ recommendations.

During the validation process on November 3, 2025, based on the validation assessment table, it can be seen that the subject matter expert evaluated one aspect: the clarity and focus of the image instructions. This is evident from the score given by the subject matter expert, which was 3 (good). There are several valid points or those with a score of 4, such as the points covering the accuracy of the use of functions and the benefits of the material, the materials and media used being non-hazardous, the materials and media presented being engaging, the storybook capturing attention, the appropriateness of the image content, the images being clear, the differences between the initial and final images being well understood, and enhancing children’s understanding of flood disaster mitigation.

Table 2. Results of the First and Second Revisions



Revision Points	Before	After
Teach and help children understand how to read instructions using pictures, transitioning from using a stool to stand on to not using a stool to measure water up to the child's ankles.		

Table 3. Results of the Evaluation of Picture Books for Children's Comprehension by Media Experts

Aspect	Test Item	Value	Validation
Picture Book Cover	1. The picture book is in full color	3	75% (It's correct, but it needs a minor revision.)
	2. The title of the picture book reflects the content of the story, which is themed "The Tale of the Water Hero"	3	75% (It's correct, but it needs a minor revision.)
	3. Guidelines for the placement of the picture book's title	3	75% (It's correct, but it needs a minor revision.)
	4. Guidelines for the size of the picture book's cover	3	75% (It's correct, but it needs a minor revision.)
	5. Uncommon font	3	75% (It's correct, but it needs a minor revision.)
Letters in Picture Books	6. Easy-to-read font	4	100% (Valid without the need for revisions)
	7. Font size appropriate for the story and illustrations	4	100% (Valid without the need for revisions)
	8. Text layout does not interfere with the illustrations	4	100% (Valid without the need for revisions)
Colour	9. Consistent color scheme in the picture book	4	100% (Valid without the need for revisions)
	10. Color contrast is appropriate for the content of the picture book	4	100% (Valid without the need for revisions)
	11. Color harmony on each page of the picture book	4	100% (Valid without the need for revisions)

Picture	12. Color variations in the picture book align with the content of the picture book themed “The Story of the Water Hero”	4	100% (Valid without the need for revisions)
	13. Illustrations on each page of the picture book are easily distinguishable	4	100% (Valid without the need for revisions)
	14. Illustrations are not pixelated or blurry	4	100% (Valid without the need for revisions)
	15. Illustrations are consistently placed on each page	4	100% (Valid without the need for revisions)
	16. The visual elements of the picture book are more prominent than the text	3	75% (It's correct, but it needs a minor revision.)
	17. The size of the picture book is appropriate for young children	3	75% (It's correct, but it needs a minor revision.)
	18. The materials used in the picture book capture children’s attention	3	75% (It's correct, but it needs a minor revision.)
View	19. The alignment of the story content and the displayed illustrations is highly engaging	3	75% (It's correct, but it needs a minor revision.)
	20. The picture book themed “The Story of the Water Hero” demonstrates children’s ability to understand flood disaster mitigation	3	75% (It's correct, but it needs a minor revision.)

Based on the results of the expert validation, it can be concluded that the picture storybooks developed to enhance children’s comprehension have a highly valid score and can be used without revision. This is evidenced by a total score of 80 on items 1–20, representing a percentage of 87.5%. This demonstrates that the picture storybook improves literacy and numeracy skills, thereby enhancing children’s comprehension in Group B (ages 5–6).

The picture book product, which had been validated and revised by experts, was then pilot-tested at Al-Hikmah Rusa Kencana Kindergarten in Toili Subdistrict, Banggai Regency, Central Sulawesi, beginning on January 13, 2026, with a sample size of 10 children from Group B2. The pilot study was conducted to determine the effect of using picture books on children’s understanding of flood disaster mitigation and to improve the quality of the developed product. The pilot study was carried out in the classroom through lessons using the picture book *Raka the Water Hero*. The learning process began with opening activities such as a group prayer, singing a song, and an introduction of the researcher along with the presentation of the learning objectives. During the main activity, the researcher introduced the picture book and presented the material on flood disaster mitigation through story reading, simple Q&A, and discussion with the children. The activity concluded with a reflection, simple questions from the teacher, and a closing prayer, as shown in the following image.



Figure 1. The Process of Introducing Picture Books in Group B2



Figure 2. Initial Pre-test Before using the Picture Book

The trial was conducted in three sessions on January 15, 22, and 28, 2026, with additional days for observing children's progress. Data were collected through pre- and post-observations after using picture storybooks. The study assessed children's responses, cognitive understanding of flood mitigation, psychomotor preparedness, and affective attitudes. The results showed that picture storybooks effectively improved children's understanding of flood disaster mitigation through engaging visuals and storytelling. The results of the observations of children's understanding prior to the pilot test are as follows:

Table 4. Results of Observations of Children's Understanding Before the Pilot Study

No.	Aspects Observed	Indicator	Appear	Not Displayed
1.	Media response (Book)	The child shows enthusiasm or interest when looking at the book.	0	10
		The child pays attention to the pictures and the story's plot.	0	10
		The child actively asks questions about the story's content or the pictures.	0	10
2.	Understanding of mitigation (Cognitive)	The child can identify the causes of flooding (e.g., trash/rain).	0	10
		The child can recognize the signs of an impending flood.	0	10
		The child can distinguish between "Safe" and "Dangerous" actions during a flood.	0	10
3.	Preparedness and action (Psychomotor)	The child can select essential items to bring during an emergency.	0	10
		Children can point out the direction of evacuation routes or high ground.	0	10
		Children practice handwashing and maintaining water hygiene.	6	4
4.		Children are willing to dispose of trash in the proper receptacles.	3	7

Attitudes and character (Affective)	Children display appropriate expressions (smiling, surprised, or anxious) in response to the story's plot.	0	10
	Children are willing to remind friends not to play in floodwater.	0	10

The results of the assessment of the children's understanding after the pilot test were as follows:

Table 5. Results of Observations on Children's Understanding After the Pilot Study

No.	Aspects Observed	Indicator	Appear	Not Displayed
1.	Media response (Book)	The child shows enthusiasm or interest when looking at the book.	10	0
		The child pays attention to the pictures and the story's plot.	10	0
		The child actively asks questions about the story's content or the pictures.	8	2
2.	Understanding of mitigation (Cognitive)	The child can identify the causes of flooding (e.g., trash/rain).	10	0
		The child can recognize the signs of an impending flood.	10	0
		The child can distinguish between "Safe" and "Dangerous" actions during a flood.	10	0
3.	Preparedness and action (Psychomotor)	The child can select essential items to bring during an emergency.	8	2
		Children can point out the direction of evacuation routes or high ground.	8	2
		Children practice handwashing and maintaining water hygiene.	10	0
4.	Attitudes and character (Affective)	Children are willing to dispose of trash in the proper receptacles.	10	0
		Children display appropriate expressions (smiling, surprised, or anxious) in response to the story's plot.	9	1
		Children are willing to remind friends not to play in floodwater.	8	2

Descriptive Statistical Analysis

Descriptive data refers to data collected to support the discussion of research findings. The data presented below show the children's level of understanding before and after they were exposed to an intervention involving the development of a picture book on the theme of flood disaster mitigation.

Table 6. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Before	12	0	6	,75	1,865
After	12	8	10	9,25	,965
Valid N (listwise)	12				

Table 6 shows that the average comprehension score for the children, which was 0.75 before the intervention, increased to 9.25 after the intervention. The highest score before the intervention was 6, and after the intervention it was 10. The lowest score before the treatment was 0, and after the treatment, it was 8. The standard deviation before the treatment was 1.865, and after the treatment, it became 0.965.

Inferential Analysis

Before the data is analyzed using a t-test, normality must first be tested. The normality test is conducted to determine whether a data distribution is normal or not, which is crucial to know because it relates to selecting the appropriate statistical test to use. The normality test table is as follows:

Table 7. Test of Normality

	Statistic	Shapiro-Wilk df	Sig.
Before	,479	12	,000
After	,680	12	,001

Based on Table 7, the df values for the pre- and post-treatment groups are 12, meaning the sample size is less than 50. The Shapiro-Wilk test can detect normality in this study, so it can be considered appropriate. The significance values are 0.000 for the pre-treatment activities and 0.001 for the post-treatment activities. Since the significance values for both treatments are >0.05 , the majority of decisions in the Shapiro-Wilk normality test can conclude that the research data before and after treatment are normally distributed.

Table 8. Paired Samples Test

		Paired Differences			t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean			
Pair 1	Before After	-8,500	1,784	,515	-16,507	11	,000

Based on Table 8, it is evident that the calculated t-value is -16.507; since the sign of the t-test is not considered, and $16.507 > 1.795$, it is concluded that H_0 is rejected and H_1 is accepted. Therefore, the method of developing picture books on the theme of flood disaster mitigation has a significant effect on the level of understanding among children in Group B2 at Al -Hikmah Rusa Kencana, Toili Subdistrict, Luwuk Banggai Regency.

The evaluation phase was conducted to assess the quality of the picture book media developed based on the validation results from the content validator and the media validator. The validation summary results showed that both validators gave an average score of 87.5% in the "highly valid" category, so the picture book product was deemed suitable for use without revision. The evaluation results indicated that the picture book *Raka the Water Hero* possesses good quality as a learning medium for flood disaster mitigation. The product was assessed as capable of

enhancing children's understanding across several aspects: response to the picture book medium; cognitive understanding of disaster mitigation; psychomotor readiness and actions; and affective attitudes and character. Thus, the developed picture book can be used as a learning medium to enhance children's understanding of flood disaster mitigation in kindergarten.

Discussion

The development of visual media through picture books aims to improve young children's understanding of flood disaster mitigation. The use of picture books as a learning medium is expected to help children understand instructions and information regarding flood disaster mitigation through engaging visuals and simple narratives. Interview results indicate that Al-Hikmah Rusa Kencana Kindergarten requires varied and engaging learning materials to boost children's interest in learning, particularly in understanding flood disaster mitigation. Children aged 4–5 years are still in the stage of recognizing symbols, so they require concrete visual aids, enjoyable learning experiences, and non-monotonous activities to ensure their understanding develops optimally.

Preliminary observations indicate that children lack focus during learning and are more interested in play activities, while teachers continue to use monotonous teaching methods. Therefore, the development of a picture book on flood disaster mitigation serves as a solution to enhance children's engagement in learning. Visual media acts as a medium for conveying information by combining visuals and colors, thereby increasing children's attention and understanding of the learning material (Kartini, 2024). The picture book developed focuses on four aspects of understanding: response to media, understanding of mitigation (cognitive), preparedness and action (psychomotor), and attitude and character (affective).

The results of the validation by subject matter experts and media experts indicate that the picture book is suitable for use in the classroom, provided certain improvements are made in accordance with the validators' recommendations. The implementation of the product with children in Group B2 at Al-Hikmah Rusa Kencana Kindergarten showed that the children were more enthusiastic and engaged in the learning process because the media used aligned with their characteristics namely, being creative, enjoyable, and relevant to daily life.

The use of picture books in learning demonstrated an increase in children's understanding of flood disaster mitigation. In terms of response to the material, all children showed enthusiasm, were able to follow the storyline, and actively asked questions about the book's content. In terms of understanding mitigation (cognitive aspect), all children were able to identify the causes of floods, recognize the signs of flooding, and distinguish between safe and dangerous actions. In terms of preparedness and action (psychomotor), there was an improvement in the children's ability to select essential items during an emergency, identify evacuation routes, and practice preparedness measures. In terms of attitude and character (affective), the children demonstrated behavioral changes such as disposing of trash properly and reminding peers not to play in floodwaters.

The research results indicate an increase in children's understanding of flood disaster mitigation, with the average pre-test score of 7.5% rising to 92.5% on the post-test. The analysis revealed that the calculated t-value was greater than the critical t-value at a 5% significance level, thus supporting the research hypothesis. This indicates that picture storybooks are effective in enhancing children's understanding of flood disaster mitigation. This finding aligns with Shofiatin (2020) research, which states that disaster preparedness activities can enhance young children's knowledge of flood disaster mitigation. Thus, picture storybooks have proven effective as a learning medium for improving children's understanding of flood disaster mitigation because they can enhance cognitive, psychomotor, and affective aspects in an integrated manner during the learning process.

4. Conclusion

Based on the results of the research and discussion regarding the development of the picture book "Raka the Water Hero" to improve children's understanding of flood disaster mitigation in Group B of Al-Hikmah Rusakencana Kindergarten, Toili Subdistrict, Luwuk Banggai Regency, it can be concluded that the developed medium is deemed highly suitable for use in learning. This is evidenced by the results of validation by subject matter experts and media experts, each of whom gave a score of 87.5% in the "highly valid" category. Implementation results showed a significant improvement in children's understanding before and after using the media, both in terms of response to the media (book), understanding of mitigation (cognitive), preparedness and action (psychomotor), as well as attitude and character (affective). The average score before the pilot test (pre-test) of 7.5% increased to 92.5% after the pilot test (post-test), leading to the conclusion that the picture storybook is effective in enhancing the understanding of 5–6-year-old children regarding flood disaster mitigation. Thus, this picture book medium can be used as an engaging, contextual learning alternative that aligns with the developmental characteristics of young children.

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