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Development of a Big Book Media Resource for Early Childhood Education Based on Local Wisdom and Environmental Adaptation as a Strategy for Mitigating Tidal Flooding Disasters

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ABSTRACT:
This study aims to analyze the feasibility and effectiveness of the Big Book as a teaching medium for early childhood education based on local wisdom and environmental adaptation as a measure to mitigate tidal flooding. The research approach used in this study is Research and Development, and the design is guided by the 4D research and development steps: Define, Design, Development, and Dissemination. The population for this study consists of students at the Muslimat NU kindergarten, which is located in a tidal flood-prone area. Instrument validation, based on the results of the Pearson Product-Moment validity test on N=25 with a critical value (rtabel) of 0.396, indicated that all instrument items are valid. The instruments measuring students' responses and comprehension yielded calculated r values ranging from 0.436 to 0.782, while the instrument measuring students' learning motivation yielded calculated r values ranging from 0.457 to 0.780. As for the reliability test results using Cronbach's Alpha, both instruments were found to be highly reliable, with a value of 0.906 for the questionnaire on students' understanding and responses to the Big Book medium and 0.878 for the questionnaire on students' learning motivation.

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1. Introduction

The Java Sea, which lies at a very low elevation of approximately 2.5 meters above sea level, has caused the region to face prolonged and repeated tidal flooding, or the overflow of seawater onto land during high tides. There are two main causes of tidal flooding: coastal development or land use that disrupts the natural balance, and climate change (Ashrida et al., 2025). Seawater intrudes onto land due to excessive groundwater extraction in coastal areas, which causes the land surface to sink further (Okta et al., 2022). The southern coast of Java in the Indian Ocean faces a higher risk of flooding due to sea-level rise compared to the northern coastal regions of Java, and this is one of the most significant impacts of climate change (Dasanto et al., 2022). Compound flooding is the combination or sequential occurrence of two or more flood triggers, resulting in greater impacts and exacerbating the adverse consequences of flooding, particularly in coastal areas and river estuaries (Green et al., 2025).

These conditions have led to an increase in the severity of tidal flooding year after year and have caused multidimensional impacts that not only damage physical infrastructure but also disrupt social stability and the education sector, particularly in early childhood education institutions located along the coastline. Early childhood education, or the "golden age," is referred to as a sensitive period during which children begin to receive various forms of stimulation and educational influences from their environment, whether intentional or unintentional. During this sensitive period, children's physical and psychological functions mature, preparing them to respond to and fulfill all developmental tasks expected to manifest in their daily behavior (Yusuf et al., 2024). Early Childhood Education strongly supports the cognitive and social development of young children (Astuti & Triani, 2024). Early Childhood Education also supports the enhancement of creativity during the "golden age"; therefore, teachers need to pay attention to the arrangement of the environment and the provision of materials that can support children's creativity so that children feel happy, comfortable, and exploratory, and can continue to develop their creativity (Suryana et al., 2022).

Young children are among the groups most vulnerable to the effects of disasters due to their limited physical and cognitive abilities to save themselves independently. Therefore, instilling a culture of disaster awareness from an early age through disaster mitigation efforts is an imperative that must be integrated into the educational curriculum. Disaster mitigation refers to a series of steps taken before an event occurs to prevent illness, injury, and death, as well as to limit property damage (Susanti et al., 2024). Physical mitigation measures include evacuation routes, as well

as raising public and government awareness of the importance of environmental conservation as part of disaster mitigation. Meanwhile, ecological-based mitigation involves the planting and maintenance of valuable mangrove forests, which have the potential to strengthen coastal protection against tsunamis while simultaneously enhancing environmental awareness and economic empowerment among residents (Tarigan et al., 2025). In addition, disaster mitigation can also be achieved through "composite resilience" that is, adapting to natural disasters caused by climate change while simultaneously reducing the impact of disasters (Galik et al., 2026).

In addition, it is important for disaster mitigation and underscores the need for continuous monitoring, early warning systems, and community preparedness to minimize potential risks (Puteri et al., 2026). Effective flood disaster mitigation also requires a balance between reducing physical impacts and enhancing the socioeconomic resilience of communities; the use of quantitative data such as the Flood Resilience Index helps ensure that the strategies adopted are targeted and timely (Ho et al., 2025). Furthermore, disaster mitigation is not merely about preparing and mobilizing resources, but rather a policy collaboration that combines budget optimization with the systematic reduction of human suffering through reliable mathematical models (Paul & Wang, 2025). Disaster mitigation also requires sound disaster mitigation management, which involves: first, establishing disaster mitigation approaches both structural and non-structural; second, establishing disaster mitigation policies with a clear division of responsibilities; third, establishing effective disaster mitigation strategies; fourth, implementing effective disaster mitigation; fifth, ensuring preparedness before, during, and after a disaster; and sixth, facilitating post-disaster recovery (Irawan et al., 2022).

Although the need for tidal flood disaster mitigation is extremely urgent, the reality on the ground shows that the learning resources available to early childhood education teachers remain very limited. Existing disaster mitigation materials are often abstract and difficult for young children to grasp. Early childhood education materials are defined as integrated thematic content that is, materials that combine national pedagogical content with local cultural contexts, thereby creating an effective and adaptive integrated curriculum (Wong et al., 2026). Early disaster mitigation education holds significant potential for enhancing young children's understanding and knowledge of preparedness for natural disasters; by empowering children from an early age, it is hoped that a resilient and disaster-aware generation will emerge, thereby building a society better prepared to face disaster risks (Indalestari et al., 2024). One disaster mitigation program that can be implemented through community outreach activities is early childhood education in early childhood education centers disaster mitigation education for young children is carried out using an appropriate learning approach (Irawan et al., 2022). Furthermore, the success of the educational materials is measured by how well children are able to interpret the phenomena around them logically and creatively (Hu et al., 2026).

Furthermore, many educational materials overlook the aspect of local wisdom, which is actually the key to successfully adapting to the surrounding environment. Local wisdom is defined as the body of knowledge and practices developed within a community that reflects its beliefs about religion, the universe, and social relationships (Nasir et al., 2025). A society's culture consists of accepted behavioral norms that have evolved over time and are passed down from one generation to the next; this is also the definition of local wisdom (Efendy et al., 2024). Also referred to as local intelligence or the thinking of the local community, local wisdom is regarded as noble values passed down from generation to generation and followed by the community (Syarifuddin et al., 2022). Therefore, local wisdom develops in various countries that have specific differences for example, regarding values, culture, and norms and as such, local wisdom constitutes a country's identity (Widiatmaka, 2022)

Learning becomes innovative when it incorporates local wisdom, as this creates an engaging learning environment and supports children's development by enriching their experiences with local values and traditions (Idhayani et al., 2023). The intrinsic application of education incorporating local wisdom in addressing potential multi-hazard scenarios is predominantly classified as moderate, whereas the extrinsic application of local wisdom is predominantly classified as high (Saiddinullah & Saputra, 2024). Local wisdom can strengthen community resilience to disasters, particularly through traditional knowledge passed down through generations, and policies that incorporate local wisdom can reinforce mitigation approaches, especially when accompanied by increased public awareness through early childhood education on disasters,Thus, integrating local knowledge into mitigation policiesis a crucial step toward more effectively addressing disasters (Sulistiyanto et al., 2024).

It is important for children in coastal areas to understand the characteristics of their region in context as a foundation for environmental adaptation, in order to build resilience in the face of disaster risks that threaten their homes. Adaptation refers to efforts to adjust to the inevitable impacts of climate change, such as building flood-resistant infrastructure or changing cropping patterns (Gusri & Annisa, 2025). These actions help reduce the losses caused by climate change (Orlove, 2022). Adaptation also involves adjusting to the environment, one's work, and everything else when a person is in a particular environment (Agapa & Martiana, 2023). To promote disaster resilience as part of the property management agenda which aims to preserve asset value, minimize recovery time, and ensure habitability structural and non-structural adaptation measures are implemented (Amadi, 2024). Structural and non-structural adaptation are types of adaptation undertaken by communities in response to flooding (Asyiawati et al., 2023).

To enhance community resilience and minimize flood risks, structural mitigation can be implemented by constructing flood-retention walls and clearing river channels of trash and sediment deposits; non-structural

mitigation can be achieved by installing flood early-warning systems, establishing evacuation routes and signage, conducting public awareness campaigns on flood hazards, and installing warning signs in flood-prone areas all of which help enhance community resilience to flood disasters (Retongga et al., 2024).Structural adaptation management is carried out through flood reduction strategies, strategies to minimize damage to buildings, strategies to mitigate the impacts of damage, the construction of flood control structures, and flood control strategies. Meanwhile, non-structural adaptation is carried out through active and passive adaptation, socioeconomic adaptation, cultural adaptation, watershed management, land-use regulations, early warning systems, and community participation (Salim et al., 2024).

Children play a vital role in adaptation by highlighting the structure, function, and widespread presence of the vast body of knowledge produced and passed down by children known as peer culture which is supported by evidence from various academic disciplines, That children are independent producers and custodians of an autonomous culture that is regularly present in various societies and persists despite growing threats; peer culture is a source of community knowledge diversity, encompassing both material and non-material knowledge related to geography, ecology, livelihoods, norms, and language. That the products of peer culture and related practices including the exploration, learning, and retention of abandoned adult cultural traits can help populations adapt to changing ecological and social conditions, contribute to community resilience, and even give rise to new cultural communities, highlighting children's role as active agents in adaptation (Lew-Levy & Amir, 2024).

The environment is a factor that influences child development. External factors consist of two types: social environmental factors and non-social environmental factors. The family, school, and community constitute the social environment, while the non-social environment consists of facilities and infrastructure. The environment's influence on students' development stems not only from the social environment but also from the non-social environment, which shapes students' mental development through the influence of the non-social environment (Nabilla & Desmon, 2022). The school and home environments also influence children's social emotional development (Taurina & Intisari, 2024). One learning medium considered effective for conveying complex messages in a simple way is the Big Book. Educational media in early childhood education have been shown to play a strategic role in every aspect of a child's development, so their use in learning can optimally stimulate various dimensions of a child's development (Adistiarachma & Alia, 2024).

A tool or aid for teachers to deliver learning material so that students can understand what is being conveyed is the definition of a teaching aid (Fadilah et al., 2023). Instructional media refers to the various resources or materials used by teachers in the teaching-learning process with the aim of providing assistance or support in the form of conveying information, concepts, or lesson content to students in a more effective and engaging manner (Titin et al., 2023). A key factor in improving the quality of learning is the use of instructional media (Shoffa et al., 2023). Instructional media is defined as anything that can convey a message through various channels such as by stimulating students' thoughts, feelings, and motivation thereby fostering an effective learning process and enriching students' knowledge with new information, so that learning objectives can be successfully achieved (Daniyati et al., 2023).

Learning media are highly practical because they can significantly enhance students' understanding and retention of basic concepts (Ahlanafila et al., 2024). Thus, the use of instructional media not only increases student engagement but also strengthens their intrinsic motivation (Trikesumawati et al., 2025). The Big Book makes learning more relatable to students, as well as enjoyable and meaningful (Muzdalifah & Subrata, 2022). The use of the Big Book enhances group collaboration, communication, responsibility, and student engagement. Big Book media has been proven to increase student participation in educational competitions and deepen their understanding of the material (Paraswati et al., 2025). Big Book media also has the unique feature of illustrations accompanied by stories, making it suitable for early childhood education (Nurika et al., 2022). This medium is also capable of fostering students' self-confidence and active participation in learning (Afifah et al., 2025).

The Big Book is characterized by its large format and large text, engaging illustrations, and an easy-to-follow storyline. As part of efforts to mitigate tidal flooding, the development of the Big Book is designed to stimulate the process of self-guidance while visualizing concrete disaster mitigation steps. By integrating local wisdom and environmental adaptation strategies into the Big Book, children not only learn about tidal flooding but also understand what actions to take in accordance with their culture and environmental conditions. As demonstrated by previous research, the use of the Big Book as a learning medium is effective in improving students' early reading skills. The Big Book can be used not only for early reading instruction but also when combined and applied by teachers across various subjects to enhance language skills and motivate students to learn (Muzdalifah & Subrata, 2022).

The Big Book program, based on local wisdom and environmental adaptation, can serve as a method for mitigating tidal flooding; furthermore, when supplemented with early childhood education materials, it is believed that children will be more engaged and better able to understand the values conveyed through the Big Book. Therefore, based on the above discussion, the researcher will conduct a study titled "Development of Big Book Media for Early Childhood Education Content Based on Local Wisdom and Environmental Adaptation as a Flood Mitigation Effort."

2. Method

This study employs a research and development methodology. This method is a scientific approach that encompasses the stages of assessment, design, development, and feasibility testing of a product (Sugiyono, 2019). This development research is also based on educational principles, aiming to develop and test a Big Book educational resource for early childhood education based on local wisdom and environmental adaptation as a strategy for mitigating tidal flooding. The study was conducted at three early childhood education institutions: TK Muslimat NU Karangjompo, TK Muslimat NU Tegaldowo, and TK Muslimat NU Jeruksari. The primary objective is to create Big Book educational resources for early childhood education based on local wisdom and environmental adaptation as a flood mitigation strategy, involving school principals and teachers through the product development and feasibility testing processes.

The development model used was the ADDIE model by Dick & Carry (as cited in Setiadi et al., 2018), which consists of five main stages: analysis, design, development, implementation, and evaluation. The population defined by the researcher in this study consists of students at the Muslimat kindergarten, which is located in a tidal flood-prone area during the odd semester of the 2026/2027 academic year in Tirto Subdistrict, Pekalongan Regency. The researcher served as the product developer and tested the validity, practicality, and effectiveness of the product, with each phase following the flow and structure of the 4D Development model. The details of these phases are outlined in Table 1.

Table 1. Steps in 4D Research and Development

4D Development	Research Activities
Define	Determining which products to develop based on the background of the problem at hand. Efforts to mitigate tidal flooding serve as the guiding principle for the development of these early childhood education teaching materials; it is hoped that through the development of these materials, these aspects can be improved, and that the materials will be based on local wisdom and environmental adaptation.
Design	Developing designs for the specified products. As a measure to mitigate tidal flooding, an early childhood education teaching material based on local wisdom and environmental adaptation was selected, specifically the "Big Book." This medium contains early childhood education content rooted in local wisdom and environmental adaptation, presented in a simple and easy to understand manner for students due to its large A3 size. This design aims to effectively fulfill the principles of clarity and readability of the Big Book medium for all students in the classroom. As for its composition, the story is structured in a coherent narrative and uses two languagesJavanese and Indonesian with each sentence containing 1 to 7 words. The text uses the League Spartan font in sizes ranging from 48 to 60 pt for the story text, 36 to 44 pt for supplementary text, and 72 to 96 pt for the cover. The cover is designed as a double-sided page; text begins with a capital letter, and the content of the Big Book focuses on events from the students' daily lives. The Big Book introduces flood mitigation efforts and features large, colorful illustrations designed to help children grasp the message. This is intended to spark students' interest in the material being taught, thereby increasing their engagement with flood mitigation efforts.
Development	At this stage, the activities involve creating the product based on the predetermined design and testing the product's validity against its specifications. The draft and storyboard that have been designed are developed into a physical Big Book. This Big Book is then developed and tested on a limited scale and a large scale.
Dissemination	dissemination, which involves activities to distribute draft versions of the product.

This study utilized both quantitative and qualitative data. The quantitative data consisted of pretest and posttest results to assess students' knowledge and skills both structural and non structural as part of early preparedness efforts. The qualitative data consisted of a questionnaire containing indicators that assessed students' ability to implement flood mitigation measures. The data sources in this study are: (1) students, to obtain questionnaire results regarding flood mitigation efforts and results indicating improvements in flood mitigation capabilities; (2) teachers, to implement lessons using Big Book media with early childhood education materials based on local wisdom and environmental adaptation; and (3) documentation in the form of photographs of research activities.

Quantitative data collection techniques involved administering a pretest to assess the initial condition of the research subjects before they were exposed to the developed product, followed by a posttest after the subjects had been exposed to the product. The instrument consisted of a test to assess students' knowledge and skills both structural and nestructural as part of early preparedness efforts, aligned with the competency indicators for flood and tidal surge mitigation. Meanwhile, the qualitative data collection techniques used in this study include questionnaires,

observations, and interviews. Specifically, the qualitative data collection techniques employed in this study are questionnaires, interviews, and documentation gathered through focus group discussions.

3.Result

3.1. Define

The "define" stage is the first step in the 4D development model, which aims to identify and define the learning needs required for developing instructional media. This stage also serves as the foundation for analyzing the background of the problem and initial needs, as well as for collecting supporting data with the goal of finding the right solution. Based on the results of field observations conducted through interviews and Focus Group Discussions with key informants, an urgent need was identified for interactive learning tools that incorporate local wisdom and environmental adaptation strategies, and that are designed to facilitate understanding and stimulate preparedness among young children in the face of the threat of tidal flooding.

This definition phase holistically covers four main aspects of analysis. The first is the initial analysis, which focuses on identifying the primary issues encountered in the process of teaching disaster mitigation in the field. It has been found that the flood mitigation curriculum currently implemented at the early childhood education level remains too general. Furthermore, the existing teaching materials have not yet been integrated with the traditional adaptation knowledge of coastal communities in a tangible and contextual manner, so they have not been optimal in building students' knowledge and practical preparedness. The second aspect is the analysis of teachers and students at the Muslimat NU Jeruksari and Tegaldowo kindergartens. In this context, both teachers and students have firsthand experience dealing with tidal flooding. Nevertheless, the students do not yet have an adequate understanding of safety risks or structured self-rescue measures. On the other hand, while the teachers actually demonstrate a high level of concern and understand the local community's adaptation traditions, they face technical limitations in designing contextual and engaging learning materials for the students.

The third step concept and task analysis involves analyzing and grouping the core material on tidal flood preparedness, tailored to the psychological developmental levels of young children. The material is also specifically designed to integrate the introduction of basic knowledge with the development of children's natural skills both structural and non-structural in coping with the threat of tidal floods in their surrounding environment. Fourth is the formulation of learning objectives, which involves formulating learning objectives for tidal flood disaster mitigation based on local wisdom and environmental adaptation. In formulating these objectives, local wisdom is not merely used as a medium to reinforce culture but is repurposed as educational material specifically focused on tidal flood preparedness. Given these conditions, the Big Book medium is utilized as an educational intervention developed to be relevant, targeted, and highly contextually valuable for young children.

3.2. Design

The design phase is the second phase in the 4D development model, with the objective of designing the conceptual and physical aspects of the Big Book media product for early childhood education materials. This design is based on the findings from the definition phase, which led to the conclusion that there is a need for learning materials that integrate the values of local coastal wisdom and forms of environmental adaptation to enhance children's resilience to tidal flooding in a contextual, engaging, and visual manner. The first step in developing learning materials based on local wisdom and environmental adaptation is the creation of Big Book content designed using the Canva graphic design application. The content is organized into an educational narrative divided into three phases of tidal flood mitigation: Before a Tidal Flood and During a Tidal Flood. The Big Book learning material for early childhood education, based on local wisdom and environmental adaptation as a tidal flood mitigation effort and created using the Canva graphic design application, can be downloaded at the following link: https://canva.link/zubmdwy5qy4qkau. Here are the results of the Big Book media design for early childhood education materials (figure 1 &2).





Figure 1. Before the Revision



Figure 2. After the Revision

3.3. Development

The development stage is the phase in which a product is produced; this final product has been validated and has undergone development testing. The resulting Big Book media product early childhood education materials based on local wisdom and environmental adaptation as a flood mitigation strategy was developed, reviewed, and then validated by experts prior to its implementation in the study. The validation of the media was conducted by two experts: a media expert and a content expert. Validation by the media expert was conducted to determine whether the developed media was appropriate, while validation by the content expert was conducted to determine whether

the content in the media was appropriate and aligned with the competencies to be achieved. The following tables show the results of the validation conducted by media experts and subject matter experts.

Table 2. Results of the media expert validation

	V1	V2	Score	Score (%)	Description
Presentation Design	3,66	3,66	3,7	92,5	Highly Recommended
Interaction Usability	4,00	4,00	4,00	100	Highly Recommended
Accessbility	3,67	3,67	3,67	91,75	Highly Recommended
Reusability	3,66	3,66	3,70	92,5	Highly Recommended
Standards Compliance	4,00	4,00	4,00	100	Highly Recommended
Average	3,80	3,80	3,81	95,4	Highly Recommended

Table 3. Results of Subject Matter Expert Validation

	V1	V2	Score	Score (%)	Description
Accuracy of Content	4,00	4,00	4,00	100	Highly Recommended
Support of Learning Goals	3,67	3,67	3,67	91,75	Highly Recommended
Motivation	4,00	4,00	4,00	100	Highly Recommended
Average	3,89	3,89	3,89	97,25	Highly Recommended

The results of the limited-scale pilot study, based on a questionnaire completed by 25 students, are presented in Table 4.

Table 4. Results of the small-scale trial

	Score (%)	Category
Students' Motivation to Learn	88,57	Very High
Students' Responses to the Big Book Media for Early Childhood Education Materials Based on Local Wisdom and Environmental Adaptation as a Strategy for Mitigating Tidal Flooding	88,75	Very High

3.4. Dissemination

The Dissemination Phase, which refers to the spread of information. The "Big Book" educational material for early childhood education, based on local wisdom and environmental adaptation as a measure to mitigate tidal flooding, has been fully revised; therefore, to assess its effectiveness, it will be implemented on a large scale. Furthermore, to promote the developed product so that it is accepted by individuals or groups, its dissemination will be carried out through scientific publications.

4.Discussion

The products resulting from this research and development are expected to be sustainable and find broader application in the future, extending beyond mere academic fulfillment. The Big Book as a learning medium is important because it encompasses various fields of knowledge and contextual learning methods at the Early Childhood Education level, while also demonstrating flexibility and adaptability in adjusting the education system during times of urgency. This Big Book learning material for early childhood education, based on local wisdom and environmental adaptation, is designed in a structured manner through the stages of the 4D development model: Define, Design, Develop, and Disseminate.

The project began with an in-depth preliminary field analysis and an assessment of the actual needs for the development of disaster preparedness educational materials by teachers and students in coastal areas prone to tidal flooding. To ensure the sustainability of implementing the "Big Book" media for early childhood education materials as an adaptive, practical, and sustainable model for disaster preparedness education, the development of this Big Book media product for materials must result in valid and practical content that aligns with early childhood development standards as well as the principles of both structural and non-structural disaster mitigation. Moving forward, the content and core elements of the Big Book resources should have the flexibility to be adapted and tailored to the age groups of students as well as the specific characteristics of local disasters in other regions.

Table 5. Results of the questionnaire evaluating the practicality of the Big Book teaching material by teachers

	Score	Score (%)	Description
Kindergarten Teacher at M NU Jeruksari	3,73	93,25	Highly Recommended
Kindergarten Teacher at M NU Tegaldowo	3,64	91	Highly Recommended

on average	3,68	92,13	Highly Recommended

Table 6. Descriptive Analysis of Students' Motivation to Learn: The Use of Big Book Media

	N	Minimum	Maximum	Mean	Std. Deviation
Experiment	25	78,57	100	92,56	5,250
Control	25	64,28	85,71	75,42	6,215
Valid N (listwise)	25				

Table 7. Average percentage of students' motivation to learn for each indicator

Indicators	Experiment		Control	
	Score (%)	Description	Score (%)	Description
A passion and desire to succeed	76,48	Height	61,44	Height
The presence of motivation and the need to learn	77,00	Hight	62,00	Height
Having hopes and aspirations for the future	86,00	Very High	72,00	Height
The inclusion of engaging activities in learning	83,00	Very High	67,00	Height
The existence of a conducive learning environment	88,00	Very High	76,00	Height

Table 8. Descriptive statistics of the research findings on students' responses to and understanding of the Big Book media in the experimental class

	N	Minimum	Maximum	Mean	Std. Deviation
Pretest	25	50	94	74,24	13,05
Posttest	25	63	100	90,80	9,39
Valid N (listwise)	25				

Table 9. Descriptive statistics of the research findings on students' responses to and understanding of the Big Book media in the control class

	N	Minimum	Maximum	Mean	Std. Deviation
Pretest	25	50	88	67,52	11,97
Posttest	25	63	94	77,16	9,79
Valid N (listwise)	25				

Table 10. Results of the normality test

Students' responses to and understanding of the Big Book medium	N	Kolmogorov -Smirnov	Significance (2-tailed)	Description
Control pretest	25	0,207	0,203	Normal
Experimental pretest	25	0,208	0,199	Normal
Control posttest	25	0,238	0,100	Normal
Experimental posttest	25	0,175	0,125	

Table 11. Homogeneity Test Results

Data	Levene's Test	df1	df2	Sig.
pretest	0,425	1	48	0,518
posttest	0,112	1	48	0,739

Table 12. Results of the difference test

Data	T Calculated	Sig	Conclusion
Pre post control	-9,998	0,000	There is a significant difference
Pre and Post-Experiment	-9,735	0,000	There is a significant difference

Table 13. Results of the analysis of the questionnaire on students' understanding of and responses to the Big Book medium

Indicators	Experiment	Control

	Score (%)	Description	Score (%)	Description
A passion and desire to succee	76,48	Height	61,44	Height
The presence of motivation and the need to learn	77,00	Hight	62,00	Height
Having hopes and aspirations for the future	86,00	Very High	72,00	Height
The inclusion of engaging activities in learning	83,00	Very High	67,00	Height
The existence of a conducive learning environment	88,00	Very High	76,00	Height

5.Conclusion

The development of a Big Book learning resource for early childhood education based on local wisdom and environmental adaptation as a flood mitigation strategy is grounded in the real-life experiences of students and teachers with tidal flooding, where understanding of self-rescue remains limited amid the scarcity of contextual learning materials. In terms of quality, this resource was deemed highly appropriate by subject matter and media experts and practical by teachers, supported by a questionnaire instrument proven to be valid (r statistic > 0.396) and highly reliable, with a Cronbach's Alpha value of 0.906 for students' understanding and responses and 0.878 for learning motivation. Furthermore, effectiveness testing using a readiness difference test (one-tailed test), paired sample t-test, independent sample t test, and N Gain demonstrated that the experimental class exhibited a significantly higher increase in disaster mitigation knowledge and skills compared to the control class.

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