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Development of E-Story Book Media Based on Local Wisdom and Ecoliteracy in Reading Comprehension Learning for Students at Ulak Embacang Public Elementary School

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ABSTRACT

The limited integration of digital learning media incorporating local wisdom and ecoliteracy in elementary reading instruction motivated this study, which aimed to develop a valid, practical, and effective e-storybook for reading comprehension. This development research employed the ADDIE model (Analyze, Design, Develop, Implement, Evaluate). The study was conducted at SD Negeri Ulak Embacang, a rural elementary school in South Sumatra, involving fourth-grade students in small-group and field testing. Data were collected through observations, interviews, questionnaires, and pretest–posttest assessments, and analyzed using feasibility and practicality percentages alongside N-Gain scores. The developed e-storybook demonstrated high validity based on expert evaluations of content (96.6%), media (95%), and language (93.3%). Practicality testing yielded an average score of 91.55% in the small-group phase, indicating strong usability. Effectiveness results showed a significant improvement in students' reading comprehension, with an N-Gain score of 0.84 (high category). The findings indicate that the e-storybook is a valid, practical, and effective digital learning medium. Its integration of local wisdom and ecoliteracy provides contextualized learning experiences that enhance comprehension while promoting digital literacy and environmental awareness among elementary students. Consequently, it offers a valuable instructional resource for teachers, particularly in rural educational settings.

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1. INTRODUCTION

Reading literacy skills in elementary school students are an important foundation for the development of language skills, critical thinking, and lifelong learning because literacy

is not only the ability to read and write, but also the ability to understand, interpret, and use information meaningfully (Lestari et al., 2021) ; however, the reading literacy achievements of Indonesian students are still concerning, as shown by the results of the 2018 Programme for International Student Assessment (PISA) in the domain of reading, where only about 25.46% of students achieved the minimum competency level (Level 2), far below the OECD average of 73.75% (Pahlevi, 2023), indicating the need for learning innovation at the elementary level. On the other hand, reading learning practices in schools still rely heavily on printed books and teacher lectures, which tend to be monotonous, lack context, and minimize the use of engaging digital media, resulting in low student motivation and engagement in reading comprehension (M. Nisphi et al., 2023).

In this context, e-story books have the potential to be a solution because they integrate text, visuals, and interactivity in line with the principles *of multimedia learning* (Mayer, 2009) and a contextual learning approach that links the material to students' real experiences. In this study, *local wisdom* is defined as the cultural values, traditions, and practices of local communities that reflect the harmonious relationship between humans and the environment, while *ecoliteracy* is defined as the ability of students to understand the relationship between humans and nature and demonstrate environmental awareness through reading, reflection, and text interpretation activities.

Although various studies have shown the benefits of e-story books for literacy (Gogahu & Prasetyo, 2020; Putri, 2025), there is a gap in research because there has been no study that comprehensively integrates *local wisdom*, *ecoliteracy*, reading comprehension assessment, and ADDIE model-based development evaluation in the context of rural elementary schools in South Sumatra. so the novelty of this research lies in the development of an e-story book that is in line with Indonesian language learning outcomes, contains *local wisdom* and *ecoliteracy* values, and is designed with attractive digital illustrations to increase student engagement.

Based on this, the research problem is how to develop an e-story book that is valid (based on expert assessment/content validity), practical, and effective in improving students' reading comprehension skills. Therefore, the purpose of this study is to develop and test the practicality and effectiveness of an e-story book based on *local wisdom* and *ecoliteracy* for fourth-grade students at SD Negeri Ulak Embacang.

2. METHODS

This study used a Research and Development (R&D) approach with the ADDIE development model, which consists of five stages, namely: (1) Analyze (needs analysis), (2) Design (product design), (3) Develop (development and validation), (4) Implement (pilot test), and (5) Evaluate (evaluation). This model was chosen because it is systematic, flexible, and suitable for developing and testing the feasibility of learning media.

This study was conducted at SD Negeri Ulak Embacang, an elementary school in a rural/remote area in South Sumatra with limited digital learning resources. The main subjects of the study were fourth-grade students who were involved in two stages of testing, namely small group testing involving 8–10 students to assess the initial readability and practicality of the media, and field testing (main implementation) involving around 25 students to test the practicality and effectiveness of e-story books in reading comprehension learning. In addition, additional participants in this study included one fourth-grade teacher as a media practitioner and three expert validators, consisting of subject matter experts, media experts, and language experts, to assess the content validity and product feasibility before implementation in the classroom.

The product developed is an e-story book based on local wisdom and ecoliteracy, containing local folk tales adapted to the learning outcomes of fourth-grade Indonesian language. This media is equipped with narrative text, colorful visual illustrations, and simple interactive elements to increase student engagement. The e-storybook was developed using Canva, presented in digital format (interactive PDF/flipbook), and accessible via laptop, tablet, or smartphone. This media was designed to be used offline after downloading, so it remains accessible even with limited internet connection.

The research instruments consisted of (1) a practicality questionnaire covering aspects of appearance, accessibility, and material presentation (referring to Santika, 2022); (2) a pretest–posttest measuring understanding of the intrinsic elements of the story, interpretation of the moral message, identification of *local wisdom* and *ecoliteracy* values, and their application in everyday life. The practicality questionnaire instrument is as follows;

Table 1. Practicality Questionnaire Instrument

No	Aspect	Statement	Response 4 3 2 1
1.	*E-Story book* display	1. The media display of *the E-story book is* attractive	
		2. Images used are relevant to the content	
		3. The layout of the pages or slides has a uniform format throughout the material	
		4. The use of colors in *the E-story book* media is in accordance with the theme	
		5. Images in the *E-story book* media have high resolution and are not blurry	
2.	Accessibility	6. *E-story books* can be easily accessed by students	
		7. *E-story books* can be accessed offline after being downloaded for the first time	
		8. *E-story books* have a fast loading time when opened for the first time.	
3.	Presentation of material	9. *Local wisdom* material in *e-story books* is presented in clear language	
		10. The *ecoliteracy* material in *the e-story book* is presented in clear language.	
		11. *Local wisdom* material is supplemented with examples.	
		12. The *ecoliteracy* material is supplemented with examples.	
		13. The content of *local wisdom* material has been compiled based on basic competencies and learning objectives to be achieved.	
		14. The content of *ecoliteracy* material has been compiled based on basic competencies and learning objectives to be achieved.	
		15. The material is structured from basic concepts to more complex concepts.	

Source: Modified from Santika, 2022

Next, the practicality questionnaire data obtained will be analyzed using the *Likert* scale.

Table 2. Likert Scale Assessment Levels

Category	Score
Very Good	4
Good	3
Fairly Good	2
Not Good	1

Source: Sugiyono, (2019)

The questionnaire results for the assessed aspects will produce data. Next, the average will be calculated using the formula;

$$\text{Response Score} = \frac{\text{Score Achievement}}{\text{Score Maximum}} \times 100\%$$

The results obtained from the average will be categorized into the criteria specified in the following table:

Table 3. Questionnaire Score Assessment Criteria for Practicality

Range	Category
81-100	Very Practical
61-80	Practical
41-60	Fairly Practical
21-40	Less Practical

Source: Sugiyono; 2019

The evaluation stage was carried out with the aim of assessing the effectiveness of the learning media developed. The evaluation process was carried out comprehensively, starting from the determination of criteria, selection of instruments, and implementation of assessment in learning activities. The evaluation design was systematically arranged so that the data obtained were objective. The tests used in this study were pre-tests and post- tests. Data on learning outcomes were collected to determine the initial conditions of the students and the changes after learning using the e-storybook media. The effectiveness of the product was assessed by comparing the pre-test and post-test results to see the improvement in students' reading comprehension skills after using the developed media. The following are the pre-test and post-test grids;

Table 4. Pretest and Posttest Assessment Grid

No	Learning Objective Flow	Question Indicators	Level Cognitive	Question number
1.	Through reading activities, students can clearly identify the characters, plot, setting, characters, and message in the story.	State the theme of the story	C1	1
		Identify the characters in the story	C1	2
		Identifying the plot in a story	C1	3
		Identifying the setting in a story	C1	4
		Describing the characters in the story	C2	5

		Explaining the message contained in the story being Read	C2	6
2.	Through reading activities, students are able to explain the moral message contained in the story in their own words in a coherent manner.	Explain the meaning of the message clearly in their own words.	C2	7
		Identify the moral message accurately based on the content of the story.	C2	8
		Connecting the moral message in the story to everyday situations accurately.	C3	9
3.	Through reading activities, students can accurately connect the cultural values in stories about the origins of their ancestors with everyday life.	Identifying cultural values *(local wisdom)* contained in stories accurately.	C2	10
		Accurately identifying environmental awareness values *(ecoliteracy)* contained in the story.	C2	11
		Provide examples of the application of cultural values *(local wisdom)* from the story in everyday life.	C3	12
		Provide examples of applying environmental awareness values *(ecoliteracy)* from stories in everyday life.	C3	13
4	Through reading story texts, students are expected to be able to apply the moral messages from the texts in their daily behavior to preserve culture and the environment.	Connecting the moral messages in the text with concrete actions that can be taken to preserve cultural and environmental sustainability.	C3	14
		Analyzing the relationship between the moral messages in the text and cultural and environmental issues occurring in the surrounding area.	C4	15

The test instrument used was a reading comprehension test for students, while the questionnaire instrument was designed to assess the practicality of learning media in the teaching and learning process. This questionnaire assessed three main aspects, namely media display, accessibility, and material presentation. Non-test instruments in the form of interviews were used to explore the strengths and weaknesses of the learning media developed. Before use, all instruments were validated by three experts to ensure their suitability. The interview data were analyzed qualitatively, such as media display, accessibility, and material presentation. Meanwhile, the questionnaire and test results were analyzed quantitatively using a four-point Likert scale, namely very good (4), good (3), not so good (2), and not good (1). After the instruments were developed, the next step was to conduct a validity test to ensure the suitability and appropriateness of the instruments before they were used in

the study.

a. Validity Test

Validity was tested through the assessment of three experts (material, media, and language). The media expert validation sheet was used to assess the feasibility and level of validity of the developed media. The media validation instrument is presented in the following table;

Table 5. Media Expert Validation Sheet Instrument

Aspect	Indicators	Assessment Scale			
		4	3	2	1
Image Quality	1. The image is of good quality and not blurry				
	2. The images used are able to attract the attention of students				
	3. The use of color in the images is not too striking				
	4. The background selection is appropriate for the learning theme and provides an attractive appearance				
	5. The layout of the material is structured in a way that makes it easy for students to understand the learning content.				
	6. The image design is in line with the learning material theme and is not boring.				
	7. The colors in the images do not obscure important details that need to be noted.				
	8. The font is easy to read, and the size is appropriate for the reader (not too small or too large)				
	9. The colors used are harmonious and not too striking.				
Appearance	10. The cover page is designed attractively.				
	11. The text is clearly legible in terms of size, font type, line spacing, and placement on the page.				
	12. Text, images, and other media elements are arranged proportionally and do not overlap				
	13. The background supports text readability				
Video and Audio	14. The videos used support the material and flow that are easy for students to understand.				
	15. The sound in the media (script, narration, dialogue, or background music) is clear.				

Source: Modified from Nur Hikmah, (2021)

The subject matter expert validation sheet is used to determine the validity of the material for use in learning**.** The following is the subject matter expert validation instrument:

Table 6. Expert Validation Instrument

Aspect	Indicators	Assessment			
		4	3	2	1
Content Relevance	1. The *local wisdom* and *ecoliteracy* material in *the e-story book* is in line with the applicable curriculum				
	2. The *local wisdom* and *ecoliteracy* materials in *the e-storybook* are in line with the Lesson Plan (RPP)				
	3. *The local wisdom* and *ecoliteracy* content in *the e-storybook* can be measured through achievement indicators				
	4. The *local wisdom* and *ecoliteracy* content in *the e-storybook* supports the achievement of learning objectives designed by Teachers				
	5. *The e-storybook* features elements of culture, customs, and local wisdom Values				
	6. The material in *the e-storybook* instills awareness of the importance of protecting the environment				
	7. The content supports the fulfillment of students' needs				
	8. The material provides valuable and informative information that is				
Material Suitability	9. The level of difficulty of the material is adjusted to the age and stage of Development				
	10. The presentation of the material follows a logical sequence				
	11. The content is free from discriminatory bias, pornography, radicalism, violence, and hate speech				
	12. The material reflects values such as faith and piety, global diversity, mutual cooperation, independence, critical thinking, and creativity				
	13. The stories or content of the material convey positive messages that shape students' attitudes and behaviors				
	14. The material uses simple and clear language				
Evaluation	15. There are practice questions				

Source: Modified from C. Dewi, (2021)

The language expert validation sheet is used to assess the level of language validity. The purpose

of this instrument is to determine the extent to which the language used in the media is appropriate and suitable. The following is the validation instrument by language experts.

Table 7. Language Expert Validation Sheet Instrument

Aspect	Indicators	Rating Scale			
		4	3	2	1
Linguistic Suitability	1. Sentences are concise and clear,				
	2. Language is used interactively				
	3. Language is appropriate for age and thinking ability				
	4. The language structure follows the rules of proper and correct Indonesian grammar.				
	5. Writing is in accordance with standard spelling (PUEBI)				
	6. Important terms are used consistently				
	7. The use of capital letters follows official rules and helps clarify the meaning of sentences				
	8. The language is positive and uplifting				
	9. Punctuation is used appropriately, neither too little nor too much				
	10. The vocabulary used is in accordance with standard Indonesian, does not use slang or non-standard language				
	11. Sentences have a subject-predicate-object structure or no structure				
Readability	12. Sentences are constructed with a simple structure				
	13. Sentences within a paragraph are interconnected				
	14. Each paragraph is structured coherently and interconnected				
	15. The language used is polite and respectful				

Source: Modified from C. Dewi, (2021)

Data obtained from expert validation will be analyzed using the *Likert* scale.

Table 8. Likert Scale Assessment Levels

Category	Score
Very Good	4
Good	3
Not Good	2
Not Good	1

Source: Sugiyono; 2019

Data from the validation sheet filled out by experts can be averaged using the following formula.

$$\text{Score} = \frac{\text{Total Score}}{\text{Maximum score}} \times 100\%$$

The results are then categorized into the following predetermined criteria

Table 9. Validity Score Assessment Criteria

Range	Category
81-100	Highly Valid
61-80	Valid
41-60	Fairly Valid
21-40	Less Valid

Source: Sugiyono; 2019

Based on the assessment of media experts, subject matter experts, and language experts, the e-storybook media is deemed suitable for use in learning; the results of the validation by media, subject matter, and language experts are presented as follows;

Table 10. Results of Media Expert Validation

No	Aspect	Score	Maximum score	Percentage	Category
1.	Graphics	33	36	92	Very Valid
2	Display	16	16	100	Very Valid
3	Video	8	8	100	Very Valid
	Total Score	**57**	**60**		

Based on the results above, the media expert validation stage, which assessed several aspects, obtained a result of 92% for the graphic aspect. The assessment of the display aspect obtained a result of 100%. For the video aspect, the result was 100%. The *E-story book* product was declared highly valid for use.

The table below shows the percentage results of the material expert validation sheet for the *E-Story book* product that was developed. The following is the explanation that the researcher presents in Table 11 regarding the results of material expert validation for the developed product;

Table 11. Results of Expert Material Validation

No	Aspect	Score	Maximum Score	Percentage	Category
1.	Content Relevance	31	32	97	Highly Valid
2	Content suitability	23	24	96	Highly Valid
3.	Evaluation	4	4	100	Highly Valid
	Total Score	**58**	**60**		

Based on the above results, the material expert validation stage, which assessed several aspects, yielded a percentage of 97%. The assessment of content feasibility yielded a percentage of 96%. In the evaluation aspect, the result was 100%. The *E-story book* product was declared highly valid for use. Thus, based on these results, the developed *E-story book* product was declared highly valid.

The table below shows the percentage results of the language expert validation sheet for the developed *E-story book* product. The following is the explanation presented by the researcher in Table 12 regarding the results of language expert validation of the developed product.

Table 12. Language Expert Validation Results

No	Aspect	Score Obtained	Maximum Score	Percentage	Category
1.	Language Proficiency	40	44	91	Highly Valid
2	Readability	16	16	100	Very Valid
	Total Score	**56**	**60**		

Based on the results above, the language expert validation stage, which assessed several aspects, obtained a result of 91% for the language suitability aspect. The readability aspect assessment obtained a result of 100%. The *e-story book* product was declared to be highly valid for use. Therefore, based on these results, the developed *e-story book* product was declared to be highly valid.

b. Practicality Test

The practicality test was conducted on a small group of 8 students. Data was collected using a 4-point Likert scale questionnaire. The practicality questionnaire given to students after the trial was assisted by the educator. The data obtained from the questionnaire was then processed to assess the practicality level of the learning media.

Table 13. Practicality Questionnaire Instrument

No	Aspect	Statement	Response 4	3	2	1
1.	*E-Story book* display	1. The media display of *the E-story book is* attractive				
		2. Images used are relevant to the content				
		3. The layout of the pages or slides has a uniform format throughout the material				
		4. The use of colors in *the E-story book* media is in accordance with the theme				
		5. Images in the *E-story book* media have high resolution and are not blurry				
2.	Accessibility	6. *E-story books* are easily accessible to students				
		7. *E-story books* can be accessed offline after being downloaded for the first time.				
		8. *E-story books* have a fast loading time when opened for the first time,				
3.	Presentation of material	9. The *local wisdom* material in *the e- story book* is presented in clear language.				
		10. *Eco-literacy* material in *the e-storybook* is presented in clear language.				

11. *Local wisdom* material is supplemented with examples	
12. *Ecoliteracy* material is accompanied by examples	
13. The content of *local wisdom* material has been compiled based on basic competencies and learning objectives to be achieved	
14. The content of *ecoliteracy* material has been compiled based on basic competencies and learning objectives to be achieved	
15. The material is structured from basic concepts to more complex concepts.	

Source: Modified from Santika, 2022

Next, the questionnaire response data obtained will be analyzed using the Likert scale

Table 14. Likert Scale Assessment Levels

Category	Score
Very Good	**4**
Good	**3**
Fairly Good	**2**
Not Good	**1**

Source: Sugiyono, (2019)

The questionnaire results for the assessed aspects will produce data. Next, the average will be calculated using the formula;

$$\text{Response Score} = \frac{\text{Score Achievement}}{\text{Maximum Score}} \times 100\%$$

The results obtained from the average will be categorized into the criteria specified in the following table:

Table 15. Questionnaire Score Assessment Criteria for Practicality

Range	Category
81-100	Very Practical
61-80	Practical
41-60	Fairly Practical
21-40	Less Practical

Source: Sugiyono; 2019

c. Effectiveness Test

The effectiveness of the media was tested through a pretest–posttest in a field trial involving 15 students. Effectiveness was determined by comparing pretest and posttest scores and calculating the increase in learning outcomes (N-Gain).

Table 16. Pretest and Posttest Results

No	Name Student	Pre-test	Posttest
1	MS	67	100
2.	RP	67	100
3.	SN	73	80
4.	AR	33	87
5.	MDA	47	100
6.	RA	27	93
7.	RS	53	100
8.	IM	33	93
9.	SY	47	93
10.	YO	33	100
11.	ZA	53	100
12.	FE	33	93
13.	SK	40	100
14.	MA	73	80
15.	MD	33	93
	Total	**712**	**1412**
	Average	**47.46**	**94.13**
	Score ≤70	**86.67**	**0**
	Score ≥70	**13.33**	**100**

Source: Primary data processing in 2025

3. FINDINGS AND DISCUSSION

3.1 Findings

After *the e-story book* media was validated by media experts, subject matter experts, and language experts as suitable for use, the next step was to conduct small group trials and field trials. Small group trials were conducted to measure the practicality of *e-story book* media based on *local wisdom* and *ecoliteracy* in reading comprehension learning for students at Ulak Embacang Public Elementary School. Meanwhile, field trials were conducted to measure the effectiveness of the learning media that had been developed.

3.2 Small Group Trial

This trial was conducted at SD Negeri 1 Ulak Embacang, involving eight students. To determine the practicality of the media, the researcher distributed a questionnaire after the trial was completed. The questionnaire consisted of 15 multiple-choice questions used to assess the media in terms of appearance, accessibility, and material presentation. The results of the questionnaire analysis are presented in the following section.

Table 17. Results of the Student Practicality Questionnaire

Name	Media Display	Accessibility	Presentation of Material	Score	Average	%	Category
MS	20	14	22	56	3.73	93.3%	Very Practical
NKP	18	12	22	52	3.46	86.6%	Very Practical
RAY	18	12	22	52	3.46	86.6%	Very Practical
RL	19	15	23	57	3.8	90	Very Practical
HB	20	15	23	58	3.86	96.6%	Very Practical
RA	19	15	23	57	3.8	90	Very Practical
SA	18	12	22	52	3.46	86.6%	Very Practical
VAP	20	15	23	57	3.8	90	Very Practical
Number					29.37	719.7	
Average					**3.67**	**89.96%**	**Very Practical**

Source: Primary data processing, 2025

Based on Table 17 above, the final average score was 3.67 with a practicality percentage of 89.96%. These figures show that the *e-story book* product developed falls into the very practical category.

Meanwhile, the recapitulation results are presented in Table 2. The following provides an overview of the practicality of the developed product from the perspective of students as respondents.

Table 18. Recapitulation of Practicality Test Results

Aspect	Score Obtained	Maximum Score	Percentage
Media Display	152	160	95
Accessibility	110	128	85.93%
Presentation of Material	180	192	93.75
Average	**147.3**	**160**	**91.55**

Based on the recapitulation results, *the e-story book* obtained an average practicality score of 147.3 out of an ideal score of 160 or 91.55%, which is classified as very practical. The assessment covered

three main aspects: appearance, accessibility, and presentation of material**.** The appearance aspect received a score of 95%**,** indicating an attractive design for students; the accessibility aspect achieved 85.93%**,** indicating that the media was easy to use despite minor obstacles; while the presentation of material aspect received a score of 93.75%**,** indicating that the content of *the e-story book* was in line with students' cognitive development and easy to understand.

Based on the results of small group trials, this study shows that *e-story books* based on *local wisdom* and *ecoliteracy* in reading comprehension learning are very practical and effective. This is supported by the results of a questionnaire given to students. The average student assessment shows a *very practical* category with a score of 95% for media display, 85.93% for accessibility, and 93.75% for material presentation.

3.3 Field Test

Field testing was conducted to determine the effectiveness of learning media in real classroom conditions. The media was applied to all students as research subjects through pretest and posttest administration. The results of data analysis from both tests were used to assess the extent to which the developed media was able to improve student understanding.

The data were obtained from the pretest and posttest results, which were analyzed using the N-Gain calculation to determine the improvement in learning outcomes. The research subjects were 15 fourth-grade students at SDN 2 Ulak Embacang. The instrument consisted of 15 multiple-choice questions, with a minimum passing grade of 70 for Indonesian language. *The pretest* was given before the learning process, while *the posttest* was given after the learning process. The following are the *pretest* and *posttest* results*:*

Table 19. Pretest and Posttest Results

No	Name of Student	*Pre-test*	*Posttest*
1	MS	67	100
2.	RP	67	100
3.	SN	73	80
4.	AR	33	87
5.	MDA	47	100
6.	RA	27	93
7.	RS	53	100
8.	IM	33	93
9.	SY	47	93
10.	YO	33	100
11.	ZA	53	100
12.	FE	33	93
13.	SK	40	100
14.	MA	73	80
15.	MD	33	93
	Total	**712**	**1412**
	Average	**47.46**	**94.13**
	Score ≤70	**86.67**	**0**
	Score ≥70	**13.33**	**100**

Source: Primary data processing in 2025

Based on the data in Table 3, the pretest and posttest results show that all fourth-grade students have achieved the minimum completion criteria (KKM). Before the implementation of learning using *e-story books*, with an average score of 47.46, 86.67% of students had not achieved the KKM, and only 13.33% were declared complete. However, after the implementation of *e- story book* media, there was a significant increase in posttest results with an average score of 94.13. These findings indicate that the use *of e-story books* can effectively improve students' understanding of the material being studied. The following is Table 4, which shows the N-Gain scores calculated for all students.

Table 20. Results of Pretest and Posttest Calculations

No	Name of Student	*Score*		*Posttest - Pretest*	Maximum Score – Pretest	N-gain	Category
		Pre-test	*Post-test*				
1.	MS	67	100	33	33	1	High
2	RP	67	100	33	33	1	High
3	SN	73	80	7	27	0.25	Medium
4	AR	33	87	54	67	0.80	High
5.	MDA	47	100	53	53	1	High
6	RA	27	93	66	73	0.90	High
7	RY	53	100	47	47	1	High
8	IM	33	93	60	67	0.89	High
9	SY	47	93	46	53	0.86	High
10	YO	33	100	67	67	1	High
11.	ZA	53	100	47	47	1	High
12	FE	33	93	60	67	0.89	High
13	SK	40	100	60	60	1	High
14	MA	73	80	7	27	0.25	Medium
15	MD	33	93	60	67	0.89	High
Average		**47.46**	**94.13**	**46.66**	**52.53**	**0.84**	High

Source: Primary Data, processed in 2025

Based on Table 4 above, *the pretest* results *were* 47.46, and *the posttest results were* 94.13 *and* N-gain of 0.84, which is in the high category. This shows that the developed *e-story book* is effective for use in learning. Based on these findings, the researcher concluded that *the e-story book* was able to change the learning outcomes of students who were previously incomplete/needed guidance to very good. The following is a graph of *the pretest* and *posttest* results;

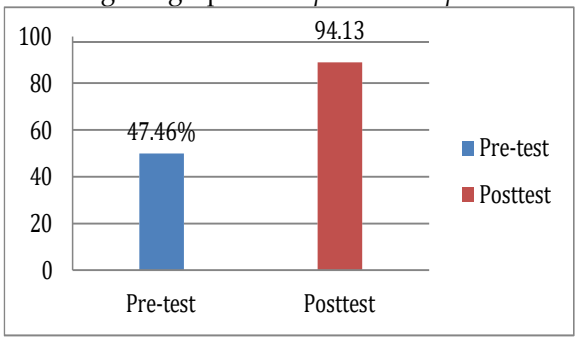

Figure 1. *Pretest* and *Posttest* Results

In the digital era, *e-story books* are an innovation in the form of a digital version of books that are structured to provide an interactive and practical reading experience (Dwi, 2020) . Students also showed high enthusiasm in using this media and actively explored the various features available. These findings are in line with the demands of digital literacy and technological engagement, which are key requirements in 21st-century learning (Ajabshir, 2024)

Recent research shows that the integration of technology in learning, such as the use of Android-based digital books in flexible and effective learning activities, is effective in improving students' reading skills (Muhammad et al., 2017; Retna Safitri et al., 2022).

Furthermore, the rapid development of digital technology also demands continuous updates in the framework and practices of digital literacy in the world of education (Mardiani et al., 2021; Purnomo et al., 2022). A comprehensive understanding of the current state of digital literacy research, including trends, patterns, and insights, is needed to inform future education policies. Digital literacy encompasses not only the use of technology, but also research, analysis, and digital communication skills (Weninger, 2023).

Thus, the development of *e-story book* media is a strategic step in strengthening students' digital competencies. This media not only serves to improve reading skills but also helps students adapt to the demands of learning in the digital age. Research on the development of *e-story books* contributes significantly to educational innovation by providing a more flexible learning process.

3.4 Discussion

The research results showing an increase in reading comprehension skills after using e-story books based on local wisdom and ecoliteracy can be explained through the perspectives of multimedia learning theory, digital storytelling, and contextual learning. The integration of text, images, and visual elements in e-story books helps reduce cognitive load and facilitates more effective information processing, while narratives based on local wisdom make the material more contextual and meaningful for elementary school students. In addition, ecoliteracy content enriches students' understanding by linking the reading material to environmental issues that are close to their lives, thereby increasing engagement and depth of understanding. These findings are in line with the research, (Santika, 2022) which shows that e- story books can increase students' reading interest and comprehension, as well as the study (Gogahu & Prasetyo, 2020) which confirms that local wisdom-based learning strengthens the meaning of learning. However, this study is different because it specifically integrates local wisdom and ecoliteracy into one digital medium and is evaluated using the ADDIE model. Compared to the study (Vina et al., 2023) which focuses on general digital media, this study emphasizes the local cultural context and environmental literacy as pedagogical added value.

Although the results of the study show high effectiveness, there are several limitations that need to be considered, including a relatively small sample size, implementation in only one school in a rural area, the absence of a control group, limited implementation duration, and the use of multiple-choice test instruments. In addition, practical constraints such as limited digital devices, teachers' readiness to utilize technology, and internet/offline access also affected implementation in the field. Therefore, further research should involve a larger and more diverse sample, use a quasi-experimental design with a control group, add retention tests to measure long-term memory, collect qualitative evidence of reading comprehension (e.g., through interviews or analysis of open-ended responses), and test this media at different grade levels and in different regions.

4. CONCLUSION

This study developed an e-story book media based on local wisdom and ecoliteracy for reading comprehension learning in elementary schools using the ADDIE model. The main results show that the developed media is valid, practical, and effective in supporting the improvement of students' reading comprehension skills and fostering environmental awareness through story contexts that are

close to their lives. These findings indicate that the integration of local wisdom and ecoliteracy in e-story books can be an alternative digital teaching material that is relevant, interesting, and meaningful for elementary school students. In practical terms, teachers can adopt this media as a flexible learning resource, both in face-to- face and independent learning, as it helps to link the reading text to students' real experiences and strengthens contextual understanding and environmental conservation values. However, this study has limitations in the form of a relatively small sample size, implementation in only one school, and the absence of a comparison group. Therefore, further research is recommended to involve a larger sample, apply a quasi-experimental design, and add evidence of understanding based on qualitative data at different levels and regions.

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