

CHAPTER III

RESEARCH METHOD

A. Research Design

This study uses a quantitative methodology to investigate how students' reading skills are affected by using the Let's Read website. Quantitative research is suitable for this study because it involves collecting and analyzing numerical data to identify trends and connections (Sukmawati et al., 2023). This study evaluated students' reading abilities both before and after the Let's Read website was implemented using a quasi-experimental framework with a non-equivalent control group design. Formats for pre-test and post-test were employed.

The research was focused on grade VIII at Madrasah Tsanawiyah Pancasila, where students lacked interest in reading. The study included a pre-test, treatment will be using series of narrative text using the Let's Read website, and a post-test to measure improvement. Treatment refers to the intentional intervention administered by the researcher to experimental groups to see their effect on dependent variable (Sugiyono, 2016).

Table 3.1 Quasi-Experimental Design

Group	Pre-Test	Treatment	Post-Test
Experiment Group	Y_1	X_1	Y_2
Control	Y_3	X_2	Y_4

Description:

Y₁ & Y₃: Both groups will take a pre-test to find out if there is a difference between the experimental group and the control group.

Y₂: Post-test in the experimental group after participating in learning using the Let's Read website

Y₄: Post-test in the control group after participating in learning without providing treatment

X₁: Treatment in the experimental group that was given learning using the Let's Read website with small group strategy

X₂: Treatment in the control group that was given the learning without providing special treatment and use conventional learning methods

B. Location and Time of research

1. Location

This study will conduct research at Madrasah Tsanawiyah Pancasila, which is located in JL. Rinjani Kecil, Singaran Pati District, Bengkulu City, Bengkulu.

2. Time

This study was carried out. This study was conducted in the even semester of the 2024/2025 academic year.

C. Population and Sample

1. Population

The total population is about 39 students. The class is VIII A and VIII B, because based on observations the eighth grade is less demanding in reading and this school only has two classes for the eighth grade

2. Sample

A total of 39 students were selected as the study's sample using the total sampling method, conducted during the 2024/2025 school year. In this method, every member of the population is included in the sample (Amin et al., 2023).

Table 3.2 Data of Sample

No.	Gender	Class	
		VIII A	VIII B
1.	Male	12	12
2.	Female	8	6
	Total	20	18
	Main Score	74,2	45,6

Base on the in first semester, treatment class will be in VIII B and the control class will be in VIII A. The class selection was conducted using purposive sampling, as only two classes were available. Since class VIII B had a lower average score than class VIII A, it was assigned as the experimental class to evaluate the effectiveness of the treatment. This follows Hardani et al (2020), who explains that purposive sampling is determined based on specific considerations aligned with the research objectives.

D. Operational Definition of Variable

In research, variables refer to the elements or factors that are investigated to determine their influence or relationship. The specific meaning of the variable in this study is described as follows:

1. Independent variable (X) Let's Read Website

Digital library is used as a media to improve reading ability.

2. Dependent variable (Y) reading Ability

Reading ability measured to quantitatively analyze the effect of using Let's Read website.

E. Collection The Data Technique

The data collection procedure in this study was conducted through narrative text exercises to the research sample, which consisted of eighth grade students of Madrasah Tsanawiyah Pancasila, Bengkulu. Confounding variables are external factors that may affect the research results (Agustina et al, 2024). In this study, the teacher factor was controlled by allowing the researcher to teach both the experimental and control classes so that the differences in outcomes were only caused by the learning media. The tests comprised two main stages: pre-test and post-test.

1. Experiment Group

- a. Pre-Test

The pre-test was administered prior to the treatment or before the students accessed the Let's Read website, aiming to assess their reading ability before undergoing the intervention process.

- b. Treatment

Treatment, this will carry out after the first test with teaching reading using Let's Read as the media

with small group strategy as many as 6 meetings. The treatment class will be in VIII B The learning method used is Literature Circles, which is a collaborative approach that allows students to read the same text, then discuss it in small groups to improve reading comprehension of the text (Julianti t. al., 2018). In this study, the text used was sourced from the *Let's Read website*, a digital platform that provides stories in English that are appropriate to the level of students.

The Process, students will be engaged in activities that encourage them to question, discuss, and investigate the learning topic. Here for the detail:

- 1) **Meeting 1:** Introducing Let's Read website
- 2) **Meeting 2:** Students will comprehend the functionalities of the Let's Read website
- 3) **Meeting 3:** Students will demonstrate the ability to read and comprehend a simple story using the Let's Read website
- 4) **Meeting 4:** Students will demonstrate the ability to read and comprehend a simple story using the Let's Read website
- 5) **Meeting 5:** Students participate in discussions in group, answer questions about the story, use new vocabulary, and write and tell stories

- 6) **Meeting 6:** Students participate in discussions in group, answer questions about the story, use new vocabulary, and write and tell stories

For Duration, the treatment will be 6 meetings because the repetition of the treatment six times is part of replication to ensure more valid and reliable results (Creswell, 2012).

c. Post-Test

And the last post-test, this test is carried out after doing a treat.

2. Control Group

a. Pre-Test

Pre-test, carried out before giving conventional learning methods. The purpose of the pre-test is to assess students' reading ability prior to learning narrative texts.

b. Control

This will carry out after the first test with teaching reading using conventional learning methods as many as 6 meetings. The control class will be in VIII A.

The Process, students will be engaged in activities that encourage them to question, discuss, and investigate the learning topic. Here for the detail:

- 1) **Meeting 1:** Students will comprehend the part of the short story (Narrative text)

- 2) **Meeting 2:** Students will demonstrate the ability to read and comprehend a simple story
- 3) **Meeting 3:** Students will answer quiz to check understanding about story
- 4) **Meeting 4:** Students will answer quiz to check understanding about story
- 5) **Meeting 5:** Students will answer quiz to check understanding about story
- 6) **Meeting 6:** Students will answer quiz to check understanding about story

c. Post-Test

And the last post-test, this test is carried out after doing a treat.

3.3 Comparison Teaching Activities in Experimental and Control group

Component	Class	
	Experimental class (Let's Read website)	Control class (Conventional learning)
Opening	1. The teacher welcomes the students and leads a prayer. 2. The teacher introduces the lesson objectives and Let's Read website. 3. The teacher provides a brief overview of digital reading concepts and its	1. The teacher welcomes the students and leads a prayer. 2. The teacher introduces the lesson objectives.

	advantages and disadvantages.	
Main Activities	1. Introduce Narrative text and explain the structure 2. The teacher explains how to find the website "Let's Read" 3. And then teacher explains how to use and the features in the Let's Read website 4. The teacher and students read together two stories in level 1 and asks students to identify unknown vocabulary 5. Students discuss together what the story is and the moral message	1. The teacher provides a story from book and explains part of the story. 2. Students are instructed to read the story together 3. Teacher read the story and all students read after it 4. Students are tasked with identifying unfamiliar vocabulary. 5. The teacher elaborates on the story's meaning.
Closing	1. The teacher asks students to reflect on the story shown in Let's Read, then reviews characters, plot, new vocabulary, and moral lesson. 2. The teacher ends the lesson by appreciating students' participation in using the digital media.	1. The teacher reviews the text from the textbook and asks about the content and vocabulary learned. 2. The teacher ends the lesson by appreciating students' activeness in class discussion.

F. The Research Instrument

This research used a multiple-choice questions focused on narrative texts test that consisted of 25 question (Sanusi et al., 2021). This test will conduct to see the understanding of students of narrative text structures, themes, character development, and plot analysis (See appendix 2). This test aims to see students' reading proficiency before and after treatment.

The instrument has reviewed by the Reading Skill lecturer and has verified as a valid tool for use in this research (See appendix 9). The instrument has also completed validation with SPSS by conducting validity, reliability, difficulty level, and discriminating power

a. Validation

The validity of the question is used to see which questions are valid and which are not, only valid questions can be used for research purposes. This study uses multiple choice for the research instrument so that it uses biserial point correlation.

After calculating the SPSS, there are 26 questions that have been verified as valid (see appendix 8), which are as follows:

Table 3.4 Data Validation of Test

Test	Number of Items	Criteria
Pre-test	2,3,4,6,7,8,9,10,11,12,13,14,15,16,17,19,20,21,22,24,25,26,27,28,29,30	Valid
Post-test	1,2,3,4,5,6,8,9,10,12,13,14,15,16,17,19,20,21,22,23,24,25,26,27,28,30	Valid

b. Reliability

As indicated by the results of the validity analysis, there are 26 questions that are verified as valid. To see the level of consistency of the questions, it is necessary to test the reliability. For multiple-choice pre-test and post-test questions, $r_{\text{value}} = 0,917 > r_{\text{table}} = 0,456$ so the test instrument is declared reliable (see appendix 8)

c. Difficulty Level

Difficulty level is a measure that shows the extent to which a question item is classified as easy or difficult for test takers (Ramadhan et. al., 2023). By analyzing the questions using the difficulty level, it can make it easier to choose the problem category. The more participants who can answer the questions correctly, the easier the questions are considered to be, and conversely, the fewer people who answer correctly, the more difficult the questions are.

The analysis of the difficulty level of test items is used as a criterion according to Suharsimi Arikunto in the following.

Table 3.5 Difficulty Level Category

Category	Difficulty Level
0,00-0,15	Very difficult
0,16-0,30	Difficult
0,31-0,70	Middle
0,71-0,85	Easy
0,86-1,00	Very Easy

Based on the calculated results of the item difficulty index (see appendix 8), the following results were obtained:

Table 3.6 Data of Difficult Level

Test	Number of Items	Criteria
Pre-test	2,3,6,7,11,19	Easy
	4,8,9,10,11,12,13,14,15,16,17,20,21,22,24,25,26,27,28,29,30	Middle
Post-test	1,5,8,9,12,25	Easy
	2,3,4,6,10,13,14,15,16,17,19,20,21,22,23,24,25,26,27,28,30	Middle

d. Discriminating Power

Item differentiation, as defined by Ropii and Fahrurrozi (2017), is the extent to which a test item can distinguish between individuals with high and low ability participants with high ability tend to give accurate answers, whereas those with low ability do not.

According to Jannah et. al., (2021), Differentiating Power is classified into the following five categories:

Table 3.7 Category of Discriminating Power

Category	Discriminating Level
Excellent	0.71-1.00
Good	0.41-0.70
Satisfactory	0.21-0.40
Poor	0.00-0.20
Rejected	Negative ($<0,00$)

Referring to the results obtained from the item discrimination index analysis (see Appendix 3), the following findings were obtained:

Table 3.8 Data of Discriminating Power

Test	Number of Items	Criteria
Pre-test	4,10,12,13,16,21,26,27,29,30	Excellent
	6,7,8,9,11,14,15,17,19,20,22,24,25,28	Good
	2,3	Satisfactory

Post-test	4,6,10,13,16,20,21,23,24,27	Excellent
	1,2,3,5,12,14,15,17,19,22,25,26,28,30	Good
	8,9	Satisfactory

G. Data Analysis Techniques

1. Normality Test

For parametric statistical tests to be applicable, quantitative data that is measured using interval or ratio scales must be normally distributed. Normality testing was conducted to verify if the data were normally distributed. This study chose the Shapiro-Wilk test because it had a small sample (Ahadi and Zain, 2023).

The following are the Shapiro-Wilk (W) test statistics:

$$W = \frac{(\sum_1^n a_i x_i)^2}{\sum_1^n (x_i - \bar{x})^2}$$

Where:

x_i : the ordered sample values,

a_i : constants derived from the expected values of order statistics,

n : the sample size,

$\bar{x}$: the sample means.

The decision-making process in the Shapiro-Wilk normality test is as follows (Isnaini et. al., 2025):

- If the Sig. value < 0.05, the data is not normal. This means that the data from the pre-test is not normally distributed.

- b. If the Sig. value $> 0,05$, the data is normal. This means that the sample data comes from a normally distributed pre-test.

2. Homogeneity Test

The Chi-square test of homogeneity is employed to assess whether the distribution of a categorical variable remains consistent across two or more populations or subgroups. In other words, this test is carried out to see from several groups of research data that have the same variation or not. The data were considered homogeneous, as indicated by the significance value (Nurhaswinda et. al., 2025).

- a. The significance value $(p) \geq 0.05$, it means that the data groups originate from populations with the same variance (homogeneous)
- b. The significance value $(p) < 0.05$, it means that the data groups originate from populations with different variances (non-homogeneous).

3. Wilcoxon Signed-Rank Test

Since the normality test revealed that some of the data did not satisfy the assumption of a normal distribution, this study used a non-parametric statistical test, specifically the Wilcoxon Signed-Rank Test, to analyze the data (Heryana, 2020). Thus, the test was used to see if the experimental group's reading comprehension had significantly improved

after using the Let's Read application. This test is more appropriate than using a paired sample t-test.

Data processing is carried out using the SPSS program. This statistical test was chosen to assess the effect of the Let's Read application in improving the reading ability of grade VIII students at Madrasah Tsanawiyah Pancasila, Bengkulu, especially in understanding narrative texts.

According to Oyeka and Ebuh (2012), the Wilcoxon Signed-Rank Testuji statistics are as follows:

$$T^+ = \sum_{i=1}^n i \cdot Z_i$$

$$Z = \frac{T^+ - \frac{n(n+1)}{4}}{\sqrt{\frac{n(n+1)(2n+1)}{24}}}$$

Where:

n : A lot of data changes after being treated differently

T^+ : the number of redirects from the negative difference value (if the number of positive differences is greater than the number of negative differences)

4. Mann-Whitney U Test

In the meantime, differences in reading comprehension between the experimental and control groups were analyzed using the Mann-Whitney U test. This test was chosen because the groups were independent, and the purpose was to determine whether

the post-test scores differed significantly after one group received treatment with the Let's Read application. The Mann-Whitney U test is a suitable non-parametric method for independent samples when the data are not normally distributed (Sundjaja & Krishan, 2020). The analysis was conducted in SPSS at a 0.05 significance level, where a p-value below 0.05 indicates a statistically significant difference between the groups, supporting the acceptance of H1 (Qolby, 2020)

The value of Mann-Whitney U statistic is calculated as (Oti et. al., 2021):

$$U_x = n_x n_y + \frac{n_x(n_x + 1)}{2} - R_1$$

$$U_y = n_x n_y + \frac{n_y(n_y + 1)}{2} - R_2$$

Where:

n_x : Total sample x

n_y : Total sample