



CHAPTER III

RESEARCH METHODOLOGY

III.1 Research Design

The design of this research was quasi-experimental research. Gay (2000:367), he states that an experimental research is the only type of research that can test hypotheses to establish cause-and-effect relationships. In Addition, Creswell (2008:299) states that, this research is used when the writer wants to establish possible cause and effect between the independent and dependent variables. The design of this research is quasi-experimental research. Furthermore, Gay (2000:394) states that quasi-experimental design is used when the research keeps students in existing classroom intact and entire classroom are assigned to treatments.

The design of the research can be illustrated as follows:

Table 3.1
Research Design

Group	Pre-Test	Treatment	Post-Test
Experimental group 1	01	X1	02
Experimental group 2	03	X2	04

Figure (Gay, 2000: 353)

EG1 : Experimental group 1

EG2 : Experimental group 2

C : Control Group

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X1 : Independent variable 1 (3-2-1 Strategy)

X2 : Independent Variable 2 (RIDER Strategy)

Y : Dependent Variable (Student's Reading Comprehension)

There were three variables in this research, first is the 3-2-1 strategy and RIDER strategy as independent variable, and dependent variable is students' reading comprehension.

In conducting this research, two classes of the eighth grade at junior high school 1 Benai. The first class was treated by using 3-2-1 strategy and the second class was treated by using RIDER strategy. Their result was compared in order to determine the effect of the treatment.

III.2. The Location and Time of the Research

This research was conducted at Junior High School 1 Benai, which it is located on Benai. The research was conducted on two months March to April 2017.

III.3 The Population and Sample of the Research

1. Population

The population of this research was the eighth grade at junior high school 1 Benai. There are four classes. The total numbers of the eighth grade students were 80 students. The following table is as follow:

Table 3.2
The Total Population of the Eighth Grades at
Junior High School 1 Benai

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No	Class	Students	Male	Female
1	VIII A	20	7	13
2	VIII B	20	10	10
3	VIII C	20	8	12
4	VIII D	20	9	11
TOTAL		80	34	46

2. Sample

Based on the total population, this research used three classes as sample. It was done by using cluster sampling technique. According to Gay (2000: 129), cluster sampling is the most useful when the population is large or spread out over a wide geographic area. It means that sampling in which intact group, not individuals, is randomly selected.

Table 3.3

The Sample of the Eighth Grades at Junior High School 1 Benai

No	Class	Male	Female	Total Number of Students
1	VIII/B	10	10	20
2	VIII/C	8	12	20
3	VIII/D	9	11	20
Total		27	33	60

Based on the table above, classes VIII B was chosen as an experimental group 1 using 3-2-1 strategy and classes VIIC was chosen as an experimental group 2 using RIDER strategy and VIID was taught by using conventional strategy. The teacher of the classroom said that both of class as sample of this research had same capability. Therefore, the writer choosed the class VIII B, VIIC and VIID as sample and they were given pretest to know the homogeneity.

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III.4 Research Instruments

Collecting data is the most important one in research in order to support the research. The data collection technique is apply in order obtain the data. In this case, a test is used as the technique of collecting data. The test was used to determine the students' reading comprehension. The writer gave pretest to students to know their prior knowledge. Then, 3-2-1 strategy was applied in VIII B and RIDER was applied in class VIII C and conventional strategy applied in class VIIID. The posttest also will be given to students to know the effect of 3-2-1 strategy and RIDER strategy. The type of the test was multiple choice tests. A multiple choice was required the students to select a correct answer out of a number of options (Shohamy, 1985:38).

The test was given to the experimental class and control class in order to find out whether there was a significant difference of using 3-2-1 strategy and Read, Imagine, Describe, Evaluate, Repeat (RIDER) strategy on students' reading comprehension and their motivation.

After the students do the test, it was counted the score by using scoring guidance formula:

$$\text{Total Score} = \frac{\text{Correct answer} \times 100}{\text{Total question}}$$

By using the formula above, it was known that the score of students' reading comprehension included in a certain classification of the score. The classification of the students' score shown on suharsimi (2007:245) below:

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Table 3.4

The Classification of Students' Score

Score	Categories
80-100	Very good
66-79	Good
56-65	Enough
40-55	Less
30-39	Fail

The total questions are 20 questions which divided into 5 indicators of reading comprehension. They are identifying the detail information in narrative text, identify the main idea, identify Inference, identify reference, and identify the moral value in narrative text.

III.5. Data Collection Technique

In order to get some data needed to support this research, the strategy of collecting data as following:

1. Observation

Observation is important to know the condition and situation in the classroom. It is used to observe directly the students using 3-2-1 strategy and RIDER strategy in reading comprehension and to observe the influence of 3-2-1 and RIDER strategies toward the



students' ability in reading comprehension. In observation technique, the researcher had a list of observational items to be observed in the class during teaching and learning process.

2. Test

The instrument to collect the data in this research is using the test on students' reading comprehension. Brown (2001:384), states that a test is a method of measuring a person's ability or knowledge in a given domain. The test was used to determine the students' reading comprehension in descriptive text. The type of the test is multiple choice tests which consist of 20 items. Harmer (2001:326) explains that multiple choice questions to test comprehension of the text. It was divided into two kinds of tests; pre-test and post-test.

The pre-test was administered before the treatment and the post-test aimed to find out students' reading comprehension after treatment. During the treatment was given by teaching 3-2-1 strategy and Read, Imagine, Describe, Evaluate, Repeat (RIDER) strategies. This activity was intended to find out the difference on students' reading comprehension in narrative text text that was taught by using 3-2-1 strategy and RIDER strategy.

III.6. Validity and Reliability Test

a. The Validity of Instrument

In general, validity refers to the appropriateness of the test given or any of its component parts as a measure of what it is purposed to measure. It means that the test will be valid to extend the instrument. That is measured what it is supposed to measure. In addition, every test whether it is a short, informal classroom test or public examination should be as valid as test constructor that can make it. The instrument of the test must aim at providing a true measure and useful.



Validity is the most important characteristics of a test or measuring instrument can process. Brown (2001:387), explains that validity is the degree to which the test actually measures what it is intended to measure. Before the test was given to the sample, both of the tests were tried out for students of the eighth grade in junior high school. The purpose of trying out is to obtain validity and reliability of the test.

Harmer (2001:322) says that a test is valid if it tests what it is supposed to test. In other words, Validity is a kind of test to measure what have already taught by the teacher and the teacher wants to know his/her students' ability in that material.

While according to Gay (2000: 161), Validity is the appropriateness of the interpretations made from test score. There are also three kinds of validity; content validity, criterion-related validity, and construct validity.

Before collecting the data, each item of the questions will be tested in order to be ideal to try out. The purpose of the try out is to find out the quality of the test items. Brown (2000; 22) states that a test is a method of a measuring a person's ability, knowledge, or performance in a given domain. Validity is the extent to which inferences make from assessment results which are appropriate, meaningful, and useful in terms of the purpose of the assessment.

The points of difficulty level and discrimination index will be analyzed by using a formula (Heaton, 1975: 178).

$$FV = \frac{R}{N} \times 100\%$$

Where:

FV :The index of difficulty



R : The number of correct answers

N : The number of respondents

b. The Reliability of the Instrument

Reliability is an important characteristic of a good test. In order to calculate the reliability of the test, the mean of the students' scores and the standard deviation are sought. To find out the reliability of the test, the following formula is used; the discrimination index of an item indicates the extent to which the item discriminates between the students, separating the more able students from the less able. The following formula is taken from Heaton (1975: 164) as follow:

$$r_{it} = \frac{N}{N - 1} \left(1 - \frac{m(N - m)}{N(X)^2} \right)$$

Where : $M = \frac{\sum x}{N}$ and $S^2 = \frac{\sum x^2 - \frac{(\sum x_i)^2}{N}}{N}$

r_{it} : Reliability of the test

N : The number of item in the test

M : The mean score of all the test

S^2 : The standard deviation of all the test score

Table 3.5

Criteria Coefficient of Reliability

Coefficient Reliability	Criteria
$0,80 \leq r_{11} \leq 1,00$	Highest reliability
$0,60 \leq r_{11} \leq 0,79$	High reliability

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$0,40 \leq r_{11} \leq 0,59$	Middle reliability
$0,20 \leq r_{11} \leq 0,39$	Low reliability
$0,00 \leq r_{11} \leq 0,19$	Lowest reliability

III.7. Blue Print of The Test and Questionnaire

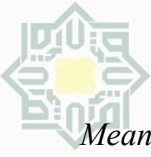
In collecting the data, this research used a test as the instrument. The test is multiple choices. In this case, 3 kinds of test were administered. The first was try out test (given to the other second grade students), the second was pre-test (given to both experimental and control class students), and the last was post-test (given to both experimental and control class students).

The table below shows the blue print of the test.

Table 3.6
Blue Print of Reading Comprehension

No	Indicators	Items Number	Number of Items
1	Identifying Main Idea	1,6,11,16	4
2	Finding Factual Information	2,7,12,17	4
3	Locating the Meaning of Vocabulary	3,8,13,18	4
4	Identifying Reference	4,9,14,19	4
5	Identifying Inference	5,10,15,20	4
	Total Items	20	20

In try out test, the total amount of the questions is 20 questions. They will be divided into five indicators; *Identifying Main Idea, Finding Factual Information, Locating the*



Meaning of Vocabulary, Identifying Reference, Identifying Inference. Each indicator consisted of 4 questions. All of the questions were distributed to the students to be answered.

III.8. Data Analysis Technique

Before analyzing the data to find out the information about students' comprehension and motivation in reading narrative text, it was needed to examine the *requirement test* (homogeneity and normality of the data). The test of homogeneity was used to examine whether the variance of population was similar or not, meanwhile the test of normality is used to investigate whether the population was distributed normally or not. The data for requirement test were taken from pre-test score of students.

1. Independent sample t-test

To find out whether there is a significant difference or there is no significant difference between two or more variables can be analyzed by using an Independent Sample Ttest. Gay (2000) adds that the t-test for independent sample is used to determine whether there is probably a significant difference between the means of two independent samples. Independent sample t-test is used to find out the results of the first and seventh hypotheses.

They are as follows:

- a. To find out whether there is any significant difference on students reading comprehension before giving the treatment by using 3-2-1 Strategy and RIDER strategy for the experimental class and non-treatment for the control class.
- b. To find out whether there is significant difference on students' reading comprehension after giving the treatment by using 3-2-1 strategy and RIDER strategy for the experimental class.

To analyze the final-test scores of the experimental group, the following formula is used:



$$t = \frac{M_X - M_Y}{\sqrt{\frac{(SD_X)^2}{N_1 - 1} + \frac{(SD_Y)^2}{N_2 - 1}}}$$

Where:

- T = The value of comparing two means
- M_X = Mean of the score in pre-test
- M_Y = Mean of the score in post-test
- SD_X = Standard deviation of experimental group
- SD_Y = Standard deviation of control group
- N_1 = Number of the sample in pre-test
- N_2 = Number of the sample in post-test
- 1 = The constant number

The t-table has the function to see if there is a significant difference between the mean of the score of both experimental and control groups. The t-obtained value is consulted with the value of the t-table at the degree of freedom (df) = (N1+N2)-2 which is hypothesized

$H_a: t_o > t\text{-table}$

$H_o: t_o < t\text{-table}$

H_a is accepted if $t_o > t\text{-table}$ or there is effect after giving the treatment of 3-2-1

Strategy and RIDER Strategy on students' reading comprehension.

H_o is accept if $t_o < t\text{-table}$ or there is no effect after giving the treatment 3-2-1 strategy and RIDER strategy on reading comprehension.

Afterward, it is better to find the effect size of T-test by following formula:

$$\tilde{\eta}^2 = \frac{t^2}{t^2 + n - 1}$$

$$\text{eta squared} = \tilde{\eta}^2 \times 100\%$$

Where:

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η^2 : Coefficient effect

$\tilde{\eta}^2$: Coefficient

2. Paired Sample T-Test

Non-independent sample t- t_{est} is known also as Paired-Sample t_{est} . The researcher uses this formula to obtain the result of the seventh, eleventh and ninth hypotheses that is to find out whether there is significant effect of using 3-2-1 strategy, RIDER strategy in teaching technique on students' reading comprehension SMP N1 Benai. L.R Gay states that t-test for non-independent sample is used to compare groups that are formed by some types of matching or to compare a single group's performance on a pre-test and post-test or on two different treatments. (L.R Gay, 2000: 488).

Pre-test and post-test scores were used in the experimental class in order to find the significant effect of using 3-2-1 strategy and RIDER strategy on students' reading comprehension of SMP N1 Benai. To obtain the data, SPSS 20 was used.

The formula of paired-sample t_{est} :

$$t = \frac{\bar{D}}{\sqrt{\frac{\sum D^2 - \frac{(\sum D)^2}{N}}{N(N-1)}}$$

D : Gain Score ($D=X_2-X_1$)

The t-table has the function to see if there is a significant improvement among the mean of the score of both pretest and posttest. The t-obtained value is consulted with the value of t-table at the degree of freedom (df) = $N-1$ which is statistically hypothesis:

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Ha: to > t-table

Ho: to < t-table

Ha is accepted if to > t-table or there is a significant effect after giving the treatment 3-2-1 strategy and RIDER toward students' reading comprehension at SMP N1 Benai.

Ho is accepted if to < t-table or there is no significant effect after giving treatment 3-2-1 strategy and RIDER toward students' reading comprehension at SMP N1 Benai.

Afterward, it is better to find the coefficient effect of T-test by following formula:

$$\eta^2 = \frac{t^2}{t^2 + n - 1}$$

$$kp = \eta^2 \times 100\%$$

Where:

kp : Coefficient effect

η^2 : Coefficient

Notation η^2 = Eta square

The effect size can assist between 0 to 1. According to Cohen (Cohen, Manion, and Morrison: 2007 p.521) the category of effect size is as follow:

0-0.20 = weak effect
0.21 – 0.50 = Modest effect
0.51- 1.00 = moderate effect

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> 1.00 = Strong effect



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