

CHAPTER III

RESEARCH METHOD

A. Research Design

The research design in this study was a quasi-experimental, quasi-experimental is the researcher use control and experimental groups but did not randomly assign participants to groups. Researchers used quantitative research with experimental research methods. There are three kinds of quasi-experiments; Control Group Interrupted Time Series Design, and Unequal Control Group (Pre-Test and Post-Test). The research design use is a pretest and posttest control group design. (Not equal). This study use two groups, namely the group that received treatment using the jigsaw technique called the experimental class while the other group is the control group that did not receive treatment (without using the jigsaw technique). To test the ability to read comprehension, each group take the same test, namely pretest and posttest.

Subjects were given pre-test and post-test reading comprehension to determine their achievement between students who are taught with the jigsaw technique and students who are taught without using the jigsaw technique. The results of this study are to compare students who are taught with the jigsaw technique and students who are taught without using the jigsaw technique.

Table 3.1: Research Design Pretest Posttest Control Group Design

Group	Pre-test	Treatment	Post-test
Experiment	0 ₁	X	0 ₂
Control	0 ₃	-	0 ₄

Note:

- X Treatment "Teached with the jigsaw technique"
 - Taught who are not by using the jigsaw technique
 0₁ (Reading Comprehension) experimental group pretest "*before treatment*"
 0₂ (Reading Comprehension) experimental group posttest "*after treatment*"
 0₃ (Reading Comprehension) control group pretest "*without treatment*"
 0₄ (Reading Comprehension) control group posttest "*without treatment*"

B. Place and Time of the Study

This research conducted on class VIII students of Junior High School 45 Mukomuko which is located Jl. Lintas Bengkulu-Padang Desa Bunga Tanjung, Kec. Teramang Jaya. Kab. Mukomuko. This research started on October 31st and ended on December 01st 2024.

C. Population and Sample**1. Population**

The population of this research was class VIII students SMP N 45 Mukomuko which is divided into two classes. In this class, the number of students as many as 64 students. To know clearly about the population, that is can be seen in the following table:

Table 3.2 Total Population

No	Class	Total
1	VIII A	32
2	VIII B	32

2. Sample

According to Sugiyono (2019) the sample is part of the number and characteristics possessed by the population, the sample taken from the population must be truly representative or represent the population under study.

This study uses a sampling technique, namely saturation samples because the entire population is sampled. The sample in this study were the entire population in this study, because in this school there are only two classes VIII A and class VIII B.

D. Instrument

The instrument used in this study was reading comprehension test of students in learning English. In this study, the researcher was used an instrument in the form of a test which is use as a tool to collect data learning outcomes data in the form of multiple choice questions. This test was an objective test with four alternative answers. The scoring system use is objective scoring. If the answer matches the answer key, the score is one (1). If the answer does not match the answer key, then the value is zero (0). Every Items require only one answer. The test is given before the experiment and after the experiment. The test instrument is obtained from the results of the instrument test has previously been done on classes outside the sample, later. the preparation of the instrument is adjusted to the level of student ability, in particular VIII grade students of Junior High School 45 Mukomuko.

1. Test

The reseacher used pre-test and post-test in this research. The test used by reseacher is recount text to find out the result of students' reading comprehension of recount text. The pre-test conduct before impelementing jigsaw technique to see how far they know about recount test. While post-test were conduct after implementing jigsaw technique to know how their improve reading comprehension of recount text use jigsaw technique.

Table 3.3 Blue Print of Reading Comprehension Test

No	Indicator	Number	
		Pre-Test	Post-Test
1.	Identify the meaning of the main idea in the recount text	1,6,11,16,21,26	1,6,11,16,21,26
2.	Identify the information in a recount text	2,7,12,17,22,27	2,7,12,17,22,27
3.	Identify the purpose of the recount text	3,8,13,18,23,28	3,8,13,18,23,28
4.	Identify the generic structure of recount text	4,9,14,19,24,29	4,9,14,19,24,29
5.	Understanding the meaning of difficult vocabulary in recount text	5,10,15,20,25,30	5,10,15,20,25,30

E. Technique of Data Collection

The data were collected by using pre-test and post-test. Pre-test will be giving before treatment in order to know and measure background knowledge of students related to recount text. The test give to both experimental and control class. Moreover, after giving pre-test, treatment implement to experimental class in order to teach recount text. The given treatment implement Jigsaw strategy for about 4 times. During treatments, control class taught recount text with no any treatment as experimental class. After giving some treatments, post-test was given in order to measure the ability of students after given different treatments to experimental and control class. After that, the result of pre-test and post-test compare in order to recognize whether Jigsaw technique is effective on students' ability of reading comprehension recount text.

F. Technique of Data Analysis

The test used by the author in collecting data. Data from the test was obtained to determine the results of students' reading comprehension skills using the jigsaw technique applied in the experimental class, then without the jigsaw technique in the control class. In this study, the authors use a T-test to determine the difference in student scores taken from the pre-test and post-test in the experimental class and the control class. Before calculating the T-test, the author first conducted a normality test and homogeneity test. In addition, the author uses SPSS for Windows software to analyze the normality test and homogeneity test (Garth, 2008).

1) Testing Requirement

a) Normality Test

Normality test serves to determine whether the research data is normal or not. In this study, the normality test is carried out on the pretest and posttest experimental class and control class. Normality test in This study uses the Kolmogorov Smirnov statistical test with an index of 0.050. The assessment criteria are if the significance is greater than 0.05 ($p > 0.05$) it can be concluded that the data is normally distributed. If the significance is more smaller than 0.05 ($p < 0.05$) it can be concluded that the data comes from a population that has distribution is not normal. Testing the normality of the data is done by using SPSS 25 computer program assistance.

b) Homogeneity Test

The homogeneity test is intended to determine the similarity of several sample, that is, whether or not the samples taken from the same population are uniform same. The data requirements are said to be homogeneous if the

significance level of the two groups is greater than 0.05 ($p > 0.05$).

Homogeneity test in this study using SPSS 25 computer program help

c) T-test

T-test is used to test the significance of the mean gained score of the experimental and control Class. Here the formula for the manual calculation could be describe as Sudjiono stated that the formula of t-test as follow:

$$t_o = \frac{M_1 - M_2}{SEM_1 - M_2}$$

Notes:

t_o = The value of “t observe”

M_1 = Mean of Variable X (Experimental class)

M_2 = Mean of Variable Y (Controlled class)

SEM_1 = Standard error of experimental class

SEM_2 = Standard error of controlled class

There are several stages taken to get the calculation of t-test, it can be seen as follow:

1. determining mean of variable X:

$$M_1 = \frac{\sum X}{n}$$

2. determining mean of variable Y:

$$M_2 = \frac{\sum Y}{n}$$

3. Determining standard of deviation score of variable X:

$$SD_1 = \sqrt{\frac{\sum X^2}{n}}$$

4. Determining standard of deviation score of variable Y:

$$SD_2 = \sqrt{\frac{\sum Y^2}{n}}$$

5. Determining standard error of mean of variable X:

$$SE_{M1} = \frac{SD_1}{\sqrt{N_1 - 1}}$$

6. Determining standard error of mean of variable Y:

$$SE_{M2} = \frac{SD_2}{\sqrt{N_2 - 1}}$$

7. Determining standard error of difference of mean of variable X and Y:

$$SE_{M1} - M_2 = \sqrt{SE_{M1}^2 + SE_{M2}^2}$$

8. Determining t_0 :

$$t_o = \frac{M_1 - M_2}{SE_{M1} - SE_{M2}}$$

9. Determining table in significant level 5%, with degree of freedom:

$$df = (N_1 + N_2) - 2$$

Specification:

M_1 = The mean of gain score of experimental class.

M_2 = The mean of gain score of controlled class

$\sum X$ = The total score of experimental class' gain score

$\sum Y$ = The total score of controlled class' gain score

$\sum X^2$ = The total of experimental class' gain score minus M^1 .

$\sum Y^2$ = The total of controlled class' gain score minus M^1 .

SD_1 = The standard deviation of gain score of experimental class.

SD_2 = The standard deviation of gain score of controlled class.

SE_{M1} = The standard error mean of experimental class.

SE_{M2} = The standard error mean of controlled class

N_1 = The total number of students in experimental class.

N_2 = The total number of students in controlled class.

