

CHAPTER III
RESEARCH METHOD

A. Research Design

This research is a quantitative approach. True to its name, it is widely used with numbers. According to Hamdi (2014) “Penelitian kuantitatif menekankan fenomena-fenomena objektif dan dikaji secara kuantitatif. Maksimalisasi objektivitas desain penelitian ini dilakukan dengan menggunakan angka-angka, pengolahan statistic, struktur dan percobaan terkontrol”. This research is designed to be Quasi Experiment research, quasi-experiment design focuses on treatment and outcome, hence the data are taken from pre-test and post-test in order to know whether the use of Thinking Maps is effective than reading guide in improving students’ reading comprehension on narrative text or not. In this research, there were two kinds of classes. They were experiment class which used Thinking Maps technique and controlled class without using Thinking Maps technique as seen in following table.

Table 3.1. Pretest-Posttest of Experiment and Control Group Design

R	Experiment	O1	X	O3
R	Control	O2	-	O4

Description:

(R): The Group is selected by purposive sampling

(X): Treatment or treatment for experimental group in using the media.

(O1): Pretest which is given before treatment of Experiment class.

(O2): Pretest which is given before treatment of Control class.

(O3): Posttest which is given after treatment of Experiment class.

(O4): Posttest which is given after treatment of Control class.

In this research design, there was two classes chosen by purposive sampling, than given a pretest to knew the different' scores between the experiment group and the control group.

A. Research Setting

This research took place at Eighth grade which consist of seventh classes they were VIII A, VIII B, VIII C, VIII D, VIII E, VIII F, and VIII G. In this research focused on VIII F and VIII G. The teacher's name was Eka Mardewiwayat, S.Pd. She was taught in VIII F and VIII G of MTs Muhammadiyah 3 Al Furqan at Jl. Cemara Ujung No. 37 Rt. 15 Banjarmasin Kecamatan Banjarmasin Utara, Kota Banjarmasin, South Borneo.

C. Population and Sample

a. Population of the Research

A population is a group of elements or cases, whether individuals, objects, or events, that conform to specific criteria and to which the results of the research

are generalized Romli (2014). In this case, the population of this research is the Eighth Grade students of MTs Muhammadiyah 3 Al Furqan consisting of 213 students as seen in the next table.

Table 3.2. The Distribution of Eighth Grade Students of MTs Muhammadiyah 3 Al Furqan

No	Class	Male	Female	Total
1	VIII A	19	12	31
2	VIII B	19	10	29
3	VIII C	18	11	29
4	VIII D	18	12	30
5	VIII E	17	14	31
6	VIII F	8	24	32
7	VIII G	17	14	31
Total		116	97	213

b. Sample of the Research

The sample is a part of the population that has the same characteristics. The sample can be the population itself. According to Sugiyono (2012), sample is part of the numbers and characteristics of which are owned by the population. In

this research, the researcher used purposive sampling. Purpose sampling was determining based on certain all of consideration. The researcher had two classes as sample. They were class VIII F as the sample of Experiment Class and VIII G as the sample of Control Class with the total 63 students. The researcher chose VIII F as Experiment Class and VIII G as Control Class based on observation when teaching practice in MTs Muhammadiyah 3 Al Furqan and the researcher teaching practice of both classes, based on observation and the score of students they did not had different levels or abilities, It means that there was no difference if VIII F as the Experiment Class and VIII F as Control Class or vice versa. That can be seen in the following table.

Table 3.3. Distribution Frequency of Student Sample

No	Class	Male	Female	Total
1	VIII F	8	24	32
2	VIII G	17	14	31
Total		25	38	63

D. Research Instrument

Instrument is an important part in the research to collect data. The results of the study depend on the validity of the instrument being stipulated. To know

the effectiveness of Thinking Maps in this quantitative research, the researcher used test as the instruments to get the data through multiple choice. There were two kinds of test used, pre and post-test.

a. Pre-test

Pre-test was conducted in both classes, experiment and control class, in order to know the students scores in reading comprehension before treatment given. The test consists of 20 questions and the type is multiple choice.

b. Post-test

Post-test was given after the researcher gave treatment to know whether it happened the change, improvement on students scores in reading or not. The test consists of 20 questions and the type is multiple choice.

E. Data Collection Procedure

The data was collected from instrument as follow:

- Test

Test was given to students for measuring the ability of students in reading comprehension. The data were submitted from pre-test before doing a treatment to see how far the students ability in reading comprehension and then compared to the result of pos-test to see the improvement of students scores.

F. Data Analysis Procedure

After the test was given to the students in the pre and post-test, the results were then tested by normality test and homogeneity test in SPSS 22. Having

analyzed the assumption testing and hypothesis testing, the researcher will know whether she has to use parametric test or non-parametric test.

Considering that parametric test should be used, the following steps are important.

1. Normality Test

Normality test is used to know whether the data come from the normal distribution or not. In this study, the researcher tends to use SPSS version 22 to find out the normality of the data.

There are some outputs of test normality in SPSS 22 program such as Shapiro Wilks, Kolmogorov and Liliefors. In this research, researcher used it because Shapiro Wilks used on the sample $50 (< 50)$, moreover Kolmogorov Smirnov and Liliefors used on the sample < 100 . This conform to the requirement of the researcher's sample because the sample < 50 .

The criteria of determining the normality of the data were:

Hypothesis:

Ha: the data distributed normally

Ho: the data are not distributed normally

- a. If t value was smaller than t table ($t \text{ value} < t \text{ table}$), it means that Ha was accepted and Ho was rejected
- b. If t value was greater than t table ($t \text{ value} > t \text{ table}$), it means that Ha was rejected and Ho was accepted

2. Homogeneity Test

Homogeneity test is used to know whether the data come from the homogeneous variance or not. To calculate the data, the researcher used SPSS version 22.

Liliefors test of homogeneity was used to analyze two independent data that they are homogeneity or not. Furthermore, it is the requirement test for parametric test. Homogeneity test used after the data had been analyzed by normality test and if the distribution of data is normal, the homogeneity test should be done to continue the next step. But, if the result of normality test is not normal, the homogeneity test can be not used, so the non-parametric analysis was only used. According to Raharjo (2016), in statistic non-parametric analysis that the variant of data can be homogeneity or not, but it is not a problem in paired sample test.

The criteria of determining the homogeneity of the data were:

Hypothesis:

H_a : the data distributed homogeneity

H_o : the data not distributed homogeneity

- a. If t value was greater than t table ($t \text{ value} > t \text{ table}$), it means that H_a was accepted and H_o was rejected
- b. If t value was smaller than t table ($t \text{ value} < t \text{ table}$), it means that H_a was rejected and H_o was accepted

After testing the normality and homogeneity of the data, the researcher used t-test to analyze the data by using comparative technique between the control and experiment class. The score of experiment class and control class in pre-test

and post-test will be compared. This technique is very effective to show the result statistically, that later showing of the effective strategy or not in improving reading comprehension.

3. Statistical Hypothesis

A hypothesis is a tentative statement about the relationship between two or more variables. This research is designed to find out whether there is progress of using Thinking Maps on students' reading achievement. In order to get the answer of that hypothesis, the researcher proposed Alternative Hypothesis (H_a) and Null Hypothesis (H_0) which is described to the following statistical hypothesis.

1. $H_0 = \text{If } t_{\text{test}}(t_{\text{count}}) < t_{\text{table}}(t_t) \text{ in significant degree of } 0,05$
2. $H_a = \text{If } t_{\text{test}}(t_{\text{count}}) > t_{\text{table}}(t_t) \text{ in significant degree of } 0,05$

Meanwhile, the degree of freedom (df) = $N - 1 = 29 - 1 = 28$. It must be consulted with t-table of df . If df is 28, the value of the significance level 5% is 2,05.