CHAPTER III

RESEARCH METHODOLOGY

G. Form of Research

The researcher used a pre-experimental design and as the research procedure, the researcher employed one group as experimental group. This design did not have a control group to compare with the experimental group. According to Cohen, Manion, and Morrison. (2007:212) "reports about the value of a new teaching method or interest aroused by some curriculum innovation or other reveal that a researcher has measured a group". In order to know whether the students' interval score between pre-test and post-test in teaching narrative text by using Magnet Summaries strategy is effective or not. The researcher compared the students' score in pre-test and post-test. This comparison is to reveal the use of Magnet Summaries strategy did influence the students' Reading Comprehension. The form of pre-experimental study which researcher applied can be seen below.

Table 3.1
One group Pre-test and Post-test design

Pre-test	Treatment	Post-pest
O1	*X*	*O2*

Taken from Cohen, L. Manion, L. And Morrison K 2007:282)

Notes :
O1 : *Pre-test*
X : *Treatment*
O2 : *Post-test*

Based on the design illustrated above, *O*1 is applied to measure the students means score before giving the treatment. Then *X* is represented as the

treatment. *O*2 is applied to measure the students' achievement after the treatment that given. In this research, a pre-experimental design does not have a control group. Compare pre-test and post-test to determine how far the students' intervals score of pre-test and post-test.

H. The Site of Research

The researcher chose SMP Muhammadiyah 1 Pontianak as the site of the research in researching the effectiveness of Magnet Summaries Strategy to teach Reading Comprehension on Narrative Text. SMP Muhammadiyah 1 Pontianak is located on Jendral Ahmad Yani Street. The researcher chose this school because of its accessibily for the purpose of the research. The idea of "accessibily" is supported by Cohen, Manion, and Morrison (2007:100) suggested that there are four key factors in sampling the first one is sample size, the second one representativeness and parameters of the sample, the third one is access to the sample and the last one is the sampling strategy to be used.

1. Population

Population is the group of students that researcher was going to generalize. The population in this research is all of the eight grade students of SMP Muhammadiyah 1 Pontianak in academic year 2015/2016. The total populations are 62 students divide into three classes:

VIII A	: 22 Students	
VIII B	: 21 Students	
VIII C	: 19 Students	+
Total population	: 62 Students	

2. Sampling

The sampling technique utilized in this research was Cluster random sampling. This sampling technique is one of the Probability types of sampling where the samples are taken randomly from the population itself (Cohen, Manion and Morrison 2007:110). Furthermore, According to McMillan (1996:90) states that "Cluster sampling involves the random selection of naturally occurring groups or areas and then the selection of individual elements from the chosen groups or areas." In other words, the researcher had to choose a classroom randomly and that classroom served as the sample of this research. These are some procedural that researcher makes to take the sample, as below:

1. The writer named each class in a paper. The classes are VIIIA, VIIIB, and VIIIC.
2. All of the papers put into a can then shakes until out of one from three roll paper.
3. A paper that out will be chosen class as representative students' for a sample in this research which class will be given the treatment as experimental group.

After going through the process of selecting the sample for this research; the students of eight grade C of SMP Muhammadiyah 1 Pontianak is chosen to be the sample of this research. The class

consists of 19 students in total. In other words, the students in class VIII C is acceptable as the participant of this research.

I. Technique of Collecting Data

The tool to collect the data that the researcher was used multiple choice test. Firstly, the researcher conducted the pre-test before the treatment to know the students' basic knowledge of narrative. Secondly, the researcher conducted the post-test after the treatment given to the students to know the achievement of the treatment.

The technique of data collecting for this research is a measurement technique used by the researcher for the data collecting purpose. Furthermore, Creswell (2012:623) states that "Measurement means that the researcher observes and records the scores on an instrument." Also, in this research the researcher measures the performance of the sample by utilizing a pre-test and a post-test in form of achievement test (Creswell 2012:151).

J. Instrument of Data Collecting

The instrument that was used in this research was multiple-choice test. The researcher used multiple choices question with chooses the correct answer, the total number of question is 50 items. The process of collecting the data was during the treatment and post-test that was given to the participants. As for the validity and reliability, the description was as follows:

1. Validity Test

Validity is an essential key to show if in a research is effective or not. According to Haladyna and Thomas (2004: 9), "validity is the degree of support enabled by the logical argument and validity evidence upholding this argument". The validity test was be used to measure the test itself by the supported evidence. The validity that was used in this research is content validity. In this research, the researcher used expert jugdement from the lecturer. Then, researcher asked the expert to give suggestion, evaluation, and also modification to re-make the instrument.

2. Reliability test

After the researcher found the validity of the test, then the researcher measured the reliability. Reliability test is a way to show that the instrument can be used to collect the data. Based on Muijs (2004 : 71), "Reliability then refer to the extent to which test scores are free of measurement error". In this research the researcher used the formula of alpha in computing all items in estimating the reliability of the test. The process is computing by SPSS program deployed internal cosistency method which is facilitated by conbrach's Alpha formula. To calculate the reliability, the researcher used Cronbach's Alpha. The formula given is:

$$alpha = \frac{nr_{ii}}{1 + (n-1)r_{ii}}$$

(Taken from: Cohen Manion & Voegtle, 2007:506)

Where:

n = The number of items in the test

r_{ii} = The average of all the inter-item correlated

For the alpha coefficient the following guidelines are:

Table 3.2
Guidelines of Alpha Coefficient

Alpha	Classification
>0.90	Very high reliable
0.80 – 0.90	Highly reliable
0.70 – 0.79	Reliable
0.60 – 0.69	Marginally/minimally reliable
<0.60	Unacceptably low reliable

Taken from Cohen, Manion and Morrison (2007:506)

K. Technique of Data Analysis

In order to analyze the data, the researcher would search for students' individual score, mean, and the deviation score of pre-test and post-test are calculated as follow:

1. The students' individual score of pretest and posttest

Before counting the mean score the researcher calculated the individual score from the test by using the formula below:

$$\frac{A}{N} \times 100$$

Cohen, Manion and Morison (2007:423)

Where:

A = the number of students who answered the item correctly;

N = students who attempted the item

The maximum score for the test is 100 and to calculate it the true answer of the test is multiplied by 100 and then divided by the total number of test items (50).

2. The students' pre-test and post-test mean score

The students' mean score of pretest and posttest are calculated by using the mean formula:

$$\bar{X} = \frac{\sum X}{N}$$

(Ary, Jacobs, Sorensen and Razavieh, 2010 :108)

Where:

$\overline{X}$: The mean score of students

$\sum X$: The sum of individual score

N : The total number of students who took the test

3. The Students' Pre-test and Post-test Deviation Score

Deviation score is a score expressed a distance from the mean. This formula is used to calculate the deviation score:

$$SD = \sqrt{\frac{\sum d^2}{N-1}}$$

(Cohen, Manion and Morrison 2007: 512)

Where :

d^2 : The deviation of the score from the mean pre-post test (squared)

Σ : The total value of

N : The total number of students who took the test

4. Normality Test

Normality test was one part of data analysis test requirement. It meant that before the researcher did the research analysis, the data must verify the data, it was normal distributed or not. If the test was normally distributed, the researcher used non-parametric test. In order to analyze normality, the researcher used SPSS to find the result..

5. Effect Size

According to Cohen, Manion and Morrison (2007: 293) "effect size is a measure of the degree to which a phenomenon is present or the degree to which a null hypothesis is not supported." The formula of effect size for one group pre-post test that will be applied in this study is:

$$d_{Rm} = \frac{\overline{x_2} - \overline{x_1}}{Sd}$$

Note:
d_{RM} = degree of repeated measure
S_d = standard deviation
x_2 = pre-test
x_1 = post-test

An effect size can lie between 0 to 1 (some formula yield an effect size that is larger than1). In using Cohen's *d*:

0–0.20	= weak effect
0.21–0.50	= modest effect
0.51–1.00	= moderate effect
>1.00	= strong effect

Cohen, Manion and Morrison (2007:521)

L. The Procedures of the Research

Before conducting the research, a procedure is necessary to assure that the research is on the track and systematic way to achieve maximum efficiency over time and precision of the research. Furthermore, Creswell (2003:22) states that: "Because quantitative studies are the traditional mode of research, carefully worked out procedures and rules exist for the research." In other words, a systematic step in conducting the research is necessary to maintain precision and time efficiency of the research. The researcher conducted a research on implementing Magnet Summaries strategy and to see the effect of that strategy toward the students' reading comprehension. The procedures of the research are as follow:

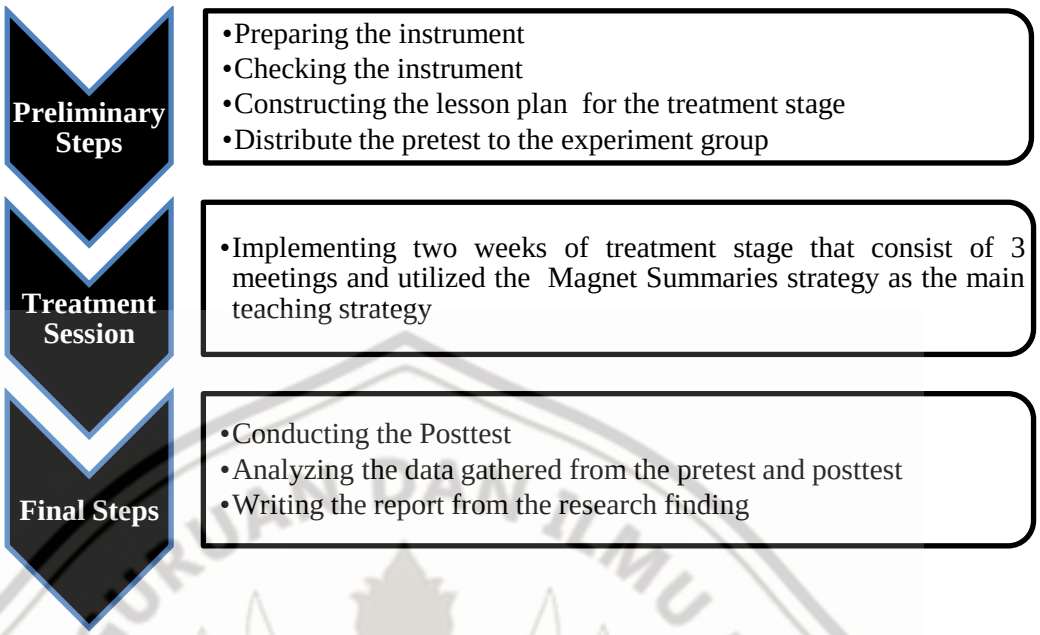

Figure 3.1 Procedures of the research

Detailed explanation over the table above is shown as follow:

a. The first step is preparing Instrument. In this step the researcher designs instrument for test to the eight grade student in SMP Muhammadiyah 1 Pontianak.

b. Second, after preparing the instrument, researcher ask the expert to give suggestion, evaluation, and also modification to re-design the instrument

c. Third, after the researcher finishes the instrument. The next thing is to do design lesson plans. The researcher designs one lesson plan for three meetings. These three meetings are also known as the treatment stage. Lesson plan is another important instrument in this research, it acts as the teaching guide for the researcher in delivering the treatment to the sample.

d. Fourth, after the previous steps have been done the researcher then moves to the next stage of distributing a pretest to the sample of the research. The

pretest data used as a baseline data for this research and to see the square one condition of the sample of this research.

e. Fifth, after calculating the data from the pretest, the researcher implemented the treatment for three times in two weeks. The first week there was only one meeting, and another week was used to conduct the pretest and in order to guide the researcher to maximize the treatment stage. The researcher used the previously constructed lesson plans to maintain accuracy over the treatment stage.

f. Sixth, after two weeks of treatment the researcher utilized a post test to gather the post treatment stage data, in order to be analyzed.

g. Lastly, after the whole steps had been conducted the researcher then analyzed the data to answer the research question and to figure which hypothesis was accepted.