Chapter Three

Methodology

This chapter discusses the methodology that is used in this study. The first part is the research design. The next are the research setting, the research population and sample. After that, it explains the data collection method, and data collection procedure starting from determining the participants until the process of collecting data. The last part of this chapter explains the data analysis used in this research.

Research Design

The main purpose of this study is to explore the effectiveness of using reciprocal teaching technique in improving reading comprehension especially in comprehending narrative texts. It means that the study explains further about the effectiveness of using reciprocal teaching technique in improving students reading comprehension to comprehend narrative texts. Based on the main purpose of this research the appropriate research design is quantitative research and more specific this study uses experimental research.

Creswell (2012) state that "quantitative research identifies a research problem based on trends in the field or on the need to explain why something occurs" (p. 13). The researcher chose this research design since quantitative research design focuses on measuring social reality. In quantitative research, the researcher collected numerical data and then the researcher analyzed the data using SPSS. Furthermore, there are some advantages of quantitative research design. First, quantitative research is useful to explain a phenomenon. It is also useful to quantify opinions, attitudes and behaviors. The researcher knows that difficulties in reading comprehension is one of the

phenomena. Thus, quantitative research is suitable for explaining phenomena in this research because quantitative reseach is to test theories or hypotheses in this research.

Regarding quantitative research, to be more specific the researcher used experimental research design. Experimental research was an appropriate research design for this research because the objective of this study was to test the effectiveness of using reciprocal teaching technique in improving reading comprehension especially in comprehending narrative texts at SMP Muhammadiyah 1 Gamping. Creswell (2012) state that experimental research is one of the ways to investigate the deliberation of control, to manipulate the conditions which determine the events that they are interested in, and to introduce the intervention or measure the difference that it makes. Cresswell also elaborates the characteristics of experimental research namely to randomize the assignment, to control over variables, to manipulate the conditions of treatment, to measure the outcome, and to compare between two or more groups.

Research Setting

This research was conducted at SMP Muhammadiyah 1 Gamping. The school is located on Jl. Wates KM 6 Depok, Ambarketawang, Gamping, Sleman, Yogyakarta. The research was conducted here because of two reasons. The first reason is the researcher was doing internship program at SMP Muhammadiyah 1 Gamping. The second reason is that most of the students have low scores in reading. Thus, these were the considerations of the researcher to conduct this research there. The research was conducted around February and March 2017 since in that time, narrative was taught based on the school curriculum.

Population and Sample

According to Arikunto (2006), population is all of the subjects who will be researched. Ross (2005) also mentioned that the definition of population is limitation area which is composed of specific elements that meet the requirements that have been selected. The specification helps the researcher to determine whether the elements are included or not in population.

In this research, the population was all of the students in grade VIII at SMP Muhammadiyah 1 Gamping since in this grade narrative text was taught. The batch was divided into four classes; they were A, B, C, and D classes. Each class consisted of thirty-six students, with a total population of students are 144 students.

According to Arikunto (2006), the sample is part of the population that the researcher will research in a study. The samples in this study were VIII B class and VIII D class at SMP Muhammadiyah 1 Gamping; it determined randomly. In determining the samples the researcher was rolling a dice in which a dice have 1 to 6 numbers. Number 1 for A class, 2 for B class, 3 for C class, 4 for D class, and number 5, 6 did not used. Each class consisted of 36 students comprising of 22 males and 14 females as proven by students' attendance list. Thus, the total of all the participants in this research were 72 students. Then the participants were divided into two groups, that is experimental group (n=36) and control group (n=36). The participants of experimental group were the students from D class and the participants of the control group were from B class. The researcher choosed experimental group from D class based on the result of rolling a dice. Thus, the sample of this study was chosen by random sampling.

In conclusion, there were two groups in this reaserch. The first was experimental group from D class. The second was control group come from B class. These two groups were chosen by using simple random sampling so that "each member of population under study has an equal chance of being selected" (Cohen, Manion, & Morrison, 2011, p. 153). Thus, in determining the sample, the researcher did not have any considerations and the researcher knew the level of student's proficiency after the researcher gave the test.

Instruments

As the researcher has explained before, this study was an experimental research, so the instrument of this research was a reading comprehension test which was used for pre-test and post-test. A test could be defined as an instrument which is used to measure the individual mastery or knowledge to certain content or material (Thyer, 2012). In this research a test was used to collect information about the students' score in reading comprehension especially in narrative text. The scores were taken from test before treatment (pre-test) and test after treatment (post-test). According to Domitrov and Rumrill (2001), the purpose of the pre-test and post-test is to measure change/effect from the experimental treatments by comparing one or more experimental groups which are exposed to a treatment and compared to one or more control groups that did not receive the treatment. The question of pre-test and post-test consisted of twenty multiple choice questions. Then, the researcher used the guidline bellow to total score of the students' reading comprehension test which is the maximum score is 100.

Correct answer	1
Incorrect answer	0
Total Score: Correct answer x 5 = 100	

Figure 4.1. **Standard of Students' Score. The figure shows the standard of students' score in reading comprehension**

The validity and reliability should be considered to know whether the instruments are applicable before they are applied to get the data of the research since validity and reliability is the important key for effective research. The validity and reliability of the instrument in this study is based on expert judgment. According to Leug and Verga (2007) "Expert judgment is an approach for seeking opinion papers on issues requiring policy responses". Thus, the lesson plan was checked by the lecturer and English teachers of SMP Muhammadiyah 1 Gamping who gave the suggestions. Their suggestions became the considerations of the researcher to make the instruments as well. The test instrument in this study was based on the question of national examination 2013 because it is suggested from the English teacher of SMP Muhammadiyah 1 Gamping. In Indonesia context, national examination is known as one of the national measurements to determene that the students pass or not in the school. It means that the test did not need the validity test and reliability test because the test was already tested its validity and reliability.

Validity refers to the precise measure of the test. There are three kinds of validity, i.e. content validity, empirical validity and face validity (Harris, 1969). The content of

validity means that the test reflects an analysis according to the views of recognized authorities in the skill area. The empirical validity depends on the large part of reliability of the test and criterion measures. Face validity is the way the test looks relevant or irrelevant.

Reliability is a general quality of stability of scores regardless of what the test measured. According to Harris (1969), reliability means that the stability of the test score. It means, if the scores of pre-test and post-test are not reliable, then the tests is not valid. Additionally, the higher value of the reliability score is, the more valid is the instrument.

Data Collection Methods

There were two groups in this research. One group was an experimental group which received reciprocal teaching technique as the treatment and another group was a control group which did not receive any treatment. The researcher used quasi-experimental design (the pre-test, post-test non-equivalent group design). According to Thyer (2012), in quasi-experimental, the researcher is advised to use samples from the same population. Hence, in this research, the researcher used sample from the same population in which the samples were students of B and D classes at SMP Muhammadiyah 1 Gamping who were chosen randomly. The figure bellow is explained the quasi-experimental design.

Quasi-experimental Design; the pre-test, post-test non-equivalent group design

Experimental	O1	X	O2
Control	O1		O2

O1   : Pre-test of experimental group

X   : Treatment (reciprocal teaching technique)

O2   : Post-test of experimental group

O1   : Pre-test of control group

O2   : Post-test of control group

Figure 4.2 **Quasi-experimental Research Design. The figure shows the model of quasi-experimental with the pre-test, post-test non-equivalent group design**

Data Collection Procedures

The procedures of data collection in this research started from recruiting the participants. Firstly, the researcher came to the school and asked the permission to conduct this research from the headmaster of the school SMP Muhammadiyah 1 Gamping. After the researcher got the permission, then the researcher met the English teacher. At the meeting, the researcher asked the teacher to begin her experiment and to decide the appropriate participants by rolling dice. The participants were divided into two groups, there were experimental group and control group. In the experimental group, the researcher was giving reciprocal teaching technique as a treatment and in the control group the researcher was not giving reciprocal teaching technique as a treatment.

At the beginning of the experiment on February 6th, 2017, the researcher came to the class and introduced herself to the students at the control group and experimental group. In the first meeting, the researcher gave the students pre-test in the control group and experimental group at the same time. The questions of pre-test instrument consisted of twenty multiple choice questions and it is completed around 90 minutes.

After the researcher got the score of pre-test in the experimental group and control group, at the second to fifth meeting on February 7th, to 6th March, 2017 in the experimental group the researcher began to use reciprocal teaching technique in improving reading comprehension. There were six meetings in every group and the duration was about 120 minutes for each meeting. In experimental group, the researcher used reciprocal teaching technique which is the researcher always gave the students instruction to read a narrative text and asked the students to work in groups in order to discuss their understanding of reading comprehension in narrative text. By using reciprocal teaching technique the researcher used four strategies in reading comprehension. The strategies were questioning, clarifying, predicting and summarizing. The researcher used these strategies to test students' understanding in reading comprehension of narrative texts. In control group, the researcher used teacher-centered teaching technique which is the students used memorizing and reviewing strategies in reading comprehension.

After the researcher finished the experiment in the experimental group, then the researcher moved to control group in equal range of time with different schedule. In the control group the researcher did not give the special treatment, that was, using of reciprocal teaching technique to teach narrative texts comprehension. In the control

group, the researcher used teacher-centered teaching technique in teaching narrative texts. It means, the students did not use four strategies in reading comprehension as experimental group. In teacher-centered teaching technique, the students used memorizing and reviewing strategies in reading comprehension.

Furthermore, in the second to fifth meetings on , the researcher taught the students reading comprehension in a narrative text in which the experimental group was given reciprocal teaching technique as a special treatment. In the control group, the special treatment was not given. In the six meeting, the researcher gave the post-test for the experimental group and control group at the same time on 7th, 2017. After that, the researcher compared the score of post-test in the experimental group and control group to know the difference of the result.

Data Analysis

Before analyzing the data, the researcher tested the normality and homogeneity of the data. According to Cohen, Manion, and Morrison (2011) state that the normality test is to know whether the distributions of the data was considered normal or not and the homogeneity test is to know the level variance of two or more distributions. The result of normality test was considered normal if the significant level in Kolmogorov-Smirnov is higher than 0.05 and the result of homogeneity test was considered homogeny if the significant level is higher than 0.05.

This study employed experimental research design. To see the differences between the two groups, the data analysis of this study used T-test. According to Seltman (2015), "T-test is used as an example of the basic principles of statistical

inference". It can be inferred that T-test was used to know the statistical (score) result. Moreover, t-test was also used as a comparison test between two independent samples which were experimental group and control group. It means, T-test was the appropriate data analysis for this study. The aim of T-test is to determine whether two groups will be different in particular variables or not. Then, the data could be entered and analyzed using Statistical Package for Social Science (SPSS) version 17.00.

Furthermore, this research used inferential statistics. Inferential analysis statistics is to know the result of T-test and T-table with the computation of correlation coefficient of the two mean score. In addition, to measure the significant difference between two groups, the researcher had to find mean scores in which the researcher will calculate the gain score of two groups of experimental group and control group for the result scores of pre-test and post-test. Thus, the researcher used inferential analysis statistics to answer the research question. There are two ways in checking the hypothesis. The first is comparing the t-value and t-table. It is indicated significant if the t-value is higher than t-table. The second is the researcher should analyze the number of significant which is the requirement is the significant value should lower than 0.05. Then, the researcher used T-test using independent samples test to know whether the null hypothesis (Ho) in this research is rejected or accepted. After, the researcher got the the result from T-test, then the researcher used effect size to know how large the effect of the influence from the hypothesis test between the samples or variables. Effect size is a statistical concept that measures the strength of the relationship between two variables on numeric scale (Cohen, Manion, & Morrison, 2011). In this research, the researcher calculated the bencmarks of the effect size by using standardized way. Then, the

researcher used the result of calculated to see the criteria of effect size. According to Cohen (2011), the criteria of effect size are 0 to 0.20 is in weak effect, 0.21 to 0.50 is in modest effect, 0.51 to 1.00 is in moderate effect, and more than 1.00 is in sreong effect.