

CHAPTER III

RESEARCH METHOD

This chapter presents the research method. It focuses on the method used in conducting this research. It covers research design, population and sample, data collection, instrument of the study, procedure of collecting data, validity of test, the reliability of test, data analysis, normality distribution test, homogeneity test of variance and hypothesis testing.

3.1 Research Design

The design of this research is quantitative research. Quantitative research is a means for testing objective theory by examining the relationship among variables. The researcher chooses quantitative research especially quasi-experimental to investigate the effect of inside-outside circle method to the students' reading comprehension. Quasi-experimental research was chosen because the researcher may not possible to random the students in the class. It was caused by the populations of this research had been grouped into some classes. Experimental research of experimental design is the traditional approach to conducting quantitative research. It is used to establish possible cause and effect between independent and dependent variable.

There are two variables in this research, those are independent variable and dependent variable. Independent variable of this study is inside-outside circle method and dependent variable is reading comprehension. The researcher wants to know the relationship between dependent variable and independent variable

before and after the treatment and also to get the result of the data. The researcher tries to find out the result between pre-test and post-test of the students after the treatment.

This research involved two groups, those are experimental group and control group. This kind of research design allowed the researcher to give different treatment on both groups. A special or certain treatment was given only to the experimental group which was inside-outside circle method. Meanwhile the control group was given was taught without using it or by using method as usually such as traditional method. The researcher will give both of them pre-test and post-test. The difference between both of the groups may define the significance of treatment. The design can be illustrated as follows:

Table 3.1 Design of the study

Class	Pre-Test	Treatment	Post-Test
Experimental	+	✓	+
Control	+	X	+

Notes:

✓ : With treatment by using inside-outside circle method

X : Without treatment by using inside-outside circle method

From table above shows that experimental group and control group are given pre-test and post test, but they receive different treatments. The experimental group teaching with inside-outside circle method treatment, while the control group without using it.

3.2 Population and Sample

3.2.1 Population

A population can be defined as all members of subjects in the research.

Population is object that has some qualities and characteristic that is chosen to be cleared and to be concluded by the researcher (Louis: 2005). The population of this study is the eleventh grade students of SMA Nusantara Balongpanggang in the first semester 2017/2018. The total number of the students in this research is 35 students who were divided into two classes.

3.2.2 Sample

Sample is a subgroup of the target population that the researcher plans to study for the purpose of making generalizations about the target population (Creswell, 2008: 646). So a technique sampling that will use by the researcher is Cluster random sampling. The sample involves 35 students of eleventh grade at SMA Nusantara Balongpanggang in the first semester 2017/2018. The researcher decides to take 2 classes of eleventh grade as sample. Those are XI Science Program as experimental group and XI Social Program as control group. Each class consists of 18 students of experimental and 17 students of control group.

3.3 Data Collection

3.3.1 Instrument of the study

Research instrument is tool of collecting data that should be valid and reliable. The researcher used test as instrument. Test is a method to gain the data by giving some question to the respondent. In this research, the researcher uses a set of tests: pre-test and post-test test. Here, Pre-test was given before doing an

experimental research study or before teaching by using inside-outside circle method and post-test was given after doing the treatment. The researcher conducting the test to get the information about the students' reading comprehension score.

3.3.1.1 Pre-Test

Pre-test was given to identify the student's achievement in reading comprehension test before they get the treatment and it given to the students both of experiment and control class. The researcher makes pre-test based on the material of eleventh grade in the first semester. Items used for pre-test that consists of 20 items (multiple choices) about narrative text. The test was about reading comprehension. The researcher gave the students 60 minutes to finish their pre-test. The worksheets of pre-test take on internet and modify by the researcher itself.

3.3.1.2 Treatment

After giving pre-test, then the researcher conducting the treatment, but before that, the researcher should prepare and arrange teaching design that will be done by the researcher. The treatment was conducted for experimental class only. The treatment was using inside-outside circle technique in teaching English part of reading comprehension. The length of the time to apply the strategy was four meetings and every meeting was about 2×45 minutes.

3.3.1.3 Post-Test

Post-test was administered after giving the treatment to the experimental group and given to the students both of experimental and control group. In this

research, the questions of post-test different with pre-test but it still equal in every item. The total items in post-test also consisted of 20 questions of multiple choices and the time allotment the researcher gave 60 minutes to finish their post-test. Post-test was given to find out whether there is an effect of inside-outside circle method to the students' reading comprehension or not.

3.4 The Procedure of Collecting the Data

These were some procedures that researcher used to collecting the data of the study:

1. The researcher try out the instrument before giving to the students as pre-test and post-test
2. The researcher giving pre-test to the students as the sample of the study both of experimental and control group before giving the treatment.
3. Giving the treatment for the experimental class using inside-outside circle method
4. The researcher giving pot-test in both experimental and control class after giving the treatment
5. Collecting and analyzing all the data

3.5 Validity of the Test

According to Tuckman (1975:229) validity refers to whether a test measures what we intend it to measure. It means that, validity is an instrument that made as a measurement to measure items is valid or not valid. Before conducting pre-test and post-test as instrument of the study, the researcher must

measure the validity of the text. In this study the researcher used content validity and construct validity for measuring the validity of the test.

To determine the content validity, the researcher checked based on the syllabus. In the present study, the validity of the test is based on the standard competency and basic competency. Whereas to determine the construct validity, the researcher uses the assistance of SPSS version 16.0 programs to compute descriptive statistics. The instrument validity was examined by analyzing item has been constructed well in term of validation or not.

3.6 The Reliability of the Test

Reliability is concerned with the effect of such random errors of measurement on the consistency of the scores. Reliability is the consistency of the measurement, or degree to which an instrument measures the same way each time it is used under the same condition with the same subjects. To measure the reliability, the researcher should to know the consistency of the test scores. In this study, the researcher would be tried out the test to another class in different school because in SMA Nusantara Balongpanggang only consist of two classes those are XI Science and XI Social. The researcher gave try out to the students of XI Science 2 class in SMA YPI Darussalam Cerme. Here, the researcher used SPSS version 16.0 program to determine the reliability of the test.

3.7 Data Analysis

In analyzing test data, the researcher made the formula and criteria to scoring the students' reading comprehension in pre-test and post-test. The formula and criteria as follows:

Score = Number of True Answer X 5

Score	Category
80-100	Good to Excellent
60-79	Average to Good
50-59	Poor to Average
0-49	Poor

Table 3.2 Students' Test Criteria

After the score was classified, the scores were analyzed by using SPSS 16.0 especially independent sample T-test. Independent sample t-test is used to find out the results of the first and second hypothesis. They are to find out significant difference of students' reading comprehension who are taught by applying Inside-Outside Circle (IOC) Method (experimental group) and the students' reading comprehension who are taught by applying traditional method (control group).

Here are the steps of analyze the data:

3.7.1 Normality Distribution Test

Normality distribution test is used to determine whether or not the data between two groups are normally distributed. The researcher uses normality distribution test because she wants to know the data between experimental group and control group to the students' reading comprehension are in normal distribution or not. To know the normality, the researcher uses Kolmogorov-Smirnov test with SPSS.

3.7.2 Homogeneity Test of Variance

Homogeneity test of variance is used to test whether two sample that have been taken have the same variance or not. It means that we need to test two sample that have been taken have the same variance or not. Two sample is said the same variance if the significant value or the probability value is larger than the level of significant (0.05). While, if the significant value or the probability is lower than the level of significant (0.05) so that, those samples are not the same variance. In this study the researcher uses Levene's test of homogeneity in SPSS 16.0 program because Levene's test of homogeneity uses to assess the equality of the variance for a variable calculates for two or more groups. In this study there are two groups, they are experimental and control group.

3.7.3 Hypothesis Testing

Independent t-test is used to find out the significant difference between experimental group and control group is accepted or rejected. The steps of t-test calculation are:

1. Stating the hypothesis and setting the alpha level at 0.05 (two tailed test). The hypothesis can be formulated as follow:

H0: There is no significant different on the effect of inside-outside circle method in reading comprehension between experimental and control group

H1: There is significant different on the effect of inside-outside circle method in reading comprehension between experimental group and control group

2. Finding t-value using independent t-test formula and comparing the probability with the level of significance for testing the hypothesis. After the scores compute in SPSS 16.00 versions. Then see the output of independent-sample t-test and

interpret the output that if $\text{sig. (2-tailed)} > \alpha (0.05)$, the researcher should accept the H_0 , but if $\text{sig (2-tailed} < \alpha (0.05)$, the researcher can be rejected the H_0 , it means H_1 is accepted.