

## **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, sample and sampling, variable, research instrument, validity and reliability, data collecting method, and data analysis.

#### **A. Research Design**

In conducting this research, there is a plan consisted some steps that the researcher will take. Consequently, the design of the research should be suitable for the research condition. For these reasons, the researcher has to follow the research design to make the research successful.

Research may define as the application of the scientific approach to study of the problem. It is a way to acquire dependable and useful information. According to Ary et al (2006: 21) research is an attempt to solve the problems by using scientific approach in a systematic way.

The design of the research is quantitative research. According to Ary et al (2006:26) experimental study is scientific investigation in which an investigator manipulates and constructs one or more independent variables and observes the dependent variable or variables for variation concomitant to the manipulation of the independent variables. Experimental research can be done in laboratory, in the class, and in the field. In this study the experimental research has been done in the class with taking students as population.

In addition, Ary (2002; 302) states that experimental research is classified into pre-experimental design, true experimental, and quasi experimental. Pre- experimental research does not have random assignment of subject to groups or other strategies to control extraneous variables. True-experimental research uses randomization and provides maximum control of extraneous variables. Quasi-experiment research not randomly selected.

This research was conducted in an experimental design using quantitative approach, *Quasi Experimental Design with Nonrandomized Control Group, Pretest-Posttest Design*. This research method provides the students with pretest, treatment, and posttest to find out the effect of collaborative writing method on students' writing ability. Since there was no random sampling, the sample in this research is considered as nonequivalent sample which consisted of experimental and control group (Jackson, 2008:323).

In this research, two classes were taken as the sample classes: those labeled as the experimental group and control group. The first group (8<sup>th</sup>B) as the experimental group was given a pre-test (X1). Treated by using collaborative writing method (T), and then provided a post-test(X2). The second group (8<sup>th</sup>C) as the control group was given a pre-test (X1), treated by using conventional teaching (O) and a post test (X2) (Hatch and Farhady 1982:21). Here is representation of the design:

**Table 3.1 Nonrandomized Control Group, Pretest-Posttest Design**

| Group        | Pretest             | Treatment | Posttest            |
|--------------|---------------------|-----------|---------------------|
| Experimental | 8 <sup>th</sup> B 1 | T         | 8 <sup>th</sup> B 2 |
| Control      | 8 <sup>th</sup> C 1 | O         | 8 <sup>th</sup> C 2 |

Where:

8<sup>th</sup> B 1: Students' writing score of experimental group on pretest

8<sup>th</sup> C 1: Students' writing score of control group on pretest

T : Collaborative writing method

O : Conventional teaching

8<sup>th</sup> B 2 : Students' writing score of experimental group on posttest

8<sup>th</sup> C 2 : Students' writing score of control group on posttest

In conducting this research, there is a plan consisted some steps that the researcher will take. Consequently, the design of the research should be suitable for the research condition. For these reasons, the researcher has to follow the research design to make the research successful. The table shows that both classes are given a pre-test, but the difference is in giving the treatments. In the experimental group, collaborative writing method was given as a treatment to the students in the learning process. In contrast, for the control group, conventional teaching was implemented as the treatment in learning to write. After both treatments were applied to both groups, a post-test was administered in order to investigate the result of the treatment.

The steps of conducting quasi experiment, Nonrandomized control group, pretest posttest are explained below:

1. Administering pretest before applying *collaborative writing method* with a purpose of measuring students' writing ability at the 8<sup>th</sup> grade of SMPN 3 Kedungwaru exactly in experiment group (8B class) and control group (8C class)
2. Applying *collaborative writing method* as treatment in experiment group (8B class) and conventional teaching in control group (8C class)
3. Administering posttest after applying *collaborative writing method* with a purpose of measuring students' writing ability at the 8<sup>th</sup> grade of SMPN 3 Kedungwaru exactly in experiment group (8B class) and control group (8C class)

## **B. Population, Sampling, and Sample**

### **1. Population**

Population is the whole objects of the research which may consist of human beings, things, phenomenon, animals, and plants, test scores, or even whose characteristic are the data source in the research. A population is defined as all members of any well-defined class of people, events, or objects (Ary, Jacobs, & Sorensen, 2010, 2006, p.148).

In this research, the population was all of the students at the eighth grade of SMPN 3 Kedungwaru in academic year 2016/2017. There were nine classes. The total number was 315 students.

## 2. Sampling

Sampling is the process of selecting a number of individual for a study in such as a way that the individuals represent the large group from which they were selected. Ary et al (2002: 163) states “The purpose of sampling is to obtain information concerning the population”. According to Arikunto (2006: 139), there are eight sampling techniques. They are simple random sampling, stratified sampling, probability sampling, proportional sampling, purposive sampling, quota sampling, cluster sampling and double sampling.

In this research, researcher used purposive sampling to take sample from population and it represents the entire population. Ary et al (2002:169) states that purposive sampling-also referred to as a judgment sampling-sample elements judged to be typical, or representative, are chosen from the population.

The researcher had taken two classes of eight grade of the second year students of SMP Negeri 3 Kedungwaru on academic year 2016/2017 exactly 8<sup>th</sup> B class and 8<sup>th</sup> C. It was done with some considerations that both classes were the existing classes which almost had the same average in writing ability so it can represent the population on the average ability on writing and both of 8<sup>th</sup> B class and 8<sup>th</sup> C class have the same total students, 30 students.

### 3. Sample

Sample is a portion of a population. A sample is part of the population which is researched (Arikunto, 2010:174). Actually the researcher is unable to take data or information from all of the population, since the limitation of time, energy, and accessibility so the researcher takes smaller one called sample that can reflect the whole population.

This research used the sample of two classes (8<sup>th</sup> B class and 8<sup>th</sup> C class) that were chosen as the sample by using the purposive sampling technique in choosing the class. Both of two classes consist of 30 students. 8<sup>th</sup> B class consists of 16 males and 14 females. 8<sup>th</sup> C class consist of 18 males and 12 females

### C. Variable

A variable is a concept that stands for variation within a class of objects. Variables can be classified in several ways. The most important classification is on the basis of their use within the research under the consideration, when they are classified as independent variables or dependent variables (Ary, Arikunto 2010:37, 2010: 161).

Independent variables are those that (probably) cause, influence, or affect outcomes. They are also called *treatment, manipulated, antecedent, or predictor variables*. Dependent variables are those that depend on the independent variables; they are the outcomes or results of the influence of the independent variable. Other names for dependent variables are *criterion, outcomes, and effect variables*.

In this research, there are two kinds of variable. The independent variable is *Collaborative writing method*, while dependent variable is *students' score in writing descriptive text*.

#### **D. Description of Treatment**

This Study was conducted at March 29<sup>th</sup> 2017 – April 19<sup>th</sup> 2017 in SMPN 3 Kedungwaru. The researcher used *Quasi Experimental Design* with *Nonrandomized Control Group, Pretest-Posttest Design*. The researcher chose VIII-B as experimental class and VIII-C as control class. In the first meeting, researcher shared the material about descriptive text (definition, generic structures, language of features) and explained about simple present tense (definition, function and pattern), then researcher asked students to discuss in a pair with their partner to make simple sentences about present tense. It hoped could stimulate the students to work together, because in collaborative writing method students should make a text collaboratively with their group or partner.

In the second meeting, researcher explained about collaborative writing method and how to apply this method to students. After that, researcher divided students into some groups which were consist two students (*Writer* and *Helper*) based on score that has submitted before in pretest. Researcher asked the groups to make a paragraph of descriptive text that the topic had been chosen by researcher. Researcher asked students to observe the vocabularies that related with the topic with the partner. It hoped in collaborative writing method they can pool ideas together, share both

knowledge and linguistics resource, build and develop their critical thinking, and It also builds on student sense of shared responsibility for completing a certain assigned writing task.

In the third meeting, the researcher explained again about what the descriptive text is and how to apply collaborative writing method. Then, researcher reviewed students' task in the last meeting and asked the students to correct the mistakes in their task collaboratively with the same partner.

#### **E. Research Instrument**

In a research an instrument is needed to collect the data. According to Arikunto (2006: 160) the instrument is the tool which is used by the researcher in the time of the research. The instrument is used to achieve the accuracy the data and can indicate that the researcher is successfully or not in his/her research. In this research the researcher used a test as an instrument to get the data. The researcher administered the students two test they are:

##### **1. Pretest**

The researcher administered the pretest to the students of experimental group and control group as the first step in collecting data. It was used to identify the achievement of writing a descriptive text. In this test the students were asked to make a paragraph of descriptive text based on the given topic. The pretest was held on March 30<sup>th</sup>, 2017 for experiment class (VIII B) and March 31<sup>st</sup>, 2017 for control class (VIII C).The researcher gave 60 minutes to the students in writing descriptive text based on the given topic. The researcher used writing rubric score



adapted from Brown (2002:244) to score the pretest. The pretest is aimed at measuring the students' preliminary knowledge of descriptive text and their achievement circle.

## 2. Posttest

In conducting this research, there is a plan consisted some steps that the researcher followed. Consequently, the design of the research should be suitable for the research condition. The posttest was conducted to measure the students' writing ability of control group and experiment group after the treatment. The posttest was held on April 17<sup>th</sup>, 2017 for experiment class (VIII B) and April 18<sup>th</sup>, 2017 for control class (VIII C). The researcher gave 60 minutes to the students in writing descriptive text based on the topic given. The researcher used writing rubric score adapted from Brown (2002:244) to score the posttest. The students were asked to write a paragraph of descriptive text based on the topic given to the students. The result was analyzed to see students' score after being taught by using collaborative writing method as a medium for developing students' writing skill of descriptive text.

## **F. Validity and Reliability**

As previously mentioned, the researcher used test as the research instrument. Both pre-test and post-test were intended to measure students' writing ability. The tests should fulfill some factors to get the data as well. The factors tested here is validity and reliability of the tests. By using a valid and

reliable instrument to collect the data, it was expected that the data and the result of the research itself also valid and reliable.

## 1. Validity

Validity is the most important consideration in developing and evaluating measuring instrument. Ary et al (2006:225) defines validity as the extent to which an instrument measured what it claimed to measure. In other words, validity can be defined as the instrument that measures what is supposed to be measured. In this study, to ensure tests validity the researcher used content validity and construct validity

### a. Content Validity

Content validity means there is correspondence between curriculum objectives and the objectives being tested. It means that test is said to have content validity if its objectives are same with the curriculum objectives. It is sometimes called curriculum validity. The test will be valid if the objectives of the test do not outside from the curriculum objectives that have been set by educational policy. The relevancy of the objective of the test and the content of the test items shows the content validity of the test (Isnawati, 2013:27).

In this case, the researcher also checked the curriculum set to know what students must be able to do in certain level, especially in junior grade. The researcher found that students in eight grade of junior high school should be able to write around three genres: descriptive,

narrative and recount. In this case, the researcher used descriptive text as the topic.

**Table 3.2 Content Validity**

|                     |  |
|---------------------|--|
| Standard Competence | 6. Mengungkapkan makna dalam teks tulis fungsional dan esei pendek sederhana berbentuk <i>descriptive</i> , dan untuk berinteraksi dengan lingkungan sekitar   |
| Basic Competence    | 6. 2 Mengungkapkan makna dan langkah retorika dalam esei pendek sederhana dengan menggunakan ragam bahasa tulis secara akurat, lancar dan berterima untuk berinteraksi dengan lingkungan sekitar dalam teks berbentuk <i>descriptive</i> |
| Indicator           | Siswa dapat menulis teks esei dalam bentuk <i>descriptive</i>  |
| Technique           | Writing test   |
| Instrument of test  | Pretest<br>Posttest  |

b. Construct Validity

A test is said to have construct validity if it can be demonstrated that it measures just the ability which is supposed to measure (Isnawati, 2012:29). Construct validity is capable of measuring certain specific characteristics in accordance with theory of language behavior and learning. In this study, the researcher tested the students writing ability by writing test and the technique of scoring the students writing ability based on five aspects of writing, they are: content, organization, vocabulary, grammar and mechanic. In this case, the researcher used analytic scoring rubric adapted by Brown (2000: 244)

### c. Face Validity

In line with face validity, Ary (2010) mentioned that face validity refers to the extent to which examinees believe the instrument is measuring what is supposed to measure. A test that does not have face validity may be refused by the teacher and advisor. In this research, researcher had the face validity by consulting the experts (English Teacher).

## 2. Reliability

A reliable test is consistent and dependable. If the students are given the same test on two different occasions, the test should yield similar results. The word “similar” is used here because it is almost impossible for the test takers to get exactly the same scores when the test is repeated the following day (Isnawati, 2011: 18). According to Heaton (1975: 155) reliability is necessary characteristic of any good test: for it to be valid all, a test must first be reliable as a measuring instrument.

The try-out test was about making a paragraph of descriptive text with the topic given by the researcher. The researcher showed the instructions. The items of try-out test were the same with the items of pre-test and post-test. The purpose of try-out was to make sure whether the instrument was reliable or not.

The researcher used inter-rater reliability where the two scorers did the scoring and the two set scores taken from the try out were calculated to get the correlation coefficient. The two scorers were the

researcher himself and English teacher of SMPN 3 Kedungwaru. The try out test was done on March, 29<sup>th</sup> 2017.

To check the reliability of the test, the researcher used Alpha Cronbach's in SPSS 16 for windows. The reliability of instrument was the result of measurement that can be trusted. It was necessary to get the data based on the purpose of measurement. To attain that, the researcher conducted the reliability test by Alpha Cronbach's table 0 until 1. See table 3.3 to see the Cronbach scale

**Table 3.3 Cronbach Scale**

| <b>Cronbach's Value</b> | <b>Interpretations</b> |
|-------------------------|------------------------|
| 0,00 – 0,20             | Less reliable          |
| 0,21 – 0,40             | Rather reliable        |
| 0,41 – 0,60             | Quite reliable         |
| 0,61 – 0,80             | Reliable               |
| 0,81 – 1,00             | Very reliable          |

The instrument that has value between 0,00-0,20 are less reliable, the instrument that has value between 0,21-0,40 are rather reliable, the instrument that has value between 0,41-0,60 are quite reliable, the instrument that has value between 0,61-0,80 are reliable, and the instrument that has value between 0,81-0,100 are very reliable.

The researcher conducted try out in 8<sup>th</sup> D class of SMPN 3 Kedungwaru. The class consist of 32 students. Score 1 was taken from researcher, score 2 was taken from English teacher. After obtaining the

two scores, the researcher did a reliability testing and got the result as presented on table 3.4.

**Table 3.4 the scores obtained from try out**

| No | Students | Rater 1 | Rater 2 |
|----|----------|---------|---------|
| 1  | AAA      | 46      | 57      |
| 2  | AA       | 81      | 76      |
| 3  | AF       | 59      | 66      |
| 4  | ANF      | 84      | 79      |
| 5  | ARP      | 53      | 60      |
| 6  | AFSP     | 73      | 64      |
| 7  | BR       | 60      | 54      |
| 8  | CAS      | 63      | 71      |
| 9  | DPM      | 53      | 61      |
| 10 | DAN      | 62      | 70      |
| 11 | DS       | 72      | 64      |
| 12 | ESDZ     | 69      | 63      |
| 13 | FK       | 74      | 61      |
| 14 | FWW      | 61      | 65      |
| 15 | GT       | 80      | 74      |
| 16 | IRRS     | 59      | 70      |
| 17 | IT       | 63      | 71      |
| 18 | KSA      | 79      | 83      |
| 19 | LDP      | 69      | 78      |
| 20 | MAM      | 66      | 75      |
| 21 | MS       | 54      | 45      |
| 22 | MKNA     | 78      | 70      |
| 23 | MBS      | 47      | 59      |
| 24 | MJ       | 76      | 61      |
| 25 | MSOP     | 73      | 68      |
| 26 | NAA      | 61      | 50      |

|    |      |                 |                 |
|----|------|-----------------|-----------------|
| 27 | PAIN | 79              | 61              |
| 28 | RP   | 62              | 78              |
| 29 | RNN  | 63              | 70              |
| 30 | SD   | 81              | 65              |
| 31 | SDA  | 54              | 61              |
| 32 | TIW  | 60              | 55              |
|    |      | $\sum X = 2114$ | $\sum X = 2105$ |

**Table 3.5 Reliability Statistics**

| Cronbach's Alpha | N of Items |
|------------------|------------|
| .671             | 2          |

Relying on the result of reliability statistics of SPSS 16 for Windows, the value obtained was 0,671. Thus, it could be concluded that the instrument used by the researcher was reliable.

## G. Normality and Homogeneity Testing

### 1. Normality Testing

Normality testing is used to examine whether a data set is well-modeled by a normal distribution or not. In this research, normality test is done toward the result (students' score) of pretest and posttest in writing descriptive text. To know the normality, the researcher used Kolmogorov Smirnov formula by using SPSS program 16.0 version. Normality test is done by using the rule of Asymp. Sig (2 tailed) or p. If Asymp. Sig (2 tailed) or  $p > 0,05$ , so the test distribution is normal.

In this research, normality testing was done toward the students' score in pretest and posttest, not only for control group but also for experimental group. The result of normality testing could be seen in table 3.6 and table 3.7 below

**Table 3.6 One-Sample Kolmogorov-Smirnov Test Control Group**

|                                 |                | One-Sample Kolmogorov-Smirnov Test |          |                         |
|---------------------------------|----------------|------------------------------------|----------|-------------------------|
|                                 |                | pretest                            | posttest | Unstandardized Residual |
| N                               |                | 30                                 | 30       | 30                      |
| Normal Parameters <sup>a</sup>  | Mean           | 62.17                              | 69.87    | .0000000                |
|                                 | Std. Deviation | 9.886                              | 7.021    | 6.13280414              |
| Most Extreme Differences        | Absolute       | .166                               | .126     | .135                    |
|                                 | Positive       | .166                               | .126     | .097                    |
|                                 | Negative       | -.118                              | -.126    | -.135                   |
| Kolmogorov-Smirnov Z            |                | .908                               | .689     | .739                    |
| Asymp. Sig. (2-tailed)          |                | .382                               | .730     | .645                    |
| a. Test distribution is Normal. |                |                                    |          |                         |

**Table 3.7 One-Sample Kolmogorov-Smirnov Test Experimental Group**

|                                |                | One-Sample Kolmogorov-Smirnov Test |          |                         |
|--------------------------------|----------------|------------------------------------|----------|-------------------------|
|                                |                | pretest                            | posttest | Unstandardized Residual |
| N                              |                | 30                                 | 30       | 30                      |
| Normal Parameters <sup>a</sup> | Mean           | 59.43                              | 70.93    | .0000000                |
|                                | Std. Deviation | 7.994                              | 6.823    | 6.40362277              |
| Most Extreme Differences       | Absolute       | .133                               | .141     | .123                    |
|                                | Positive       | .133                               | .141     | .123                    |
|                                | Negative       | -.096                              | -.091    | -.070                   |



|                                 |      |      |      |
|---------------------------------|------|------|------|
| Kolmogorov-Smirnov Z            | .728 | .773 | .675 |
| Asymp. Sig. (2-tailed)          | .665 | .589 | .753 |
| a. Test distribution is Normal. |      |      |      |

Based on the result of computation by using SPSS program 16.0 version, it can be concluded that the test distribution was normal. Therefore, the data is qualified to be analyzed.

## 2. Homogeneity Testing

Homogeneity testing is used to know homogeneous or not the variance of the two samples from the same population. Nurgiyantoro (2004: 216) states that in examining the homogeneity of variance should do testing of variance of the distribution score of group involved. Homogeneity testing was done after doing normality testing. The variance can be said homogeneous if the significance of the result is more than 0.050.

By using SPSS program 16.0 version, the result of computation showed that variance was homogeneous. The result of homogeneity testing could be seen in table 3.8 and table 3.9 below

**Table 3.8 Homogeneity Testing of Variances in Control Group**

**Test of Homogeneity of Variances**

Pretest

| Levene Statistic | df1 | df2 | Sig. |
|------------------|-----|-----|------|
| 2.029            | 7   | 14  | .123 |

**Table 3.9 Homogeneity Testing of Variances in Experiment Group**

**Test of Homogeneity of Variances**

Pretest

| Levene Statistic | df1 | df2 | Sig. |
|------------------|-----|-----|------|
| 1.779            | 9   | 15  | .156 |

From the result above, the homogeneity testing of variance in pretest of control group and experimental group for writing descriptive text in this research showed that the data had homogeneous variance, so it is qualified to be analyzed.

#### **H. Data Collecting Method**

The data of this study was collected by administering test. To find out the data, the researcher applied pretest and posttest. The test of pretest was about making a paragraph of descriptive text with the topic was animal or favourite idol. The pretest was administered to know the basic competence of the student and to know their earlier knowledge before they got treatment. Time allocation of the pretest was 80 minutes and it was held on March 30<sup>th</sup>, 2017 for experiment class (VIII B) and March 31<sup>st</sup>, 2017 for control class (VIII C)

After gaining the result of pretest, the researcher provided the treatment by teaching writing using *Collaborative Writing Method*. Then, the researcher conducted the posttest. It was administered after the researcher giving the treatment or after teaching writing by using *Collaborative Writing Method*. This test aimed to know the students' difference achievement before

and after they got treatment. The posttest held for about 80 minutes on April 17<sup>th</sup>, 2017 for experimental class (VIII B) and April 18<sup>th</sup>, 2017 for control class (VIII C) gave the final score.

## **I. Data Analysis**

The data obtained from research is the students' score that will be analyzed quantitatively. Quantitative analysis was done using statistics which is called statistical analysis or inferential statistics. Data analysis is a time consuming and difficult process, because typically the researcher faces massive amounts of field notes, interview transcripts, reflections, and information from documents to examine and interpret (Ary, 2002:465)

The quantitative data of this research is analyzed using statistical computation. The best known and most widely used statistical package for data analysis in educational research is SPSS. It can import data from most spreadsheet software and from databases. SPSS provides descriptive and inferential statistics and graphical presentations of data as well as more sophisticated statistical procedures (Ary et al., 2010: 141).

The researcher used SPSS 16.0 After getting the data either from pretest or posttest, the researcher analyzed the data by using formula of t-test by to know the significant difference of students' writing ability between students who are taught by using collaborative writing method and students who are taught by using conventional learning.

The researcher's assumption of the hypothesis is as follows:

1. If significance value  $<$  significance level, the Null Hypothesis ( $H_0$ ) is rejected and alternative hypothesis ( $H_1$ ) is accepted. It means there is a significant difference of students' writing ability between students who are taught by using collaborative writing and students who are taught without using collaborative writing method.
2. If significance value  $>$  significance level, the Null hypothesis ( $H_0$ ) is accepted and alternative hypothesis ( $H_0$ ) is rejected. It means there is no a significant difference of students' writing ability between students who are taught by using collaborative writing and students who are taught without using collaborative writing method.