# CHAPTER III

# RESEARCH METHOD

## 3.1 Research Design

In this research, the researcher uses experiment especially quasi-experimental with the non-randomized design. Dinardo (2008) found that quasi-experiment use to predict the cause and effect of the relationship between independent and dependent variable. The writer uses quasi-experiment with non-randomized because the school does not allow to do the true experiment in SMP Muhammadiyah 4 Giri. It is because the classification of the class in SMP Muhammadiyah 4 Giri had been determined by the school. It means that the researcher cannot change the classification of the group. So that, the researcher does not have accesses to full control the target and the last reason is time for this study is limited.

There are two variables in this study. The first is four square method and the second is writing ability. The dependent variable is writing ability and the independent variable is four square method. There will be two groups. Those are the control group and experimental group. The control group becomes group which has a treatment of think talk write method. In addition, for the experimental group is a group which has a treatment about four square method. To get the data, the researcher uses tests in this research. There are two tests, the first is pre-test and the second is post-test. So that, the researcher tries to find out the result between pre-test and post-test of students in control group and experiment group and to

know the effect of using four square method for increasing students' writing ability at eighth grade of SMP Muhammadiyah 4 Giri.

The researcher divides this research into two groups, they are experiment group and control group. Both of them gives a pre-test, and then the treatment of four square method apply to the experiment group while the control group will be though by a teacher method that is think talk write because think talk write can minimize the students' difficulties in writing especially in generating the idea and organizing the idea, because the students can talk their ideas to their friends before writing. Then, four square method and think talk write both of them are pre-teaching activities.

In this study, design chart can be seen in the figure below:

| Group | Pre-test | Treatment | Post-test |
|---|---|---|---|
| **Experiment** | O | $X_1$ | Y |
| **Control** | O | $X_2$ | Y |

**Table 3.1 Experimental chart**

O : Pre-test

$X_1$ : Four square writing method treatment

$X_2$ : Think talk write method treatment (teacher's method)

Y : Post-test

From the table above, it could be seen that both of the classes will give pre-test in the beginning of the research. Next, the researcher gives a treatment "four square writing method" for the experimental group and teaches use teacher's method (think talk write) in the control group. After giving

treatments, the researcher will give them a post-test. The last, the researcher tries to find out the mean different between pre-test and post-test score. The researcher analyzes the data using t-test formula to prove the hypothesis.

**3.2 Population and Sample**

In this research, the researcher chooses the students' of junior high school at SMP Muhammadiyah 4 Giri in the second semester of academic year 2015/2016. The researcher takes this school because the school fills with the researcher criteria. First, the school has a good accreditation "A". Then, the school is excellent in the English language. In SMP Muhammadiyah 4 Giri, has an English program "Central Language Movement (CLM)" for increasing students' in English ability. This program always does thirty minutes on Monday until Thursday after dhuha pray.

The researcher takes the eighth grade of SMP Muhammadiyah 4 Giri as a population. The researcher uses a population sampling that the sample is the population of the study. The total numbers of the populations are 44 students. The researcher takes two classes VIII-A with 21 students and VIII-B with 23 students as the sample of the study. They will be two groups, one is experimental group and other is the control group. Class VIII- A for the control group and class VIII-B is for the experimental group.

**3.3  Data Collection**

The researcher collects the data from the result of the tests. The researcher makes a pre-test and post-test to experiment group and control group as a data collections. The first data is pre-test that conducts to both classes to measure

student's writing ability before giving treatment. From the pre-test score, the researcher will analyze the homogeneity both of the class whether equal or not. Then, the researcher classifying the groups into experimental that teach using Four square method and control group that teach using their teacher method. After pre-test, the researcher gives the treatment consists of four meetings which each meeting has a different topic of recount text.

The second data are taken from post-test of both experimental and control group to see the effect of using four square method on student's writing ability. Then the last is analyzing the data from pre-test and post-test by using SPSS 16.0 program.

### 3.3.1 Instrument

Research instrument is an important role in doing the research. In this study, the researcher uses tests as an instrument. The instrument is writing recount text in order to measure the student's ability in writing. It is very important to measure the validity of the tests to make sure that the tests are valid. Research instrument is a tool, which is used by the researcher to collect the data. The instrument is created whether the research success or not.

### 3.3.1.1 Test

The test is a set of questions to measure the skill, intelligence, ability and talent of an individual of the group. The tests that use in this study is written test. The tests are focus in writing recount text. There are two tests in this study, pre-test and post-test. The pre-test will give to students before the treatment. It is to gain the data of students' entry in mastering writing ability. Besides, the post-test

given to students after the researcher gives the treatment "four square method" for experiment group and without treatment "four square method" for the control group. The test checks the content validity. The content of the item is based on the standard of competence in the syllabus (school-based curriculum or KTSP) of eight grade of Junior High School.

### 3.3.1.1.1. Pre-test

The pre-test will give before the students get the treatment. The form of the pre-test is written test to measure students' writing ability in recount text. The researcher asks the students to tell their experience with a free topic. The students will make a recount text about their experience with their own words. From the result of the pre-test, the researcher will get the students' writing ability,

### 3.3.1.1.2 Post-test

Post-test is to find out whether the students make progress in their writing ability or not. Post-test will be given after the students get the treatment. The test in this research is written text, especially in the recount text.  Post-test is to measure the student's writing recount ability after giving the treatment and as the comparator between experimental group and control group.

### 3.3.2 The procedure of a collecting data

In collecting data, the researcher uses such procedure; the first step is asking permission to school where the researcher will be conducted. The second step is the researcher makes English writing test for pre and post-test which of them consists of making a recount text. The third, the researcher makes a subject

into two group as experimental and control group. The fourth, the researcher gives

the treatment to the experimental group by using four square method while for

control group the researcher teach them using their teacher method (Think Talk

Write). The treatment will be done four times. In the first meeting, the researcher

will discuss the topic "School Experience", a second meeting will discuss the

topic "birthday party", a third meeting will discuss the topic "holiday" and the last

meeting will discuss the topic "embarrassing experience". In each meeting, the

researcher will give the evaluation. In the evaluation process, the researcher will

discuss with the English teacher about the meeting. The fifth, researcher gives the

post-test to control and experiment group. The last is analyzing the data from pre-

test and post-test by using SPSS16.0 program.

| No | Date | Activities |
|----|------|------------|
| 1 | April 28th, 2016 | Sending approval letter in the school |
| 2 | April 28th, 2016 | Asking approval to head master in order to conduct primary observation |
| 3 | May 4th, 2016 | Giving pre-test for experiment and control group |
| 4 | May 7th, 2016 | Giving first treatment "School Experience" for experiment and control group. |
| 5 | May 13th,2016 | Giving second treatment "Birthday" for experiment and control group. |
| 6 | May 14th, 2016 | Giving third treatment "Holiday" for experiment and control group. |
| 7 | May 20th, 2016 | Giving fourth treatment "embarrassing treatment" for experiment and control group. |
| 8 | May 21th,2016 | Giving a post-test for experiment and control group. |

**Table 3.2 Schedule of Research**

### 3.3.3 Scoring Guide

The scoring guide is used to guide the teacher to correct the students' test. Douglas (2004) design the analytical scoring scale that includes five areas of writing component as organization, content, grammar, vocabulary, and writing mechanic. The five components above have levels which are divided into five level "Excellent", "Good", "Adequate", "Fair" and "Unacceptable". To get the final score, the researcher sums the score of organization, content, grammar, vocabulary, and writing mechanic. There is also having the points of each level.

To correct the test of this research, the researcher will use three correctors because writing is the subjective test which needs an accurate in correction. The first corrector is a researcher, second is an English teacher in SMP Muhammadiyah 4 Giri and the third is a researcher's friend who an English teacher from other school and had ability in writing. The researcher uses analytical scoring rubric adapted from Brown, J.D. & Bailey, K.M. (1984) in Douglas (2004).

| No | Aspect | Score | Criteria |
|----|--------|-------|----------|
| 1 | Organization | 30-25 | **Excellent:** Very easy to understand and all of the generic structure of recount text are correct, detail and clearly stated . |
| | | 24-19 | **Good :** Mostly easy to understand and all of the generic structure of recount text are placed but not detail and clearly stated |
| | | 18-13 | **Adequate:** Not too hard to understand and two of the generic structure of recount text are correct, detail and clearly stated. |
| | | 12-7 | **Fair**: An effort needed to understand and two of generic structure of recount text are stated but not detail and clearly stated. |
| | | 6-0 | **Unacceptable:** Very hard to understand and unstated generic structure in recount text. |

| | | 25-21 | **Excellent**: All sentences are relevant and support the topic, progression of gives idea well linked |
|---|---|---|---|
| **2** | Content | 20-16 | **Good :** Ideas are well organized but some sentence is relevant and support the topic. |
| | | 15-11 | **Adequate:** Ideas are not well organized but some sentence is relevant and support the topic. |
| | | 10-6 | **Fair :** Ideas are not well organized and incomplete but some sentence is relevant and unsupported the topic. |
| | | 5-0 | **Unacceptable:** difficult to understand the ideas and sentence are not relevant and unsupported the topic. |
| **3.** | Grammar | 20-17 | **Excellent** : Mastery of grammar (past form of tense) article, preposition,etc. |
| | | 16-13 | **Good :** Mastery of grammar (past form of tense) but have few minor mistakes (article, preposition,etc). |
| | | 12-9 | **Adequate:** Many mistakes in grammar (past form of tense) and have few minor mistakes (article, preposition,etc). |
| | | 8-5 | **Fair:** Lack of mastery in grammar (past form of tense) and have many mistakes (article, preposition,etc). |
| | | 4-0 | **Unacceptable:** No mastery of grammar (past form of tense) have many mistakes (article, preposition,etc). |
| **3** | Vocabulary | 20-17 | **Excellent** : All of words / idiom / phrases are appropriate and support the topic. |
| | | 16-13 | **Good :** Many words / idiom / phrases are appropriate and support the topic. |
| | | 12-9 | **Adequate:** some words / idiom / phrases are appropriate but not support the topic. |
| | | 8-5 | **Fair:** Many words / idiom / phrases are inappropriate but still support the topic. |
| | | 4-0 | **Unacceptable:** All of words / idiom / phrases are inappropriate. |
| **5** | Mechanics | 5 | **Excellent** :Connect use of English writing conventions: Margin, capitalization spelling and punctuation are very neat. |
| | | 4 | **Good :** Some problems with writing conventions: spellings and punctuation but the paper is neat |
| | | 3 | **Adequate:** uses general writing conventions but has errors; the distract spelling and punctuation errors interfere with idea |

| | | |
|---|---|---|
| 2 | **Fair :** Serious problem in format paper, capitalization, punctuation and unacceptable to educated reader. | |
| 1 | **Unacceptable:** No mastery of conventions; spelling, punctuation, capitalization are error. | |

**Table 3.3 scoring guide**

### 3.3.4 Validity

Before doing pre-test and post-test as an instrument of the research, the test should be tried out in terms of validity. There are three kinds of validity; content validity, content-related validity, and construct validity. In this study, the test will be analyzed by using content validity. The content validity is measured by relating the content of the instrument in Indonesia curriculum. Besides, writing is a subjective test, if the subjective test the validity does not use the construct validity as the objective test, but can be broken down into smaller and observable abilities. For example, writing consists of content, vocabulary, organization of ideas, etc. Content validity is not always in numeric form but it can be determined whether the test's items reflect the objective in curriculum guides and syllabus. To test the content validity, the researcher compares the content of instrument to the subject based on English curriculum and English syllabus. If the test content reflects the curriculum guides, and syllabus, the test can be said have content validity. Then the item of the tests is valid.

| Basic Competence | Sub- Basic Competence | Questions | |
|---|---|---|---|
| | | Pre-Test | Post Test |

| | | | |
|---|---|---|---|
| Revealing the meaning and step down the rhetoric in a short essay that uses in the writing style which accurately, fluent and for public communication with recount and narrative form. | Revealing the meaning and step down the rhetoric in a short essay that uses in the writing style which accurately, fluent and for public communication with recount form. | Write a recount text free title with "experience" theme based on the generic structure and language feature appropriately? | Write a recount text using one of the following title based on the generic structure and language feature appropriately!<br>- First Experience to be a Student in Junior High School<br>- My Amazing Vacation<br>- An Unlucky Day<br>- My special birthday |

**Table 3.4 Content Validity**

## 3.4  Data Analysis

After collecting the data, the researcher will analyze the data. Analyzing the data is very important in a research because is to answer the research problem with the data taken from pre-test and post-test.  The researcher analyzes the data by using t-test from SPSS program especially by using Independent sample t-test. Moreover, the samples are small and the groups are independent, the t-test for independent samples is carried out to determine whether there is any significant between experimental and control group.

The assumption for Independent t-test where: (1) Independence: Observations within each sample must be independent, (2) Normal Distribution: The two population must be normally distributed. In this study included in parametric research which divided into two kinds of data; ratio and interval. The data of this study is ratio because zero has value or absolute zero. If the ratio, the data is definite homogeny and normal distribution. Last, (3) Homogeneity of Variance: The two populations must have equal variance.

## 3.4.1   Homogeneity Test of Variance

Homogeneity test of variance uses to know whether two groups are in the same position. For homogeneity test, the researcher uses Levene's test of homogeneity in SPSS 16.0 version because Levene's test of the homogeneity uses to assess the equality of the variance for a variable calculates for two or more groups. In this study has two groups; experimental and control groups. So, in this study uses Levene's test. The test of Levene's test, or P, defined as follow:

$$P = \frac{(N-k)\sum_{i=1}^{k} N_i\ (Z_i - Z..)^2}{(k-1 \sum_{i}^{k}\sum_{j=1}^{Ni}(Z_{ij} - Z_i)^2}$$

The symbols defined as follow:

P        : the result of the test

K        : the number of different groups which the sample belong

N        : the total number of sample

$N_i$        : the number of sample in the $i^{th}$ group

$Y_{ij}$        : the value of the $j^{th}$ sample from $i^{th}$ group

$Z_{ij}$        : $\begin{cases} |Y_{ij} - \overline{Y_i}|\overline{Y_i} \text{ is a mean of } i^{th} \text{ group} \\ |Y_{ij} - \overline{Y_i}|\overline{Y_i} \text{ is median of } i^{th} \text{ group} \end{cases}$

The significance of P is tasted a gained F ($\alpha$,k – 1, N – k ) where F is a quintile of the test distribution, with k – 1 and N – k its degrees of freedom, and $\alpha$ is the chosen level of significance (0.05). To analyze the homogeneity, the researcher uses SPSS 16.0. The homogeneity will check in SPSS by Levene's test with the following procedure. First, a procedure is inserting the pre-test score of both groups using data view. The second is going to the analyze menu, selecting compare means and the choosing independent sample t-test. The last procedure is interpreting the homogeneity test output, the researcher looks (sig.) at the

Levene's test columns to know whether the quality of variance in group of scores was homogeneity or not. If the sig. $> \alpha$ (0.05), two populations of variance were homogenous or equal but if sig. $< \alpha$ (0.05) two populations of variance were not homogenous or not equal.

### 3.4.2 Hypothesis Testing

Independent t-test uses to find out the significant difference of using four square method for increasing student's writing recount ability between experimental and control group. The steps of t-test calculation are: First, the tests the hypothesis of the research and the setting $\alpha$ (alpha) level at 0.05 (two-tailed test). The hypothesis in this research could be formulated as follow:

$H_0$ : There is no significant difference of using Four Square Method on Student's Writing Recount Ability between experimental and control group.

$H_1$ : There is significant difference of using Four Square Method on Student's Writing Recount Ability between experimental and control group.

The second step is finding t-value using Independent - Sample T-Test and comparing the probability with the level of significance for testing the hypothesis. After the scores compute in SPSS 16.00 version, then see the output of Independent- Sample T-Test and interpret the output that if sig. (2-tailed) $> \alpha$ (0.05), the researcher should accept the $H_0$, but if sig. (2-tailed) $< \alpha$ (0.05), the researcher can be rejected the $H_0$, it means $H_1$ is accepted.

T-test calculates to find out the comparison of two means between pre and post test score of experimental and control group. In analyzing the data, the researcher uses independent t-test formula. The formula for calculating t-test is :

$$t = \frac{(\overline{X}_1 - \overline{X}_2) - (\mu_1 - \mu_2)}{S_{\overline{X}_1 - \overline{X}_2}}$$

Where :

$$S_{\overline{X}_1 - \overline{X}_2} = \sqrt{\frac{S^2 \text{ pooled}}{n_1} + \frac{S^2 pooled}{n_2}}$$

Pooled variance: the average of two-sample variance, allowing the large sample to weight more heavily:

Formula:

$$S^2 \text{pooled} = \frac{(df_1)S_1^2 + (df_2)S_2^2}{df_1 + df_2}$$

$$= \frac{SS_1^2 + SS_2^2}{df_1 + df_2}$$

df1$_1$= dr for 1st sample;n$_1$-1

dfl$_2$ = dr for 1st sample; n$_2$-1

Standard Error of the differences

$$S_{\overline{X}_1 - \overline{X}_2} = \sqrt{\left(\frac{SS_1 + SS_2}{n_1 + n_2 - 2}\right)\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}$$

In calculating t-test, the researcher uses SPSS 16.00 version. The first steps, input the data of post-test in SPSS program between experimental and control group, then click Analyze then Compare Mean Then Independent Sample T-Test. In Independent Sample T- Test, input the score variable into Test Variable

column, and group variable Grouping Variable column, then clicks Define Group,

Choose group 1 (for experimental) and group 2 (for control), then click OK.