

CHAPTER III

RESEARCH METHOD

This chapter present seven topics dealing with the research method those are research design, population, sampling and sample, research instrument, validity and reliability testing, normality and homogeneity testing, data collecting method and data analysis.

A. Research Design

Before doing the research, the researcher arranged a research design. This research was a pre-experimental research design using quantitative approach with one group pretest-posttest design. A pre-test provided a measure on some attribute or characteristic that you assess for participants in an experiment before they received a treatment. While post-test provided a measure on some attribute or characteristic that assessed for participants in an experiment after a treatment.

According to Creswell (2012:294), an experimental design is the traditional approach to conducting quantitative research or experimental are procedures in quantitative research in which the investigator determines whether an activity or materials make a difference in results for participants. While according to Gay (1992:298), experimental method is the only method of research that can truly test hypotheses concerning cause and effect relationships. The researcher used a pre-experimental research design because the researcher want to established possible cause and effect between the independent and dependent

variables. This research was best of quantitative design used to establish probable cause and effect.

The illustration of the research design in this study is:

A diagram of One Group Pretest –Posttest

Y1	X	Y2
Pretest	treatment	posttest
	(Independent variable)	(Dependent variable)

Y1 : students' achievement on writing descriptive text before being taught by using basic questioning technique

X : basic questioning technique treatment

Y2 : students' achievement on writing descriptive text after being taught by using basic questioning technique

The procedures of pre experimental research that use One-Group Pretest-Posttest design are described:

1. Administering a pre-test before applying strategy with a purpose of measuring writing achievement of seventh grade students at SMPN 2 Sumbergempol.
2. Applying the experimental treatment teaching writing by using basic questioning as technique.
3. Administering a post-test after applying strategy with a purpose of measuring writing achievement of seventh grade students at SMPN 2 Sumbergempol.

In this study, the researcher used pre-experimental treatment are determined by comparing the pretest and posttest scores. The purpose to identify the effectiveness of using basic questioning technique in teaching writing descriptive text of seventh grade student at SMPN 2 Sumbergempol.

B. Population, Sampling and Sample

1. Population

Population is all the subject of the research. According to Creswell (2012:142), population is a group of individuals who have the same characteristic. In practice, quantitative researcher samples' from lists and people available. A target population (or the *sampling frame*) is a group of individuals (or a group of organizations) with some common defining characteristic that the researcher can identify and study. In this study, the population are all of the first grade students of SMPN 2 Sumbergempol which consist of eight class (A, B, C, D, E, F, G and H).

2. Sampling

Sampling is the act, process, or technique of selecting a suitable sample, or a representative part of a population for the purpose of determining parameters or characteristics of the whole population (Fridah, 2002:1). The primary goal of sampling is to get a representative sample, or a small collection of units or cases from a much larger collection or population. In an ideal situation, the researcher

select a sample of individuals who are representative of the entire population. In this research, the researcher used probability sampling. The sampling type was random sampling. According Creswell (2012: 143), in simple random sampling, the researcher selects participants (or units, such as schools) for the sample so that any individual has an equal probability of being selected from the population. The intent of simple random sampling is to choose individuals to be sampled who will be representative of the population. Some characteristic of sample members are quite active in teaching learning process, pay more attention when the teacher explain the material than they make noise in the classroom and have good attitude. The researcher using random sampling to get the sample from all class of VII class. And the appropriate class who have choose by using random sampling is VII C class. Therefore, the researcher choses VII C class as sample in this research.

3. Sample

Within this target population, the researcher then select a sample for study. According to Creswell (2012:142), a sample is a subgroup of the target population that the researcher plans to study for generalizing about the target population. Based on the description above, the researcher got sample from population with certain sampling technique. The sample of this reserach was the students of VII-C which consist of 31 students.

C. Research Instrument

Instrument has important function in this research. Instrument is one of the significant steps in conducting this research. According to Creswell (2012:157), an instrument is to measure the variables in the study may not be available in the literature or commercially. Developing an instrument consists of several steps, such as identifying the purpose of the instrument, reviewing the literature, writing the questions, and testing the questions with individuals similar to those the researcher plan to study.

As an experimental research, the main instrument used in this research is test. The materials of the test were taken from English book which related to students subject and based on Junior High School curriculum with the subject is descriptive text. There were three kinds of test in this research, those were pre-test, post-test and try out.

1. Pre-Test

To measure the students' ability before the treatment process, the researcher administered the pre-test on March 30th, 2016. This test was administered to know the basic competence for student and to know their earlier knowledge before they get the treatment. The scores were analyzed to determine the student's score between pre-test and post-test. The test of pretest was essay writing about descriptive text. Time allocation of the test is 80 minutes. The researcher used procedure to get the score by using analytic scoring rubric. There were four domain score. For the highest score was four and the lowest score was

one. And there were five component to be scored. So, the total score was 20. Each students' assignment scored by using calculation below:

$$\frac{\text{The total number}}{\text{The maximal score}} \times 100$$

2. Post-Test

To measure their ability after the treatment process, the reseacher given the post-test on April 27th , 2016. This test was administered to know the basic competence for students and to know their knowledge afer they get the treatment. It is done to know the final score and to know the student difference achievement before and after the treatment. The test of post-test is essay test about descriptive text. Time allocation of the test is 60 minutes. The researcher used procedure to get the score by using analytic scoring rubric. There were four domain score. For the highest score was four and the lowest score was one. And there were five component to be scored. So, the total score was 20. Each students' test scored by using calculation below:

$$\frac{\text{The total number}}{\text{The maximal score}} \times 100$$

3. Try Out Test

Before administering the test, the researcher conducted the try out test to know whether the test was reliable or not. The test was conducted on March 28th, 2016. The test was in the form of writing test by using basic questioning. To get the score, the researcher used a rubric to assess the writing test. The respondent is 26 students of SMPN 2 Sumbergempol of VII B class.

Furthermore, the scoring for the test was based on the analytic scoring rubric. According to O'Malley & Pierce (1996: 144), analytic scales separate the features of a composition into components that are each scored separately. Two advantages of this type of rubric are in providing feedback to students on specific aspects of their writing and in giving teachers diagnostic information for planning instruction. The researcher used the analytic scoring rubric from the product of O'Malley. There are four domain score in this rubric and there are five components will be scored. The component are composing, style, sentence formation, usage and mechanics. And for the domain score are: 4 = Consistent control, 3 = Reasonable control, 2 = Inconsistent control, 1 = Little or no control. The total score was 20 with calculation:

$$\frac{\text{The total number}}{\text{The maximal score}} \times 100$$

D. Validity and Reliability Testing

There are two important characteristics that every measuring instrument should pass. They are validity and reliability. According to Creswell (2012:159), reliability and validity are bound together in complex ways. These two terms sometimes overlap and at other times are mutually exclusive. Validity can be thought of as the larger, more encompassing term when assessing the choice of an instrument. Reliability is generally easier to understand as it is a measure of consistency. If scores are not reliable, the scores are not valid; scores need to be stable and consistent first before the scores can be meaningful.


The ideal situation exists when scores are both reliable and valid. So, the scores need to be stable and consistent before they can be meaningful.

1. Validity

Validity is to assess or measure what is supposed to measure. The material of the test must be the same as the material which is given in the teaching learning process. According to W. Creswell (2012:159), Validity is the development of sound evidence to demonstrate that the test interpretation (of scores about the concept or construct that the test is assumed to measure) matches its proposed use. According to Isnawati (2014:27), there are four types of validity. They are content validity, criterion-related validity, construct validity and face validity. This section discusses content validity. Content validity is the test that a content which is relevant with the purpose of the test.

In this test, the researcher asked student to answer the essay test to measures student's ability in writing descriptive text. The researcher made this test based on the course objectives in the syllabus of first grade of SMPN 2 Sumbergempol.

Table 3.1 Content Validity

Standard Competence	12. Menulis Mengungkapkan makna dalam teks tulis fungsional dan esai pendek sangat sederhana berbentuk descriptive untuk berinteraksi dengan lingkungan terdekat
Basic Competence	12.2 Mengungkapkan makna dan langkah retorika dalam esai pendek sangat sederhana dengan menggunakan ragam bahasa tulis secara akurat, lancar dan berterima untuk berinteraksi dengan lingkungan terdekat dalam teks berbentuk descriptive
Indicator	12.2.1 Melengkapi teks - descriptive 12.2.2 Menyusun teks 12.2.3 Menulis teks berbentuk - Descriptive
Technique	Writing test
Item of writing test	<p>Theme : My Favorite Teacher Time allotment : 80 minutes</p> <p>INSTRUCTIONS</p> <ol style="list-style-type: none"> 1. Write your name and class on the right top of the paper! 2. Make a descriptive paragraph based on the theme above! 3. The paragraph must consist of 30-40 words. 4. The paragraph is written in the present tense. 5. You may open your dictionary. <p>Title : My Favorite Teacher</p>  <p>Basic Questioning</p> <ol style="list-style-type: none"> 1. What is the title? 2. Who is your favorite teacher? 3. Where does he/she live? 4. Where does he/she work? 5. What does he usually bring for teaching? 6. What is his/her duty? 7. How does his/her characteristic? 8. How does he/she go to school? 9. Is he/she a good teacher? <p>Make a descriptive paragraph by answering the questions above!</p>

Based on table 3.2 showed that the instrument of the test was valid based on the standard competence, basic competence, and indicator which mentioned in syllabus.

2. Reliability

Reliability is the results of assessment in producing the score on different testing are consistency. According to Creswell (2012:159), reliability means that scores from an instrument are stable and consistent. Scores should be nearly the same when researchers administer the instrument multiple times at different times. Also, scores need to be consistent. When an individual answers certain questions one way, the individual should consistently answer closely related questions in the same way. According to Isnawati(2014:18), reliable test is consistent and dependable. So, if the test are administered in two different times, the test should have similar results.

In the try out test, the researcher used Chronbach's Alpha to know the reliability of the test. For the qualification of pre-test and post-test, there are 5 aspect will be scored. They are composing, style, sentence formation, usage and mechanics. And the students got 4 score for the highest score and 1 for the lowest score. The researcher tried to check the empirical reliability by using Cronbach's Alpha and to analyze the reliability the researcher used SPSS 16.0 after trying out the instrument.

The criteria of reliability according to Sujianto (2009:97), the value of Cronbach's Alpha as follows:

Cronbach's Alpha	Interpretation
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

**Table 3.2 Reliability by using Cronbach's Alpha
Tryout**

Case Processing Summary			
		N	%
Cases	Valid	26	100.0
	Excluded ^a	0	.0
	Total	26	100.0

Reliability Statistics	
Cronbach's Alpha	N of Items
.788	5

From the analysis, it was found that the value of try out score is 0.788. It means that the try out test is reliable.

E. Normality and Homogeneity Testing

1. Normality

Normality distribution test is a test to measure whether the data has a normal distribution or not. Normality test is intended to show that the sample data come from a normally distributed population. To know the normality, the researcher used Kolmogorov-Smirnov test with SPSS 16.0. If the value is smaller than 0.05 indicates that the data are non-normal. If the value is higher than 0.05 indicates that the data is normal. The test of normality is done toward the students' writing score in both pre-test and post-test.

The hypothesis for testing normality are:

- a. H_0 : Data is normal distribution
- b. H_1 : Data is not in normal distribution.

Criteria is which H_0 is rejected when the significance value is lower than 0.05

The analysis is as follows:

Testing data from pre-test using SPSS 16.0

One-Sample Kolmogorov-Smirnov Test		
		VAR00001
N		31
Normal Parameters ^a	Mean	49.3548
	Std. Deviation	8.24034
Most Extreme Differences	Absolute	.214
	Positive	.214
	Negative	-.209
Kolmogorov-Smirnov Z		1.194
Asymp. Sig. (2-tailed)		.116
a. Test distribution is Normal.		

Testing data from post-test using SPSS 16.0

One-Sample Kolmogorov-Smirnov Test		
		VAR00002
N		31
Normal Parameters ^a	Mean	65.9677
	Std. Deviation	8.70051
Most Extreme Differences	Absolute	.141
	Positive	.141
	Negative	-.098
Kolmogorov-Smirnov Z		.783
Asymp. Sig. (2-tailed)		.571
a. Test distribution is Normal.		

Based on the output from SPSS 16.0 by using One-Sample Kolmogorov-Smirnov test above show that the subject is 31 students. The significance value from pre-test is 0.116 and from the post-test is 0.571. The sig value from the pre-test it is bigger than 0.05 ($0.116 > 0.05$). It means that H_0 is accepted and H_1 is rejected and the data is in normal distribution. Then, for the post-test the value of sig is 0.571 and that is bigger than 0.05 ($0.571 > 0.05$). It also means that H_0 is accepted and H_1 is rejected and the data is in normal distribution. So, it can be concluded that both of data (pre-test and post-test score) are in normal distribution.

2. Homogeneity

Homogeneity test is intended to know whether the variance of data is homogeneous or not. In this case, the researcher wants to know the variance score in the class (group) sample. The procedure used to test the variance of homogeneity

is by determining F_{\max} value. In homogeneity test, F calculation should be lower than F theoretic (table).

The computation as follows:

$$S_X^2 = \sqrt{\frac{n \cdot \sum X^2 - (\sum X)^2}{n(n-1)}} \quad S_Y^2 = \sqrt{\frac{n \cdot \sum Y^2 - (\sum Y)^2}{n(n-1)}}$$

$$S_X^2 = \sqrt{\frac{31.77550 - (1530.1530)}{31(31-1)}}$$

$$= \sqrt{67,9032}$$

$$= 8,2403$$

$$S_Y^2 = \sqrt{\frac{31.137175 - (2045.2045)}{31(31-1)}}$$

$$= \sqrt{75,6989}$$

$$= 8,7005$$

$$S_X^2 = 8,2403$$

$$S_Y^2 = 8,7005$$

$$F_{\max} = \frac{S_Y^2}{S_X^2}$$

$$= \frac{8,7005}{8,2403}$$

$$= 1.0558$$

$$F_{\max} = 1.0558$$

$$\text{Degree of freedom (df}_1\text{)} = N_1 - 1 = 31 - 1 = 30$$

$$(\text{df}_2) = N_2 - 1 = 31 - 1 = 30$$

The calculation shows the result of F_{\max} is 1.0558. Furthermore, the homogeneity is fulfilled if F_{\max} calculation is lower than F table. The value of F table in level 0.05 and $\text{df}_1 = \text{df}_2 = 30$ is 1.8409, it can be said that the result of F_{\max} calculation is lower than F table or $F_{\text{table}} > F_{\text{calculation}}$ ($1.8409 > 1.0558$), it means that the variance value in the class sample based on pre-test and post-test is homogeneous.

F. Variable

A variable is everything that will become the object of research or the influenced in the research. According Balnaves and Caputi (2001:46), a variable is a general class of object, events, situations, characteristics and attributes that are of interest to the research. Based on the title of this research, it has two variables:

1. Independent Variable (X)

Independent variable is a variable which influence dependent variable, in order words independent variable is causes variable. According to Creswell (2012:116), Independent variables are is an attribute or characteristic that influences or affects an outcome or dependent variable. In this research independent variable is basic questioning technique.

2. Dependent Variable (Y)

Dependent variable is a variable that emerge in fuction relationship influenced by independent variable. According to Creswell (2012: 115), a dependent variable is an attribute or characteristic that is dependent on or influenced by the independent variable. The dependent variable in this research is the students' descriptive writing skill.

G. Data Collecting Method

In this research, the researcher collecting the data by giving test. According to Onet (2000:3), test is assessment tools that may be used to measure an individual's abilities, values, and personality traits. In an experiment, test an idea (or practice or procedure) to determine whether it influences an outcome or dependent variable. In this research, the researcher used achievement test. According Isnawati (2014:14), achievement test is kind of test that establish how successful individual students, group of students or the course have been in achieving objectives. The test is used to get the data of the students writing ability achievement. The researcher uses the essay test/writing test to test the writing skill.

There are procedures of conducted the research:

1. Pre-test

Pre-test was given to the students before the students being taught writing descriptive text by using basic questioning technique. Its given to know the students' ability in writing descriptive text before the students got the treatment.

The pre-test was conducted in the first meeting on March, 30th 2016. The test was in the form of essay or writing test. Time allocation is 80 minutes.

2. Post-test

Post-test was given to the students after the students being taught writing descriptive text by using basic questioning technique. This test was administered to know the students' ability in writing descriptive text after the students done the treatment. The post-test was conducted on April 27th, 2016. The test was in the form of writing test. Time allocation is 60 minutes. The post test score will be compare with score of pre-test. Hence, the researcher can find out the differences between before and after being taught by using basic questioning technique in writing descriptive text.

H. The Description of Treatment

Treatment was given after administering the pre-test and before the post tests. The treatment conducted by the researcher on March 31th, on April 13th, 14th, 20th, 21th 2016. The procedure of treatment as follows:

1. First treatment was conducted on March 31th, 2016

Before beginning applied the basic questioning, the researcher conveyed about simple present tense and discussed the main point of descriptive text and given examples both them. Then the reseracher introduced a technique that used in teaching writing especially writing descriptive text. The technique is basic questioning technique. In this occasion, the researcher explained how to apply

basic questioning in writing descriptive text. The researcher given the example about descriptive text then the reseracher asks some questions related with the topic. After that, the researcher asked the students to answer some question related with the topic. After answer the questions, the researcher asked the students to make a descriptive paragraph based on questions that given. The last, the teacher scoring the students' writing in descriptive text. So, the students will easy to make a simple paragraph about what they should describe by giving questioning in the task. Because basic questioning give stimulus to the students to get an idea before writing.

2. Second treatment was conducted on April 13th, 2016.

In this occasion, the researcher given exercise to the students. The students should describe the topic given by the reseacher. The topic are about “Mr. Sugito is Our Headmaster” and “SMP Negeri 2 Sumbergempol.” Before the students do the exercise, the researcher reminded how to do the exercise based on explanation before.

3. Third treatment was conducted on April 14th, 2016.

In this occasion, the researcher given exercise to the students. The students should describe the topic given by the reseacher. The topic are about “Mrs. Marsiyah is a Teacher” and “Mrs. Sumiatun is a Teacher.”

4. Fourth treatment was conducted on April 20th, 2016.

In this occasion, the researcher given exercise to the students. The students should describe the topic given by the reseacher. The topic is “My Sister and Brother.”

5. Fifth treatment was conducted on April 21th, 2016.

In this occasion, the researcher given exercise to the students. The students should describe the topic given by the reseacher. The topic is “My Sitmate.”

I. Data Analysis Techniques

The collected data was processed by comparing with the first data (pre-test) and the second data (post-test) to see whether there will be significant difference after give by treatment or not.

The data result (post-test) of writing ability was data of average score of writing ability test after being taught by basic questioning technique. The first data is data of students’ scores before being taught by using basic questioning technique (pre-test). To get the achievement of writing ability test, the reseacher given the student a test after got treatment in teaching writing by using basic questioning technique helped with picture. The test was in the form of writing test. To know the significant difERENCE of the writing ability between before and after being taught by using basic questioning technique, the researcher in this research used paired sample T- test with formula of t-test and using SPSS 16.0 for windows.

The formula of t-test as follows:

1. The researcher finds out the mean of pre-test (x) and mean of post-test (y), the formula is:

$$x = \frac{\sum x}{N}$$

$$y = \frac{\sum y}{N}$$

Where:

$\sum x$: Total score of pre-test

$\sum y$: Total score of post-test

N : total number of students

2. Then, the researcher finds out the mean of differentiate pre-test and post-test, the formula used is follow:

$$Md = \frac{\sum d}{N}$$

Where:

Md : the mean of differential pre-test and post test

$\sum d$: sum of different between post-test and pre-test

N : total number of students

3. Next, the researcher finds out the data percentage, the researcher used formula:

$$P = \frac{f}{n} \times 100\%$$

Where:

P : percentage of data

f : frequency of the counted value

n : number of students

4. After that, the researcher finds out the standard deviation, the formula used is:

$$S = \sqrt{\frac{\sum X^2 - \frac{(\sum x)^2}{N}}{N-1}}$$

$$S = \sqrt{\frac{\sum y^2 - \frac{(\sum y)^2}{N}}{N-1}}$$

Where

S : standard deviation

$\sum X^2$: sum of pre-test quadrate score

$\sum x$: sum of pre-test score

$\sum Y^2$: sum of post-test quadrate score

$\sum y$: sum of post-test score

N : number of students

5. Then, the researcher finds out the total number of quadrate deviation ($\sum X^2 d$), the formula is:

$$\sum X^2 d = \sum d^2 - \frac{(\sum d)^2}{N}$$

Where:

$\sum X^2 d$: total number of quadrate deviation

$\sum d$: sum of different between post-test and pre-test

N : number of students

6. Next, the researcher finds out the t-test by using formula:

$$t_{\text{count}} = \frac{Md}{\sqrt{\frac{\sum x^2 d}{N(N-1)}}}$$

where:

Md : mean different of pre-test and post-test

$\sum x^2 d$: total of quadrate deviation

N : number of students

7. Finally the researcher looks for t-table distribution with significant 5%

$$df = N-1$$

where:

df : degree of freedom

N : number of students

The criteria for accepting or rejecting the hypothesis are: if the significance value bigger than 0.05 means that H_0 is rejected and H_a is accepted. On contrary, if the significance value smaller than 0.05 means that H_0 is accepted and H_a is rejected.