CHAPTER III

RESEARCH METHODOLOGY

In this chapter the writer describes the research methodology, which consists of research design, population, sampling and sample, variable of the study, research instrument, try out project of the instrument, validity and reliability testing, normality testing, data collecting method, and data analysis.

A. Research Design

Quantitative research is research that is guided by a particular hypothesis, which is one of the goals of the research is to test the hypothesis that predetermine. Based on Creswell (2008:6) quantitative research is a type of educational research in which the researcher decides what to study, asks specific, narrow question, collects quantifiable data from participants, analyze these numbers using statistics, and conducts the inquiry in an unbiased, objective manner.

Considering the research of the problems and the purposes of the research, research design used in this study is pre-experimental design with quantitative approach. This research conducted in pre-experimental using quantitative approach with one-group pre-test and post-test design without control variable. Latief (2010: 96) states that pre-experimental research is conducted without a control group. The pre-experimental research can be done to investigate.

The one-group pretest posttest design involves three steps: (1) Administering a pretest measuring the dependent variable, (2) Applying the treatment X to the subjects, (3) Administering a posttest, again measuring the dependent variable.

Table 3.1 A Diagram One Group Pretest-Posttest Design

Pre-test	Independent Variable	Post-test
Y_1	X	Y_2

This research consist of two variables are independent variable and dependent variable. The score that is taken before students giving treatment called as pretest and after the giving treatment called posttest.

Applying one group pretest-posttest, the researcher wanted to find out whether there is any significant different of students' mastery before and after being taught using lecturing method at MTsN Tunggangri in academic year 2015/2016.

B. Population and Sample

1. Population

Before collecting sample, the researcher had to determine the population. Arikunto (2006: 130) stated that a population is a set or collection of all

elements processing one or more attributes of interest. According to Gay (1992: 140) population is the group to which a researcher would like the results of a study to be generalizable. Based on Creswell (2008: 151) a population is a group of individuals who have the same characteristics. It means population has at least one characteristic that differentiates it from other groups.

A population is defined as all members of any well-defined class of people, events, or objects (Ary et al, 2010: 148). The population of this study was taken from MTsN Tunggangri Kalidawir Tulungagung. The population of this research is all of the class of eight grade students in MTsN Tunggangri that is consist of ten classes in academic year 2015/2016 with total of students 392 students, 169 male, and 223 female.

2. Sample and Sampling

In selecting the sample, it must be representative to a population. Ary (2010: 148) stated that a sample is a portion of a population. It means that good sample must be representative of the entire as possible, so that the generalization of the sample of this research. Based on Creswell (2008: 152) a sample is a subgroup of the target population that the researcher plans to study for generalizing about the target population.

Selection of the sample is very important step in conducting a research study. Sampling is the process of selecting a number of individuals for a study

in such a way that the individuals represent the larger group from which they were selected (Gay, 1992:123).

The selection sample of population in this research is C class of eight grade students at MTsN Tunggangri academic year 2015/2016 consists of 42 students, 18 male, and 24 female. The researcher decides to choose VIII-C because the researcher believes that VIII C has average proficiency in English language subject. Based on the information of the English teacher if the class had average capability and this class is appropriate to be given the treatment.

The researcher used purposive sampling to choose the sample. Purposive sampling is technique to chosen the sample with specific purpose (Sukardi, 2012: 64). By using purposive sampling, the expected criteria for sample obtained completely in accordance with the research to be conducted. Choosing the sample is based on purposive sampling depends on what criteria are used.

C. **Variable of the Study**

Variable is a characteristics or attribute of an individual or an organization that researchers can measure or observe and varies among individuals or organizations studied (Creswell, 2008: 123). This study has two variables; they are independent variable and dependent variable.

a. Independent variable

Independent variable is an attribute or characteristic that is dependent on or influenced by the independent variable (Creswell, 2008: 126). Independent variable is a variable which is observed. The side of independent variable can appear and exist by itself without any other supported. It influences and gives special effects in dependent variable. In this study, the independent variable is lecturing method.

b. Dependent Variable

Dependent variable is the variable which is influenced by independent variable. According to Creswell (2008: 126) dependent variable is an attribute or characteristics that influences or affects an outcome or dependent variable. The dependent variable in this study is the students' achievement of grammar.

D. Research Instrument

Instrument has important function in research. The researcher needs the instrument to collect the data. Instrument is a tool collects a data needed in a research. The instrument is used by the researcher is test. This grammar testing used by the researcher to know the students achievement in grammar before and after taught by using lecturing method.

A test is not necessarily a written set of questions to which an individual responds in order to determine whether he or she "passes" (Gay, 1992: 154).

According to Ary et al (2010; 201) stated that a test is a set of stimuli presented to an individual in order to elicit responses on the basis of which a numerical score can be assigned. Arikunto (2010:193) explain that a test is a set of question or exercise or by any means which is used to measure the skill and the knowledge, intelligence, ability or talent proposed by individual or a group of people.

To obtain the required score of the students' achievement in grammar ability in this research, the researcher used two kinds of test as the instrument. They are pre-test and post-test. The pre-test was given before the students taught by using lecturing method. It aims to know students achievement of grammar before taught by using lecturing method. The second test is post-test. Post-test was given after the students were taught by lecturing method. The aim of post-test is to know students' achievement of grammar after taught by using lecturing method.

The test items in the pretest are exactly same as those in the posttest. The researcher gave the test that contains 25 items and consists of 3 kinds. The first kind is multiple-choice that contains 15 items. Second, is complete the table that contains 5 items. And the last is finding the verb that contains 5 items. It was done to know the final score and to know the students' difference competence before and after they getting treatment. Thus, in measuring the students' mastery, the test was considered quit representative to topic in the class.

E. Validity and Reliability Testing

The validity and reliability is important part for the research in measuring instrument. In this research, the researcher need valid and reliable instrument. In this research, the researcher used test as instrument to collect the data.

In this research, vocabulary test used to measure the students' achievement of grammar after they have been taught by using lecturing method. Validity and reliability testing of this test was very important to know scores derived from instrument used in the research.

1. Validity

Validity is the most important consideration in developing and evaluating measuring instruments. According to Ary (2010:225) validity was defined as the extent to which an instrument measured what it claimed to measure. Heaton (1988; 159) the validity of test is the extent to which it measures what it is supposed to measures and nothing else. There are four types of validity, they are content validity, criterion-related validity, construct validity, and face validity. In this research, the researcher used content validity and construct validity to measure whether the test has a good validity or not. The description of both types of validity is described below.

a) Content Validity

Content validity is a kind of validity which depends on careful analysis of the language being tested and of particular test. A test is said to

have content validity if its contents constitutes a representative sample of the language skills, structures, etc. with which it is meant to be concerned (Hughes, 1989:22). It includes a proper sample of the structure or content which is relevant with the purpose of the test. The researcher create questions of the test based on the component of grammar testing that is matched by syllabus of second grade of MTsN Tunggangri, so that is was not out of contents. The content validity in this research can be showed as follow:

Table 3.2 Content Validity of the Objective of Syllabus

Standard Competence	12. Mengungkapkan makna dalam teks tulis fungsional dan esai pendek berbentuk *recount text* dan *narrative* untuk berinteraksi dengan lingkungan sekitar
Basic Competence	12.1 Mengungkapkan makna dan langkah retorika dalam esai pendek sederhana dengan menggunakan ragam bahasa tulis akurat, lancar dan berterima untuk berinteraksi dengan lingkungan sekitar berbentuk *recount* dan *narrative*
Indicator	• Mengidentifikasi cirri kebahasaan teks fungsional pendek berbentuk *recount text / narrative* • Menulis teks pendek dan sederhana dalam bentuk *recount text / narrative* dengan langkah retorika yang benar

	• Mengidentifikasi berbagai makna *recount text / narrative*
Technique	Writing
Instrument of Test	Pre-test Post-test

b) **Construct Validity**

Creswell (2008: 173) stated that construct validity is established by determining if the scores from an instrument are significant, meaningful, useful, and have a purpose. A test is said to have construct validity if it can be demonstrated that it measures just the ability which is supposed to measure. The word construct refers to any underlying ability which is hypothesized in a theory of language ability.

2. **Reliability**

A reliable test is consistent and dependable. Thus, if the students are given the same test on two different occasions, the test should yield similar result and the more similar the scores are, the more reliable the test is.

According to Ary et al (2010: 236) the reliability of a measuring instrument is the degree of consistency whit which is measures whatever it is measuring. Creswell (2008: 169) explain that a goal of good research is to

have measures or observations that are reliable. This quality is essential in any kind of measurement. So, the reliability is important part to know the test is good or not in using the test to measure students master in vocabulary of this research.

The researcher consider the reliability coefficient used the formula from Kuder Richardson Reliability or KR-20, which is based on the proportion of correct and incorrect responses to each of the items on a test and the variance of the total scores (Ary et al, 2010:245). To have the reliable test, the researcher was conducting the tryout of both tests: pre-test and post-test. After conducting the try out, the researcher got score to be analyzed to know the reliability of pretest, which were:

Table 3.3 List Scores of Tryout Pre-Test

No.	Students	Score of tryout pretest
1.	T1	11
2.	T2	12
3.	T3	14
4.	T4	12
5.	T5	12
6.	T6	10
7.	T7	15
8.	T8	11
9.	T9	14

10.	T10	13
11.	T11	11
12.	T12	10

Based on table 3.3, the researcher analyzed each item's answer of pretest with give point 1 for correct answer, and point 0 for incorrect answer, then used it to analyze the reliability by using Microsoft excel to computation Kuder Richardson Formula or KR-20, "it is based on the proportion of correct and incorrect responses to each of the items on a test and the variance of the total scores" (Ary*et al*, 2010:245). Then, the researcher got value of coefficient reliability was 0.64 for tryout pre-test instrument.

After conducting the try out, the researcher also got score to be analyzed to know the reliability of posttest, which were:

Table 3.4 List Scores of Tryout Post-Test

No.	Students	Score of tryout posttest
1.	T1	12
2.	T2	12
3.	T3	14
4.	T4	12
5.	T5	12
6.	T6	10

7.	T7	15
8.	T8	11
9.	T9	14
10.	T10	13
11.	T11	11
12.	T12	11

Based on table 3.4, the researcher analyzed each item's answer of posttest with give point 1 for correct answer, and point 0 for incorrect answer, then used it to analyze the reliability by using Microsoft excel to computation Kuder Richardson Formula or KR-20. Then, the researcher got value of coefficient reliability was 0.78 for tryout post-test instrument.

Ary*et al* (2010: 241) said "if the reliability coefficient is near 1.00, the instrument has relatively little error and high reliability". From this statement, it showed that both instrument in pre-test and post-test was reliable, so it could be used as appropriate instrument to measure student's achievement in simple past tense without need any revising.

According to Vansickle (2015: 4) the classification of reliability test is:

Table 3.5 The Criteria of Coefficient Correlation

Reliability Test Coefficient	Classification
Les than 0.20	Poor

0.20 to 0.40	Fair
0.40 to 0.60	Moderate
0.60 to 0.80	Good
0.80 to 1.00	Very Good

From the criteria above, the researcher could be concluding that both instrument in pre-test and post-test was reliable and the instrument was good. So it can be used as appropriate instrument to measure student's achievement in simple past tense.

F. Normality and Homogeneity Testing

1. Normality

Normality test are used to determine whether a data set is well-modeled by a normal distribution or not. Priyatno (2011, 77) told that the normality of data is important because the data can be considered to represent the population when it is in normal distribution.

To know the normality, the researcher used One-Sample Kolmogorov-Smirnov test with SPSS 16.0. If the value is smaller than 0.05 indicates that the data are not normal. If the value is higher than 0.05 that the data is normal. The result can be seen at the table below.

Table 3.6 One-Sample Kolmogorov-Smirnov Test

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		42
Normal Parameters[a]	Mean	.0000000
	Std. Deviation	1.63215138
Most Extreme Differences	Absolute	.100
	Positive	.076
	Negative	-.100
Kolmogorov-Smirnov Z		.646
Asymp. Sig. (2-tailed)		.799
a. Test distribution is Normal.		

Based on the data above, the result of normality test uses one-sample kolmogorov-smirnov test shows the subjects is 42 students. The value of Kolmogorov-Smirnov Z is .646 and the Asymp. Sig (2-tailed) is .799. It shows that the data is normal, because the value of Kolomogorov-Smirnov Z is 0.646 more than 0.05 (0.646>0.05) and the Asymp. Sig (2-tailed) is 0.799 more than 0.05 (0.799>0.05).

2. Homogeneity

Homogeneity testing is used to know whether the data is homogeneity or not. In this research, the researcher intended to test the homogeneity of the data. To know the homogeneity, the researcher used One Way Anova with SPSS 16.0. the result can be seen in the table below:

Table 3.7 Test of Homogeneity Variances

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Levene Statistic	df1	df2	Sig.
1.284	6	34	.291

From the table, it can be seen the value of Sig. is 0.291. It can be concluding that the data result of SPSS is homogeneity.

G. Data Collecting Method

The data collecting method is the method to obtain the data in the research. The aim of the data collecting in conducting scientific research was to get material that needed by the research. The data collecting method in this research was done in three steps:

1. Pretest

Lodico (2006: 178) stated that a pretest is a test given before the experimental treatment. So pretest is done before treatment process to know the students' achievement of grammar before taught used by lecturing method. The researcher gave the test that contains twenty five items and consists of three items. The numbers of students who took the pre-test there were 42

students. Then, the result of the test is students' score. The score obtained were analyzed to determine between pre-test and post-test.

2. Posttest

A posttest is a measure on some attribute or characteristic that is assessed for participants in an experiment after a treatment (Creswell, 2008: 297).After the treatment, post-test was given to the students. The test items in the post-test are exactly the same as those in pre-test. The post-test is done to see final score and to know the different of the students' score before get the treatment and after they get the treatment. The goal of this test is to measure students' achievement of grammar after being taught using lecturing method. The numbers of students who took the pre-test there were 42 students.

H. Data Analysis

The data obtained from research result students test that were analyzed quantitatively. Quantitative analysis was done using statistic which is called statistical analysis. This technique was used to find the significant difference on students' achievement of grammar before after being taught using lecturing method. The data was collected from students' score in pretest and posttest. To know the significant difference on the students' achievement of grammar before and after using taught lecturing mrthod, the researcher in this research using paired sample T-test as SPSS 16.0 for windows.