CHAPTER III

RESEARCH METHOD

In this chapter, the researcher presents the research method used in this research. The main components are research design, subject of the research (population, sampling, and sample), research instrument, validity and reliability testing, normality and homogeneity testing, data collecting method, data analysis.

A. Research Design

In this study the researcher used quantitative approach with Quosi-experimental research design. This design is applied because the researcher comparing two group which are experimental class and control class. In experimental class, the students gave pre-test, treatment, and post-test but in the control one, the students did not given a treatment only as control.

The researcher conducted quosi experimental research design by using two groups pre-test and post-test. For more detail about the design, see the table below:

Table 3.1

Nonrandomized subjects pre-test post-test control group design

Group	Pre-test	Independent Variable	Post-test
Experimental	Y1	X	Y2
Control	Y3	-	Y4

(Ary, et.al 2010:316)

Note:

A: Experimental group (VII C)

B: Control group (VII D)

Y1: Pre-test for experimental group

Y2: Post-test for experimental group

X: Treatment (STAD Technique)

Y3: Pre-test for control group

Y4: Post-test for control group

B. Population, Sampling and Sample

1. Population

Population is the large group of the research. It stated by Ary (2010:148) population defined as all members of any well-defined class of people, events or object. In this research, the population was the whole seventh grade students of MTs Al Huda Bandung that consist of four classes. There are 99 students.

Table 3.2 Population of the Research

No.	Class	Total
1.	VII A	11 students
2.	VII B	32 students
3.	VII C	31 students
4.	VII D	25 students

2. **Sampling**

Sampling is a process used to select a sample. Sampling is a process of selecting a number of the students who will be represent from the large group (Ary, 2010:155). Sampling is very important way to obtain a group of a subject who will provide specific information. In other word, sampling is the technique how the researcher chooses the sample.

In this research, the researcher used purposive sampling. The researcher used purposive sampling because the sample was suggested from English teacher who taught seventh grade students in MTs Al Huda Bandung and the researcher believe that the sample could give sufficient information.

3. **Sample**

Sample is a group of subject or participant (students) is chosen from the populations to be a representative (Fraenkel and Wallen, 2009:90). In selecting the sample, the researcher used purposive sampling technique. The researcher chose students in VII C which is consist of 31 students and VII D which is consist of 25 students.

C. **Research Instrument**

Instrument of the research is a tools which be used by the researcher in collecting data. It means any research needs instrument for gathering data. According to Arikunto (2010) there are many kinds

of instruments such as test, questionnaire, interview, rating scale, observation, and documentation. The instrument that is used in this research is test. In collecting the data, the researcher used Pre-test and Post-test. Pre-test was administered before teaching using STAD Technique to experimental class and without using STAD Technique to control class in teaching grammar. Meanwhile post-test was administered after doing a treatment by using STAD Technique to experimental class and without using STAD Technique to control class in teaching grammar. The researcher gave the test consists of 30 items in multiple choice (see appendix 4).

D. Validity and Reliability

1. Validity

Fraenkel and Wallen (2012:147) stated a valid instrument is that is measures what it is supposed to measure. Validity is the most important idea to consider when preparing or selecting an instrument for use. To know the validity of instrument to gather the data, the researcher used content validity, construct validity and face validity.

a. Content Validity

Content validity is the test that the content is relevant with the purpose of the test. According to Ary et al (2010:226) the question on a test is representative of some defined universe or domain of content. It means the researcher must seek evidence

that the test to be used represents a balanced and adequate sampling of all the relevant knowledge, skill, and dimensions making up the content domain. Content validity is the test that if has a good content of the test. It means a test has valid if the content of the test is representative among lesson given. The instrument of study had content validity because the items were materials used for teaching grammar at the seventh graders of MTs Al Huda Bandung and also the test was designed based on syllabus in Curriculum 2013 since the school implemented in the time the researcher conducted this research. The researcher made the test based on standard competences.

Table 3.3 Content Validity

Main Competence	Basic Competence	Indicators	Type of test	Number of items
3. Memahami pengetahuan (faktual, konsptual, dan prosedural) berdasarkan rasa ingin tahunya tentang ilmu pengetahuan, teknologi, seni, budaya terkait fenomena dan kejadian tampak mata.	3.8. Memahami tujuan, struktur teks, dan unsur kebahasaan dari teks lisan dan tulis untuk menyebutkan tingkah laku/tindakan /fungsi dari orang/binatang/benda.	Students are able to complete "to be" in the sentence.	Multiple choice	1, 2, 3, 4, 5, 6, 7, 8, 9, 10,
		Students are able to complete sentence which indicate plural or singular form.	Multiple choice	11, 12, 13, 1, 15, 16, 17, 18, 19, 20, 21,
		Students are able to choose the correct time signal used in simple present tense in the sentence.	Multiple choice	22, 23, 24, 25,
		Students are able to change affirmative to negative or interrogative in verbal and nominal sentences.	Multiple choice	26, 27, 28, 29, 30.

b. Construct Validity

      Construct validity is the test actually tap into theoretical construct as it has been defined. It can be said construct validity is degree to which a test measures what it claims, or purports, to be measuring (Brown, 2007:25). Therefore, the researcher used multiple choice test consists of 30 numbers about simple present tense.

c. Face Validity

      The face validity of this research is based on expert opinion. Ary (2010:228) stated that face validity refers to the extent to which examinees believe the instrument is measuring what it is supposed to measure. Therefore, the researcher guided by advisor in processing conducted the research. The other expert is English teacher who teach seventh grade in MTs Al Huda Bandung. The researcher asked her opinion about the test which is appropriate for students or not. Validation sheet from the teacher can be seen in appendix 7.

2. Reliability

    The reliability of the test is its consistency and dependable (Brown, 2007:20). Thus, reliability is a measure of accuracy, consistency, dependability or fairness of scores resulting from administration or particular examination. Reliability is necessary characteristic of any

good test: for it to be valid all, a test must first abe reliable as a measuring instrument (Heaton, 1989). Reliability test instrument can be done by using Cronbach's Alpha. The value of Cronbach's Alpha can be seen as follow:

Table 3.4 Cronbach's Alpha Interpretation

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

The researcher used SPSS program to compute the reliability of instrument. The result of the reliability testing can be seen as follow:

Table 3.5 Reliability Result of Tryout Pre-test

Reliability Statistics

Cronbach's Alpha	N of Items
.848	30

From the table above, the result of Cronbach's alpha is 0.848 it means that the test is very reliable.

Table 3.6 Reliability Result of Try-out Post-test

Reliability Statistics

Cronbach's Alpha	N of Items
.939	30

From the table above, the result of Cronbach's alpha is 0.939 it means that the test is very reliable.

E. Normality and Homogeneity Testing

1. Normality Testing

Normality test is used to test whether a variable is normal or not. Normal here means if the data have a normal distribution. The main reason of conducting normality testing in a research in order to know that the population or data involved in the research is in normal distribution. To test the normality of the data, the researcher used *One Sample Kolmogorov-Smirnov* technique and calculating used SPSS 16.

The considerations to test the normality testing are:

a. If the significance > 0.05, the data is in normal distribution

b. If the significance < 0.05, the data is not in normal distribution

After got the score of pre-test and post-test, the researcher calculated the normality of both pre-test and post-test by SPSS 16.00. The result was shown below:

Table 3.7 Test of Normality Pre-test

One-Sample Kolmogorov-Smirnov Test

		experimental_group	control_group
N		29	25
Normal Parameters[a]	Mean	32.8276	33.8000
	Std. Deviation	5.88624	6.54472
Most Extreme Differences	Absolute	.178	.208
	Positive	.178	.171
	Negative	-.143	-.208
Kolmogorov-Smirnov Z		.958	1.038
Asymp. Sig. (2-tailed)		.317	.232

a. Test distribution is Normal.

Based on the table above, the Asymp. Sig (2-tailed) in experimental group was 0.317 and control group was 0.232. Both of them were above 0.05. It means the distribution data in both of classes was normal.

Table 3.8 Test of Normality Post-test

One-Sample Kolmogorov-Smirnov Test

		experimental_group	control_group
N		29	25
Normal Parameters[a]	Mean	34.1034	53.2800
	Std. Deviation	10.42780	11.71367
Most Extreme Differences	Absolute	.232	.135
	Positive	.232	.135
	Negative	-.179	-.096
Kolmogorov-Smirnov Z		1.248	.677
Asymp. Sig. (2-tailed)		.089	.749

a. Test distribution is Normal.

Based on the table above, the Asymp. Sig (2-tailed) in experimental group was 0.089 and control group was 0.749. Both of them were above 0.05. It means the distribution data in both of classes was normal. The conclusion from two table shown above, the data both of pre-test and post-test have normal distribution.

2. Homogeneity Testing

Homogeneity testing is conducted to know whether the gotten data has a homogeneous variance or not. Homogeneity test intended to show two or more group of data sample come from population having the same variance. . To test the homogeneity of the data, the researcher calculating used SPSS 16.

The considerations to test homogeneity testing are:

c. If the significance > 0.05, the data is homogeneous

d. If the significance < 0.05, the data is not homogeneous

After got the score of pre-test and post-test, the researcher calculated the homogeneity of both pre-test and post-test by SPSS 16.00. The result was shown below:

Table 3.9 Test of Homogeneity Pre-test Variances

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
grammar_score	Based on Mean	2.129	1	52	.151
	Based on Median	1.246	1	52	.270
	Based on Median and with adjusted df	1.246	1	50.854	.270
	Based on trimmed mean	2.169	1	52	.147

Based on table above, the significance value shown 0.151. Because of the significance value was higher than 0.05, so it can be concluded that data of pre-test were homogeneous.

Table 3.10 Test of Homogeneity Post-test Variances

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
grammar_score	Based on Mean	.685	1	52	.412
	Based on Median	.999	1	52	.322
	Based on Median and with adjusted df	.999	1	52.000	.322
	Based on trimmed mean	.877	1	52	.353

Based on table above, the significance value shown 0.412. Because of the significance value was higher than 0.05, so it can be concluded that data of post-test were homogeneous.

F. Method of Collecting Data

Method of collecting data deals with how the researcher got the data. The data in this study were collected by administering test, they were pre-test and post-test. The test was about grammar (simple present tense). The test consists of 30 questions which were served in multiple choice forms.

1. Pre-test refers to a measure or test given to the subject prior to the experimental treatment. This aims to know the basic competence and their earlier knowledge before they get the

treatment. At the first meeting, the researcher gives pre-test to the students.

2. Post-test was given after taught by STAD technique in experiment group and control group which is taught without STAD technique.

Table 3.11 The Schedule of the Test and Treatment

No	Activity	Date	Material	Note
1.	Pre-test	March 19, 2019	-	Experimental Class
		March 19, 2019	-	Control Class
2.	Treatments	March 21, 2019	To be	Treatment
		March 25, 2019	Singular, Plural, and Time signal	Treatment
		March 26, 2019	Verbal and nominal sentence	Treatment
3.	Post-test	March 26, 2019	-	Control Class
		March 28, 2019	-	Experimental Class

Before the test was administered to the students, the researcher conducted try-out on March 15, 2019. Try-out was conducted to another class that is 7B class. The purpose of conducted the try-out of the test to achieve the validity and reliability of the instrument. Based on the result of validity in the instrument, the researcher revised some items in the test especially number 1,2,10,22,25,26 in the pre-test and number

10,12,15,18,19 in the post-test because they were not valid (see appendix 7).

Based on the table above, the researcher conducted Pre-test in the experimental class and control class on March 19, 2019. After did Pre-test, the researcher gave treatment three times. In the first treatment, the material was about "to be" used in simple present tense. In the next treatment, the researcher gave the material about singular, plural, and time signal used in simple present tense and the last treatment, the researcher gave verbal and nominal sentence used in simple present tense. After did treatments, the researcher have Post-test. Post-test in the control class was conducted on March 26, 2019 and in the experimental class was conducted on March 28, 2019.

The researcher used STAD technique as the treatment. The procedure of conducting STAD technique in this research as follow; the researcher prepared the material such as worksheet, the individual quiz, and the answer key. After that, the researcher make group list of students' name in the whiteboard and ask them to gather with their group. Afterwards, the researcher gives class presentation to present about simple present tense. The next is the researcher give each groups a worksheet and asks them to have discusses in their group. After they finish the discussion, the researcher gives them the answer key to correct their work and the students have individual quiz. In individual quiz, the other member of the group does not help their friend to answer the

questions. After the students do the individual quiz, they have a chance to correct their quiz using an answer key and delivered the score toward the researcher. The next is the researcher check their individual improvement score and in the last day, the researcher gave reward if their scores reach a certain criterion. From the explanation above, it can be concluded that the procedure of STAD technique in conducting this research followed from Slavin (1995) and Shaaban and Ghaith (2005).

G. Data Analysis

Data analysis is aimed to analyze the data which has been collected. The data got from the result of the students' test and analyzed quantitatively. Quantitative data analysis is also called statistical analysis. It meant the result of the data served in numeral form. The quantitative data of this research was analyzed using statistical computation. The data collected was processed by comparing the score between control group and treatment group to see whether there is significant different between students who given by treatment and not. In this research, the researcher was used independent sample test through SPSS 16.