CHAPTER III

RESEARCH METHOD

In this chapter, the researcher presents the research method, it focus the method used in conducting this study. The main components of research method are (a) research design, (b) population and sample, (c) variable data, (d) research instrument, (e) validity and reliability testing, (f) normality and homogeneity testing, (g) data collecting method, (h) data analysis.

A. Research Design

Research design is all of the process that needed in planning and conducting a research. According to Creswell (2012: 3) states that Research is a process of steps used to collect and analyze information to increase our understanding of a topic or issue. This research conducted using quantitative approach. The design of this research conducted experimental design. Experimental research is defined as a method of research which is used to looking for certain influence toward the other on the controlled condition (Sugiyono, 2007: 107). Experimental research can be done in the laboratory, in the class, or in the field. In this research, the researcher conducted experimental research in the class.

This experimental research used pre-experimental design with one group; an experimental group by using pre-test and post-test. The experimental class is

the class which gets the treatment by using bingo game. In experimental group, the researcher gave pre-test, treatment by using bingo game and post-test to the students. Pre-test was the test done before treatment and post-test was the test done after treatment. The criteria whether media of bingo game can increase the students' ability in the simple past tense was determined by the differences between the score of pre-test and post-test in experimental class.

The design of this research can be seen at the table below:

Table 3.1 One Group Design

Class	Pre-test	Treatment	Post-test
Experimental	Y_1	**X**	Y_2

Y1   : Pre-test

X   : Treatment

Y2   : Post-test

The data of this pre-experimental design is the form of quantitative. Quantitative data means that the data are in numerical form. This research intended to investigate the effectiveness of Bingo Game to improve eight graders' grammar mastery on past tense at MTsN Tulungagung in academic year 2016/2017.

B. Population, Sample and Sampling

1. Population

According to Arikunto (2013: 173), Population is the whole subject of research. A population is defined as all members of any well-defined class of people, events, or subjects (Ary *et. al*., 2010: 148). It means that

population is the large group of the research. The populations of this research were all of the eighth grade students of MTsN Tulugagung which have nine classes and consist of 336 students.

2. **Sample and Sampling**

Sample is a subgroup of the target population that the researcher plans to study for generalizing about the target population (John. W. Creswell, 2008: 152). The sample of this research took from the B class which consists of 35 students of the eighth grade of MTsN Tulungagung. It consisted of 14 male and 21 female. The researcher was conducting a sample by using a purposive sampling technique. According to Cohen et al., (2007) in purposive sampling technique, sample is satisfactory to specific needs. The researcher used purposive sampling because the sample has been chosen for a specific purpose. The researcher took 8-B class as the sample because it suggested from English teacher in there and the researcher believe that they give sufficient information. Besides that, the material of past tense based on the Curriculum 2013 contained on material in eight class second semester.

C. **Variable Data**

Variable is a characteristic or attribute of an individual or an organization that (a) researchers can measure or observe and (b) varies among individuals or organizations studied. Measurement means that the researcher records information

from individuals by asking them to answer questions. And when variables vary, it means that scores will assume different values depending on the type of variable being measured (Creswell, 2012: 112).

In this research, there are two variables, which are:

1. Independent Variable

Creswell (2012: 116) states that an independent variable is an attribute or characteristic that influences or affects an outcome or dependent variable. Independent variable is the cause of other variable. The independent of this research was the use of Bingo Game.

2. Dependent Variable

Creswell (2012: 115) states that a dependent variable is an attribute or characteristic that is dependent on or influenced by the independent variable. The dependent variable was not manipulated by the researcher, but it was affected by the independent variable. The dependent variable of this research was the students' grammar mastery.

D. Research Instrument

Instrument is one of the significant steps to conducting the research. By using instrument, the researcher can get the data. Instrument is a tool or facilities that are used by researcher (Arikunto, 2010: 160). The researcher must choose some instrument in the process of collecting data. The instrument of this research

was test. The researcher used two kinds of test, pre-test and post-test to get the scores of the students' achievement in grammar mastery, especially on past tense.

1. Pre-test

Pre-test was the test which given to the students before the researcher taught by using Bingo Game. Pre-test is needed to know the basic competence for the students and how far the students understand the subject that will be taught. The form of pre-test was multiple choices with 20 questions about past tense. In multiple choices, each items had four choices, which are A, B, C, D. The students were given 30 minutes to finish the test. There were 35 students as the subjects of this research.

2. Post-test

Post-test was the test which given to the students after the researcher taught by using Bingo Game. This test is needed to measure the students' grammar mastery on past tense after taught by using Bingo Game. The form of post-test was multiple choices, each items had four choices, which are A, B, C,D. The students were given 30 minutes to finish the test. There were 35 students as the subjects of this research.

E. Validity and Reliability Testing

According to Ary et. al. (2002: 213), there are two important characteristic that every measuring instrument should process: validity and reliability. In this

research, the test of grammar mastery has constructed the criteria of validity and reliability test.

1. Validity

Validity is a measurement that shows the validity levels of an instrument. A valid instrument has high validity. The other way, the fewer instruments mean it has low validity (Arikunto, 2010: 168). In addition, Lodico *et al* (2006: 87-88) presented, "Validity focuses on ensuring that what the instrument "claims" to measure is truly what is measuring". It can be concluded that validity was usefulness instrument that shows the degree of truly.

In this research the researcher used content validity to test the instrument valid or not. Isnawati (2014: 27) states that Content validity is a kind of validity which depends on careful analysis of the language being tested and of the particular test. A test is said to have content validity if its contents constitutes a representative sample of the language skill, structures, etc. being tested.

These tests are made by herself by adapted from Betty Schrampfer Azar aimed to measure the students' grammar mastery especially on past tense with the materials that they learnt at class. The instrument of study had content validity because the items were materials used for teaching grammar at the eighth graders of MTsN Tulungagung. Also, the content validity since the test was designed based on main competence and basic competence in syllabus Curriculum 2013 since the school implements the Curriculum 2013 in the time the researcher conducted this research. In this test, the researcher provided the multiple-choice test which consulted or

validated with advisor. After the instrument has been validated by the advisor, the researcher began to try out it to the subjects.

2. Reliability Testing

If the data related with the fact, so how many time the data taken, it will be same. The reliability shows the consistency and stability the measurement score (Sarwono, 2006: 219). It means that reliability of instrument is needed to make sure that the instrument can be consistent if used in other time. Therefore, the instrument as the test was reliable. The researcher use test retest to gain the reliable. First try out done on Wednesday, 1 February 2017 and the second try out on Wednesday, 8 February 2017. The researcher use test retest by using SPSS 16.0. to calculate reliability for grammar test. The table of data and the calculation are showed below:

Table 3.2 Score of Test Retest

Subject	First Score	Second Score
A	85	80
B	80	85
C	80	80
D	55	50
E	75	75
F	80	80
G	80	75
H	80	75
I	80	75
J	75	80
K	80	85
L	80	80
M	80	80
N	80	75
O	85	80
P	80	80
Q	80	80
R	80	85
S	80	85
T	80	85
U	75	80
V	80	75
W	80	85
X	80	85
Y	80	80
Z	75	70
AA	75	80
AB	80	85
AC	85	85
AD	70	75
AE	75	70
AF	85	80
AG	80	85
AH	75	80
AI	75	75

Based on the data above, the result of SPSS version 16.0 for windows is showed below:

Table 3.3 Test Retest Reliability

Descriptive Statistics

	Mean	Std. Deviation	N
test1	78.57	5.226	35
test2	78.86	6.652	35

Correlations

		test1	test2
test1	Pearson Correlation	1	.755[**]
	Sig. (2-tailed)		.000
	N	35	35
test2	Pearson Correlation	.755[**]	1
	Sig. (2-tailed)	.000	
	N	35	35

**. Correlation is significant at the 0.01 level (2-tailed).

The criteria of reliability instrument can be divided into 5 classes, those are very reliable, reliable, enough reliable, rather reliable, and less reliable (Riduwan, 2004: 136). The criteria of reliability can be showed as bellow:

Table 3.4 Criteria of Reliability

Interval Coefficient	Correlation
0.80 – 1.00	Very reliable
0.60 – 0.79	Reliable
0.40 – 0.59	Enough reliable
0.20 – 0.39	Rather reliable
0.00 – 0.19	Less reliable

The result of calculation showed that reliability coefficient was 0.755 and the ideal reliability coefficient is 1. So, based on the criteria of reliability, 0.755 was called reliable.

F. 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 the researcher know that the population or data involved in the research is in normal distribution. To test the normality of the data can use the *One Sample Kolmogorov-Smirnov* test with the provision that if Asymp. Sig > 0,05, the data were normally distributed (Asmarani, 2008: 234). In this research, the normality testing used *SPSS 16.00 for windows.* The normality testing is done towards both pre-test and post-test score. The hypotheses for testing normality are:

a. H_0 : Data is in normal distribution

b. H_a: Data is not in normal distribution

2. **Homogeneity Testing**

Homogeneity testing is conducted to know whether the gotten data has a homogeneous variance or not. The computation of homogeneity testing using SPSS 16.0 for windows is *Test of Homogeneity of Variances* by the value of significance 0.05. before doing homogeneity testing, the researcher decides hypothesis in this homogeneity as follow:

a. H_o : If the value of significance > 0.05, it means the data is homogeny.

b. H_a : If the value of significance < 0.05, it means that the data is not homogeny.

G. **Data Collecting Method**

Data collecting method was needed to get the research data. According to Tanzeh (2009: 57), data collecting is systematic and standardized procedure to obtain the necessary data. There was a method of collecting data used in this research, it was administering test.

Test is a series questions, or others which are used to measure the skill, knowledge, intelligent, ability or talent that have by individual or group (Arikunto, 2010: 127). A test is a method to get the data by giving some questions to the subjects.

The researcher used test to get scores of students' grammar mastery in conducted the research. The test consists of 20 questions which were served in multiple choice forms. The researcher was given 30 minutes for the students to finish the test. This data took place at MTsN Tulungagung, especially for students of eighth grade.

There were procedures of conduct the research:

1. Before administering test, the researcher gave try out to the other class (8-A class). It is conducted twice for the try out test.

2. The researcher conducted the administering test and gave the pre-test for the students of 8-B class to measure the students' achievement in grammar mastery, especially on past tense before they taught by using Bingo game.

3. The researcher gave the treatment by using Bingo game to the students.

4. For the last, the researcher gave the post-test for the 8-B class after they taught by using Bingo game.

Table 3.5 The Schedule of Test and Treatment

No	Activity	Date
1.	Try out test	February 1, 2017
		February 8, 2017
2.	Pre-test	February 24, 2017
3.	Treatment	February 24, 2017
		March 3, 2017
4.	Post-test	March 10, 2017

H. Data Analysis

Tanzeh (2009: 89) states that data analysis is a review of a series of activities, grouping, systematization, interpretation and verification of data so that a phenomenon has social value, academic, and scientific. The data got from the result of the students' test and analyzed quantitatively. Quantitative data analysis is also called statistical analysis. It meant that the result of the data served in numeral form. The quantitative data of this research was analyzed using statistical computation. This technique was used to find the significant difference on students' grammar mastery on past tense after being taught by Bingo game. In this research, the researcher used computation paired sample T-test by using SPSS 16.0 for windows.