CHAPTER III

RESEARCH METHOD

In this chapter, the researcher presents nine topics dealing with research methods. It focuses on the method that is used in conducting the research. It covers research design; population, sample, and sampling; research variables; data and data source; research instrument; validity and reliability testing; normality and homogeneity testing; data collection method; and data analysis.

A. Research Design

The design of this study is conducted experimental design. According to Muijs (2004, 13) Experimental design are sometimes known as 'the scientific method' due to their popularity in scientific research where they originated. The basis of the experimental method is experiment, which can be defined as: a test under controlled conditions that is made to demonstrate a known truth or examine the validity of hypothesis.

This research the researcher used pre-experimental design classified into one-group. It was because only had one group as both the control and experimental groups. In applying this design, the experimental class is the class with get the treatments by applying Hot Potatoes and the control class which gets the treatments by using conventional technique.

The purpose of control class is aimed at proving whether the increase scores or achievement possibly got by the teacher in the experimental class are really caused by the application of the treatment in the class. Then, both experimental class and control class received the same pre – test and post – test. The test done before treatment was called pre – test and after treatment called post – test. The criteria whether Hot Potatoes can increase the students' ability in the simple present tense was determined by the differences between the score of post – test between experimental and control class. Pre experimental research involved administering pre – test to the dependent variable, applying the experimental treatment X to the experimental class, and administering post – test. The design of this research can be seen at the table bellow:

Table 3.1 One Group Pre test and Posttest Design

Pre-test	Independent variable	Post-test
Y_1	X	Y_2

Note	
Y1	: Pretest
X	: Treatment
Y2	: Postest

This study intended to investigate the effectiveness of using Hot Potatoes toward the students' achievement in simple present tense at the seventh grade of SMPN 1 Ngunut at the academic year 2014/2015. The use of treatment is aimed at proving whether the increase score possibly got by the researcher in the experimental class the control class. Then, we will know about the effectiveness

of this treatment by significant score when the students taught using Hot Potatoes (experimental class) and without using Hot Potatoes (control class).

B. Population, Sample and Sampling

1. Population

According to Muijs (2004, 15) the population is the group of people we want to generalize. The population in this research was all students at the seventh grade of SMPN 1 Ngunut Tulungagung.

2. Sample

According to Gay (1992: 126) Sample is one of that is representative of the population from which it was selected. It means that a good sample must be representative of entire as possible, so that the generalization of the sample as true as the population. In this research, the sample was a group of students consisted of 39 students in VII I class of SMPN 1 Ngunut Tulungagung. The group of sample was as the control and experimental groups.

3. Sampling

Based on Gay (1992: 123) Sampling is the process of selecting number of individuals for a study in such a way that the individuals represent he large group for which they were selected. The purpose of the sampling is to get information about a population. The sampling is technique to take a sample.

In this research, the researcher non-probability sampling classified purposive sampling as the taking of sample. In purposive sampling- also referred to as judgment sampling- sample elements judged to be typical, or representative,

are chosen from the population (Ary *et al*, 2009: 156). It means that the sample of this research should be appropriate and representative and also should be heterogenic. Next, the researcher choose class that will get the treatment, the researcher choose VII I class consisted 39 students as the sample, by considered some factors:

1.   Class VII I was heterogenic class, that in VII I class consisted of many kind students at seventh grade of SMPN 1 Ngunut Tulungagung.

2.   By my experience teach in SMPN 1 Ngunut, in the VII I class and by teacher English recommended to use VII I class as a sample, because in VII I there were the students' grammar achievements was medium. And the characteristic of the students in VII I class is controlled. Beside that, in class VII A and VII B were the excellent class, that were consist of excellent too, and also their grammar achievement was excellent. And for VII C – VII H class there were their grammar achievement is good although they were the uncontrolled students. That is why the researcher decides to choose VII I class.

C. Variable

According to Fraenkeil (1996 : 61) A variable is any characteristic or quality that varies among the members of particular group. There are two kind variables:

a. Independent variable

Independent variable is variable that consequence of or upon antecedent variables. In this study the teaching grammar by using Hot Potatoes.

b. Dependent variable

Dependent variable is the response or the criterion variable that is presumed to be caused by or influenced by the independent treatment condition and any other independent variables. In this study the dependent variables is students' achievement in the simple present tense.

D. Research Instrument

Research instrument is an instrument used to measure nature and social phenomena observed. This research used a test as a way to get the data (see in appendix 3 and 5). According to Ary *et al* (2009: 201), test is a set of stimuli presented to individual in order to elicit responses on the basis of which a numerical score can be assigned. The type of test used in this research was achievement test. Achievement test is used to measure what individuals have learned (Ary *et al*, 2009: 201). The purpose of this kind of test is to establish how successful individual students, group of students, or the courses themselves have been in achieving objectives. It means that the test has to represent the structure or skill that will be tested. It also has to be appropriate to the grade of the students that will be tested.

According to (Fraenkeil 1969) the device that the researcher uses to collect the data is called instrument. The instrument of this research is test used grammar test. test is process of measuring students' knowledge and ability of the student, so the researcher should make a good test. A good test must fulfill and consider

standardized of test itself. Measuring a good test, there are some aspects to make a good test, there are: reliability and validity.

E. Validity

Validity refers to the extent to which an instrument measured what it claimed to measure (Ary *et al*, 2009: 225). It means that the test will be valid when it measures what is supposed to measure. To ensure whether the test has a good validity, the researcher used construct validity, content validity, and face validity.

According to Muijs (2004: 66) These are three types of validity:

1. Content validity

Content validity refers to whether or not the content of the manifest variables (e.g items of a test or question of a questionnaire) is right to measure the latent concept (self-esteem, achievement, attitude) that we are trying measured.

In this case the content validity was the researcher used the curriculum, syllabus and the lesson plan, to measure the student achievement in grammar especially simple present tense because based on learn the curriculum, syllabus and lesson plan there is some goal that the student must be master in grammar especially simple present tense in descriptive text of first semester.

2. Criterion validity

Criterion validity closely related theory. In criterion validity, there are two types of criterion validity, the first is predictive validity refers to whether or not

the instrument you are using predicts the outcomes you would theoretically expect it too. And the second is concurrent validity make a less stringent validity.

Based on the theory above the researcher consulted the test firstly with the teacher that handled seventh grade of SMPN 1 Ngunut Tulungagung to avoid the less stringent validity.

3.   Construct validity

Construct validity is a slightly more complex issues relating to the internal structure of an instrument and the concept it is measuring.

Based on the theories above the researcher created the test based on the material that is suitable for the students at seventh grade of SMPN 1 Ngunut Tulungagung. Furthermore, in the class the researcher ask the student use the test that suitable for the student at seventh grade of SMPN 1 Ngunut Tulungagung the test is about simple present tense. This test is to measure the student achievement in grammar especially in simple present tense.

F.   Reliability

Reliability refers to our measure repeatedly delivering the same (or near same) results. Ideally, if we use the same measure with the same people under the same conditions, our measure should give us the same result (Litosseliti *et al*, 2010: 55). It can be said that a reliable test is consistent and dependable.

According to Muijs (2004: 71) Reliability refers to the extent to which test scores are free of measurement error. Based on Litosseliti *et al*, 2010: 55 in Arumsari: 2014:54) reliability refers to our measure repeatedly delivering the

same (or near same) results. Ideally, if we use the same measure with the same people under the same conditions, our measure should give us the same result (Litosseliti *et al*, 2010: 55). It can be said that a reliable test is consistent and dependable.

To know the reliability of instruments used in this research, the researcher had tried them out before conducting them into the pretest and posttest. The tests were administered to twelve students. After getting the data, the researcher analyzed them by using SPSS 16.0. The result of the analysis of reliability can be seen in table 3.2 and 3.3.

Table 3.2 The Result of Reliability in Pretest

Reliability Statistics	
Cronbach's Alpha	N of Items
.735	30

The table 3.2 shows that in number of items 50, the reliability of Cronbach's Alpha is 0.962.

Table 3.3 The Result of Reliability in Postest

Reliability Statistics	
Cronbach's Alpha	N of Items
.881	30

The table 3.3 shows that in number of items 30, the reliability of Cronbach's Alpha is 0.856.

According to Triton in Arumasari (2014: 56), the value of Cronbach's alpha can be interpreted in table 3.4.

Table 3.4 Cronbach's Alpha Interpretation Based on Triton

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

Based on the table 3.2, it can be known that the reliability of pretest is 0.735. It is nearer with 0.700. 0.80 belongs to reliable; it means that the instrument of pretest is reliable. Furthermore, based on the table 3.3, the reliability of posttest is 0.881. It is higher than 0.81 and lower than 1.00 $(0.81 < 0.881 < 1.00)$. It means that the instrument of posttest is very reliable. So, it can be concluded that the instruments in this research fulfill the reliability.

G. Normality and Homogeneity Testing

1. Normality Testing

Normality testing is used to measure whether the distribution of test is in normal distribution or not. Based on Priyatno (2012: 33 in Arumsari 2014: 56) said that the normality of data is important because the data can be considered to represent the population when it is in normal distribution. In this research to measure the normality testing, the researcher using SPSS with One-Sample Kolmogorov-Smirnov method. The researcher measured both in pretest score and posttest score. The data for testing normality can be seen in appendix 1.

The hypotheses for testing normality are:

a. H_o: Data is in normal distribution

b. H_a: Data is not in normal distribution

The H_o is rejected when the significance value is lower than 0.05 (= 5%), while H_a is accepted when the significance value is higher than 0.05 (= 5%). The result analysis for normality testing can be seen as follows.

a. Testing normality data for pretest scores by using SPSS 16.0

Table 3.5 The Result of Pretest in Normality Testing

One-Sample Kolmogorov-Smirnov Test		
		PRETEST
N		39
Normal Parameters[a]	Mean	76.00
	Std. Deviation	16.454
Most Extreme Differences	Absolute	.186
	Positive	.137
	Negative	-.186
Kolmogorov-Smirnov Z		1.160
Asymp. Sig. (2-tailed)		.135
a. Test distribution is Normal.		

Based on the table above the significance 2 tailed is 0.135.

b. Testing normality data for postest scores by using SPSS 16.0

Table 3.6 The Result of Posttest in Normality Testing

One-Sample Kolmogorov-Smirnov Test		
		POSTTEST
N		39
Normal Parameters[a]	Mean	88.49
	Std. Deviation	6.403
Most Extreme Differences	Absolute	.213
	Positive	.142
	Negative	-.213
Kolmogorov-Smirnov Z		1.332
Asymp. Sig. (2-tailed)		.058
a. Test distribution is Normal.		

Based on the table above the significance 2 tailed is 0.058.

Based on the output of One-Sample Kolmogorov-Smirnov Test in SPSS 16.0 at table 3.5 and 3.6 above, can be known that the significance 2 tailed from pretest is 0.135 and from the posttest is 0.058. For this part, H_o is rejected when the significance value is lower than 0.05 (= 5%), while H_o is accepted when the significance value is higher than 0.05 (= 5%). According to the data above, the significance 2 tailed of pretest is 0.135 and it is higher than 0.05 (0.135 > 0.05). It means that H_o is accepted and H_a is rejected. It means that the data is in normal distribution. Beside that, for the significance value of posttest is 0.135 and it is higher than 0.05 (0.135 > 0.05). It means that H_o is accepted and H_a is rejected. It can be interpreted that the data is in normal distribution. It means that the instruments in this research are in normal distribution.

2. Homogeneity Testing

Homogeneity testing is intended to know whether the variance of data is in homogeneous or not. In this case, the researcher wants to find out the variance score of the sample. In this case to measure the homogeneity testing the researcher analyzed the sample by using SPSS 16.00 (ANOVA)

1. Homogeneity Testing for Pretest Scores

Table 3.7 Homogeneity Testing for Pretest

Test of Homogeneity of Variances

NILAIPRETEST

Levene Statistic	df1	df2	Sig.
.798	5	33	.559

Analyzed Output of Homogeneity Testing of Variance:

The assumption of ANOVA testing is the variance of sample data is same of homogenous. The criterion of testing is, if the significance < 0.05 the variance of the sample is not same, another side, if the significance > 0.05 the variance of the sample is the same. Based on the output above, can be known that the significance > 0.05 (.559 > 0.05). So, the researcher conclude that, the variance of six sample is same, it means that this test is homogenous.

2.   Homogeneity of Pretest Scores

Table 3.8 Homogeneity Testing for Postest

Test of Homogeneity of Variances

SCOREOFPOSTTEST

Levene Statistic	df1	df2	Sig.
.960[a]	3	33	.423

a. Groups with only one case are ignored in computing the test of homogeneity of variance for SCOREOFPOSTTEST.

Analyzed Output of Homogeneity Testing of Variance

The assumption of ANOVA testing is the variance of sample data is same of homogenous. The criterion of testing is, if the significance < 0.05 the variance of the sample is not same, another side, if the significance > 0.05 the variance of the sample is the same. Based on the output above, can be known that the significance > 0.05 (0.423> 0.05). So, the researcher concludes that, the variance of six samples is same, it means that this test is homogenous.

H. Data Collecting Method

In this step method of collecting data is to obtain the data in the research. Meanwhile, the data of this study is collected by administering test. To collecting data the researcher using two test grammar test, pre-test, and post-test. The technique of collecting data was clarified bellow:

1. Pre-test

This is the first meeting; in this step the researcher gave pre-test to the students. It was conducted to know the students score in grammar, and also to know how far the student ability in the simple present tense.

In this research the researcher chose grammar especially simple present tense. The researcher chose the simple present tense because the students often made error in using to be of simple present tense for any subject. And also, the students also still confused to determine when they should article s/es and when they not use the article s/es. Beside that, in the curriculum of seventh grade the students should have grammar mastery especially in simple present tense.

This pretest was administered in sample group. It was on Wednesday, 13th May 2015. The posttest it self consist of 30 questions, with the cloze test. The pretest was in the form of objective test in which there was only one correct answer for each item. The scoring guide for posttest was formulated as follows.

Score = (number of correct items x 3) + 10

The researcher allocated 40 minutes for conducting the posttest. This pretest produced numerical scores that can be used to identify, classify, or evaluate by the researcher.

2. Treatment

After doing pre-test, the researcher, gave treatment for the student. The researchers choose gave treatment. In this step the researcher applied Hot Potatoes in teaching simple present tense in experimental class. On the other hand, in control class the researcher teaching applied conventional way.

In this research, the researcher focused the grammar on simple present tense because the students often made mistakes in doing simple present tense. Furthermore, based on the curriculum at the second semester, simple present tense should be mastered by the students at the seventh grade of junior high school.

At the first treatment, the researcher first introduced what hot potatoes was and how to use the jcloze test. The treatment was done in class A since the hot potatoes had to be done by using computers and connected them to Internet. To simplify the explanation of the materials, the researcher used LCD to convey the materials.

There are six programs in hot potatoes software, those are JQuiz, JMix, JCross, JMatch, JCloze, and The Masher. In this research, the researcher used Jcloze in the form of fill in the blank. After introducing the JCloze test to the students, the researcher let them to try it in front of their friends. It was purposed in order to the students could try the JCloze test before they were let to do it in

computers by themselves. The other students who did not try to do the jcloze in front of the class might also help their friends who came in front of the class. It was done continuously. After let the students to try the jcloze test, the researcher asked the students to try the jcloze in computers by themselves. The researcher would not correct the students' mistakes directly, meanwhile let them to realize their mistakes by themselves. The researcher had given feedbacks for both the correct and incorrect answers in the jcloze test, therefore when the students made a mistake to answer the jcloze test, they would realize the mistake directly after looking at the feedback and continuously answer the question with the correct one.

3. Post-test

After conducting pre-test, treatment, and now the researcher conducted post-test. The researcher conducted poet-test in both of experimental class and also control class. Experimental class is classes that have applied Hot Potatoes. The purpose of post-test is the students' development in simple present tense after having the treatment. The writer conducted the post-test to know whether or not the treatment given to experimental class result a significant effect and the achievement of student's was significantly different than control class. (See in appendix 1 and 2).

The posttest was administered in to sample group consisting 39 students at the VII I class. It was administered on Thursday 21st May 2015. The posttest it self consist of 30 questions, with the cloze test. The posttest was in the form of

objective test in which there was only one correct answer for each item. The scoring guide for posttest was formulated as follows.

Score = (number of correct items x 3) + 10

The researcher allocated 40 minutes for conducting the posttest. This posttest produced numerical scores that can be used to identify, classify, or evaluate by the researcher.

I. Data Analysis

Method of data analysis is the way the researcher analyzes the data. In this research, the data was analyzed by using quantitative data analysis that was by using statistical technique. It was to find out the significant difference on the students' grammar achievement in simple present tense before and after being taught by using hot potatoes cloze test. In this research, the data gathered from field was numeric data in the form of students' scores. Next, it was analyzed by using statistical technique. The data analysis in this research used t-test. According to Gay *et al* (2011: 436), t-test is used to determine whether two means are significantly different at a selected probability level. The procedure analysis of data used both descriptive and inferential statistics. In this research, the researcher analyzed the value of $t-test$ by using paired sample $t-test$ through SPSS 16.0.