CHAPTER III

RESEARCH METHOD

In this chapter the researcher presents some points related to this research include research design, data source, population, sample, sampling, research variable, research instrument, the validity and reliability testing, normality and homoginity testing, data collecting method, and data analysis.

A. Research Design

The research design of this study is quasi-experimental research design with quantitative approach. In quantitave, there are experimental and non-experimental research design. Experimental research involves a study of the effect of the systematic manipulation of one variable. While, in non-experimental research, the researcher identifies variables and may look for relationship among them, but does not manipulate the variables (Ary, 2002:24).

This study will conduct in experimental research to find out the students' understanding on simple past tense taught by using snake and ladder and those taught by using conventional strategy. This study will use quasi-experimental research design because according to Best (1993:151) "quasi-experimental design provides control of when and to whom the measurement is applied, but because

random assignment both of them has not been applied, the equivalence of the groups is not assured".

In addition, Creswell (2012: 309) stated that "Quasi-experiments include assigments, but not random assignment of participants to groups. This is because the experimenter cannot artificially create groups for the experiment." It means in this research, the researcher does not have an authority to choose the sample.

This study will use quasi-experimental research design with two group pre-test – post-test design, that consist of pre-test, treatment and post-test. Based on Lodico et al., (2006: 183) stated that the control group is a separate group that receives no treatment or a different treatment, while the experimental group is the group which will receive a treatment. So, the researcher used two intact classes in which one of them was as experimental class and another was controlled class. Experimental class is class which got treatment or being taught by using Snake and Ladder game and control class is class which is not got treatment or using conventional strategy.

Both classes were given a pre-test before giving a treatment and post-test after giving a treatment. The pre-test and post-test were given to take the score of the students' achievement on simple past tense by using snake and ladder game and for another without using snake and ladder game. Then, both of the sources were computed by using t-test to find out if there is any significant difference of teaching simple past tense by using snake and ladder game and those taught without using snake and ladder game. The design of the research can be summarized as follows:

Table 3.1 : The Illustration of Reseacrh Design

Group	Pre-test	Treatment	Post-test
E	Y_1 (DV)	X_1 (IV)	Y_2 (DV)
C	Y_1 (DV)	-	Y_2 (DV)

Note   :

E :   Experimental group

C :   Control group

Y_1 :   Pre-test in experimental group before treatment (Dependent Variable)

Y_1 :   Pre-test in control group before treatment (Dependent Variable)

X_1 :   Treatment in Experimental group by using Snake and Ladder game (Independent Variable)

- :   The group without treatment or using conventional strategy (Independent Variable)

Y_2 :   Post-test in experimental group after treatment (Dependent Variable)

Y_2 :   Post-test in control group (Dependent Variable)

B. Population, Sample, and Sampling

1. Population

A population can be defined as all members of any well-defined class of people, event or object (Ary *et. al,* 2010: 148). Population is object that has some

qualities and characteristic that is chosen to be cleared and to be concluded by the researcher (Louis: 2005). It means that population is large group of the research.

In this research, the population of data is all of second grade students of SMP Negeri 1 Sumbergempol in period 2018/2019 which consists of 367 students. Those are divided into 12 classes. Class A, B, C, D, E, F, G, H, I, J, K and L. It can be seen in the table 3.2 below:

Table 3.2 Population of Research

No	Class	Total
1	VIII A	31 students
2	VIII B	31 students
3	VIII C	32 students
4	VIII D	31 students
5	VIII E	33 students
6	VIII F	30 students
7	VIII G	32 students
8	VIII H	32 students
9	VIII I	31 students
10	VIII J	33 students
11	VIII K	35 students
12	VIII L	16 students
Total students		367 students

2. Sample

Sample is a part of the total number and characteristics belong to population. Ary *et. al*, (2010: 148) defined sample as a small portion of population. In addition, Hanlon (2011) defined a sample is a subset of the individuals in a population.

In this research, the researcher took 2 classes those were chosen based on the English teacher's recommendation. The total number of the sample was 67 students and it was divided into two groups, where class VIII H with 32 students as experimental group and class VIII K with 35 students as control group.

Table 3.3 : Sample of Research

Sample		Gender		Total
		Male	Female	
Experimental group	VIII H	19 students	13 students	32 students
Control group	VIII K	20 students	15 students	35 students
Total participants				67 students

3. Sampling

Sampling is process of selecting a number of individuals for a study insuch a way that the individual represent the larger group from which they are selected (Gay, 1992: 123). It means that sampling is the process of taking sample. The sampling technique used by the researcher was purposive sampling.

According to Palys T. (2008:697) a purposive sampling is non-probability sample that is selected based on characteristics of a population and the objective of the study. Purposive sampling is also known as judgmental, selective, or subjective sampling. This type of sampling can be very useful in situations when the researcher need to reach a targeted sample quickly, and where sampling for proportionally is not the main concern.

By using purposive sampling, the researcher considered some suggestions from certain people who know well which sample is appropriate to be choosen by

giving qualification. According to an English teacher who handles VIII G – VIII K suggested the researcher to take two classes VIII H and VIII K as sample to be researched. It was depend on some reasons. For the first, all of the students have similar characteristics which are their mastery on English is average. Then, snake and ladder have never been used in teaching grammar especially on simple past tense in these classes.

C. Research Variable

Variable is a characteristic or attribute of an individual or an organization that the researcher can measure or observe and varies among individuals or organization studied (Creswell, 2012: 112). It means that, variable is the characteristic of something that will be researched. There are two variables in this research:

1. Independent Variable

According to Creswell (1994: 128) independent variable is called treatment conditions or factors in an experiment. These treatment conditions are under the control of the researcher and typically are manipulated in experiment. Arikunto (2010: 162), independent variable is a variable that has function to cause the other variable that will be researched or observed. In other words, independent variable is cause which is the one affecting another variable. Independent variable of this research was Snake and Ladder game."

2. Dependent Variable

Creswell (2012: 115) stated that a dependent variable is an attribute or characteristic that is depend on or influenced by the independent variable. In other word, dependent variable is the one affected by another variable. The dependent variable was not manipulated by the researcher, but it was affected by the independent variable. In this research, the dependent variable is the students' mastery on simple past tense.

D. Research Instrument

Instrument is a medium to collect the data of a research. Instrument had an important function in the research, because it is used to measure the value of the variables being studied. According to Arikunto (2010: 193), there are several kinds of instrument; they are test, questionnaire, interview, observation, rating scale, and documentation. In this research, the researcher used test as the instrument.

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 (Ary *et al.,* 2010: 201). Test used to measure the students' understanding on simple past tense. The test was in the form of writing test to see the different result of student' mastery on simple past tense taught by using Snake and Ladder game and for another without using Snake and Ladder game. The researcher administered two kinds of test, pre-test and post-test. Pre-test which was a preliminary test conducted before the treatment to measure student' basic knowledge of the simple

past tense, while post-test which was a test conducted after the treatment to measure the students' understanding or mastery of the simple past tense.

The form of test is objective test which consist of 25 multiple choices and 5 completion tests. For 25 multiple choices, each number have same score 4 points. So, every correct answer gets four points to each number and gets zero for incorrect answer. Then, for 5 completion tests that consist of (a) and (b) point have same score 5 points for each point then will be summed. It means that if the answer of number 1 in point (a) and (b) is correct, it will be got 10 points. Otherwise, if the answer in point (a) is correct and point (b) is incorrect, it will be got just 5 points. Then, the result of the tests was compared to know whether there was significant difference before and after the students given the treatment whether who are taught by using snake and ladder game and another taught without using snake and ladder game.

E. The Validity and Reliability Testing

1. 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. There are four types of validity, such as content validity, criterion-related validity, construct validity and face validity. To ensure whether the test has a good validity, the researcher uses content validity, construct validity and face validity.

a) **Content Validity**

Content validity is related to the ability of the instrument in measuring the content which is supposed to measure. According to Ary et al. (2010: 226) content validity involves the test's content and its relationship to the construct it is needed. It means the researcher must seek evidence that the test to be used represents a balanced and adequate sampling of all the relevant knowledge, skills, and dimensions making up the content domain. A good content of test is looked at from the content of test. It means a test named valid, if the content of test represented lesson given. The researcher will combine both the content of test and the material of test to know the test is valid or not. In this study, the content validity refers to the Curriculum of 2013 which was applied for eight grade students' level. The test was designed based on main competence and basic competence in the Curriculum 0f 2013. The content validity can be seen in the table below :

Table 3.4 : Content Validity

Kompetensi Inti	Kompetensi Dasar
3. Memahami dan menerapkan pengetahuan (faktual, konseptual, dan prosedural) berdasarkan rasa ingin tahunya tentang ilmu pengetahuan, teknologi, seni, budaya, terkait fenomena dan kejadian tampak mata	3.4 Memahami tujuan, struktur teks, dan unsur kebahasaan dari teks recount tulis tentang pengalaman/ kegiatan/ kejadian/ peristiwa, sangat pendek dan sederhana

Table 3.5 : Content Validity of Test

Competence Indicators	Test Items	
	Pre-test	**Post-test**
Students are able to understand about simple past tense	Simple past tense test	Simple past tense test

From the table above, the test has a content validity because there is approriateness between the test and the indicator. It is appropriate with course objectives based on syllabus of the second grade of Junior High School.

b) 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 theory above the researcher creates the test based on the material that is suitable for the students at second grade of SMP Negeri 1 Sumbergempol. Furthermore, in the class the researcher ask the students use the test that suitable for the student at second grade of SMP Negeri 1 Sumbergempol. The test is about simple past tense. This test is to measure the student achievement in grammar especially in simple past tense.

Construct validity shows how far the tests are suitable with the theory in composing those tests. According to Muijs (2004: 68) construct validity is a slightly more complex issue relating to the interval. The instrument is constructed concerning aspects that will be measured. In

other word, the form of the test must suitable with the theory of grammar mastery especially on simple past tense. To measure the construct validity, the researcher made a blueprint. The blueprint of the test could be seen in the appendix 4.

c) Face Validity

Face validity is a term sometimes used in connection with a test's content (Ary, 2010: 228). Face validity refers to a test can looks measure what is supposed to be measured. It means that the test should look clear or the instruction must be understandable for the students. In this research, the test was designed to measure students' understanding on simple past tense. Thus, to achieve face validity, the researcher provides the instructions on the paper test to ask students to answer it. In this study, the face validity was done through validator by the expert. The purpose of face validity which is used in this research is to check some aspects that are consideration in the test, they are:

1. To check that the instruction must be clear and understandable for the students

2. The test is suitable with syllabus and their level

3. Time allocation must be given clearly

2. Reliability

After having tested the validity of the instrument, the next step is to examine the reliability. A test is considered reliable if the same test is given to the same subjects or matched subjects in two different occasions, the test should yield similar result (Brown, 2004: 20). Wiersman and Jurs (2009: 255) added that reliability is the consistency of the instrument in measuring whatever it measure. It means that if the instrument has a consistent result in the second chances or more, the instrument is reliable. To know how far the reliability of the instrument, the researcher made test to be tried out to students before giving pre-test and post-test.

In this case, before the researcher conduct try-out in the class, the researcher made a test consist of 30 question that consist of 25 multiple choices and 5 completion tests. Then, the researcher asked to the two experts to give correction about the test that the researcher have done before. They were a lecturer of English subject and an English teacher of SMP Negeri 1 Sumbergempol. After that, the researcher revises the test. Then, the researcher conducted a try-out for the test to the different subject before it be the pre-test and post-test for the subject of research, to know how far the reliabilitu of the instrument.

The try-out was tested to VIII-I class which consist of 31 students. It was done on February 20th 2019. The try-out was held to know how far the reliable of the test. After the researcher got the score from try-out, to find out the reliability of the score obtained either from the pre-test and post-test, the

researcher will calculate two scores of the students to calculate the correlation between them. The formula to find the correlation coefficient is *Pearson Product-Moment*. Finally, SPSS 16.0 for windows program is used to compute the reliability of instruments. Here the researcher got the result as follows:

Table 3.7 and 3.8 : The Statistical Correlation of *Pearson Product Moment* from IBM SPSS Statistical 16.0

Table 3.7 : Reliability Pre-Test

Correlations

		rater_1	rater_2
rater_1	Pearson Correlation	1	.872"
	Sig. (2-tailed)		.000
	N	31	31
rater_2	Pearson Correlation	.872"	1
	Sig. (2-tailed)	.000	
	N	31	31

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

Table 3.8 : Reliability Post-Test

Correlations

		rater_1	rater_2
rater_1	Pearson Correlation	1	.815"
	Sig. (2-tailed)		.000
	N	31	31
rater_2	Pearson Correlation	.815"	1
	Sig. (2-tailed)	.000	
	N	31	31

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

Table 3.7 showed that Pearson Correlation of both rater 1 and 2 were 0.872. Meanwhile, table 3.8 showed that Pearson Correlation of both rater 1 and 2 were 0.815. In this case, if the Pearson Correlation was closer to 1, it can be said has strong correlation. Based on the both of table above, the result is closer to 1. Those mean that the instrument is reliable to be tested.

F. Normality and Homogeneity Testing

Normality and homogeneity testing are calculated and analysed to determine either parametric or non-parametric testing. In order with the result of both tests can be seen in chapter IV.

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 Kolmonogorov-Smirnov* method in IBM SPSS Statistic 16.0 with the significance level (α) = 0.050. Basic decisions making in normality testing are as follows:

- If the significant value > 0.050, it means that the data distribution is normal

- If the significant value < 0.050, it means that the data distribution is not normal

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 used *Levene statistic* with SPSS 16.0 by the value of significance (α) = 0.050. Before doing homogeneity test, the researcher decided hypothesis testing as follows:

- If the significance value > 0.050, then the data distribution is homogeneous

- If the significance value < 0.050, then the data distribution is not homogeneous

G. Data Collecting Method

Data collecting method is method which used by the researcher to collect the data. Data collecting is a systematic and standardized procedure to obtain the necessary data. To collect the data, the researcher used instrument. Instrument is a tool which used to get the data. In this research, the instrument was only a test. According to Ary *et al.* (2010: 201) the tests were valuable measuring instruments for educational research. In addition, he defined that test as a set of stimuli presented to individual in order to elicit responses on the basis of which a numerical score can be assigned. It meant that by conducting the test, the researcher would get numerical score to collect the data.

In this research, the test consisted of pre-test, treatment and post-test. The function of pre-test was to know students' mastery on simple past tense before getting the treatment. Whereas, the function of post-test was to know the result of the experiment after the treatment had been given. The following are the steps in collecting the data on this research:

1. **Pre-Test**

    Pre-test was undertaken for the first step in a form of simple past tense test. As revealed by Cresswell (2012: 297) that a pre-test provided a measure on some attributes or characteristics that you assess for participants in an experiment before they receive a treatment. It was given before the students were given the treatment. Pre-test was administered to both the experimental and control classes in the same way. The aim of the pre-test was to know the basic or prior knowledge and students' skill in simple past tense. Pre-test was conducted on February 26th 2019 in experimental and control class. There was no one absent on that date, so the students could passed the pre-test. The test wast consist of 30 number item and the material about simple past tense. The form of the test was objective test that consist of point A and B. The time allocation was 60 minutes for finishing the test.

2. **Treatment**

    After administering a pre-test, the researcher gave the students treatment. The treatment of this study was given three times in every class. For experimental group would be taught by using Snake and

Ladder game while the control group would be taught without using Snake and Ladder game.

In this study, class VIII H was choosen as experimental group who are taught by using Snake and Ladder game. The first treatmment had done on March 5th 2019. The steps on this treatment were: 1) The researcher shared the material about simple past tense especially about "*regular and irregular verbs*" for the first. 2) Then, divided the students into six group, for each group consist of 5 – 6 students. 3) After that, the researcher read the rule of Snake and Ladder game and the students was listened. 4) On the Snake and Ladder board game, there were some verbs 1, then the students asked to change it into simple past form depend on the number of the group got in playing Snake and Ladder game. 5) And the other groups or the researcher was decided that the answer was correct or not. 6) The winner of this game was not the group who got the highest square on the board but the highest scores or the most point got. The second treatment had done on March 9th 2019. The steps on this treatment were: 1) The researcher shared the material about simple past tense especially about "*verbal sentences*" for the first. 2) Then, divided the students into six group, for each group consist of 5 – 6 students. 3) After that, the researcher read the rule of Snake and Ladder game and the students was listened. 4) On the Snake and Ladder board game, there were some verbs 1, then the students asked to change it into simple past form depend on the number of the group got in

playing Snake and Ladder game. After changing the verbs, the students asked to make it into a simple sentence. 5) And the other groups or the researcher was decided that the answer was correct or not. The third treatment had done on March 12th 2019. The steps on this treatment were: 1) The researcher shared the material about simple past tense especially about "*nominal sentences*" for the first. 2) Then, divided the students into six group, for each group consist of 5 – 6 students. 3) After that, the researcher read the rule of Snake and Ladder game and the students was listened. 4) On the Snake and Ladder board game, there were some verbs 1, then the students asked to change it into simple past form depend on the number of the group got in playing Snake and Ladder game. After changing the verbs, the students asked to make it into a simple sentence. 5) And the other groups or the researcher was decided that the answer was correct or not.

While, class VIII K was choosen as control group who are taught by using conventional strategy. The first treatmment had done on February 27th 2019. The steps on this treatment were: 1) The researcher shared the material about simple past tense especially about "*regular and irregular verbs*" for the first. 2) Then, divided the students into six group, for each group consist of 5–6 students. 3) After that, the researcher gave the example of conventional strategy by using transformation drill before the student practiced it in front of the class. 4) Then, the researcher gave a worksheet that consist of some verbs 1,

then the students asked to change it into simple past form. 5) After that, the leader of group asked to come forward and read 5 verbs. She or he asked the other group to change it, if the answer was wrong the other group could asnwer it. If the answer was correct, then continued to the next questions. In this case tranformation drill was applied. The second treatment had done on March 5th 2019. The steps on this treatment were: 1) The researcher shared the material about simple past tense especially about "*verbal sentences*" for the first. 2) Then, divided the students into six group, for each group consist of 5–6 students. 3) After that, the researcher gave the example of transformation drill before the student practiced it in front of the class. 4) Then, the researcher gave a worksheet that consist of some sentences, then the students asked to change it based on the instruction on worksheet (it can be positive, negative or interrogative sentences). 5) After that, the leader of group asked to come forward and read 3 sentences. She or he asked the other group to change it, if the answer was wrong the other group could asnwer it. If the answer was correct, then continued to the next questions. In this case tranformation drill was applied. The third treatmment had done on March 6th 2019. The steps on this treatment were: 1) The researcher shared the material about simple past tense especially about "*nominal sentences*" for the first. 2) Then, divided the students into six group, for each group consist of 5–6 students. 3) After that, the researcher gave the example of transformation drill before the

student practiced it in front of the class. 4) Then, the researcher gave a worksheet that consist of some sentences, then the students asked to change it based on the instruction on worksheet (it can be positive, negative or interrogative sentences). 5) After that, the leader of group asked to come forward and read 3 sentences asked to come forward and read 3 sentences. She or he asked the other group to change it, if the answer was wrong the other group could asnwer it. If the answer was correct, then continued to the next questions. In this case the conventional strategy was applied.

3. **Post-Test**

Post-test is one kind of test which given after treatment. A post-test was a measure on some attribute or characteristic that is assessed for participants after a treatment, Creswell (2008:201). Post-test was given in the last meeting of teaching learning process. It was used to measure students' mastery after given treatment. It was done on March 12th 2019 in VIII K as control class. While, for VIII H as control class was done on March 16th 2019. There was no one absent on that date, so the students could passed the post test whether on experimental class and control class. In this study, the post-test was conducted in the last meeting. The test wast consist of 30 number item and the material about simple past tense. The form of the test was objective test that consist of point A and B. The time allocation was 60 minutes for finishing the test.

H. Data Analysis

Data analysis is used by researcher to analyze the collected data. The data is taken from students' score in pre-test and post-test. Then, to investigate the effectiveness of Snake and Ladder game on the students' mastery on simple past tense. According to Ary (2010: 32) the analysis provides evidence that supports of fails to support the hypothesis of the study. The researcher determined it by using statistical computation to analyze the collected data and the researcher uses *Independent Sample T-test* through SPSS 16.0. The purpose is the researcher wants to know the result of the students' who are taught by using snake and ladder game and those taught without using snake and ladder game at the second grade of SMP negeri 1 Sumbergempol. The procedure of analysis data both used descriptive statistic and inferential statistic.

1. **Descriptive Statistic**

   The function of descriptive statistic is to describe the condition of research such as mean, median, mode, and standard deviation.

2. **Range and Inferential Statistic**

   Range is the number of points between the highest score on a measure and the lowest score. After got the description of the scores, the researcher used *T-test* formula to know significant differences on teaching simple past tense that taught by using Snake and Ladder game and those taught without using Snake and Ladder game at the second grade of SMP Negeri 1 Sumbergempol. After collecting the data, the researcher analyzed by using independent sample *T-test.*