## CHAPTER III

## RESEARCH METHODOLOGY

In this chapter, there are seven parts that discussed by the research. They are research design, variable of research, subject of the research, instrument of the research, trying out the instrument, the method of data collection, and the method of data analysis.

### 3.1. Research Design

The researcher conducted in the eighth grade of MTs Negeri 1 Jepara. This is located at Jalan Tahunan – Batealit Km. 4, Kabupaten Jepara, Jawa Tengah 59461. The research conducted at the eighth graders in even semester of MTs N 1 Jepara in the academic years of 2018/2019.

There are so many methods in doing research, but the researcher chose experimental research in this research. According to Mubarok (2015), argues experimental research method used to find a specific treatment effect against the other in uncontrolled conditions. On the other hand Cohen, Louis (2000) defines it is the essential feature of experimental research is that investigators deliberately control and manipulate the conditions which determine the events in which they are interested.

Experimental research divides into four types. They are pre experimental, true-experimental, factorial experimental and quasi experimental. This study used true experimental research. In this study, there were two classes, those were experimental group which was chosen randomly and control group which was also chosen randomly. In this

design, both the experimental and control group were compared, even the group was selected and placed without randomly (Mubarok, 2015).

Sugiyono (2016), the design of true experimental research can be presented below:

**Figure 3.1 Design of True Experimental Research**

$$R \quad O_1 \quad X \quad O_2$$
$$R \quad O_3 \quad \quad O_4$$
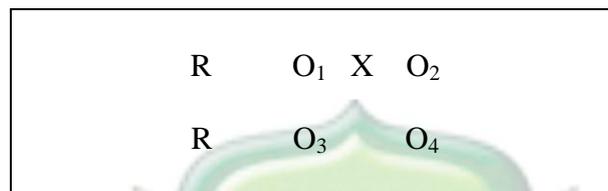
Where:

R : Randomly

X : Treatment

01 : pre-test for experimental class

02 : post-test for experimental class

03 : pre-test for control class

04 : post-test for control class

**3.2. Research Variable**

Arikunto (2006) stated variable is the object of research or something that become the concern of research and it becomes the focus of research. A variable is essentially what we can observe or quantity of the human characteristics or abilities involved. The variable distinguishes between two variables by giving them different labels. The label given to the variable that the researcher expects to influence the other is called the independent variable. The variable upon which the independent variable is acting is called the dependent variable. The independent variable of this

research was Snakes and Ladders Game. The other hand, the dependent variable of it was students' past form of irregular verbs mastery.

## 3.3. Population and Sample

The subject of the research, the researcher chose the students of the eighth grade of MTs Negeri 1 Jepara in academic years of 2018/2019. The researcher did not take the entire student as subject, but drew a sample.

### 3.3.1. Population

According to Mubarok (2015), population is a unit of the object that has certain qualities and characteristics which are studied by the researchers then be deduced. The population of this research was eighth grades students of MTs Negeri 1 Jepara in academic year of 2018/2019, which could be described as the following table.

**Table 3.1**

Population of Eighth Graders

| NO | CLASS | QUANTITY |
|----|-------|----------|
| 1  | A     | 29       |
| 2  | B     | 31       |
| 3  | C     | 36       |
| 4  | D     | 35       |
| 5  | E     | 36       |
| 6  | F     | 35       |
| 7  | G     | 36       |
| 8  | H     | 35       |
| 9  | I     | 34       |
| 10 | J     | 35       |

| 11 | K | 34 |
|---|---|---|
| | TOTAL | 376 |

### 3.3.2. Sample

Sample is part of quality and characteristics of the population (Mubarok, 2015). The researcher took some subjects from the population. In this research, the researcher used simple random sampling. Simple random sampling is a sampling technique that done by randomly without focuses to the strata on the population (Sugiyono, 2016). The sampling was not fully random, but just random the class. It did not change the composition of class. Furthermore, it did not disturb teaching and learning process in the classroom.

**Table 3.2**

Sample of Experimental and Control Class

| Experimental Class (VIII A) | Control Class (VIII B) | TOTAL |
|---|---|---|
| 29 | 31 | 60 Students |

The reasons of choosing those classes are:

a. Those classes got difficult to learn grammar, especially in simple past tense.

b. The students got bored to learn simple past tense using traditional way.

c. The students needed a new method of learning simple past tense.

d. Those classes never used snake and ladders game to learn simple past tense.

e. Simple past tense included in eighth grade syllabus.

## 3.4. Instrument of Research

This research conducted by using quantitative research. The researcher used test. Test is a method of measuring a person ability, knowledge or performance in a given domain (Brown, 2004). It helped the researcher to know the improvement of the student. The test in this research used pretest and posttest. Pretest was the test that held before treatment. On the other hand, posttest was the test that held after the treatment.

The form of the test was multiple choices. There were twenty five questions.

**Table 3.3**

The Blue Print of the Questions

| No | Indicators | Kind of Question | Questions' Number | Answer Key |
|----|-----------|------------------|-------------------|------------|
| 1 | The students are able to change base form into past form. | Multiple choice | 25, 35, 44, 47, 48, 50 | B, D, A, A, B, D |
| 2. | The students are able to change past form into base form. | | 19, 26, 45, 46, 49 | A, B, B, B, A |
| 3. | The Students are able to complete the sentence with past form. | | 1, 2, 4, ,5, 6, 7, 8, 9, 10, 12, 13, 14, 15, 20, 21, 22, 27, 28, 29, 31, 32, 33, 34 | C, C, B, D, D, B, A, D, C, C, A, C, D , C, B, A, D, D, B, D, A, C, C |
| 4. | The Students are able to complete the sentences with the irregular words in | Multiple choice | 17, 18, 23, 24, 36, 37, 38, 39, 40, 41, | A, D, C, D, D, B, A, D, A, B, |

| No | Indicators | Kind of Question | Questions' Number | Answer Key |
|----|-----------|-----------------|-------------------|-----------|
|    | parentheses. |                | 42, 43 | C, D, B |
| 5. | The Students are able to complete the dialogue. |     | 3, 11, 16, 30 | D, A, B, C |

## 3.5. Methods of Data Collection

In this research, researcher used some instruments. These are the instruments that researcher used:

## 1. Pre-test

In this session the researcher gave a test to the students. It was given on $21^{st}$ June 2019, but in different time. There were 25 items of multiple choices. These questions were given to both of groups. The purpose of pre-test is to know the initial knowledge of past form of irregular verbs before the treatment.

## 2. Treatment

The treatment was given after pre-test. In the experimental class the researcher used Snakes and Ladders Game. On the other hand, in the control class the researcher used conventional technique. The treatment had been done in three meetings for both experimental and control group. The detail could be seen as follows:

**Table 3.4**

The Schedule of Implementing the Research

| No. | Date | Time | Activity |
|-----|------|------|----------|
| 1. | June $22^{nd}$, 2019 | 08.00 - 09.30 A.M | First meeting in control class |

| | | 04.00 - 05.30 P.M | First meeting in experimental class |
|---|---|---|---|
| 2. | June 23rd, 2019 | 10.00 – 11.30 A.M | Second meeting in control class |
| | | 04.00 – 05.30 P.M | Second meeting in experimental class |
| 3. | June 28th, 2019 | 08.00 - 09.30 A.M | Third meeting in control class |
| | | 08.00 – 09.30 P.M | Third meeting in experimental class |

**Table 3.5**

The Treatment Procedures of Experimental and Control Class

| Treatments | Experimental Class (Snakes and Ladders Game) | Control Class (Conventional Technique) |
|---|---|---|
| 1 | • The researcher gave the explanation about the material<br>• The researcher gave the table of regular and irregular verbs<br>• The researcher asked the students to memorize the words in the table | • The researcher gave the explanation about the material<br>• The researcher gave the table of regular and irregular verbs<br>• The researcher asked the students to memorize the words in the table |
| 2 | • The researcher reviewed the material<br>• The researcher divided the class into some groups<br>• The researcher chose the chief and the judge of every group<br>• The researcher told about the game (the concept and the rules)<br>• The researcher gave the demonstration in front of the class | • The researcher reviewed the material<br>• The researcher divided the class into some groups<br>• The researcher gave a table of regular of irregular verbs for every group (incomplete table)<br>• The researcher asked the students to filled the table by the right |

| | | answer (change the word into base form or irregular verb without open up the dictionary/ table) |
|---|---|---|
| 3 | • The researcher reviewed the material more deeply<br>• The researcher asked the students to gathered the group<br>• The researcher gave every group the property<br>• The researcher asked them to play the game<br>• The researcher guided the students in playing snakes and ladders game | • The researcher reviewed the material more deeply<br>• The researcher asked the students to gathered the group<br>• The researcher asked one group to present the result. The other group check their answer<br>• The researcher gave the practices |

**3. Post-test**

Post-test was given at the last time as final test after the researcher implemented the treatment. It was used to know the students' progress in past form of irregular verbs after implementation of the method and whether Snakes and Ladders Game was effective to teach students' past form of irregular verbs mastery. It was given on 29$^{th}$ June 2019 both of experimental class and control class, but in different time.

**3.6. Trying Out Instrument**

Try out test is a test that used to measure the questions before it used. The try out test was used to check the difficulty and the effectiveness of the test. Post-test was given at the last time as final test after the writer implemented the treatment. It was used to know the students' progress in

learning past form of irregular verbs after implementation of the method. The criteria of the good instruments are valid and reliable.

### 3.6.1. Validity and Reliability

An instrument can be said as the valid one if it can show the data from the research variable accurately (Arikunto, 2010). According to Hughes (2003), to be valid a test must provide consistently accurate measurements. It must therefore be reliable. Reliability is refers to the reliability of a certain. The instrument that reliable contain the meaning that instrument is good enough with the result that capable to revealing believable data (Arikunto, 2010) .The test is reliable if the result of $r_{value}$ was greater than r-table.

The past form of irregular verbs try-out test consists of 50 item numbers. From the try-out test was conducted, it was got that the item numbers were valid and invalid. The test was valid if the result of $r_{value}$ was less than r-table. The data was counted by using SPSS. The researcher consulted that the r-table with N=36 students and the significance of level 5% (0,05) in which the r-table was 0, 339.

**Table 3.6**

Calculation Valid Question and Invalid Question

| Valid | Invalid |
|---|---|
| 3, 4, 5, 8, 11, 12, 13, 14, 20, 21, 22, 25, 28, 29, 30, 32, 33, 35, 37, 39, 43, 47, 48, 49, 50 | 1, 2, 6, 7, 9, 10, 15, 16, 17, 18, 19, 23, 24, 26, 27, 31, 34, 36, 38, 40, 41, 42, 44, 45, 46 |
| Sum : 25 | Sum : 25 |

Based on the table above, the 25 items which were valid was used for pre-test and post-test questions. And for the 25 invalid items, were not used for the test.

**Table 3.7**

The Reability Computating Using SPSS Calculation

**Reliability Statistics**

| Cronbach's Alpha | N of Items |
|---|---|
| .845 | 50 |

**Case Processing Summary**

|  |  | N | % |
|---|---|---|---|
| Cases | Valid | 36 | 100.0 |
|  | Excluded[a] | 0 | .0 |
|  | Total | 36 | 100.0 |

a. Listwise deletion based on all variables in the procedure.

Based on the SPSS calculation above showed that in Cronbach's Alpha column was 0,845. It could be concluded that the try-out instrument was reliable, because the r-value was higher than r-table (0,339).

### 3.7. Methods of Data Analysis

Data from this research comes from the result of pretest and posttest, pretest as an initial result and posttest as a last result. In this research the

researcher will analyze the data using application namely SPSS (Statistic Product and Service Solutions) and T-Test.

The formula of T-test is expressed as follows:

$$t = \frac{X_1 - X_2}{\sqrt{\left(\frac{SS_1 + SS_2}{n_1 + n_2 - 2}\right)\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}}$$

(Sukardi, 2003)

Where:

t     = t-Value

$X_1$  = the average score of experimental class.

$X_2$  = the average score of control class.

$SS_1$ = standard deviation of experimental class

$SS_2$ = standard deviation of control class

$n_1$   = the number of students in the test in experimental class

$n_1$   = the number of students in the test in experimental class

## 3.8.    Statistical Hypothesis

Before deciding the result of hypothesis, there are statistically hypotheses as follows:

Ho: μ1 = μ2

Ha: μ1 = μ2

Notes :

Ho     : The Null Hypotheses

Ha     : The Working Hypotheses

μ1      : Students' past form of irregular verbs mastery achievement that are taught by Snakes and Ladders Game.

μ2      : students' past form of irregular verbs mastery that are taught by Snakes and Ladders Game.

The assumption of this hypothesis as follows:

a. If $t_o \geq t_{table}$, the Null Hypotheses (Ho) is rejected and the Working Hypotheses (Ha) is accepted. It means that there is a significant difference of students' past form of irregular verbs mastery between students who are taught by Snakes and Ladders Game and students' who are taught without Snakes and Ladders Game.

b. If $t_o \leq t_{table}$, the Null Hypotheses (Ho) is accepted and the Working Hypotheses (Ha) is rejected. It means that there is no significant difference of students' past form of irregular verbs mastery between students who are taught by Snakes and Ladders Game and students' who are taught without Snakes and Ladders Game.