# CHAPTER III

# RESEARCH METHODOLOGY

This chapter presents research method which consist of setting of the research, method of the research, population and sample, design true-experimental, procedures of collecting data, trying out of instrument, method of data collecting and statistical hypotheses.

## 3.1 Setting of the Research

This research took place in State of Junior High School 01 Jepara in the academic year 2017/2018. This located in Jl. Sersan Sumirat 3, Jepara.

## 3.2 Method of the Research

In this research, the writer will process the data by conducting an experiment. According to Mubarok (2015:78), Experimental research is a research method used to find specific treatment effect against the other in uncontrolled condition. An experimental research described what happened next toward particular variables when the students got certain treatment. Thus this research used experimental research as a form of quantitative research to know the effectiveness of using flashcard in teaching speaking for seventh grade students of Junior high school.

## 3.3 Population and Sample

### 3.3.1 Population

In most studies this population will be finite one that consists of element which conforms to some designated set of specifications. These specifications provide clear guidance as to which elements are to be included in the population and which are to be excluded (Ross, 2005:2).

In this research, the researcher used the students of seventh grade of state junior high school 01 Jepara in the academic year of 2016/2017 as the population. There were nine classes of seventh grade in state junior high school 01 Jepara. Those classes are sorted from A until I.

### 3.3.2 Sample

A sample design is definite plan for obtaining a sample from a given population. It refers to the technique or the procedure the research would adopt in selecting items for the sample. Sample design may as well lay down the number of items be included in the sample (C.R.Kothari, 2004:55-56).

In finding the controlled and experimental class (group), the researcher used random sampling system with hand-rolled paper. Then the result is one class as controlled class and one class as experimental class. There were 27 students in controlled class and 30 students in experimental class.

## 3.4 Design True-Experimental

In a true-experimental class design there are two classes directly selected, then given a pretest to know the initial state, is there any difference between classes experiment and control class (Sugiyono, 2009:113). Experiment class were treated using learning using flashcard media, while control class still using lecture method. After completion of treatment both classes were given posttest.

The cognitive domain student learning test is used three times on this research. The first test aims to determine the ability cognitive both groups. The second test to further finalize the media used. The third test aims to measure student achievement or learning outcomes in the cognitive domain. The design experiment in the study shown in the table below:

**Table 3.1**

| Group | Pre-test | Treatment | Post-test |
|---|---|---|---|
| EC | O1 | X1 | O1 |
| CC | O2 | X2 | O2 |

(Sugiyono, 2009:113).

In which:

EC : Experiment Class

CC : Control Class

O1 : Pre-test for Experiment Class

O1 : Post-test for Experiment class

O2 : Pre-test for Control Class

O2 : Post-test for Control Class

X1 : Treatment using Flashcard

X2 : Treatment not using flashcard

### 3.5 Procedures of collecting data

In collecting data, the writer followed some procedures, such as, doing try-out, giving pre-test and post-test.

**Table 3.2**

**The Activities**

| No | Activity | Week | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 1. | Preparation | ■ | | | | | | | |
| 2. | Try-out test | ■ | | | | | | | |
| 3. | Pre-test | | ■ | | | | | | |
| 4. | Treatment | | | ■ | ■ | | | | |
| 5. | Post-test | | | | | ■ | | | |
| 6. | Data processing | | | | | | ■ | ■ | |
| 7. | Report | | | | | | | | ■ |

### 3.6 Trying out of instrument

The instrument will use in this research is a test (pretest and posttest). Before a test give to the students, tryout test will apply to know the test is good instrument. The result of the test is to find out the validity and reliability.

1. Validity

According to Brown (2004:387) stated that test validity is the degree to which the test actually measure. Every test has to be valid. To calculate the validity, the writer will use the product moment formula:

$$r_{xy} = \frac{(N.\Sigma XY)-(\Sigma X.\Sigma Y)}{\sqrt{\{N.\Sigma X^2-(\Sigma X)^2\}\{N.\Sigma X^2-(\Sigma Y)^2\}}}$$

In which:

$r_{xy}$ : the item of test reliability

N : the number of respondent

X : total score of each item

Y : individual total score

$X^2$ : total for the square for each item

$(X)^2$ : the square of the total score for each item

$(Y)^2$ : the square of the individual total score

(Arikunto,2010:213)

The validity computation is consulted to the r-table of product moment by determining the significances level 5% and n which is according to the data. The instrument is valid if the $r_{xy} > r_{table}$ for $\alpha$= 5% and N= 28

2. Reliability

Brown (2004:386) states that the reliability a test is defined as the extent to the result can be consistent and dependable. If you give the same test to the same student or matched students on two different occasions, the test should yield similar result. To measure the reliability of the test, the writer used the following spearmen

$$r_{11} = \frac{2.r_{hh}}{1+r_{hh}}$$

In which:

$r_{11}$ : Coefficient of reliability

$r_{hh}$ : Reliability of half test.

### 3.7 Method of Data Collecting

The writer would be used pre-test and post-test in this research. The pre-test would conduct to know the students in both classes have the homogenous skill in English and their earlier knowledge of speaking skill before the treatment. After the treatment finished, the writer would give post-test to both classes and compared their speaking skill.

Before the researcher give pre-test, the researcher would did the validity of test to seventh grade of SMP N 1 Jepara. The choosing class as controlled and experimental class is based on the purposing sampling. Then, the writer would examine the validity and reliability.

In this research, both class (experiment and controlled class) were given two test about speaking based on their source books: pre-test and post-test.

1. Pre-test

   The pre-test for the students is carried out to get their score. The students have to present procedure and descriptive orally. The purposes of pre-test are to know the homogenous skill in English of the student and to know their earlier knowledge of speaking skill before the treatment.

2. Treatment

   After given the test to the students, the treatment was given twice to the students who taught using flashcard as a media in experiment class. In this session, the writer as a teacher. After that, teacher explained about flashcard as a media to teach speaking.

3. Post-test

   The post-test is given by asking students to present procedure and descriptive orally. The purpose of post-test is to know the improvement of students in their speaking skill after the treatment.

### 3.8 Method of Data Analysis

The technique of data analysis would use the t-test formula that adapted from Suharsimi Arikunto. The t-test is used to compare the score in pre-test and post-test.

In order to get calculation of t-test from Arikunto (2010:311), there are several steps to be taken:

The following steps describe as follows:

Determining mean of gained score of experiment class:

Mx $= (\frac{\sum x}{Nx})$

Mx = Mean of Score in Experiment Class

∑x = Gained Score of Experiment Class

Nx = Number of Students in Experiment Class

Determining standard deviation of experiment class

$\sum x^2 = \sum X^2 - \frac{(\sum X)2}{Nx}$

$\sum x^2$ = Standard deviation

$\sum x^2$ = Squared of gained score in Experiment Class

∑x = Gained score of experiment Class

Nx = Number of Students in Experiment Class

Determining mean of gained score in Controlled Class

My $= (\frac{\sum y}{Ny})$

My = Mean of Score in Controlled Class

∑y = Gained score of Controlled Class

Ny = Number of students in Controlled Class

Determining standard deviation of controlled class.

$\sum y^2 = \sum Y^2 - \frac{(\sum y)2}{Ny}$

$\sum y^2 =$ Standard deviation

$\sum Y^2 =$ Squared of gained score in controlled class

∑Y = Gained score of controlled class

Ny = Number of students in controlled class

Determining Degree of Freedom

Df = Nx+Ny-2

df = degree of freedom

Nx = number of students of experiment class

Ny = number of students of control class

The t-test formula can be formulated as follow:

$$to = \frac{Mx - My}{\sqrt{\left(\frac{\sum x^2 + \sum y^2}{N2 + Ny - 2}\right)\left(\frac{1}{N2} + \left(\frac{1}{N2}\right)\right)}}$$

to = t observation

Mx =Mean of the Gained Score of Experiment Class

My = Mean of the Gained Score of Controlled Class

$\sum x^2$ = Standard Deviation of Experiment Class

$\sum y^2$ = Standard Deviation of Controlled Class

Nx = Number of students in Experiment Class

Ny = Number of students in Controlled Class

**3.9 Statistical Hypotheses**

Ho : $\mu a \leq \mu b$

Ha : $\mu a \geq \mu b$

In which:

Ho : Null Hypotheses

Ha : Alternative Hypotheses