

## **CHAPTER III**

### **RESEARCH METHOD**

In this chapter, the researcher describes the research method. It consist research design, population and sample, research instrument, validity and reliability testing, data collection method, and data analysis.

#### **A. Research Design**

Research design is the way to complete the data and search the result of the study. Research design is all process in conducting a research. It was about the activity that doing to know the purpose of the study. In fact, there are two kinds of research approaches namely quantitative and qualitative approach. This research used quantitative approach with experimental design. According to Ary et al (2010), experimental research design is a research about the effect of the systematic manipulation of one variable on another. Arikunto (2002:78) stated that in experiment, the observation is done twice; before and after treatment. The observation that is done before the experiment is called pre-test and observation after the experiment is called post-test.

This research used pre experimental research design that involves only one group of individuals. The researcher only takes one class to do pre-test, treatment, and post-test. Before conduct the pre-test, the researcher gives try out to different students and class. Pre-test is conducted before giving a treatment, while after giving treatment is called post-test. Those tests are given to take the score of the students' achievement before and after being taught by using cartoon video.

Next, conforming to why using pre-experimental research design because the researcher was not visible to have random assignment to determine the sample of the research and it was used limited of the time and cost. The requirement of this design was stated by Creswell (2014), with pre-experimental research design the researcher studied a single group. This design did not have a control group to compare with the experimental group.

This is form of pre experimental study that the researcher applies can be seen bellow:

**Table 3.1 One Group Pre-test and Post - test**

| Pre test | Independent | Post test |
|----------|-------------|-----------|
| Y1       | X           | Y2        |

X : Treatment (teaching vocabulary by using Cartoon Video)

Y1 : Students' achievement on vocabulary mastery before treatment

Y2 : Students' achievement on vocabulary mastery after treatment.

The procedures of experimental research that use one group pre-test and post-test design are:

1. Administering a pre-test with a purpose of measuring vocabulary achievement of fifth grade students of MI Najatus Salikin.
2. Applying the experimental treatment teaching vocabulary by using Cartoon Video to the fifth grade students of MI Najatus Salikin.
3. Administering a post-test with a purpose of measuring vocabulary achievement of fifth grade students of MI Najatus Salikin.

Y1 was pretest and it was given before teaching or treatment was applied. The purpose of the pretest was to measure the students' English vocabulary before they got treatment X. X was considered as the treatment, namely the teach by using cartoon video. Y2 was known as post-test. Which researcher conducted after the treatment to know the achievement of the students or the subject. By using this form of research, the influence of experimental treatment could be seen by analyzing or comparing the result of the pre-test and post-test.

In this research the significant differences between vocabulary achievements before the students are taught by using cartoon video and after the students are taught by using cartoon video.

## **B. Population and sample**

### 1. Population

McMillan, (1996:85) states that a population is a group of elements or cases, whether individuals, objects, or events, that conform to specific criteria and to which we intend to generalize the results of the research. . Population is the large group which is a researcher wishes to generalize, it includes all the members of a defined class of people, event, or object (Ary, et al, 2010). On the other hand, population is a group of individuals who have the same characteristic (Cresswell, 2012: 142). It means, the population of this research is MI Najatus Salikin.

### 2. Sample

According to Cresswell (2012:142) sample is a subgroup of the target population that the researcher plans to study for generalizing about the

target population. Selection of sample is very important steps in conducting a research study. According to Gray (1992:123) sampling is the process of selecting a number of individuals for a study in such a way that the individuals represent the large group from which they were selected.

### 3. Sampling

Sampling is process in selecting a sample for a study used to represent a population. In this study, the researcher uses non probability sampling with purposive sampling technique to obtain the sample. Purposive sampling technique is sampling technique which is the researcher does not consider strata, or random when choosing a subject. However, the fifth grade students of MI Najatus Salikin were chosen because among other classes the fifth grade students have average proficiency.

### **C. Research Variable**

In this study, the researcher studies the relationship among variables. Variable is a construct or a characteristic that can take on different values or scores (Ary, 2010: 37). The variables that examined in this study are classified into two types of variables, they are:

#### 1. Independent variable (X)

Independent variable is variable which is manipulated by researcher deliberately. In experimental studies, the treatment is the independent variable. So, independent variable in this research is teaching vocabulary by using Cartoon Video.

Data collection method is the way used by researcher to collect the data. There are some methods in collecting data to complete the researcher design. The technique of collecting the data in this research is administering test. Diwandono (2008: 12) in Isnawati's book (2012: 3) states that a test is a tool or procedure used to measure the students' language proficiency. There are two kinds of test that given to the students, they are pre-test and post-test. The result of the test will be compared between pre-test and post-test score.

## 2. Dependent variable (Y)

Dependent variable is a variable that affected the independent variable. The dependent variable is also the outcome of the research. In this research, dependent variable was students' score in vocabulary.

### **D. Data collecting Method**

#### 1) Pre-test

Pre-test is the test which is given to the students before the research do a treatment. Pre-test conducted by researcher to measure how well the vocabulary of the students before being taught using cartoon video. This test consist of 20 items and has done in 60 minutes. The form of pre-test is multiple choices. The questions are made by researcher related to the topic.

#### 2) Post-test

Post-test is given to the students after the researcher do a treatment. It aims to measure the students' vocabulary mastery after getting treatment. The procedures of post-test were similar to the pre-test.

The form of post-test is also multiple choice which consist of 20 items and has done in 60 minutes.

**Table 3.2 The schedule of test and treatment**

| No | Activity    | Date            |
|----|-------------|-----------------|
| 1. | Pre-test    | July 30, 2020   |
| 2. | Treatment 1 | July 30, 2020   |
| 3. | Treatment 2 | August 6, 2020  |
| 4. | Treatment 3 | August 13, 2020 |
| 5. | Post-test   | August 15, 2020 |

#### **E. Research instrument**

Research instrument is the tool of collecting data that must be valid and reliable, research instrument can be valid if the instrument can be measured what will be measured. Instrument is tool or facilitates that are used by researcher, (Arikunto, 2010:160). As an experimental research, the instrument in this study is using test. According to Ary (2006:201) 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 researcher uses one kind of instrument to do this research, it is vocabulary test. The aim of using test is to know whether students are successful or not in teaching English vocabulary by using cartoon video. The researcher applies pre-test and post-test. Pre-test is taken before doing an experimental study or before teaching English vocabulary by using cartoon video. After doing pre-test and get the result, the researcher doing the

treatment, teaching English vocabulary by watching cartoon video. After doing treatment the researcher conduct posttest, so post-test is taken after doing a treatment study or after teaching English vocabulary by using cartoon video. After the treatment is done, the researcher gave post-test to all students.

The test consist of twenty multiple choice questions. Each items of test includes four options, namely a, b, c, d. it composed based on the syllabus, lesson plan, and the textbook for fifth grade students of Elementary School. Before giving the test to the students, the researcher tries out the test to the fifth grade students from different school with have the same characteristics. Try out is conducted to the fifth grade of MI Plosolanang Grogol. The researcher chooses this subject based on the characteristics of the students' ability which is almost same with the sample. By trying out the test, the researcher can find out th validity and reliability of the instrument, so it can be known the quality of the test item.

#### **F. Validity and Reliability testing**

The set of vocabulary test is used to collect the data related to the students' vocabulary achievement before and after giving the treatment. The test being given to the students must be valid and reliable. Before using the test, firstly the researcher had try out for pre-test to the 30 students of fifth grade of MI Plosolanang Grogol.

##### **1. Validity**

According Heaton stated, "The validity of the test is the extent to which it measures what it supposed to measure and nothing else. The test

must aim to provide a true measure of the particular skill which is intended to measure". So validity is the most important idea to consider when preparing or selecting an instrument for use. To measure whether the test has good validity or not, the researcher analyzes the test from content validity, construct validity, and face validity.

a. Content validity

Content validity is concerned with whether the test sufficiently representative and comprehensive for the test. To have content validity a test's content must be seen as representative of the subject are a being covered. The test made by the researcher based on the course objective in the lesson plan which make by the researcher. The researcher made vocabulary test with consist of multiple choice. In this test the students' are asked to answer the test to measure their vocabulary achievement. The content validity in this research can be seen in as follow:

**Table 3.3 Content Validity**

| Basic competence  | Material   | Indicator  | Test item  |
|---|------------|--|--|
| Get to know, study, ask, and tell about the Job / Profession. | Vocabulary | Presented questions about the name of the profession, students can answer questions about job/profession names | Pre-test<br>1.<br>Post-test<br>1.                            |
|   |            | Presented questions, students can answer the name of the object in Indonesian and English.                     | Pre-test<br>14, 15, 17, 18,<br>19, 20.<br>Post-test<br>2, 3. |



|  |  |  |
|--|--|--|
|  | Presented a picture, students can determine where the location in the picture.                           | Post test<br>5, 6, 17, 20.                       |
|  | Presented questions, students can answer where the location about name place.                            | Pre-test<br>4, 5, 6, 16.                         |
|  | Presented a picture, the students can determine the animal in the picture.                               | Post-test<br>7.                                  |
|  | Presented a picture, students can answer the name profession in the picture correctly                    | Post-test<br>11, 12, 14, 15,<br>16, 18, 19.      |
|  | Presented a simple sentence, students can complete the sentence with the correct related to the context. | Pre-Test<br>7, 8, 11, 2.<br><br>Post-test<br>13. |
|  | Presented questions, students can answer the names of fruit  | Pre-test<br>13.                                  |
|  | Presented questions, the students can answer about something at home                                     | Pre-test<br>3.<br>post-test<br>4.                |
|  | Presented questions, the students can determine about hobby home.  | Pre-test<br>9.<br>Post-test<br>8, 9, 10.         |

#### b. Construct Validity

A construct is any theory, hypothesis, or model that attempts to explain, observed phenomena in our universe of perceptions (Brown, 2004: 45). The researcher needs ensuring that the method of measurement matches the construct wants to be measured. Related to this study, the researcher conducted a research about vocabulary. The researcher asks the students to answer the twenty multiple choice questions.

c. Face validity

Face validity becomes one of the validity types that can establish. Validity was measurement that showed the validity level of the instrument (Arikunto, 1998: 160). Face validity is almost always perceived in terms of content. If the content of the measuring instrument appears in accordance with what researcher wants to measure, it can be said that the validity has been fulfilled.

2. Reliability

Reliability is necessary characteristic of any good test for it to be valid all. Reliability means the stability of test scores; a test cannot measure anything well unless it measures consistently (Harris, 1969: 14). Reliability is a measure of accuracy, consistency, dependability or fairness of scores resulting from administration of particular examination.

In this research, the researcher uses SPSS 16.0 for windows to know the reliability of test instrument. To know the reliability, the researcher gives try out to the fifth grade students in other school. The try out is used to know the reliability of pre-test and post-test. To analyze the result score of the students in try out, the researcher uses reliability test based on Cronbach's Alpha. The result of reliability test is:

**Table 3.4 The Reliability of Pre-test****Reliability Statistics**

| Cronbach's Alpha | N of Items |
|------------------|------------|
| .727             | 20         |

According to Arikunto (2009: 100) the criteria of reliability coefficient is divided into five classes:

- a. If the alpha Cronbach score 0.00-0.20 : less reliable
- b. If the alpha Cronbach score 0.21-0.40: rather reliable
- c. If the alpha Cronbach score 0.41-0.60: enough reliable
- d. If the alpha Cronbach score 0.61-0.8: reliable
- e. If the alpha Cronbach score 0.81-1.00: very reliable

From the analysis by using alpha Cronbach in SPSS Statistics in the table above, the reliability value of pre-test is 0.727. Based on the criteria of reliability coefficient according to Triton, if alpha Cronbach score is above 0.60, it can be said that the instrument is reliable. So, it can be concluded that the test instrument of this research is reliable.

**G. Data Analysis**

According to Ary et al.(2010: 530), data analysis is reviewing the data while they are being collected and attempting to synthesis and make sense out of what is observed. The technique of the data analysis used in this research is

quantitative data analysis. This is a technique used to analyze and count the data, to know the students' vocabulary score by using cartoon video.

In analyzing the data, the researcher uses statistical calculation of paired sample t-test. This technique is used to investigate the significant difference of the students' score by using cartoon video. This research uses experimental class with one group pre-test and post-test. It means the subject is same but they get different treatment. Then, the researcher uses Paired Sample T-test in SPSS Statistics 16.0 to analyze the data. The data is gained from the result of students' pre-test and post-test. Then, the mean of each test will be compared to see whether there is significant different after given the treatment or not. If the result of significant value is higher than the level of significance 0.05 (sig. > 0.05, the null hypothesis cannot be rejected, it indicates that cartoon video is not effective to increase students' vocabulary mastery. By contrast, if significant value is lower than the level of significance 0.05 (sig. < 0.05), the null hypothesis can be rejected, it indicates that there is significant difference score of students' vocabulary mastery before and after being taught by using Cartoon Video.