

CHAPTER III

RESEARCH METHODOLOGY

A. Method of Research

The researcher conducting this research used quantitative method. Quantitative research is studied quantitatively or carried out using numbers, statistics, structures, and also controlled experiments in which conducted with 2 classes of junior high school students. Meanwhile, this research used a quasi experimental design. Experimental is a procedure for testing a hypothesis by set a situation in which the strength of the relationship between variables.¹⁴

The researcher used quasi experimental research focuses to describe how reading comprehension effective with used multimodal text. Conducting pre test and post test for the experiment class with selection in the experiment and control class. The design is used to know how the multimodal text help the students to understanding more about picture text, it is compares experiment class (multimodal text is used in learning of a reading text) and control class (multimodal text is not used in learning of a reading text). The effectiveness of this strategy can be known by comparing of student's score of experiment class and control class of post test after the researcher do the treatment.

¹⁴ David Nunan, Nunan David, and Michael Swan, *Research Methods in Language Learning*, 1st ed. (New York: Cambridge university press, 1992): 27.

B. The Site and Time of Study

This research has been conducted on students at SMP IT MAGS located in Menes, Pandeglang Regency, Banten 42262. It started in April 2022. The researcher chose this place because this place was my previous school and was the best school with international standard and was accredited A. This school prioritizes communicating in English and conducting learning activities using English.

C. Population and Sample

1. Population

The population of this research is 32 students of seventh grade of SMP MAGS.

2. Sample

The sample of this research there was two classes. There are VII-KH. Mas Abdurraman and VII-KH. Mustaghfiri class. Then the researcher manipulates the sample, VII-KH. Mas Abdurrahman as experiment class and VII-KH. Mustaghfiri as control class. The KH. Mas Abdurrahman class has its member for about 16 students and the class KH. Mustaghfiri has 16 students.

D. The Technique of Data Collecting

Data collection techniques are the most important thing that must be completed and obtained by a researcher, so this research can be said to be complete. Without data collection, the researcher could not process the data and could not continue the research to the next

stage. In conducting this research, the researcher chose to conduct research using experiment research, by conducting a test. The test was conducted to determine the effectiveness of multimodal text in reading comprehension test, and this test was carried out twice, before and after the treatment. The following are some of the steps for conducting research:

1. Pre-test

The technique test is used to see the results of students' skill in reading comprehension of the text. The test was applied in the experimental class and the control class to see the initial ability, then the test score was used as a comparison between the experiment class and the control class. Researchers conducted two tests, pre-test and post-test. After getting the data, then data analysis was carried out to see the effectiveness of reading using pictures in student's reading comprehension.

Pre-test was applied in experiment and control class and it is conducted in first meeting before multimodal text was given by the researcher. The pre-test was 15 multiple choice and 5 essay questions. There are reading text passages in the test and the students had to answer the questions according to the text.

2. Post-test

At this stage of the test, post-test are also carried out in both classes and conducted after the treatment. Several picture reading description is given to know the effectiveness of multimodal text strategy on students reading comprehension based on the post-test score. The test consisted of 15 multiple choice and 5 essay questions. In both test has a same difficulty level. Then the results

of the Pre-test and Post-test were compared, reading comprehension with or without pictures is evaluated and scores as numerical data.

3. Observation

Observation is the technique which used by the researcher. The purpose is to get preliminary data. The researcher observed respondent's activities in class and the process of teaching activities to identify the problem happened in the class before applying the treatment for the research.

4. Documentation

The collecting data by using take the pictures in learning process about student's test of this research.

E. The Technique of Data Analysis

To assess the data, the researcher used the formula of t test. The experimental using null hypothesis of the mean differences of two samples. Because the quasi-experiment used pre-test and post-test and then use this test to measure the final test between experiment class and control class. There are several steps:

- a. Determining mean of variable X1 with formula:

$$M_1 = \frac{\sum x_1}{N_1}$$

- b. Determining mean of variable X2 with formula:

$$M_2 = \frac{\sum x_2}{N_2}$$

- c. Determining derivation score variable X1 with formula:

$$x_1 = X_1 - M_1$$

- d. Determining derivation score variable X2 with formula:

$$x_2 = X_2 - M_2$$

After collecting the data from pre-test and post-test, the researcher analyze it by using statistic calculation of t-test by using the formula with significance degree 5% and 1%. The formula below:

$$t = \frac{M_1 - M_2}{\sqrt{\left(\frac{\sum x_1^2 + \sum x_2^2}{N_1 + N_2 - 2}\right) \left(\frac{N_1 + N_2}{N_1 \cdot N_2}\right)}}$$

Notes:

M_1 = Mean score of the experiment class (Mean X1)

M_2 = Mean score of the control class (Mean X2)

$\sum x_1^2$ = Sum of square deviation score in experimental class

$\sum x_2^2$ = Sum of square deviation score in control class

N_1 = Number of students of experimental class

N_2 = Number of students of control class

2 = Constant number

df = Degree of freedom (df = $N_1 + N_2 - 2$)

F. Statistical Hypotesis

The statistical hypothesis of the research can be seen as:

1. There is no effectiveness of using multimodal text for teaching reading comprehension (**H₀**).

$$\mathbf{H_0 = \mu_1 = \mu_2}$$

2. There is effectiveness of using multimodal text for teaching reading comprehension (**H_a**)

$$\mathbf{H_a = \mu_1 \neq \mu_2}$$

Where: **H₀** = Null hypothesis

H_a = Alternative hypothesis

μ₁ = Students pre-test achievement

μ₂ = Students post-test achievement

And then, the criteria used are as follows:

- a. If t-test (**t_o**) > t-table (**t_t**) in significant degree of 0.0,5 **H₀** (null hypothesis) is rejected. It means that the average score rates of the experimental group are higher than the controlled group. In other words, using multimodal text for teaching reading comprehension is effective.
- b. If t-test (**t_o**) < t-table (**t_t**) in significant degree of 0.0,5 **H₀** (null hypothesis) is accepted. It means that the average score rates of the experimental group are same as or lower than the controlled group. In other words, using multimodal text for teaching reading comprehension is not effective.