CHAPTER III
RESEARCH METHOD

A. Research Design

This research used a pre-experimental design. The researcher tested one group. This research design is usually carried out as a preliminary study, before conducting a real experiment (Creswell 2009:158). The researcher used a quantitative approach in this design. In quantitative research, researcher rely on statistical analysis (mathematical analysis) of the data, which is usually in numerical form (Creswell 2012:19). This type of research is an experiment with an one group pre-test and post-test design. Researcher tested the treatment group before and after the treatment. Results obtained then compared to strengthen the answer research question (Creswell, 2009:158).

B. Population and Sample

1. Population

   In general research, a population is defined as a group of subjects who are subject to the generalization of research results. The population is defined as a generalization area consisting of objects/subjects that have certain qualities and characteristics determined by the researcher to be studied and conclusions drawn. The population in this study were all students of class VIII SMP Negeri 1 Subah, totaling 77 students.

2. Sample

   The sample is defined as a small part of the population to be studied. A sample can represent a population whose results represent the symptoms to be studied as a whole. The number and number of samples determines whether or not the sample is taken. In sampling in this research, a probability sampling technique was used, namely cluster random sampling.

   Based on the explanation above, the researcher determined the sample, namely one class in class VIIIB of SMP Negeri 1 Subah, totaling 25 students.

C. Research Instrument

Instrument is a tools used to collect data on Study (Purwanto, 2018). In this study, the researcher collected data through pre-test and post-test.

1. Pre-Test

Pretest is a test conducted which aims to determine the extent to which the material or teaching materials to be taught have been mastered by students (Sudijono as quoted in Effendy, 2016). In this study to determine the knowledge of students' peers before being given treatment. The type of pre-test used is multiple choice with 15 questions.

2. Post-Test

The post test is a test that is carried out with the aim of knowing whether all the teaching materials that are classified as important can be understood as well as possible by students (Sudijono as cite in Effendy, 2016). In this study to determine the knowledge of students' peers after being given treatment. The type of post test used is the same as the pre test, namely multiple choice with 15 questions, but the post test questions are randomized or changed with the same level of ease and difficulty.

D. Procedure of Collecting Data

In this study, the researcher collected data using tests. This test is conducted to identify problems before and after research. First, students are given a pre-test about vocabulary to ensure the consistency of their knowledge about vocabulary. Furthermore, students learn how to used flash cards, then the researcher directs several flash cards and students guess the contents of the flash cards then the researcher recited the vocabulary on the flash card after which the students were encouraged to repeat the vocabulary until the students said the correct word. Then the students were asked to remember the vocabulary they had seen before and the researcher took out flashcards, then the researcher asked the students to match the flashcards one by one. So students have to remember which flashcards to put together. This test is designed to assess students' vocabulary skills. The last step, the researcher gave

a post-test to the students to check the students' vocabulary development. After that the data can be analyzed.

In this research there are several steps that must be taken to collect data. The steps in this research are as follows:

1. Pre-Test   : In this research to know the peers knowledge of the students' before give the treatment. The type of pre-test used is multiple choice with 15 questions.

2. Treatment   : At this meeting, the researcher introduced the media to be used, namely by using flashcard media in learning vocabulary. In this meeting, the researcher provided material about the importance of learning English vocabulary before entering into core learning, namely using flashcard media containing nouns, verbs, and adjectives. The words in this flashcard are applied in class with the aim of increasing students' understanding of nouns in English.

   After that, the researcher entered the next material, namely the introduction of vocabulary using flashcards as a learning medium by the way the researcher read the vocabulary on the flashcards and was followed by students. Then the researcher asked the students to go to the teacher's desk to guess and make simple sentences from the pictures that had been shown. The researcher asked the students what material they did not understand so that the researcher could take action in class.

3. Post-Test   : In this study to determine the knowledge of students' peers after being given treatment. The type of post test used is the same as the pre test, namely multiple choice with 15 questions, but the post test questions are randomized or changed with the same level of ease and difficulty.

E. Technique of Data Analysis

To analyze the data from this research, that was by analyzing the score of each student and the average score according to the test results. The resulting data was analyzed quantitatively using SPSS version 29.

1. Assessing students' correct answers from the Pre-Test and Post-Test using the following formula.

$$\text{Students' Score} = \frac{\text{The Number of Students Correct Answer}}{\text{The Number of Tests}} X\ 100$$

<div align="right">Agung (2022)</div>

2. Classifying score into seven levels as follows

Table 3.1 Measurement Scale

No.	Score	Classification
1	96-100	Excellent
2	86-95	Very Good
3	76-85	Good
4	66-75	Fairly Good
5	56-65	Fair
6	46-55	Poor
7	0-45	Very Poor

<div align="right">Agung (2022)</div>

3. Calculating the percentage of students' improvement based on the Pre-Test and Post-Test

$$P\ (\%) = \frac{x2 - x1}{x1} \text{ x } 100\%$$

<div align="right">Agung (2022)</div>

Where :

P : the percentage of the students' improving score

X1 : the total score of Pre-Test

X2 : the total score of Post-Test

4. Calculating the percentage of students' vocabulary by using this following formula:

$$P = \frac{F}{N} \text{ x } 100\%$$

<div align="right">Agung (2022)</div>

Where:

P   : The percentage

F   : Frequency of the correct answer

N   : The total number of samples

5. Standard Deviation

The standard deviation was utilized to compute the average depth that prior studies had determined. Because it expresses the size of the distribution for each unit of observation, the standard deviation is the most accurate measure of distribution (Ghozali, 2016). Additionally, this demonstrates that the standard deviation calculation is the appropriate method to used in order to view the distribution or dispersion surrounding the average score.

6. Normality Test

Before carrying out the t-test calculations, a normality test was first carried out using Shapiro-Wilk. This aims to find out whether the resulting data is normally distributed or not. In accordance with the examiner's criteria Sarjono et. al. (2011:30) as follows:

significance value > $\alpha = 0.005$ Normally

significance value < $\alpha = 0.005$ Not Normaly

7. Homogeneity Test

Because the researcher has obtained the results of the normality test, the next step is for the researcher to carry out the homogeneity test using Levene's statistics to obtain results in the form of homogeneous data or not. In accordance with the examiner's criteria Nuryadi et al (2017) as follows:

significance value > $\alpha = 0.005$ Homogeneous

significance value < $\alpha = 0.005$ Not Homogeneous

8. T-test

T-test will use to differentiate if the students result of vocabulary are significant or not. The guidelines for making decisions in the paired sample t-tests based on the significance value (Sig.) obtained from SPSS (Santoso, 2014), are as follows:

1. If the t-value is Sig. (2-tailed) < 0.05, then H0 is rejected and H1 is accepted

2. If the t-value Sig. (2-tailed) > 0.05, then H0 is accepted and H1 is rejected

9. The criteria for the hypothesis testing

Hypothesis testing criteria in the t-statistical test (Ghozali, 2016):

1. If the significance value of the t-test is > 0.05 then H_0 is accepted and Ha is rejected. This means that there is no influence between the independent variable and the dependent variable.

2. If the significance value of the t-test is <0.05 then H_0 is rejected and Ha is accepted. This means that there is an influence between the independent variable and the dependent variable.

10. Effect Size

After evaluating the hypothesis, the researcher proceeded to the next step in answering question number two of this research, How significant is the influence of flash card media in teaching English vocabulary?

Table 3.2 Effect Size Level

Value	Level
0-0.20	Weak Effect
0.21-0.50	Modest Effect
0.51-1.00	Moderate Effect
>1.00	Strong Effect

Taken from Cohen, Manion and Marrison (2007:521)

If the value of the effect size is between 0-0.20 means it category in a weak effect. If the value between 0.21-0.50 means it category in modest effect, if the value between 0.51-1.00 means it category in moderate effect and if the value more then >1.00 means it category in strong effect.