

CHAPTER III

RESEARCH METHOD

The research method is very important in every research as a guideline to attain the objective of the study. Chapter three provides information about the research method that the writer applied in his study. It consists of design of the research, population and sample, instrument of the research, procedure of collecting data and technique of analyzing data.

A. Research Design.

This research is an experimental research. Experimental research with the purpose of examining the cause and the effect after the treatment will be done toward experimental group. The research design aims to give the responsibility for setting the next steps to make the result more accurate and objective. The subject of this research is the seven grade students of SMP Ahmad Yani 4, Bojonegoro which consisted of 1 class. In this study, there are two variables, they are:

1. Independent variable is "The use of animation video" as a media of teaching English".
2. Dependent variable is "The mastery of English vocabulary".

The experiment research used one group pre-test, post-test design, because it was done in one group only without other control group. So, that this experiment is

called pre-experimental design (simple experiment). There are three stages in one-group pretest - posttest design.

1. The researcher held a pre-test to find out the student's vocabulary mastery before being taught using animation video. The pre-test is formulated as T1. using this test, the researcher gave twenty five words which the sample group will chose answer form certain them or topic in Indonesian before doing the test.
2. The researcher applied the experimental treatment to the subjects. The students were taught using animation video. The experimental treatment is formulated as X.
3. The researcher conducted a post-test to measure the student's vocabulary mastery after being taught using animation video. It is formulated as T2. Using the test, the researcher gave twenty five question in the form of multiple choices will answer by student.

To find out how effective the method was, the researcher used a way to calculate it by way of reduced $T_2 - T_1$

The experimental research was used for the seventh grade students of SMP Ahmad Yani 4, Bojonegoro. The reseacher gave two times treatments. They were, pre-test-to now the rudimentary ability of the students in term of vocabulary mastery before being treated by animation video-, two times treatments and post-

test-to know how far the students progress concerning vocabulary mastery after being treated by animated video.

B. Population and Sample

Population and sample are important elements in the research. “Population is total member of research respondent¹.” Population is the entire aggregation of items from which sample can be draw, a branch of applied mathematics concerned with the collection and interpretation of quantitative data and the use of probability theory to estimate population parameters².

In this case, the population is all of the seventh grade students of SMP Ahmad Yani 4, Bojonegoro. The number of population is 26 students.

After determining the population, I obtained the sample, which is obviously important step in conducting a research. I used a sample research to represents the population. Arikunto says that a sample is a part of population, which is investigated³. In this sample research I have a purpose to generalize the result of study. The number of population used in this study was 26 students. Because of the limited number of population which is only 26 students, I took the whole population as the sample of the research. Sugiono said that if the population is less

¹ Arikunto suharsimi, *prosedur penelitian suatu pendekatan praktek (rev VI)* (jkarta: rineka cipta 2006), p 130

² Fuchan, A. *pengantar penelitian dalam pendidikan*. (Yogyakarta:pustaka pelajar 2004)p, 29

³ Arikunto,suharsimi. *Prosedur penelitian suatu pendekatan praktek*.(Jakarta:rineka cipta,1998),117

than 40 people, we could use all of them as samples in a single group that is pre-experimental design. If a population is more 40 people, we can divide into 2 groups of the sample⁴. Because the number of the seventh grade students of SMP Ahmad Yani 4, Bojonegoro is less than 40 students, so the number of sample is 26 students.

C. Research Instrument.

Research instrument is a device used by the research while collecting the data to make his work easier and to get better result, complete and systematic in order to make the data easy to process.

I used multiple choice tests with 25 questions as a research instrument. According to Brown a test is a method of measuring a person's ability, knowledge, or performance in a given domain⁵.

Arikunto categorized of two types of instruments, test and non-test. He also explained that test is a series of questions or exercises used to measure skills, knowledge, intelligences, abilities, or talents possessed by individual or group. While non-test includes giving questionnaire, interview, observation, rating skill, and documentation⁶.

⁴ Sugiono. *Metode penelitian kuantitatif kualitatif R&D*. (Bandung: Alfabeta, 2010) p20

⁵ Brown, H. Douglas, *teaching by an interactive approach to language methodology* (new York: addition Wesley longman inc, 2001), 3

⁶ Arikunto, Suharsimi, *prosedur penelitian suatu pendekatan praktek (rev VI)* (jakarta: rineka cipta: 2006), 150

However, before the test items are being tested to the students, the writer must measure their validity to get the accurate data. What is meant by validity is the accuracy stage of an instrument to test the things in a certain group⁷. According to Farida, validity is something called a valid means in accordance with what is expected so that the truth can be received within a certain criteria⁸. It means that the test item must be appropriate to the material that had been taught to the students. To measure the test validity, the content of the test was matched with the curriculum provided i.e. text books material that was used this school and based on the teacher. In this case, the instrument was validated by the teacher.

D. Technique of Collecting Data

To collect data, I conducted several steps:

1. Asking permission to the headmaster of SMP Ahmad Yani 4, Bojogoro to do the experiment that would take 2 weeks.
2. Giving pre-test to explore the data of vocabulary mastery of students before being taught using animation video.
3. Teaching vocabulary using animation video to explore the response of the students when they were taught using animation video. It took two meetings.
4. Giving post-test to find out the data result of the vocabulary mastery after being taught by using animation video.

⁷ Ali, Muhamad. *Penelitian kependidikan prosedur dan strategi* (bandung: angkasa, 1984),101

⁸ Nursyahida ,farida. *penelitian eksperimen* (jakarta,20012)

E. Technique of Analyzing Data

The writer analyzed the data using following steps:

1. Calculating the mean, median, and modus of pre-test score and post-test score
2. Calculating the Standard Deviation of pre-test score and post-test score
3. Calculating the t-test of pretest and posttest score to find out the difference between them

Method of analyzing data is a method to process the findings data into a research. The technique of analyzing the data is using the T-test. In analyzing the scores using t-test, the writer should find out the Mean, modus, median and the Standard Deviation of both the pretest and the posttest score.

Here are the formulas of calculating the Mean and the Standard Deviation.

1. The formula of calculating the mean⁹:

$$\bar{X} = \frac{\sum X}{N}$$

note:

X : mean

$\sum X$: sum of scores

N : number of scores

The formula f calculation of median

$$Md = b + p \left(\frac{\frac{1}{2}n - F}{f} \right)$$

⁹ Ali, mhamad. penelitian kependidikan prosedur dan strategi. (bandung: angkasa 1984)

Note:

Md: median

b: lower limited, where the median located

n: amount of the data

p: length of the class interval

F: number of all classes before the class median frequency

f: frequency median class

the formula of modus

$$Mo = B + P \left(\frac{B_1}{B_1 + B_2} \right)$$

Note:

Mo : modus

B : limit of interval class with the highest value

P : length of the class interval

b₁ : frequency of the modus class (highest frequency in the class interval) reduced the frequency of the previous interval

b₂ : frequency mode reduced frequency class the next interval class

The formula of calculating the standard deviation

Standard Deviation = SD = s

$$S = \sqrt{\frac{\sum X^2 - \frac{(\sum X)^2}{N}}{N-1}}$$

Notes:

- S : standard deviation
 X : individual scores
 N : number of scores in group

Meanwhile, to know the vocabulary mastery of the seventh grade students of SMP Amad Yani 4, Bojonegoro using animation video, the writer would like to make criteria of the English reading from score. The score is obtained from the sum of the total correct answer, the writer used this formula:

$$\begin{aligned} \text{Score} &= S \times 4 \\ &= 25 \times 4 \\ &= 100 \end{aligned}$$

Therefore, the highest score will be 100 and the lowest score will be zero. The data description of the students' test scores will be classified into five criteria. According to Arikunto, the criteria of measuring the test score is as follows¹⁰:

¹⁰ Arikunto, suharsimi. *Prosedur penelitian suatu pendekatan praktek* (Jakarta: rineka cipta, 1998), 251

Score	Category
80-100	Excellent
66-79	Good
56-65	Sufficient
40-55	Low
> 40	Poor

The table above is the standard to measure the quality of the students concerning on pre-test and post-test. To begin with, the researcher gave pre-test to the students to find out the rudimentary of the students vocabulary and how far their ability is in term of vocabulary mastering. The writer is going to distribute the test which consisted of 25 questions. The maximal score was 100, so for every right question got 4 score, then the total of all right answer was timed by 4. Finally the researcher got the score of the students. It was also applied for post-test. Afterward, the score of pre-test was compared with the score retained from posttest to know how far the quality improvement of the students after getting some treatment whether it have significant rise or so so. Based on the data that has been gathered, this research uses a method to analyze the data, namely t-test formula. This formula is arranged by sugiono as follows¹¹:T-test formula:

¹¹ Sugiono, *statistika untuk penelitian* (badung: Alfabeta,2010), 96

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2} - 2r \left(\frac{S_1}{\sqrt{n_1}} \right) \left(\frac{S_2}{\sqrt{n_2}} \right)}}$$

\bar{x}_1 : mean of pree-test

\bar{x}_2 : mean of the post-test

S_1 : standard deviation of the pree-test

S_2 : standard deviation of the post-test

S_1^2 : variants of the pree-test

S_2^2 : variants of the post-test.

r : correlation of two sample

F. Hypothesis

To examine, if there was any significant difference between the independent variable (X) and dependent variable (Y), the hypothesis testing was done by the statistic hypothesis as follows:

Ho= There is no significant difference between the vocabulary mastery of seventh graders student of SMP Ahmad Yani 4 Bojonegoro before and after being taught by using Animation Video.

Ha= There is any significant difference between the vocabulary mastery of seventh graders students of SMP Ahmad Yani 4 Bojonegoro before and after being taught by using Animation Video.