

CHAPTER III

RESEARCH METHODOLOGY

This chapter explains method and design of the Research, population and sample, research variables, research instrument, the technique of data collection, the technique of data analysis, statistical hypothesis.

3.1. Method and Design of the Research

This research used quantitative method with quasi-experimental design. Quantitative method is a method that describes a research problem through explanation of the variables' relationship, creates purposes statement, research questions, and specific hypotheses, then collects numeric data from samples by using instruments, and analyses the data by using statistic procedures and quasi-experimental is a design of the study which used because the experimenter can't unnaturally make groups for the experiment (John W. Creswell, 2012). The writer used quantitative research because he compared groups using statistical analysis and collected data from the sample using an instrument with present questions and responses. Furthermore, the writer chose quasi-experimental as the design of the research. As stated by Cresswell (2012), the design used when the writer cannot artificially create groups for the experiment is called quasi-experimental design. That is the design that was used by the writer because the writer used the existing class in the school without forming a new group of experiments.

There will be two classes as the samples of the study. The first class as an the experimental class is the group that received the treatment using media video, meanwhile the second class as control class is the group that received the treatment

using teacher's presentation Using this method is for knowing the significant effect of using video on students' writing ability of procedure text.

Table 3.1. Design of Quasi Experimental Research

EG	O₁	X	O₂
CG	O₃	-	O₄

(Sugiyono, 2017)

Notes:

EG : Experimental group

CG : Control group

O₁ : Pre-test experiment class

O₂ : Post-test experiment class

O₃ : Pre-test control class

O₄ : Post-test control class

X : Treatment

- : No treatment

Based on the research design that has been presented, the research conducts two tests in each group. Initial tests are carried out against the group experiments and control groups to determine early learning outcomes writing before being given treatment. Then on the final test in groups experiments were given treatment in the form of the use of video media in procedure text. Meanwhile, in the control group, the final test of direct learning using writing is carried out in a direct way. After

both groups conducted the final test, the results of both were then compared or tested the difference. Significant differences between the two values in the experiment group and control group will show influence from the treatment that has been given.

3.2. Population and sample

The students in this study were SMA. The subject of this research is SMA N 1 Lhoknga Aceh Besar in academic years 2023/2024. The research population at SMA Negeri 1 Lhoknga Aceh Besar totaled 240 students. The sample is part of the population. In this study, researchers took class XII-1 and XII-2 SMA N 1 Lhoknga Aceh Besar, which consisted of 46 students.

3.3. Research Variables

The researcher applied two kinds of variables in doing this research. They are independent and dependent variable.

3.3.1. Independent Variable

The independent variable is a variable that can have an influence or influence on the dependent variable. In this study the independent variable is the use of video media in increasing students in writing procedure text.

3.3.2. Dependent Variable

Dependent variable is a variable that is influenced by the use of independent variable. It is saying as a dependent variable because dependent variable is influenced by the independent variable. Dependent variable of this research was the test result of the students' in writing procedure text.

3.4. Research Instrument

The instrument of this research is test. The test itself is divided into pre-test and post-test. The test will be given to both experimental class and control class. The pre-test is conducted before the treatment of using video in teaching-learning process and the post-test is conducted after the treatment is finished.

3.5. The Technique of Data Collection

As a quantitative method that used in this study, writer also collect quantitative data which divided into three steps, they are:

a. Pre-Test

The first step is giving the controlled class and the experimental class the pre-test before activity of the class treatment. The pre-test is aimed to know the student's background knowledge about writing procedure text. The pre-test that given to them is about instruction to write procedure text freely and they are the one who choose the topic of their writing.

b. Treatment

The treatment is given after the students are given the pre-test; the students are given the video media treatment. The researcher gave four meetings for this treatment and each meeting lasted 45 minutes.

Table 3.2 Treatment

MEETING	ACTIVITY
First Meeting	The teacher introduces and explains video media (definitions, advantages and benefits for use as learning media, especially in writing procedure text)
	Teacher explains the meaning and function of procedure text
	Students are given motivation or stimulation to focus on procedure text material
	Teachers provide opportunities for students to identify as many questions as possible related to procedure text (E.g difficult vocabulary, Pronunciation, etc.)
Second Meeting	Teacher reviews the material that was taught last week
	Teacher explains the components of writing (content, vocabulary, mechanics, organization and grammar)
	The teacher provides reinforcement about the components of writing being learned
	Teacher shows video media
	The teacher chooses students randomly to see the results of the vocabulary they wrote while watching the video media

The researcher applies the treatment by explaining video YouTube Then the material is given to students in the form of printed pictures, in other words after that students describe what they think. The students wrote in a paragraph in the form of procedure text.

c. Post-Test

The last activity is post-test. After conducting the treatment, the post-test is given to the students. Both classes will get the post-test. The reason for giving post-test to experimental class and controlled class is to measure the result of the treatment itself.

3.6. Technique of Data Analysis

Data analysis is the method used by a researcher to analyze data. By using quantitative data analysis to manage and analyze the collected data, researchers analyze the information using formulas. This analysis aims to find out whether there

is a significant difference between students' writing skills before and after using video media.

3.6.1. N. Gain score

N-gain score is an evaluation metric in the context of learning research that is used to measure the increase in students' knowledge or skills after participating in a program or learning activity. Calculation of the N-gain score involves a comparison between the scores obtained by students before and after intervention or learning. The N-gain score formula includes the final score, initial score, and initial maximum score. With a value range between -1 to 1, the N-gain score provides an idea of the extent to which there has been an increase or decrease in students' understanding or skills. Positive values indicate an increase, while negative values indicate a decrease. Understanding the N-gain score is often applied in learning effectiveness research, allowing researchers to evaluate the extent to which a learning program is successful in increasing student achievement.

3.6.2. Normality Test

In this research, the writer conducted the test of normality through SPSS (Special Package for the Social Sciences) version 20. The test of normality is need to be done in order to know whether the distribution of data were normal or not. Kolmogorov Swirnnov and Shapiro Wilk table was used in this test of normality. If the result of normality test was above 0.05, then it could be said that the distribution of data was normal. On the other hand, if the result showed less than 0.05, then it could be said the distribution of data were not normal.

3.6.3. Mann Whitney

The Mann-Whitney test is a non-parametric statistical method used to evaluate whether there are significant differences between two independent data groups. This test is an option when the data does not meet the normal distribution assumption or when the data is ordinal. The Mann-Whitney test process involves ranking the values of the two groups being compared, and then calculating the U value (Mann-Whitney U) based on these rankings. The null hypothesis states that there is no significant difference between the two groups, while the alternative hypothesis states that there is a significant difference. The results of this test are interpreted by comparing the U value with the critical value of the Mann-Whitney U distribution. The Mann-Whitney test is frequently used in research in various fields when data do not meet parametric assumptions, and when comparisons of medians between two groups are to be evaluated, such as in the context of social sciences, medicine, and other research fields.

3.7. Statistical Hypothesis

The hypotheses of the statistical measurement are:

Ho: There is no significant effect of using video on students' writing procedure text if $p\text{-value} > \text{sig } \alpha = 0.05$ (5%) it means the mean score of the experimental group is lower than the control group or the alternative hypothesis (Ha) is rejected and the null hypothesis (Ho) is accepted.

Ha: There is a significant effect of using video on students' writing procedure text if $p\text{-value} < \text{sig } \alpha = 0.05$ (5%) it means the mean score of the

experimental group is higher than the control group or the alternative hypothesis (Ha) is accepted and the null hypothesis (Ho) is rejected.