

CHAPTER III

RESEARCH METHOD

A. Research Design

This study was an experimental study. It is a functional research design which purpose is to explain the impact of certain input variable on other outcome variables".⁷² In this study the researcher applied photographs from *National Geographic* in teaching writing to know its impact to students.

This study employed two groups, they were experimental group and control group. The design of this research was a quasi-experimental with pre-test and post-test and control group. Pre-test and post-test design involved a group of students who belonged to the experimental group (using photograph from *National Geographic*) and the others belonged to control group (was given the topic without any photograph)

Arikunto stated that observation should be done twice, before and after treatment. The observation before treatment (O_1) is called pre-test, and observation after treatment (O_2) is called post-test. The differences between O_1 and O_2 , that is $O_2 - O_1$, is assumed to be the effect of treatment.

The design is illustrated as in the table below:

⁷²Suharsimi Arikunto, *Procedure Penelitian: Suatu Pendekatan Praktek*. (Jakarta: Rineka Cipta. 1998)

Table 3.1

The process of experimental research

SUBJECT	PRE-TEST	INDEPENDENT VARIABLE			POS-TEST
		1 st TREATMENT	2 nd TREATMENT	3 rd TREATMENT	
E (experimental group)	✓	Applying photograph I	Applying photograph II	Applying photograph III	✓
C (control group)	✓	Without applying photograph I	Without applying photograph II	Without applying photograph III	✓

Pre-test was given to the both group (experimental and control group). After that writing descriptive text using photographs from *National Geographic* was taught to the experimental group. The other, writing descriptive text without using photographs was taught to the control group. Finally, the researcher compared the results of both group.

B. Hypothesis

This study consisted of two hypothesis, they are:

Ha : There is a significance difference in students' English writing achievement taught by applying photographs from *National*

Geographic and students who are not taught using them at the eleventh grade at SMA PGRI 2, Bangkalan.

H₀ : There is no significance difference in students' English writing achievement taught by applying photographs from *National Geographic* and students who are not using them at the eleventh grade at SMA PGRI 2, Bangkalan.

Explanations:

H_a will be accepted if t-value < t-table

H₀ will be accepted if t-value > t-table

T-table is the score gotten from t distribution, while t-value is the score gotten from calculation using the formula of t-test.

C. Variable of the Study

According to Trochim, “dependent variable is what is presumed to be affected by the independent variable your effects or outcomes”.⁷³ In this study, variables were classified into two:

1. Independent variable

Ary defines that independent variable is “antecedent to dependent variables and are known or are hypothesized to influence the dependent

⁷³William M. K. Trochim, *The Research Methods Knowledge Base* (Ithaca, N. Y: Cornell Custom Publishing, 1999), 8.

variable, which is the outcome”⁷⁴. Moreover, Welkowitz state that it is one which is created by the experimenter⁷⁵. So in this research, applying photographs from *National Geographic* becomes the independent variable.

2. Dependent variable

Ary also defines dependent variable is the consequence of another variable⁷⁶. Meanwhile, Welkowitz argue that it is a variable which is measured by the experimenter and is expected to change from one level of independent variable to another⁷⁷. In this study, the dependent variable used was the students’ writing performance in descriptive text.

D. Population and Sample

1. Population

Ary stated that, “population is defined all members of any well-defined class of people, event or objects”⁷⁸. Therefore, the population of this research is all of students of SMA PGRI 2 Bangkalan.

2. Sample

Sample is “a part of population that has the same characteristic.

Sample is the small group that is observed”⁷⁹. Arikunto said that sample is

⁷⁴Donald Ary, C.J. Lucy, Razavieh Asghar. *Introduction to Research in Education, Third Edition*. (Hold Rinehart and Winston, 1982), 37

⁷⁵ Joan Welkowitz, *Introductory Statistics for the Behavioral Sciences*, (USA:John Willey & sons, Inc. 2006),.8

⁷⁶Donald Ary, *Introduction to Research Education*.....,p.39

⁷⁷Welkowitz, *Introductory Statistics for the Behavioral Sciences*, 8

⁷⁸ Donald Ary, C.J. Lucy, Razavieh Asghar. *Introduction to*, p.23

a part that can represent all the population observed. It is called sample research when we want to generalize the sample research result.⁸⁰

The sample of this research was the eleventh graders of SMA PGRI 2 Bangkalan. Purpose sampling was used in this study, purposive selection of sample is “on the basis of our own knowledge of the population, its elements, and the nature of our research aims”.⁸¹ In this study, the samples were students of XI IPA 1 and students of XI IPA 2. Students of XI IPA 1 was chosen as the experimental group while students of XI IPA 2 as the control group. Each class has 30 students, so the total number of the samples were 60 students.

The researcher chose eleventh graders because she expected that the students have already had framework about how to write descriptive text. They have learnt about writing descriptive text for one year when they were the tenth grade. Not only that, the English teacher had claimed that the eleventh graders have problem in writing descriptive text. Then, researcher organized preliminary research to know their ability in writing descriptive text. Based on the result of preliminary research the researcher

⁷⁹Donald Ary, C.J. Lucy, Razavieh Asghar. *Introduction to Research in Education, Third Edition*,....., p.24

⁸⁰Suharsimi Arikunto, *Prosedur Penelitian Suatu Pendekatan Praktik*, (Jakarta: PT Rineka Cipta, 2006), p. 131.

⁸¹ Babbie, Earl. *Survey Research Methods*. (Belmont, California: Wadsworth Publishing Company, 2nd ed., 1990), 97

concluded that students seemed to have problem in writing descriptive text.

E. Research Procedure

This study conducted based on the following procedures;

1. Pre-test

The researcher needed to observe student's prior knowledge before the treatment. It was done by conducting a pre-test on the first meeting for both experimental and control groups. This time the researcher asked the students to write descriptively. The topic is about "Traditional Clothes of Indonesia". The score of experimental group was classified in to five components: content, organization, vocabulary, language use and mechanic. Then, the score of pre-test of experimental group was assessed based on the ESL composition.

2. Treatment

a. First treatment

First, researcher explained to the students about how to write essay well based on the ESL composition profile (see appendix I) to make them understand the rules of scoring for the essay. Second, the researcher asked the students to write descriptive text based on the photographs from *National Geographic* the title was "Traditional Home, Libya". After that, the students submit their work and the researcher gave score based on the criteria used in ESL composition.

b. Second treatment

In this time the researcher asked the students to write descriptive text based on the photographs from *National Geographic* the title was “Bridal Procession of India”. After that, the students submitted their work and the researcher gave score based on ESL composition.

c. Third treatment

In this time the researcher asked the students to write descriptive text based on the photographs from *National Geographic* the title was “Traditional Home of Sulawesi”. After that, the students submitted their work and the researcher gave score based on ESL composition.

d. Post-test

Posttest was given after the researcher gave the treatment. The post-test questions based on the previous meeting. The students choose one of the titles of photographs in the previous meeting.

e. Questionnaire

The next meeting after conducted treatment, the researcher gave questionnaire to the students to know their responses towards the application of photographs from *National Geographic* in writing descriptive text.

f. Data Analysis

The last phase of the research procedure in this study was data analysis. The data was taking from the result of the test and the

questionnaire. The test was in the form of pre-test and post-test. T-test formula was used to find out whether the difference of mean between weresignificant or not. T- Test is used to measure and compared the difference of means score between experimental group and control group.

The second data was taken from questionnaire. It was used to answer the second research question about what students' response toward applying photographs from *National Geographic* to improve students' writing descriptive text. The score of students' response was calculated with every single question and look for the percentage.

Data analysis would be described clearly in data analysis technique.

F. Data Collection Techniques

Based on those problems of the study, the techniques that will be conducted to collect data for this research are:

1. Test

According to Ary, "a test is a set of stimuli presented to an individual in order to elicit responses on the basis of which a numerical score can be assigned, the writer took an achievement test as a measuring instrument".⁸² According to Arikunto, a test is series of questions or exercises and other device used to measure skill, knowledge inteligensi,

⁸²Donald Ary, *Introduction to Research in Education Third Edition*,..... 249.

ability or talents possessed by individuals or groups.⁸³ From test, the researcher wanted to know the effectiveness of applying photographs from *National Geographic* in writing descriptive text. The researcher needed to measure students' achievement toward control group and experimental group by conducted pretest and posttest. It was described as follows:

a. Pre-test

Pre-test is “a preliminary test administered to determine a student's baseline knowledge or preparedness for an educational experience or course of study”⁸⁴. Data was collected through pretest in both groups in order to measure the students' prior achievement before the treatment. It was given at the first meeting before the researcher gave treatment.

b. Post-test

Post-test was a test given after a lesson or a period of instruction to determine what the students have learned. After the researcher gave the treatment to the students, the post-test was given. The result of the test was scored and calculated. Then, compared to the pre-test.

⁸³ Arikunto, *Prosedur Penelitian*, 193

⁸⁴<http://www.thefreedictionary.com>

2. Questionnaire

A questionnaire is a set of questions for gathering information from individuals.⁸⁵ In constructing the questionnaire, the researcher used closed questionnaire. It means that the respondents answer the questions by choosing one of the options that was given by the researcher. In this study, the researcher used questionnaire to get additional information about the students' reflection toward the learning by applying photographs from *National Geographic* in writing descriptive text.

G. Research Instruments

The researcher arranges and makes the instrument for her research that will be used to collect the data.

1. Instrument for test

In administering the pre-test and post-test, the researcher needed "question sheet" as the instrument. The questions are prepared in the form of multiple-choice since the multiple-choice is the most common type of objective common items used to test awareness of the features of the language⁸⁶.

2. Instrument for questionnaire

Questionnaire was a written form of questions that used to get information from the respondents. There were 10 questions in the

⁸⁵ Ellen Taylor, *Questionnaire Design: Asking Questions with a Purpose*, (Texas: College State, 1998), 2

⁸⁶ Heaton, J.B, *Writing English Language Tests* (New York: Longman, 1988) P 34

questionnaire and it was written in Bahasa Indonesia to help the students understand the content easily. The question number one until number five asked about students' perception about teaching media. The question number six until ten asked about students' improvement.

H. Data Analysis Techniques

In data analysis, the researcher analyzed the result of teaching and learning process of this study. There are two kinds of data, first was the data for the effectiveness of applying photographs from *National Geographic* in writing descriptive text, and the second, the data of the students' responses toward the use of photographs from *National Geographic* in teaching writing. Those were described as follows:

1. Analyzing data concerning the effectiveness of the study

To see the effectiveness of the study, whether it affected success or not, the researcher conducted pre-test and post-test to collect data. Then, the researcher measured the score differences from pre-test and post-test of experimental group and control group by the statistical calculation. In this study, the researcher used t-test formula to find out whether the mean difference between the two groups was significant or not. T-test used to measure and compared the difference of means score between experimental group and controlled group⁸⁷. The students' scores were

⁸⁷ A.E.Bartz, *Basic Statistical Concepts in Education and Behaviour Sciences* (Minneapolis: Burgess Pub, co, 1976), 293

analyzed statistically by using a procedure of t – test, with the steps below:

First, the researcher gave score of the students' work and put all scores of experimental and control group.

Second, the researcher calculated the mean from overall scores of pretest and posttest of both groups. The following formula was used to calculate the mean:

$$MEAN: \sum \frac{fx}{N}$$

Where:

M = mean

$\sum fx$ = total of the test

$\sum N$ = total of the students

Third, after collected the overall score of data of pre-test and post-test from both of groups, then the researcher calculated of the mean of difference score between the pre-test and post-test of each group used the formula below:

$$Md = \frac{\sum d}{N}$$

Where:

Md = mean of the different score pretest and posttest each groups

$\sum d$ = the total of different score.

N = total of students taking the test.

After collected the data of pre-test and post-test from both groups, the researcher analyzed the data through t- test to find out whether the difference of the scores between them was significant or not. Through the following formula:

$$t = \frac{x_1 - x_2}{\sqrt{\frac{s_1^2}{n_1 - 1} + \frac{s_2^2}{n_2 - 1}}}$$

Explanation:

x_1 = The average score of control group

x_2 = The average score of experimental group

s_1^2 = The derivation of control group

s_2^2 = The derivation of experimental group

Before calculated the t-value, the researcher used the following formula to find the sum deviation square of each group.

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

$$\sum Y^2 = \sum Y^2 - \frac{(\sum Y)^2}{N}$$

Where:

X = deviation of posttest and pretest score of each subject in experimental group

Y = deviation of posttest and pretest score of each subject in controlled group

After calculated all of the scores, the researcher calculated the number of degree of freedom by adding the individual of each group, then subtract of two. The formula as follows:

$$df = N_1 + N_2 - 2$$

Where:

df = degree of freedom

N1 = number of subject in experimental class

N2 = number of subject in control class

Standard of significant = 0,05

2. Analyzing data concerning students' response toward the applying photographs from *National Geographic*

The writer also used the percentage formula to know the students' response in the use of photographs from *National Geographic* to teach descriptive writing. The researcher gave questionnaire for experimental group after gave treatment. Students' response questionnaire was arranged based on the Likert scale. It was assessed with the following scale⁸⁸:

- a. Excellent / Very interesting = 5
- b. Good / Interesting = 4
- c. Enough / Ordinary = 3
- d. Less / Less of interesting = 2
- e. Poor / not interesting = 1

The score of students' response was calculated with the every single question and was looked for the percentage by used formula as follow:

$$\% SRS = \frac{\sum SRS}{SRS \text{ maksimum}} \times 100\%$$

⁸⁸Sugiyono, *Statistika Untuk Penelitian* (Bandung: Alfabeta, 2010) Page: 93-95

Information:

$\sum SRS$: the total of students' response score was gotten by calculating $SRS SA + SRS A + SRS N + SRS K + SRS SK$

$$SRS \text{ maksimum} = \sum R \times \text{the best score choice}$$

$$= \sum R \times 5$$

The percentage result can measure the feasibility of the worksheet used likert scale. It was explained as follows:

Table 3.2

Criteria of students' response

Percentage	Criterion
0% - 20%	Poor
21% - 40%	Less
41% - 60%	Enough
61% - 80%	Good
81 - 100%	Excellent

The applying photographs from *National Geographic* was claimed positive according to the students responses only if every single question of student response more than 61% for good criterion.