

CHAPTER III

RESEARCH METHOD

This chapter presents the description of the research methodology was used in this research. It consists of research design, population and sample, research instrument, data collection technique, data analysis technique and hypothesis testing.

A. Research Design

Research design is the researchers' plan how to process to understanding of some groups and phenomenon in its natural setting. According to Burgin research design is all process that be needed in conducting the research. It means that be the process includes planning and doing the research. The design begins with a general statement of a research problem or topic. In the beginning, the researcher need to think about some topic in which he or she has an interest and wants to know more about it¹.

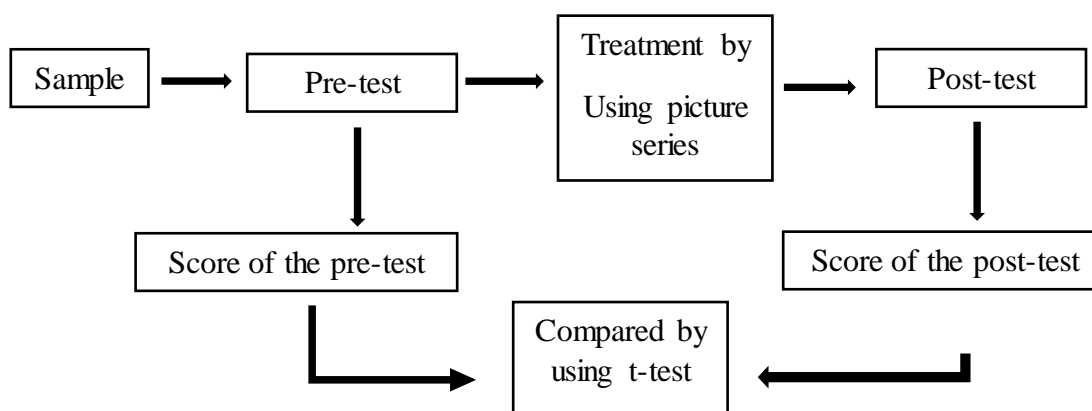
Experimental research measure the effect of one manipulated and controlled (independent) variable to another (dependent) variable, like the effect of different methods of teaching to students' achievement, the effect of an English training method to participants' English skills. Experimental research is powerful research method to establish cause-and-effect relationship involving two or more

¹ Gall, M. D., Borg, W.R., & Gall, J. P., *Educational Research: An Introduction (Sixth ed)*. (New York: Longman, 1996), p. 250

variables, the variable that becomes the cause (independent) and the variable that becomes the effect².

The design of this research is experimental research by using quantitative approach, because the researcher want to prove the effectiveness of picture series by comparing the data of students score between control group and experimental group. The data were in quantitative form obtained from the students' pre-test and post-test scores.

Table II. The research procedures of research design to conduct the data.



True experimental research design was applied in this research. In a true experimental research, the researcher has access to random selection of the samples random assignment of the samples into experimental and control groups to ensure the equivalence of groups and control for many interfering variables that might otherwise contaminate the results of the investigation.

²Mohammad Adnan Latief, *Research Methods On Language Learning An Introduction* (Malang: UM Press,2011), p.93

B. Population and Sample

1. Population

The population in this research were all the second grade students of SMK TI Labbaika Samarinda distributed into 3 classes. Class A consist of 34 students, class B consist of 34 students, and class C consist of 33 students. The total number of the second grade students at SMK TI Labbaika Samarinda were 101 students.

2. Sample

In this research the researcher used cluster sampling technique. In cluster sampling, population is divided into units or groups, called strata (usually they are units or areas in which the population has been divided in), which should be as representative as possible for the population, i.e., they should represent heterogeneity of the population we are studying and they should be homogenous among them³. The researcher take two classes. The sample of this research were the second grade A which consist of 34 students and the second grade B which consist of 34 students. So the total sample of this research were 68 students of SMK TI Labbaika Samarinda.

³ Paula Lagares Barreiro & Justo Puerto Albandoz, "Population and sample. Sampling techniques" Management Mathematics for European Schools. <http://www.mathematik.uni.kl.de/~mamaesch>.

C. Research Instrument

Instrument is the tool that researcher use to get the data. In this research the instrument that researcher use is speaking test:

1. Pre-test

Pre-test is a test was given to the students of experimental group and control group to measure their ability before treatment process. This test was given to know the students' basic competence of both groups.

2. Treatment

After pre-test, the treatment was conducted by the researcher. The treatment for experimental group was teaching by using picture series. And control group without picture series. The researcher made some lesson plans.

3. Post-test

Post-test also was given for experimental group and control group. Post-test used to measure students ability after treatment process, to know their knowledge after they got treatment.

Table III
Pre-test and Post-test Design

Experimental group	Pre-test	Treatment	Post-test
Control group	Pre-test	Treatment (Without Picture Series)	Post-test

D. Data Collection Technique

Technique for collecting data is the way that can be used by the researcher to collect data. In this research, the researcher used some steps to collecting data, as follows:

1. Experimental Group

- a. The researcher gave a test as a pre-test
- b. The researcher gave treatment about the material
- c. The researcher divided the experimental group 5 or 6 group
- d. The researcher used picture series to experimental group
- e. The researcher gave post-test to experimental group
- f. The researcher found out the result
- g. The researcher calculate and compared the two groups to know whether there are significantly different or not

2. Control Group

- a. The researcher gave a test as a pre-test
- b. The researcher gave treatment about the material
- c. The researcher taught the students without picture series
- d. The researcher gave post-test to control group
- e. The researcher found out the result
- f. The researcher calculate and compared the two groups to know whether there are significantly different or not

Table I
Table Analytic oral language scoring rubric

Aspect	Score	Explanation
pronunciation	21-25	Very clear pronunciation and meaning of the speech can be well understood.
	16-20	There are a few mistakes in pronunciation and it does not influence the meaning of the utterances.
	11-15	There are some errors in pronunciation and it does not influences the meaning of the utterances.
	6-10	Many mispronunciation errors and it damage the meaning of utterances.
	0-5	The pronunciation is very bad and cannot be understood at all.
Grammar	21-25	No errors in using grammar.
	16-20	There are few mistakes in grammar used and does not affect the meaning of the story.
	11-15	There are quite a lot of mistakes in grammar, but the meaning of the story can still be

	6-10	understood. There are many errors in grammar and meaning of the story is difficult to be understood.
	0-5	There are so many errors in grammar and meaning of the story cannot be caught.
Vocabulary	21-25	No errors in using vocabulary
	16-20	There are a few mistakes in vocabulary and does not affect the meaning of the story.
	11-15	There are quite a lot of mistakes in vocabulary, but the meaning of the story still be understood.
	6-10	There are many errors in vocabulary and meaning of the story is difficult to be understood.
	0-5	There are so many errors in vocabulary and meaning of the story cannot be caught.
	21-25	Speech is very smooth and the meaning of the story is clear and can be understood.
	16 – 20	Speech is effortless smooth and the meaning of the story can easily be understood.

Fluency	11 – 15	Speech is occasionally hesitant but the meaning of the story is difficult to be understood.
	6 – 10	Speech is frequently hesitant and jerky and the meaning of the story is difficult to be understood.
	0 – 5	Speech is too halting, sentences may be left uncompleted, and it is less meaning that cannot be understood.
Content	21-25	The content of the speech is relevant and lot of response to task set and the information given is much satisfying.
	16-20	The content of the speech is relevant and adequate to the task set and the information given is satisfying.
	11-15	The content of speech is limited, relevant, and adequate to the task set and the information given is quite satisfying.
	6-10	The content of the speech is less relevant and adequate to the task set and the information given is less satisfying.
	0-5	The content of the speech is irrelevant to the

		task set and the information given is not satisfying.
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(source : Ngadiso)⁴

E. Data Analysis Technique

Data analysis is the last step in the procedure of experiment, the researcher focused on the mean scores to measure how the students speaking ability in pre-test and post-test, this aim to know the result of both the class. In terms of technique of data analysis, the researcher uses formula, as follows:

1) Mean Score

$$M = \frac{\sum x}{N}$$

Where :

M : Mean of average

N : Total Number of sample

X : Score in Distribution

2) Deviation Standard

a. Deviation Standard of variable X_1

$$X_I = X_1 - M_1$$

Where :

X_I = The sum of square of deviation of experimental class

X_1 = The score of students as experimental class

⁴ ngadiso. "Evaluating The Students' Speaking Skill", *proceeding 60th TEFLIIN International Conference 2013*, Universitas Siswa Bangsa International, 2013

M_1 = The mean of students score who are treated as experimental class.

b. Deviation Standard for variable X_2

$$X_2 = \sum (X_2 - M_2)^2$$

Where :

X_2 = the sum of square of deviation of control class

$\sum X_2$ = The score of students as control class

M_2 = the mean of students score who are treated as control class

In line with this, the writer uses statistic calculation through *t-test* formula in manual calculation. It is used to examine the significance difference of students' speaking ability between experimental class and controlled class. The formula of t-test as follow:⁵

$$t = \frac{M_1 - M_2}{\sqrt{\frac{\sum x_1^2 + \sum x_2^2}{N(N-1)}}}$$

Where:

M_1 = Gained score of experimental class

M_2 = Gained score of control class

N = Number of student in class

⁵ Anas Sudijono . *Pengantar Statistik Pendidikan*, (Jakarta: PT. Raja Grafindo Persada, 2006), p. 314.

Determining Degrees of Freedom (df), with formula:

$$df = N_1 + N_2 - 2$$

F. Hypothesis Testing

It is very important to determine whether the hypothesis of this research is accepted or rejected, so that there were two criteria of the hypothesis testing as follows:

1. If t-value is the same or higher than t-table, so that alternative hypothesis (Ha) is accepted.
2. If t-value is lower than t-table, so that null hypothesis (Ho) is not accepted.