

CHAPTER III

RESEARCH METHODOLOGY

A. Location of Research

This research was conducted at SMP SWASTA WASHLIYANI MEDAN. It was located at Jl. Pancing V, Lingkungan III, Gang Washliyani Martubung, Kelurahan Besar, Kecamatan Medan Labuhan. The researcher was conducted in the first semester as the location of the study because :

1. The Inquiry Method had never been used in the classroom at this institution.
2. The information was readily available and the study could be located at this institution.
3. The English instructor continues to use the traditional approach in the classroom while teaching students how to improve their speaking skills.

B. Research Design

Quantitative experimental research was used to carry out this study. Quantitative experimental research declares that in experimental research, the researcher manipulates at least one variable, controls other relevant variables, and observes the effect that their manipulation has on one or more dependent variables. In addition to that, the researcher demanded that there be a certain time priority, consistency, and amplitude of the connection.¹ Therefore, experimental study demonstrates that a research was conducted to explore whether or not there is any impact treatment has on the actions of participants or the participants' internal processes.

¹Enzir (2010), *Metode Penelitian Pendidikan, Kuantitatif dan Kualitatif*, Jakarta : Rajagrafido Persada, P.64

Table 3.1 Experimental Design : Pre-Test and Post-Test Design

	Pre-Test	Treatment	Post- Test
Experimental Group	O1	X	O2
Control Group	O1	-	O2

Where :

O1 : Pre-Test

O2 : Post- Test

X : Treatment

The application of therapy was the subject of this study investigation. This study was carried out at the SMPS Washliani Medan throughout the years 2021 and 2022. When carrying out the experiment involving the experimental group and the control group. In this study, the group that would be taught using the Inquiry Learning Method was considered to be part of the experimental group, while the group that would not be taught using the Inquiry Learning Method was considered to be part of the control group.

C. Population and Simple

C.1 Population

A population is a set or (collection) of all elements processing ones or more attribute of interest. The population in this research must decide, because it is important to decide what is used in this research².

The population of this study was taken from the second-year students of SMP Swasta Washliyani Medan for Academic Year 2020/2021. The total numbers of population

² Suharsimi Arikunto (1998), *Prosedur penelitian suatu pendekatan praktek*, Jakarta: Rineka Cipta, P.226

are 123 students, it consists of three classes. Class VII consists of 42 students (23 male and 19 female), Class VIII consists of 40 students (17 male and 23 female), Class IX consists of 41 students (21 male and 20 female).

Table 3.2 TOTAL POPULATION

No	Class	Male	Female	Number of students
1	VII-1	23	19	42
2	VII-2	17	23	40
3	VII-3	21	20	41
Total	3	61	62	123

C.2 Sample

The sample is part of the number and characteristics that are owned by the population³. The sample can also be part of or representative of the population that represents the characteristics of the population whole. Jalaluddin Rakhmad in thesis Komariah Ulfa “The sample of this research was by using Torayomane formula to get the number of sample in this research by using the following formula”⁴ :

$$n = \frac{N}{N(d)^2 + 1}$$

Where :

n = The number of sample

N = The number of population

³ JW Creswell (2002), *Pendekatan Kualitatif & kuantitatif*, P. 130

⁴ Komariah Ulfa (2009) *Analysis on the students' problems in transforming singular into plural nouns at MTNS 2 Medan*, P. 28

d = The precision is decided 10%

So the sample is :

$$\begin{aligned}n &= \frac{123}{123 (10)^2 + 1} \\&= \frac{123}{123.0,01 + 1} \\&= \frac{123}{2,23} \\&= 55,15 \\&= 55\end{aligned}$$

TABLE 3.3 TOTAL SAMPLE

No	Class	Number of students	Sample
1	VII-1	42	19
2	VII-2	40	18
Total	2	82	37

According to Arikunto "sampling is a process that done to select and take samples". According to Djarwanto PS and Subagyo "There are 2 ways of taking samples, namely random sampling and non-random sampling". Here's the explanation. a. Random Sampling is a sampling technique where all individuals in the population, either individually or together are given the same opportunity to be selected as sample member.

Random sampling there are 3 ways, namely:

- a. Lottery method
- b. Ordinal method
- c. Randomization method.

Lottery Method is the most popular and simplest method. In this method the researcher was did a class by Lottery Method to get a sample to use in the research. The Lottery Method is focused on the seventh grade in junior high school in SMP SWASTA WASHLIANI MEDAN in this school there are three seventh graders is 7-1, 7-2 and 7-3 the results obtain after drawing are grade 7-1 to be an Experimental class and grade 7-2 to be control group.

D. The Instrument of Collecting Data

The instruments for collecting data in this research is :

D.1 Test

Test is a set of standardized questions administrated and individual for the purpose measure his attitude or achievement. The test was used to observation a natural phenomenon by pictures, the students must be analyzed to identify of the problem from natural phenomenon. Every students have got two pictures. The first picture tell about effect of littering to person, animals and environment, and the second picture is the student tell about

E. Technique of Collecting Data

The exam was given to participants in order to gather data for this investigation. A test, in its most basic sense, is a tool for determining a person's level of ability, knowledge, or

performance in a certain field.⁵ The researcher used two distinct types of examinations. Both a pre-test and a post-test were carried out. Both a pre-test and a post-test were administered before carrying out an experimental research study or before teaching using the inquiry method, respectively. The post-test was administered after carrying out the experimental research study or after teaching using the inquiry method.

E.1 Pre- Test

The pre-test was conducted before treatment. The same pre-test was given to both experimental and control group to investigate the students' speaking skill. Both experimental and control group was used to see pictures of previous description received by students in speaking in the class.

E.2 Treatment

After the preliminary test, the therapy was carried out on the experimental group. The students in the test group were instructed using the Teacher-Centered technique, whereas the students in the control group were taught using the Inquiry Learning Method. Both the experimental group and the control group were instructed using the identical material throughout the study. The students identify the problem in the picture, looking for sources related to the picture then students collect data that has been compiled by the group and share it their friends in front of the class by speaking. Students to imagine and helping them determine the points they were explained base on the pictures provided by the researcher.

⁵ Brown, H. Donald et al (1985), *Introduction to research in Education*, New York CBS College Publishing. P.3

E.3 Post – Test

The post-test is a task that must be done by student can be questions that must be answered by student after the learning process finish. Post test aims to know of success the process of study. The post test was used of speaking test based on the pictures. At SMP SWASTA WASHLIANI MEDAN, the purpose of this was to collect data on the outcome of therapy so that it could be examined to see how the intervention affected the kids' level of ability in speaking skill.

F. Technique of Analyzing Data

In this research, the writer was used a quantitative data analysis technique. To find the different effect between experimental and control group, the t-test formula was applied. The formula was stated as the following :

$$Ttest = \frac{\bar{x}^1 - \bar{x}^2}{s \sqrt{\frac{1}{n^1} + \frac{1}{n^2}}}$$

Where :

Ttest= t Count

\bar{x}^1 = Average value of sample group owning highest score

\bar{x}^2 = Average value of sample group owning lowest group

s = Standart deviation merger

n^1 = The total of samples in Experimental Group

n^2 = The total of samples in Control Group

The information collected in this study came from both the experiment and the control group.

In order for the researcher to determine, in a statistically significant manner, whether or not the

Inquiry Method had an influence on the students' capacity in speaking skill, the researcher should begin by conducting the requirement test by employing normaly and homogeneity test.

a. Normally Test

Normaly Test is carried out to determine whether the distribution of the sample data to be analyzed is normally distributed or not. Normaly test is using to determine whether the distribution of data is normally or not. Normaly test can be using as follow :

$$x^2 = \sum \frac{(fo - fn)^2}{fn}$$

Explanation :

x^2 = Chi Kuadrat

fo = Frekuensi yang diobservasi

fn = Frekuensi yang diharapkan

\sum = Jumlah Katagori

b. Hypothesis of Test

The hypthothesis to be tested in the form :

$$H_0 : \mu_x = \mu_y$$

$$H_a : \mu_x \neq \mu_y$$

Where :

H_0 : Null Hypothesis

H_a : Alternative Hypothesis

μ_x : The mean score of the students' speaking skill by using inquiry method

μ_y : The mean score of the student's teach by using conventional method