CHAPTER III

RESEARCH METHODOLOGY

3.1 Research Design

In this research, the author uses correlational research. According to Sugiyono (2016), correlational research is a type of research with problem characteristics in the form of a correlational relationship between two or more variables. The purpose of this research is to determine whether or not there is a correlation between variables or make predictions based on the correlation between variables. Correlational design is a procedure in quantitative research in which the researcher measures the degree of relationship (or relationship) between two or more variables using the statistical procedure of correlational analysis. The author uses two tests, namely vocabulary mastery which focuses on (verbs and adjectives) and a reading comprehension test which focuses on (main idea, sequence and inference). Researchers intend to find out whether there is a relationship between vocabulary mastery and students' reading comprehension.

3.2 The Setting of Research

This research is being conducted at SMAN 1 Indrapuri, Jl. Banda Aceh-Medan KM 27,4, Lampanah Ranjo, Aceh Besar District, Aceh Province 23363. The time of this research is 3 Maret 2023

3.2 Population and Sampling of The Research

1. Population

The population is a geographic generalization, according to Sugiyono (2010:117). However, there are other traits that an object or subject must have in

order for a researcher to learn about it and draw a conclusion. A population is a sizable group from which the researcher can collect samples. 93 The population consists of every tenth grader (IPA program) enrolled in SMAN 1 Indrapuri for the 2023–2024 academic year. Mastery of Students' Vocabulary (X) Understanding of Reading (Y) Based on the statement above, the population for this study is the tenth-grade (IPA's program) students at SMAN 1 Indrapuri during the academic year 2023– 2024. The overall population is made up of 93 students.

2. Sample

The researcher utilized purposeful sampling in this study. Purposive sampling chooses a sample by taking a subject that depends on a specific objective rather than the level or region (Arikunto, 2010:183).

The researcher utilized purposive sampling to choose the sample for this study. Data sampling with specific goals is known as "purposeful sampling" (Sugiyono, 2012:218). Implementing purposive sampling involves the following steps:

1. Establish the goal of the study. This is the first step in the process of choosing a suitable sample.
2. After deciding on the research's goals, list the requirements for selecting an appropriate research sample.

3. Select a demographic list appropriate for the study's goals and confirm that any objects or subjects fit the requirements.
4. Establish guidelines with a minimum and maximum number of examples.
5. Research the chosen sample using the predetermined criteria.

The criteria used in this research are Students of X IPA 1 at SMAN 1 Indrapuri in the academic year 2023–2024 served as the research's criterion. Thirty-one students make up the entire sample.

3.4 Variable of The Research

In this study, the researcher examines how two independent variables (X) and one dependent variable (Y) relate.

1. The independent variables

Vocabulary proficiency of pupils in class X IPA 1 at SMAN 1 Indrapuri during the academic year 2023–2024(X).

2. Dependent variable.

Class X IPA 1 students at SMAN 1 Indrapuri in the academic year 2023/2024 (Y) were tested on their reading comprehension. 21 There are two directions of connection: a positive and a negative correlation, claims Arikunto (2010: 322).

1. A positive correlation suggests that Y's value increases when X's value increases.
2. When there is a negative correlation, the value of Y decreases as X increases.

3.5 Instrument of The Research

The instrument used in this research was the form of "Field research". In this instrument was divided in two parts: the first was vocabulary test, that consist of 20 questions. The numbers of each item of the test were 20 items of a multiple-choice type test with four options: A, B, C, or D. In vocabulary test the researcher found out the improvement of the student's vocabulary mastery that focus on (verb and adjective).

The second test was reading test which consist of 20 questions. The numbers of each item of the test were 20 items of a multiple-choice type test with four options: A, B, C, or D. In reading comprehension test the researcher found out the improvement of the student's reading comprehension that focus on (sequence and inference).

3.6 The Procedure of Collecting Data

To collect data the writer did the procedure of this research as follows:

1. The writer distributed the test namely the vocabulary test and reading comprehension test
2. The researcher explained to the students about the test
3. The researcher gave two hours for respondent to answer the entire question

3.7 Technique of Data Analysis

In completing the data, the next step of this research was technique of data analysis. In this research, the writer gave a test to the students at the first grade of SMA Muhammadiyah 9 Makassar in academic year 2018/2019. These tests focus on the vocabulary test and reading comprehension test in English.

Since the writer wanted to investigate the correlation between two kinds of test, vocabulary and reading comprehension, so the writer used test method. The test was divided into two parts; the first was vocabulary, which consists of 20 items. The second was reading comprehension, which also consists of 20 items. The steps in analyse the data were chronologic present as follows: a. Classifying the student's vocabulary mastery to classify the vocabulary mastery of the student, the writer calculated the mean score of the students' vocabulary mastery test by used the following pattern and formula:

Table 3.1. Classifying the student's vocabulary mastery

No	Rate of Score	Categories
1	96 – 100	Excellent
2	86 – 95	Very Good
3	76 – 85	Good
4	66 – 75	Fairly Good
5	56 – 65	Fair
6	36 – 55	Poor
7	00 – 35	Very Poor

Istiqamah (2012)

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

Where: $\bar{x}$ = Mean
$\sum x$ = Total Raw Score
N = Total Number of Students

(Hizbullah: 2012)

To classify the vocabulary mastery of the student, the writer calculated the mean score of the students' vocabulary mastery test by used the following pattern and formula:

Table 3.2. Classifying the student's reading comprehension

No	Rate of Score	Categories
1	96 – 100	Excellent

2	86 – 95	Very Good
3	76 – 85	Good
4	66 – 75	Fairly Good
5	56 – 65	Fair
6	36 – 55	Poor
7	00 – 35	Very Poor

Istiqamah (2012)

To know there was significant correlation between the student's vocabulary mastery and their reading comprehension ability, the writer would apply the following formula:

$$r_{xy} = \frac{n\sum xy - (\sum x)(\sum y)}{\sqrt{[n\sum x^2 - (\sum x)^2][n\sum y^2 - (\sum y)^2]}}$$

Notation:

r_{xy} : Coefficient variable between variable 'x' and 'y'

∑X: Sigma score of students' vocabulary mastery

∑Y: Sigma score of students' reading comprehension

XY: the result of multiplication of the total score of each item.

∑x2: the sum of the square in X

∑y2: The sum of the square in Y

N: the number of respond

(sudijono, 2012 :192)

Table 3.3 The interpretation of Pearson correlation analysis.

"r" Score of Product Moment	Interpretation
0.00-0.20	Very poor
0.20-0.40	Low

0.40-0.70	Moderate
0.70-0.90	High
0.90-1.00	Very high

Sudjino (2012: 193)

If the r_{xy} lies between 0. 40 - 1.00 H_1 is accepted, and is rejected.

Whereas if the r_{xy} lies between 0.00 - 0. 40, H_0 is accepted.

To see whether the correlation between the students‟ vocabulary mastery and their reading comprehension ability was significant or not, the writer concludes the result by applying the following comparison between the r analysis and the r table.