# CHAPTER III

# RESEARCH METHOD

## A. Reseach Design

The design of this research was correlational research. Creswell (2012) correlation is a statistical test to determine the tendency or pattern for two (or more) variables or two sets of data to vary consistently. It was clear that the purpose of the correlation study is to find out whether there is a correlation between two or more sets of data.

Furthermore, Cohen, Manion, and Morrison (2000) stated correlational research is mainly concerned with achieving a fuller understanding of the complexity of phenomena or, in the matter of behavioural and educational research, behavioural patterns, by studying the relationships between the variables which the researcher hypothesizes as being related.

Based on the statements above, it can be seen that correlational research is a research design where the researcher determine the relationship between two or more variables that consist of independent variable and dependent variable. It is an appropriate one to this research in order to find out the influence of students' reading interest (independent variable X1) toward students' vocabulary mastery (independent variable X2) and their reading ability (dependent variable Y).

**B. The Location and the Time of the Research**

This research was conducted on August 2018. The location of the research was at Senior High School Tri Bhakti Pekanbaru on Tuanku Tambusai street at Pekanbaru.

**C. Subject and Object of the Research**

The subject of this research was the eleventh grade students of Senior High School Tri Bhakti Pekanbaru in the academic year of 2018/2019, while the object of this research was the influence of students' reading interest toward students' vocabulary mastery and their reading ability.

**D. Population and Sample of the Research**

**1. Population of the Research**

In this research, the population was the eleventh students coming from the eleventh students at Senior High School Tri Bhakti Pekanbaru. The total numbers of this population is 73 students.

**2. Sample**

In this research, researcher was took all of the eleventh grade students. Therefore, the technique used in taking the sample is Total Sampling. Total Sampling is a technique of taking sample where the amount of sample equal with population (Sugiyono, 2007). According to Arikunto, if the population is less than 100 respondents, we can take all of it, but if the population more than 100 respondents we can take 10%, 15%, 20%, 25% or more. In this research the researcher took all of the population as the sample. So, the sample of this research was 73 students.

**Table III. 1**
**The Population and Sample of the Research**

| No. | Class/Major | Population | Sample |
|-----|-------------|------------|--------|
| 1 | XI Ipa | 40 | 40 |
| 2 | XI Ips | 33 | 33 |
| | **Total** | | 73 |

## E. Technique of Collecting Data

In this research, the researcher used questionnaire to collect the data of students' reading interest (variable X1). Then, the researcher used test to collect the data of students' vocabulary mastery (variable X2) and students' reading ability (variable Y).

### a. Questionnaire

Questionnaire is a tool in gathering information through written questions, it is one of the most widely used social research technique. According with Arikunto (2005), he stated that questionnaire is a list of question that given to the persons to give their responses concerning the questions. Based on the definition above, it can be concluded that questionnaire is a list of questions that given to the respondents of the research in order to collect the information (data) about the respondents through their responses concerning the questions. In this research, questionnaire is used to find numerical data of students' interest of reading English text.

In determining the students' scores, the writer determines the score of each statement in the questionnaire first. The researcher used the Likert scale as the rating scale of the questionnaire. The researcher gave a

questionnare to the students which contains 20 items. The questionnaire deals with respondent's opinions in responding to following options based on the Likert' – scale:

**a.** Always

**b.** Often

**c.** Sometimes

**d.** Seldom

**e.** Never

**Table III. 2**
**Indicator of Reading Interest**

| No | Indicator | Sub-indicator | Statement Positive | Negative | Items |
|----|-----------|---------------|--------------------|----------|-------|
|    |           | Focusing attention | 1,5 | 15 | 3 |
|    |           | Curiosity | 8,12 | 2 | 3 |
|    | Internal motivation | Time spending | 18 | 20 | 2 |
| 1  |           | Effort | 13,17 |  | 2 |
|    |           | Concluding | 3,19 | 6,10 | 4 |
|    |           | Pleasure | 4 | 14 | 2 |
| 2  | Emotional factors | Enthusiasm | 9 | 16 | 2 |
|    |           | Impression | 7,11 |  | 2 |

*Adapted from Shaleh dan Wahab*

The classification of the students' reasing interest score can be seen in the following table:

**Table III. 3**
**Category Score of Likert Scale**

| Statement \ Option | A | O | S | S | N |
|--------------------|---|---|---|---|---|
| Positive | 5 | 4 | 3 | 2 | 1 |
| Negative | 1 | 2 | 3 | 4 | 5 |

### *b.* Test

Arikunto (2006) defined a test is a series of question which is used to measure the skill, knowledge or ability that is possessed by individual or group. Djiwandono (2008) stated that there are two kind of test based on the way of scoring, they are objective and subjective tests. Objective test is a form of questioning which has single correct answer. It consist of matching test, true false test, fill in the blank and multiple choice test. Then, the subjective test is a form of questioning which may have more than one correct answer (or more than one way of expressing the correct answer).

In this research, the researcher carried out test to measure as follows:

1) Test of vocabulary mastery

The test of vocabulary mastery was intended to collect the data about students' vocabulary mastery. The test is objective test in the form of multiple-choice type consisting of 20 items. There are four answer's option; a, b, c, or d in each question.

**Table III. 4**
**Indicators of Vocabulary Mastery**

| No. | Indicator | | Sub-indicator | Number of items | Total |
|-----|-----------|---|--------------|-----------------|-------|
| 1. | Word classes | a. | Noun | 1, 2 | 2 |
| | | b. | Verb | 3, 4 | 2 |
| | | c. | Adjective | 5, 6 | 2 |
| | | d. | Adverb | 7, 8 | 2 |
| 2. | Word meaning | a. | Synonym | 17, 18 | 2 |
| | | b. | Antonim | 19, 20 | 2 |
| | | c. | Hyponym | 9, 10 | 2 |
| 3. | Word building | a. | Affixation | 11, 12 | 2 |
| | | b. | Compounding | 13, 14 | 2 |
| | | c. | Conversion | 15, 16 | 2 |

2) Test of Reading ability

The test of reading ability was intended to collect the data about students' reading ability. The test is objective test in the form of multiple-choice type consisting of 20 items. There are four answer's option; a, b, c, or d in each question.

**Table III. 5**
**Indicators of Reading Ability**

| No | Indicator | Number of items | Total |
|----|-----------|-----------------|-------|
| 1 | Main idea | 1,4, 13, 16,18 | 5 |
| 2 | Meaning of word | 3,9, 15, 19 | 4 |
| 3 | Identify information | 2, 5, 17 | 3 |
| 4 | Supporting details | 6,10,12, 20 | 4 |
| 5 | Reference | 7, 8,11,14 | 4 |

Then, in determining the students' score, the researcher marks 1 for each item which is answered correctly and marked 0 for the wrong answer.

**F. Validity and Reliability of Instrument**

According to Vandergrift (2012), validity refers to extent to which a test assesses what is proposed to assess. Validity is concerned with what a test measure and for whom it is appropriate. Thus, the validity of instrument is the

device used to get the valid of data. Those means that the instrument can be used to measure what should be measured.

1. **Questionnaire**

a. **Questionnaire Validity**

**Table III. 6**
**The Analysis of Reading Interest Questionnaire**

| Item Number | r-item | r-table | Result |
|:---:|:---:|:---:|:---:|
| 1 | 0.712 | 0.22 | Valid |
| 2 | 0.484 | 0.22 | Valid |
| 3 | 0.598 | 0.22 | Valid |
| 4 | 0.615 | 0.22 | Valid |
| 5 | 0.611 | 0.22 | Valid |
| 6 | 0.273 | 0.22 | Valid |
| 7 | 0.339 | 0.22 | Valid |
| 8 | 0.392 | 0.22 | Valid |
| 9 | 0.354 | 0.22 | Valid |
| 10 | 0.506 | 0.22 | Valid |
| 11 | 0.304 | 0.22 | Valid |
| 12 | 0.609 | 0.22 | Valid |
| 13 | 0.570 | 0.22 | Valid |
| 14 | 0.601 | 0.22 | Valid |
| 15 | 0.593 | 0.22 | Valid |
| 16 | 0.756 | 0.22 | Valid |
| 17 | 0.571 | 0.22 | Valid |
| 18 | 0.615 | 0.22 | Valid |
| 19 | 0.624 | 0.22 | Valid |
| 20 | 0.766 | 0.22 | Valid |

From the table above, the questionnaire items were valid. Because the items were valid, the researcher used the test to be examined to the sample of the research.

b. **Questionnaire Reliability**

Reliability is to measure the instrument that is used to collect the data. To know whether the test is reliable or not, the researcher calculated the data obtained by using statistical and service solution 16 version. The test reliability can be seen as follows:

**Table III. 7**
**Reliability statistic of Students' Reading Interest**

| Cronbach's Alpha | N of Items |
|---|---|
| .893 | 20 |

## 2. Test

### a. Test Validity

In this research, the researcher used content validity. According to Sugiyono (2014), testing validity of the test-shape instrument can be done by comparing the test with the lesson which was taught by the teacher in the class. Thus, the test was given based on material studied by the students. The material of the best was taken from the syllabus of the Eleventh grade of the students at Senior High School Tri Bhakti Pekanbaru.

**Table III. 8**
**The Analysis of Vocabulary Mastery Test Validity**

| Item Number | r-item | r-table | Result |
|---|---|---|---|
| 1 | 0.302 | 0.22 | Valid |
| 2 | 0.247 | 0.22 | Valid |
| 3 | 0.753 | 0.22 | Valid |
| 4 | 0.385 | 0.22 | Valid |
| 5 | 0.314 | 0.22 | Valid |
| 6 | 0.299 | 0.22 | Valid |
| 7 | 0.753 | 0.22 | Valid |
| 8 | 0.510 | 0.22 | Valid |
| 9 | 0.411 | 0.22 | Valid |
| 10 | 0.448 | 0.22 | Valid |
| 11 | 0.304 | 0.22 | Valid |
| 12 | 0.239 | 0.22 | Valid |
| 13 | 0.590 | 0.22 | Valid |
| 14 | 0.227 | 0.22 | Valid |
| 15 | 0.839 | 0.22 | Valid |
| 16 | 0.792 | 0.22 | Valid |
| 17 | 0.364 | 0.22 | Valid |
| 18 | 0.313 | 0.22 | Valid |
| 19 | 0.351 | 0.22 | Valid |
| 20 | 0.839 | 0.22 | Valid |

From the table above, the test items were valid. Because the items were valid, the researcher used the test to be examined to the sample of the research.

**Table III. 9**
**The Analysis of Students Reading Ability Test Validity**

| Item Number | r-item | r-table | Result |
|---|---|---|---|
| 1 | 0.315 | 0.22 | Valid |
| 2 | 0.239 | 0.22 | Valid |
| 3 | 0.753 | 0.22 | Valid |
| 4 | 0.400 | 0.22 | Valid |
| 5 | 0.326 | 0.22 | Valid |
| 6 | 0.311 | 0.22 | Valid |
| 7 | 0.753 | 0.22 | Valid |
| 8 | 0.478 | 0.22 | Valid |
| 9 | 0.426 | 0.22 | Valid |
| 10 | 0.472 | 0.22 | Valid |
| 11 | 0.285 | 0.22 | Valid |
| 12 | 0.261 | 0.22 | Valid |
| 13 | 0.560 | 0.22 | Valid |
| 14 | 0.253 | 0.22 | Valid |
| 15 | 0.845 | 0.22 | Valid |
| 16 | 0.794 | 0.22 | Valid |
| 17 | 0.341 | 0.22 | Valid |
| 18 | 0.313 | 0.22 | Valid |
| 19 | 0.307 | 0.22 | Valid |
| 20 | 0.845 | 0.22 | Valid |

From the table above, the test items were valid. Because the items were valid, the researcher used the test to be examined to the sample of the research.

**b. Test Reliability**

Reliability is to measure the instrument that is used to collect the data. To know whether the test is reliable or not, the writer calculated the data obtained by using statistical and service solution 16 version. The test reliability can be seen as follows:

**Table III. 10**
**Reliability Statistic of Students' Vocabulary Mastery**

| Cronbach's Alpha | N of Items |
|---|---|
| .842 | 20 |

From the table above, it showes the reliability test in cronbach's alpha was 0.840, the item was 20. The coefficient was in high level (0.80-0.90).

**Table III. 11**
**Reliability Statistic of Students' Reading Ability**

| Cronbach's Alpha | N of Items |
|---|---|
| .840 | 20 |

From the table above, it showes the reliability test in cronbach's alpha was 0.840, the item was 20. The coefficient was in high level (0.80-0.90). the table of the test reliability level is shown as follows:

**Table III. 12**
**Test Reliability Level**

| Cronbach Alpha | Internal Consistency |
|---|---|
| > 0.90 | Very highly reliable |
| 0.80-0.90 | Highly reliable |
| 0.70-0.79 | Reliable |
| 0.60-0.69 | Minimally reliable |
| < 0.60 | Unacceptably low reliable |

## G. Technique of Analyzing Data

### 1. Description of the Data

After collecting the data, the next step is analyzing the data in order to know whether there is a significant positive correlation between students' interest of reading on English text and translation ability toward reading comprehension. The researcher presents the mean, range, median, and modus of the sample. Furthermore the next step is analyzing the data, this research used Normality, Simple Linear Regression, Multiple Linear Regression, and Correlation to analyze the data. Those are as follows:

### a. Mean

Mean is the average value of a data group. It is gained from summing up all individual data of the group and dividing it by the total of the individuals.

**b. Range**

Range is the gap between the highest and the lowest value in a data group. It is gained by subtracting the highest value with the lowest value.

**c. Mode**

Mode is that score which occurs most frequently (Brown, 1996). Brown also says that no statistical formula is necessary for this straight forward idea.

**d. Standard Deviation**

Standard deviation is the distance of an individual value from the mean.

**e. Median**

Median is the scores which are arranged based on the amount, which is in the middle between the lowest and the highest scores

**2. Normality Testing**

This test is aimed to know whether the sample taken from the population has normal distribution or not. To find out the normality of the sample of the research, the researcher used the formula Kolmogorov-Swirnov.

**3. Linearity Testing**

This test is aimed to know or predict whether two variable involved in the research, which commutated by statistic analysis correlation have relationship linear or not.

a. Simple Linear Regression

1) Equation of Simple Linear Regression

2) To Find Out the Significance of Regression

If Fobserved > Ftable (Fo > Ft) the regression is significant.

  3)  To Find Out the Linearity of Regression

If Fobserved > Ftable (Fo < Ft) the regression is linear.

b.  Multiple Linear Regression

Multiple linear regression is significant if the Fobservation is higher than Ftable (Fo > Ft)

## 4.  Hypotheses Testing

This research is going to test the hypotheses using simple correlation and multiple linier regression. Arikunto (2013) said that product moment is used to describe the strength between variable, while multiple linear regression are used to describe the strength between two independent variables and one dependent variables.

a.  The first hypotheses and second hypotheses

The first hypotheses is the correlation between students' reading interest (X1) and reading ability (Y). While the second hypotheses is the correlation between vocabulary mastery (X2) and reading ability (Y). To test the first and second hypotheses, the researcher used the simple correlation technique using the Product Moment Formula as follows:

$$r_{xy}=\cfrac{N\sum xy-\left(\sum x\right)\left(\sum y\right)}{\sqrt{\left[N\sum x^2-\left(\sum x\right)^2\right]\left[N\sum y^2-\left(\sum y\right)^2\right]}}$$

Where:

rxy : the coefficient of the correlation between variable X and Y

X : the independent variable

Y : the dependent variable

N : the number of the sample

b.  The third hypotheses

The third hypotheses is the correlation between students' reading interest (X1) and vocabulary mastery (X2) toward reading ability (Y). To test the third hypotheses, the researcher used the multiple correlation as follows:

$$R_{x_1 x_2 y}=\sqrt{\frac{r^2 x_1 y+r^2 x_2 y-2.r x_1 y.r x_2 y.r x_1 x_2}{1-r^2 x_1 x_2}}$$

R $x_1 x_2 y$  : The coefficient of correlation between $X_1$, $X_2$ and Y

r $x_1 y$  : The coefficient of independent variable $X_1$ and Y

r $x_2 y$  : The coefficient of independent variable $X_2$ and Y

r $x_1 x_2$  : The coefficient of correlation between $X_1$ and $X_2$

The researcher used the formula of regression line analysis to find out whether or not the coefficient of multiple correlations is significant as follows:

$$F = \frac{R^2/k}{(1-R^2)/(n-k-1)}$$

Where:

F : the value of regression line

R : the coefficient of correlation between $X_1$, $X_2$, and Y

k : the number of independent variable

n : the number of sample

(Sugiyono, 2013)

In this research, there are two kinds of hypothesis. They are the alternative hypothesis (Ha) and null hypothesis (Ho). The hypothesis of alternative (Ha) says that there is a correlation between students` reading interest (X1), vocabulary mastery (X2) and reading ability (Y). When Ha is changed become null hypothesis (Ho), it says that there is no correlation between students` reading interest (X1), vocabulary mastery (X2) and reading ability (Y). The statistical hypothesis are as folllows:

a.  First Hypothesis

Ho = $\rho X_1 Y = 0$

It means that there is no correlation between reading interest ($X_1$) and reading ability (Y).

Ha = $r X_1 Y > 0$

It means that there is a positive correlation between reading interest $(X_1)$ and reading ability $(Y)$.

b. Second Hypothesis

Ho $= \rho X_2 Y = 0$

It means that there is no correlation between vocabulary mastery $(X_2)$ and reading ability $(Y)$.

Ha $= r X_2 Y > 0$

It means that there is a positive correlation between vocabulary mastery $(X_2)$ and reading ability $(Y)$.

c. Third Hypothesis

Ho $= R X_1 X_2 Y = 0$

It means that there is no correlation between reading interest $(X_1)$ and vocabulary mastery $(X_2)$ simultaneously, and reading ability $(Y)$.

Ha $= R X_1 X_2 Y > 0$

It means that there is a positive correlation between reading interest $(X_1)$ and vocabulary mastery $(X_2)$ simultaneously, and reading ability $(Y)$.