CHAPTER III

RESEARCH METHOD

This chapter presents research design, variable of research, population and sample, instrument, data collection and data analysis.

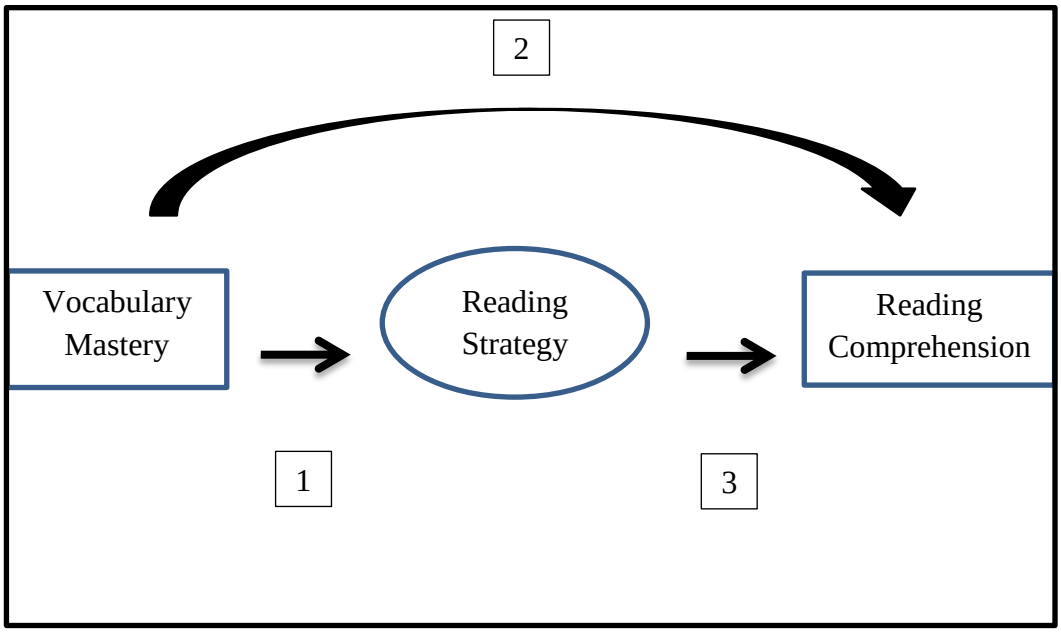
A. Research Design

In this study, the researcher used descriptive quantitative research method which is helped by path analysis to know direct and indirect effect of independent variable and intervening variable on dependent variable. This technique is for causal model which formed by the researcher based on the knowledge and the theory. Path analysis is one kinds of quantitative research design, which led the researcher to develop correlation technique and the result of path analysis probably showed direct-indirect effects as the causes of variables.

The researcher conducted path analysis to know the correlation pattern of variables and it will be showed by path diagram. The function is for the problem's concept which is complicated, and to know empiric implication of the theory that is studied.

Thus, this study aims to know direct-indirect effects of Vocabulary mastery as independent variable and Reading strategy as intervening variable, which mediate vocabulary mastery on Reading comprehension as dependent variable. It will show how the researcher concepts the problem and draw the path diagram to analysis direct and indirect correlation

among the variables and how intervening variable engages independent variable to enhance reading comprehension maximally.



Path diagram

B. Variable of Research

A variable is defined as anything that has a quantity or quality that varies. In this study, there are three variables. They are Independent variable, Dependent variable, and Intervening variable.

1. Independent variable

   Independent variable is a variable believed to affect the dependent variable. In this study, Independent variable is Vocabulary mastery.

2. Dependent variable

   Dependent variable is the variable that is affected by independent variable. In this study, dependent variable is reading comprehension.

3. Intervening variable

Intervening variable is variable that mediate between independent variable and dependent variable. It intervenes on independent variable to dependent variable. In this study, intervening variable is reading strategy, which mediates vocabulary mastery on reading comprehension. Thus, direct-indirect effect is probably happens to enhance readers' comprehension.

C. Population and Sample

A population is all members of any well-defined class of people, events, or objects. In this research, the population is the fourth semester of English department students in IAIN Kediri. It is located at Sunan Ampel street No. 7 Kediri East Java. They are in academic year 2020-2021.

A sample is a portion of population that the researcher chosen as the object of the study to represent the population. The participants are taken from the students who took extensive reading course for their subject in this semester. There were eight classes and the total number of students is 281 students. Thus, the researcher chooses two classes as the volunteers which consist of 30 students for each class. The volunteers is from D class and B class. The participants will be divided as two part as like their class. The first class will get reading comprehension test, vocabulary mastery test and questionnaire of reading strategy as try out for knowing the validity and reliability of the items. The second class will be the respondent. Thus, it can conclude the correlation of vocabulary mastery

and reading strategy on students' reading comprehension significantly whether it will have direct or indirect effect.

D. Instrument

The data collection instruments used in this study is test and questionnaire. The researcher applies questionnaire for getting the information about the affect of reading strategy and uses test which consist of vocabulary test and reading test for knowing the correlation of them. The instruments of this research are as follow.

1. Questionnaire of Reading Strategy

The questionnaire of reading strategy was used to collect the data about how often students used reading strategy when they did reading comprehension test. This study used close questionnaire and consisted of 16 statements with six alternatives of answer: (1) I always do the activity, (2) I usually do the activity, (3) I often do the activity, (4) I sometimes do the activity, (5) I rarely do the activity, and (6) I never do the activity. Thus, the participants just need choose one of the choices (arikunto). The score ranges from 1 to 6 and the researcher will give 20 minutes to answer the questionnaires.

The reading strategies questionnire used in the current study was adapted from Mokhtari & Sheorey (2002) *Survey of Reading Strategies* (SORS). The SORS is based on Mokhtari & Reichard's (2002) *Metacognitive-Awareness-of-Reading-Strategies Inventory* (MARSI). According to Mokhtari and Sheorey (2002), the SORS is

intended to "measure the type and frequency of reading strategies that adolescent and adult ESL students perceive they use while reading academic materials in English" cited by Al-nujaidi (2000).

Adaptation of SORS

The Questionnaire was adopted from SORS which the original SORS has 30 reading strategy statements then the researcher took 16 items from 30. It base on the validity item which shows that just 16 items can used for collecting the data.

The blueprint of reading strategy included five indicators. They are (1) to know the students' awareness of using reading strategy, (2) to measure the baseline level of reading strategy, (3) to know how often students use reading strategy on their reading test, (4) to know students' focus on their reading strategy, and (5) to know which strategy is usually used by the students. The questionnaire and the blueprint of reading strategy questionnaire can be seen at appendix A1.

2. The Test of Vocabulary Mastery

The test is objective test in the form of multiple-choice type. There are five alternative answers in each item, consisting one correct answer and four destructions. It is divided being 3 levels; high level, medium level and low level. The researcher arranged the questions randomly. There are 24 items will be used to measure students' vocabulary mastery. The scoring system for the test is correct answer

multiplying it by 4. So, the highest score is 96 and the lowest one is 0. Vocabulary mastery test and the blue print of it can be seen at appendix A2.

3. The Test of Reading Comprehension

The test is objective test in the form of multiple-choice type. There are five alternative answers in each item, consisting one correct answer and four destructors. There are 12 items will be used to measure students' reading comprehension competence. The scoring system for the test is correct answer multiplying it by 8. Thus, the highest score is 96 and the lowest one is 0. The vocabulary mastery test and the blue print of reading competence test can be seen at appendix A3.

Before being used to collect the data each of the questionnaire and the test will be tested to check its validity and reliability.

E. The Validity and Reliability of Instrument

1. The validity and reliability of Reading Strategy

The validity of reading strategy questionnaire was tested using *Pearson Product Moment* formula. The questionnaire was being tried out to 30 respondents or students. The result of the try out was then being tested its validity and reliability. The criteria of validity was measured using comparison between the value of correlation coefficient with the value of t-table for n = 30, that is 0,361. If the value of correlation coefficient is higher than the value of t-table, it can

be concluded that the item is valid. In other hand, if the value of correlation is lower than the value of t-table. It means that the item of questionnaire is not valid to collect the data of the research.

Based on the result of the validity test using *Pearson Product Moment* formula, it was known that there are 19 items which is not valid. Those items were item number 1, 4, 5, 6, 7, 8, 9, 11, 12, 14, 15, 16, 18, 20, 21, 25, 26, 34, and 35. The result of validity can be seen in the appendix A4.

Meanwhile, the test of questionnaire reliability was done by *Alpha Cronbach*. It can be seen at table 3. 1

Reliability Statistics	
Cronbach's Alpha	N of Items
0,875	16

Based on the reliability test, it was known that the r observation was 0,875. Then it can be concluded that the questionnaire of reading strategy was very reliable and can be used as the instrument to collect the data.

2. The Validity and Reliability of Vocabulary Mastery Test

The validity of the vocabulary mastery was done using *Pearson Product Moment*. The instrument of vocabulary mastery was being tried out to 30 respondents or students of the classes which was not chosen as the sample of study. The result of the try out was then being tasted its validity and reliability. The criteria of validity was measured using the comparison between the value of correlation coefficient with

the value of t-table for n = 30, that is 0,361. If the value of correlation coefficient is higher than the value of t-table, it can be concluded that the test item is valid, while if the value of correlation coefficient is lower than the value of t-table, it means that the test item is not valid to collect the data of the research.

Based on the computation data with *SPSS*, it was known that there were 21 items which was not valid. The researcher used 24 items as the instrument of vocabulary mastery based on the level of difficulty as follow.

Table 3.2. The Item Used as the Instrument of Vocabulary Mastery Test

No.	Level of Difficulty	Item Number	Total
1	High	2, 4, 11, 20, 21, 22, 23, 24	8
2	Medium	3,7, 10, 12, 13, 14, 15, 18, 19	9
3	Low	1, 5, 6, 8, 9, 16, 17	7
Total			24

Table 3.2 shows that the items of the test consisted of items with three different level of difficulty. The table also shows that there are 8 items with high level of difficulty, 9 items with medium level difficulty, and 7 items with low level difficulty. The result of validity can be seen in the appendix A5.

Meanwhile, the test of reliability for the instrument of vocabulary mastery was done using *Alpha Cronbach* with *SPSS*. It can be seen at table 3.3.

Reliability Statistics	
Cronbach's Alpha	N of Items
0,931	24

Table 3.3 shows that the result of computation is 0,931. This coefficient is very high. Thus, it means that the instrument of vocabulary mastery is reliable to be used to collect the data of vocabulary mastery.

3. The Validity and Reliability of Reading Comprehension Test

The validity test of reading comprehension was done using *Person Product Moment* formula. The instrument of reading comprehension was being tried out to 30 respondents which was not chosen as the sample of the study. The result of try out was then being tested its validity and reliability. The criteria of validity was measured using the comparison between the value of correlation coefficient with the value of t-table for n = 30, that is 0,361. If the value of correlation coefficient I higher than the value of t-table, it means that the item test is valid, while if the value of correlation coefficient is lower than t-table, it can be concluded that the item test is not valid for collecting the data.

Based on the computation with *SPSS*, it was known that there were 18 items from 35 items which was not valid. The writer chose 12 items to be the instrument of reading comprehension. The level difficulty can be seen at table 3.4. and the result of validity can be seen in the appendix A6.

Table 3.2. The Item Used as the Instrument of Vocabulary Mastery Test

No.	Level of Difficulty	Item Number	Total
1	High	12	1
2	Medium	1, 2, 4, 5, 6, 8, 10,	7
3	Low	3, 7, 9, 11	4
Total			12

Meanwhile, the test of reliability for the instrument of reading comprehension was done using *Alpha Cronbach.* the result of computation is 0, 833 this coefficient is very high, so that it can be concluded that the instrument of reading test is reliable to be used to collect the data of reading comprehension. The result of *Alpha Coronbach* can be seen at table 3.5

Reliability Statistics	
Cronbach's Alpha	N of Items
0,833	12

F. Data Collection and Data Analysis

The data collected during the study were analyzed using *SPSS* version 24.00. It will use Analysis of Moment structures (AMOS) for analyzing the data on Structural Equation Model (SEM). It will make the path analysis easily because SEM is developed by it. It described the data of regression among three variables. The researcher will determine descriptive statistic for obtaining the variable. The analysis is needed for describing or illustrating the object that is observed through the sample or population.

1. Classic Assumption Test

a. Normality Test

Normality test is used for testing whether the data collecting that is gotten distribute normally or no. the normality Test is conducted for observing the data sample. The method for normality test used comparison of signification value. The researcher used 0,05 as the signification value which means the researcher take standard error 5%. The data is computed by *SPSS* program. It used *Kolmogorov-Smirnov* (K-S). The criteria of normality test is decided by the significant value. If the signification value is more than 0,05, the distribution of data is normal. On the contrary, if the signification value is lower than 0,05, the distribution of data is not normal.

b. Linearity Test

The linearity test is used for knowing whether independent variable and dependent variable of the study have linear correlation or not. The criteria of linearity test was measured using the comparison between the value of a*ncova* with the value of F-table for n = 30. If the value of F-table is higher than the value of *ancova,* it means that independent variable and dependent variable do not have linearity correlation. On the contrary, if F-table is lower than the value of *ancova,* it means that independent variable and dependent variable have linearity correlation.

c. Multicollinearity Test

Multicollinearity test is used for knowing the multicollinearity among the variable. To detect it, the researcher used correlation matric analysis between independent variable and *tolerance* value and VIF, through *SPSS*. If the result of VIF showed 1, there is no multicollinearity. In other hand, if the value showed more than 10, there is multicollinearity on the data.

d. Heterokedastisitas

Heterokedastisitas is used for knowing whether regression model has different variant from on residual research to other research. To detecting the heterokedastisitas, the researcher using *plots* graphic predicts dependent variable value. That is ZPRED with SRESID residual.

The computation data from *SPSS* shows that the result of regression model is not heterokedastisitas, if the graphic shows the distribution randomly above 0 on Y as horizontal.

e. Determination Coefficient (R^2)

Determination coefficient is for measuring how the model explain the variation of dependent variable. The value of determination coefficient is between 0 to 1. If the value of R^2 is lower, it means that the ability of dependent variable to explore the variation of independent variable is limited. On the contrary, if the value is almost going to be , it means that the dependent variable can inform all the information needed for predicting the variation of independent variable as cited in Fitriana (2012).