CHAPTER III

RESEARCH METHOD

This chapter discusses the research method used in this. It covers the presentation of the research design, research instrument, data collection method, and data analysis.

A. Research Design

The type of this research is Correlation Research. Fraenkel et.al (2000: 331) state that correlation research sometimes called associational research, the relationship among two or more variables are studied without any attempt to influence them. The reason of choosing this type of research is researcher wants to know the strength of the relation of two or more variable based on the correlation coefficient. Furthermore, Johnson and Christensen (2000: 27) stated that there are three possible result of correlation study, as follows: a positive correlation, a negative correlation and no correlation.

1. Positive Correlation

   It is assumed that there is a positive correlation when all of the variables move in the same directions, the scores improve or decrease at the same time.

2. Negative correlation

   When two variables move to different direction, it means that there is a negative correlation. Move different directions mean score of one variable improves while the other decreases.

3. No correlation

It means there is no correlation among variables. If the number of correlation coefficient is equal to zero it indicates no correlation and they are not influencing one to another.

B. Population and Sample

1. Population

Sugiyono (2015: 61) states that population is a generalization region consisting of objects / subjects that have certain qualities and characteristics set by the researchers to be studied and then drawn conclusions. The population of this research is the tenth grade students of SMAN 1 Plosoklaten. The total of population is 272 students divided into 8 classes. There are X.IPS-1, X.IPS-2, X.IPS-3, X.IPS-4, X.MIPA-1, X.MIPA-2, X.MIPA-3, X.MIPA-4.

2. Sample

Sugiyono (2015: 62) states that sample is part of the number and characteristics possessed by the population. If the population is large, researcher can use sample taken from the population. Sample is taken from the population must be truly representative. In this research, the researcher took 30% of population as the sample. The researcher took 10 students randomly in six classes and 11 students in two classes of the tenth grade students of SMAN 1 Plosoklaten. There are 8 classes of the tenth grade students of SMAN 1 Plosoklaten. The total sample are 82 students.

C. Data Collecting Method

The researcher used test and questionnaire as the technique to collect the data of this research. Test was used to measure students' vocabulary mastery and reading comprehension. While questionnaire used to collect the data about students' learning motivation.

D. Instrument of Collecting Data

1. Scale for motivation

Arikunto (2006: 151) defined that questionnaire is a number of the researcher question which was used to get information from respondent about their personality or something that they know. In this research, the questionnaire was used to know whether students have learning motivation or not. The type of the questionnaire is closed-type questionnaire.

The items of the questionnaire is given were followed by answers. The questionnaire consists of 25 items. There are 13 items as positive statement and 12 items as negative statement. The items consist of six indicator of learning motivation. Those are the need for exploration, the need for manipulation, the need for activity, the need for simulation, the need for knowledge, and the need for ego enhancement. Then, the students had to answer the question given by gave checklist in answer column. Students will choose one of them based on what the students actually experienced.

2. Test of vocabulary mastery

Arikunto (2006: 150) explains test as an organized questions or exercise and also other instrument which is used to measure the skill, intelligence knowledge, ability or talent had by individual or group of people. The test of vocabulary mastery is objective test in the form of multiple-choice type. The test consist of 25 items. There are four alternatives answer in each item, consisting three destructors. The scoring system for the test is that if the students answer the item correctly, they will be scored 1 whereas if the students answer themincorrectly, they will be scored 0. The way to score students' vocabulary mastery :

Total correct answers X 4

So the high score was gotten 100 if the students answer all of the question correctly.

3. Test of reading comprehension

The test is objective test in the form of multiple-choice type. The test consist of 25 items. There are four alternatives answer in each item, consisting three destructors. The scoring system for the test is that if the students answer the item correctly, they will be scored 1 whereas if the students answer them incorrectly, they will be scored 0. The way to score students' reading comprehension :

Total correct answers X 4

So the high score was gotten 100 if the students answer all of the question correctly.

E. Validity and Reliability

a. Validity of the instrument

Arikunto (2006: 168) states that an instrument is valid if it is table to measure what the researchers are going to measure. Validity refers to the extent to which an instrument measures what one thinks it is measuring.

In the research, the researcher used SPSS 20.0 for windows on obtaining the Pearson Product Moment. The criteria validity of test called valid, if r-obtained is higher than r-table and it is not valid if r-obtained is lower than r-table.

There are 30 items of reading comprehension test used to try out. It can be seen in the appendix. After try out, the researcher gets 26 valid items to measure students' reading comprehension which consists of 6 indicators. They are finding topic, finding main idea, finding detailed information in the text, identifying reference of pronoun, drawing inferences, and guessing word meaning based context.

There are 30 items of vocabulary mastery test used to try out. It can be seen in the appendices. After try out, the researcher gets 25 valid items to measure students' vocabulary mastery which is consist of 10 indicators. Word classes consists of noun, verb, adjective and adverb. Word meaning consists of synonym, antonym, and hiponym. Word building consists of affixation, compounding, and conversion.

There are 25 items of learning motivation questionnaire the researcher distribute by wording. It can be seen in the appendices. After researcher distributes all the questionnaire the researcher explains the difficult question to all the students.

b. Reliability of the instrument

Frankel and Wallen (2000: 169) state that reliability refers to the consistency of scores or answers from one administration of an instrument to another, and from one set of items to another. Reliability is concerned with consistency of scores if the instruments used repeatly for different subjects or different times. The researcher used Alpha Cronbach to measure the reliability of the instrument.

The criteria of reliability measured using the comparison between the values of correlation coefficient. If the value of correlation coefficient is higher than the value of t-table, it means that the instrument is reliable, while if the value of correlation. coefficient is lower than the value of t-table, it can be concluded that the instrument is not reliable. The researcher uses SPSS 20.0 for windows in obtaining Alpha Cronbach.

Arikunto (2006: 276) states that the criteria of reliability coefficient are as follow:

$0,80 < r_{11}$ = very high reliability

$0,60 < r_{11}$ = high reliability

$0,40 < r_{11}$ = fair reliability

$0,20 < r_{11}$ = low reliability

$0,00 < r_{11}$ = very low reliability

Reliability Statistics

Cronbach's Alpha	N of Items
.751	30

Based on the analysis using the formula of Alpha Cronbach helping by SPSS 20.00 for windows, the result of computation R_{11} is 0,751. So it can be said that reading comprehension instrument has very high reliability

Reliability Statistics

Cronbach's Alpha	N of Items
.744	30

Based on the analysis using the formula of Alpha Cronbach helping by SPSS 20.00 for windows, the result of computation r_{11} is 0,744. So it can be said that vocabulary mastery instrument has very high reliability.

Reliability Statistics

Cronbach's Alpha	N of Items
.741	36

Based on the analysis using the formula of Alpha Cronbach helping by SPSS 20.00 for windows, the result of computation r_{11} is 0,741. So it can be said that learning motivation instrument has very high reliability.

F. Data analysis.

After collecting the data, the next step is analyzing data. In this research, the researcher used some technique of analyzing data, it as follow:

1. Prequisite test

The test cover normality test, linearity test, and significance of regression test. The test is required in correlation study to convince that the data is normal, significant and linear.

a. Normality test

Normality test is one of the perquisite tests before entering linear regression analysis, that is used to know whether the dependent variable are normal distributed or not. The researcher used Kolmogorov Smirnov (KS-Z) formula to test the normality of data through SPSS 20.0 for windows. The normality can be seen from p (significance) on Kolmogorov Smirnov value. If p (significance) value greater than 0,05 (p>0,05), it tells that the distribution of the data is normal.

b. Linearity test

Linearity testing is aimed to know whether two variables which done by statistical analysis correlation show the linear relationship or not. In this study, the researcher used SPSS 20.0 for windows in obtaining simple linear regression.

2. Hypothesis testing

After testing the prequsite test, the researcher tested the hypothesis. To test hypothesis whether there is positive correlation or not, the researcher used Pearson Product Moment through SPSS 20.0 for windows for hypothesis 1 and hypothesis 2. The value of rxy, then is compared with product moment formula at significance of 5%, and N = the number of the

students. If rxy is greater that rt (rxy>rt), it means that Ho is rejected and Ha is accepted . Then, the researcher used regression to test hypothesis 3. If significant F change < 0.05, it concluded that Ho is rejected and Ha is accepted.

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