CHAPTER III

RESEARCH METHOD

This chapter consists of some principle components of the research methods used in this research. They are research design, population and sample, research instruments, data collection technique, and data analysis technique.

A. Research Design

In this research, the researcher uses correlation field study design. Since the aim of correlation field study design is to assess the extent of the relationships (correlation) between independent variables and dependent variables[1]. Correlation field study design is chosen as the design of this research, automatically this research is quantitative research.

According to Aliaga and Gunderson cited in Daniel states that quantitative research is "explaining phenomena by collecting numerical data that are analyzed using mathematically based methods (in particular statistics)"[2]. The quantitative data of the research which is used in this design is the correlation study. The phenomena explained in this research are Multiple Intelligence score and proposal writing score by students in the sixth semester of English Teacher Education Department, especially who are in the

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[1] Tharenou Phyllis, Ross Donohue, Brian Coper. *Management Research Method* (New York: Cambridge University Press, 2007), 46.

[2] Daniel Muijs, *Doing Quantitative Research in Education*, (Sage Publication Ltd, 2004), 1

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proposal writing class. Then the use of correlation design is for knowing the relationship between both variables.

There are two variables in this research. The first is independent variable, independent variable is variable that occurs naturally; there is no manipulation or control over it (influence of dependent variable). The independent variable is Multiple Intelligence score and the symbol is X. The second is dependent variable. Dependent variable is variable which is influenced by independent variable (output). The dependent variable is proposal writing score and the symbol is Y.

B. Population and Sample

Population is generalization area that consists of object/subject. It has special quality and characteristics based on the criteria decided by researcher, then to be learned and concluded[3]. Population in this research is the sixth semester students of English Teacher Education Department in proposal writing class. The total populations are 83 students. If the research population is less than 100, the sample is taken is all of them. On the other hand, if the research population is more than 100, then the sample that is taken between 10-15% or 20-25% or more[4]. Based on the statements, the researcher decides to obtain the score of Multiple Intelligence and proposal writing from all the

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[3] Prof. Dr. Sugiyono, *Statistika untuk Penelitian* (Bandung: Alfabeta, 2013), 61

[4] Suharsimi Arikunto, *Prosedur Penelitian Pendekatan Praktek*. (Jakarta: PT Raja Grafindo Persada, 2010). 134

students in the fifth semester students, since the the larger of the recipients is more representative the result of the data.

C. Research Instruments

The researcher uses some instruments for this research as follows:

1. Test

The test is a set of stimulation which is given by the researcher to the respondents in order to get the answer that can be used as the base of determining the score[5]. The instrument is adapted from V Chislett MSc and A Chapman which enable the researcher to measure MI score of students individually[6]. This test published in 2005-2006 will be used by the researcher to determine students' MI score since the items in the test are arranged based on Howard Gardner's MI model.

2. Study Document

For collecting the data of students proposal writing score, the researcher uses study document which is obtained from the lecturer of proposal writing and then analyze the document to get the score of students' proposal writing.

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[5] S. Margono, *Metodologi Penelitian Pendidikan*. (Jakarta: PT. Rineka Cipta,1997), 170.

[6] Chisslett, V – Chapman, A. (2005). Free Multiple Intelligences test, from (Http://www.businessballs.com/howardgardnermultipleintelligences.htm#multipleintelligences tests, accessed on December 05, 2014).

D. Data Collection Technique

The first step to collect the data is choosing the participants. The participants of this research are the sixth semester students who took proposal writing class in the previous semester. The next step is choosing the instrument. The instrument will be used in this research is questionnaire (scaling questions questionnaire) and study document.

The researcher will collect the data from the fifth semester students by giving the questionnaire (scaling questions questionnaire) for obtaining the students' Multiple Intelligence score. For collecting the data of proposal writing, the researcher chooses study documents as the technique. This technique will help the researcher to study the proposal writing score of the students after obtaining the score of students' final exam of proposal writing from the lecturer of proposal writing.

To answer the research question, "What is the correlation between the students' multiple intelligences and the students' proposal writing score?" is required the students' Multiple Intelligence score and students' proposal writing score. The researcher gathers it by distributing the questionnaire of MI test to all of the sixth semester students in English Teacher Education Department. For collecting the students' proposal writing score, the researcher obtains it from the lecturer of proposal writing, then uses study document technique to analyze the proposal writing score.

According to Karl Pearson cited in Anas, states that the formula of Pearson Product Moment is one of the correlation technique which is mostly used to correlate among two variables[7]. It is required seek the correlation between two variables. The first variable is students' Multiple Intelligences score and it is called independent variable. Another variable is the students' proposal writing score and it is called dependent variable.

E. Data Analysis Technique

After collecting the data of students' multiple intelligences and students' proposal writing score. The researcher analyzes, examines, interpretes and concludes the result of the research. For general of the technique of analysis the data is done these following steps[8].

1. Preparation

   In this step, the data about students' multiple intelligences and students' proposal writing score are checked the accomplishment and choose the data needed or not.

2. Tabulation

   In the tabulation, the data of students' multiple intelligences and students' proposal writing score are classified and put in a table. It will be known by seeing chapter IV.

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[7]Anas Sudjono, *"Pengantar Statistik Pendidikan"* (Jakarta: Rajagrafindo Persada, 2011), 190.

[8] Suharsimi Arikunto, *"Prosedur Penelitian Pendekatan Praktek"*............ 235

3. Application of the formula suitable with the approach of the research.

After collecting the data, the researcher will analyze and measure it by using descriptive quantitative technique that is correlation technique. Because the data will come from questionnaire and which is counted and scored by numeric. Then calculate it using correlation product moment technique. Product of the moment correlation is one of the correlation techniques which correlate among two variables. The coefficient of correlation computed by this method is known as Product Moment coefficient of correlation symbolically represented by 'r'[9].This technique is developed by Karl Pearson cited in Anas, That is why called *Pearson Correlation Technique*[10].

Then, the researcher formulates the data using index correlation number (r_{xy})[11]:

$$r_{xy} = \frac{N\left(\sum XY\right) - \left(\sum X\right)\left(\sum Y\right)}{\sqrt{\left(N\left(\sum X^2\right) - \left(\sum X\right)^2\left(N\left(\sum Y^2\right) - \left(\sum Y\right)^2\right)\right)}}$$

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[9] Kultur Singh, *Quantitative Social Research Method*. (New Delhi: Sage Publications, 2007), 307.
[10] Anas Sudjono, *"Pengantar Statistik Pendidikan"* .... 190.
[11] Prof. Dr. Sugiyono, *Statistika untuk Penelitian*.............................. 228

Note:

r_{xy} = Correlation coefficient of variable X and Y

N = Number of cases

x = Independent variable (students' MI score)

y = Dependent variable (students' proposal writing score)

Σxy = The sum of the product of paired score multiplication of x and y scores for each student

Σx = The sum of x (students' MI score)

Σy = The sum of y (students' proposal writing score)

Σx^2 = The sum of square of students' MI scores

Σy^2 = The sum of square of students' writing propoal scores

$(\Sigma x)^2$ = The square of the sum of students' MI scores

$(\Sigma y)^2$ = The square of the sum of students' proposal writing scores

After collecting the data, the researcher looks for x and y, the data included to table of correlation. The output can be included to

r table to know the output of coefficient correlation is significant or not (can be generalization).

In t table, the researcher uses the standard of significance of 0, 05 or 5% (the reliability is 95%). The output of that can be conclusion with looking at that, when arithmetic r is more than r table means Ho is pushed way and Ha is accepted and the conclusion is "there is correlation and vice versa" and could be written:

Ho : p = 0

Ha : p ≠ 0^{12}

The coefficient correlation which got from that formula is interpreted based on the guidance Sugiyono's book. It shows the interval of coefficient and the level of relationship between the two variables below[13].

Table 3.1,

Coefficient Correlation

Interval of Coefficient	Relationship Level
0,00 - 0,199	Very weak
0,20 - 0,399	Weak

[12]Anas Sudjono, "*Pengantar Statistik Pendidikan*...................... 218

[13] Sugiono, *"Statistik Untuk Penelitian"* (Bandung: Alfabeta, 2007), 231.

0,40 - 0,599	Enough
0,60 - 0,799	Strong
0,80 - 1,000	Very strong

The correlation coefficient has some important properties. Mark Belnaves and Peter Caputi explain that the magnitude of the correlation coefficient indicates the strength of the relationship between the variables. The values of the correlation coefficient can range from -1 to +1. A coefficient close to +1 or to -1 indicates a strong relationship between two variables. Scores closes to zero indicated the absence of a relationship between the two variables. The variables are positively related, if the coefficient has positive sign[14].

The researcher also uses SPSS 16 as the application for this research in order to make the calculation easier and more valid. The level of significance 0,05 is used and the value of sig from output of SPSS. The value of sig is higher than the level of significance, it means that the null hypothesis is rejected and the alternative hyphothesis is accepted (there is significant correlation). If the value of sig is lower than the level of significance, it means that the null hypothesis is accepted and the alternative hypothesis is rejected

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[14] Mark Balnaves and Peter Caputri, *Introduction to Quantitative Research Methods an Investigative Approach.* (London: SAGE Publication Ltd, 2001), 155.

(there is no significant correlation). The table of data collection and analysis

step more detail shows as follow:

Figure 3.2,

The step of data collection and analysis

(1) Respondent gathered
The sixth semester students

(2) Score collected	
Multiple Intelligences Test	Final Score of Proposal writing

(3) Score analyzed and correlated using SPSS 16	
Multiple Intelligences Score	Proposal writing Score

The Correlation MI and Proposal writing obtained

From the table above, the researcher divides into three steps for

analysing the data. The first step is gather the respondent which is in this

research is the sixth semester students. The second is the researcher collects

the data of students' multiple intelligence score from multiple intelligence

test and for proposal writing score is from final score of proposal writing.

And the third step is analysing tha data. For analysing the data, the researcher uses SPSS 16.

The score of multiple intelligences and proposal writing are put into data view. Then, choose analyze → correlate-bivariate. Bivariate correlation is chosen, since that function is to know the correlation between two variables and also can be used to find variable that has more than one sub variable as multiple intelligence. Then, automatically the result of correlation between multiple intelligences and proposal writing are presented.