

Chapter Three

Research Methodology

In this chapter, the researcher discusses the research methodology used on this research. This chapter includes the research design, research setting, population, sample, sampling, and data collection method and data analysis.

Research Design

The researcher adopted the quantitative design. Creswell (2012) stated that quantitative research has some characteristics that describe an exploration issue through a portrayal of examples or requirement for an illumination of the relationship among factors. Quantitative research puts forth objective expression, examine questions, speculations, gathers numeric information, breaks down patterns, contrast gatherings or relates factors utilizing measurable investigation. Kumar (2011) proposed that quantitative design is a research design which has the characteristics of a structured research. Based on these theories, the researcher can deduce that quantitative design is a research design that gathers some numeric information, breaks down patterns, gathers or relates factors using measurable investigation, describes an exploration issue through a portrayal of examples or requirement for an illumination of the relationship among factors. Therefore, quantitative research was appropriate to be applied on this research, because the characteristic of quantitative research is relating variables with statistical analysis. It was suitable since the

researcher gathered information from a large number of people, and the information was in the form of numbers.

The focus of this research is to find out the correlation between two variables, in which variable 1 is personality type and variable 2 is academic achievement which in this case is the GPA. The quantitative method used by the researcher in this study was correlational design. The researcher chose this method, because correlational design focuses on analyzing two or more variable, and it helped the researcher to find out about the relationship between variables. Creswell (2012) proposed that correlational design is a statistic test used to find out or decide the relationship between two or more variables. Correlational design has two types: explanatory design and prediction design. In this study, the researcher used explanatory design. Creswell (2012) argued that explanatory design is a correlational design type which aims to find out about the relationship between two variables. The researcher chose explanatory design because the researcher wants to find out the correlation between two variables. The two variables are students' personality type and academic achievement.

Research Setting

The researcher decided to conduct this research at English Language Education Department in one of a private university in Yogyakarta. The researcher chose this department as the setting because there is no under graduate student of ELED in one of a private university in Yogyakarta that investigated the correlation

between personality type and academic achievement, with the hope that the result of this study can give more information about students' personality to students and lecturers. The second reason is that the researcher was a student at English Language Education Department at one of a private university in Yogyakarta so it was more accessible for the research purposes. The researcher is familiar with the field used as the research setting. The researcher conducted the data on November up to December 2018. The researcher required two weeks to collect the data.

Research Population

Population is the total of the object or the subject of the research in the environment that has been specified by the researcher. Luthfi (2017) said that population is the completeness of an element that consists of living beings or objects that are evaluated by the researcher.

In this study, the researcher determined 208 students at English Language Education Department in one of a private university in Yogyakarta batch 2017 as the population in this research. The researcher chose students batch 2017 because they took fulltime courses in their semester and researcher is needed a minimum sample of over a hundred. It eased the researcher to collect the data. The researcher is not chosen ELED students at one of private university in Yogyakarta batch 2018 because those students are at the first semester and don't have GPA score. The researcher is not chosen ELED students at one of a private university in Yogyakarta batch 2016 because the population is under a hundred

Research Sample

After the researcher chose the research population, the researcher chose a sample in this research. The sample is one part in the population. Oswala (2011) said that sample is one unit from population. The population in this research were 208 students of English Language Education Department in one of a private university in Yogyakarta batch 2017. After that, the researcher determined the sample in this research. The researcher determined the amount of the sample based on Cohen, L, Manion, L, & Morrison, K (2011)'s table which showed that the total population of the research is 208 with a confidence interval of 5%, then the result is 132 students of ELED in one of a private university in Yogyakarta batch 2017 as sample in this research.

After determining the amount of the sample, the researcher took the data from the sample that have already been specified by using simple random sampling. Creswell (2012) argued that simple random sampling is a technique where every individual in the sample has an equal chance to be chosen as a sample. The researcher did several steps in determining the sample in this research. First, the researcher determined the total number of student population at English Language Education Department in one of a private university in Yogyakarta batch 2017. The total number of student at English Language Education Department of Private University a private university in Yogyakarta batch 2017 were 208 students. After determining the

total population, the researcher conducted the sample of this study. The researcher utilizes random sampling technique from the student's class from class A-F as the sample until the number of samples is fulfilled

Data Collection Technique

In conducting this research, the researcher used two types of instruments. Questionnaire and the GPA of students are the instruments used in this study. The explanations of the instruments are presented below:

Questionnaire

The researcher used a questionnaire to assess the students' personality type. Kumar (2011) said that questionnaire is an instrument that contains a list of questions to be answered by the respondent. The researcher chose to use questionnaire, because the researcher wanted to find data in the form of numbers. The questionnaire used by the researcher is adopted from Tarmidzi (2012). In the previous research, the value of validity and reliability is $r = 0.852$ which mean that the questionnaire is valid and reliable. The researcher did not conduct validity and reliability test because the researcher is adopted the questionnaire from Tarmidzi (2012) and the researcher doesn't change the item questionnaire. The number of items on the questionnaire is thirty.

The questionnaire used in this research was written in Bahasa Indonesia. The researcher used the Indonesian language in the questionnaire, because it eased the respondents in answering any questions or statements on the questionnaire given by the researcher. Using Indonesian language also avoided misunderstanding. The researcher used a rating scale for the respondent of the questionnaire. Cohen, L., Mannion, L., & Marrison, K. (2011) stated that the rating scale is a technique that has provided a variation of response on a statement or a question that has been given by the researcher in the form of a questionnaire. The responses in use in the questionnaire consisted of 4 different ratings (never, seldom, often, and always). This helped the respondents to easily determine the response in the questionnaire.

Table 2. Detail of Questionnaire Statements

The Detail of Questionnaire Statements		
Description	Statements	Total
Introvert	3, 4, 5, 6, 7, 8, 11, 12, 13, 16, 17, 18, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30	24
Extrovert	1, 2, 14, 15, 19, 20	6
Total	30	30

Student's Grade Point Average (GPA)

This research used the student's GPA as an instrument to find out the number or level of academic achievement of the student. The researcher asked the administration office of ELED in one of a private university in Yogyakarta for the students' GPA data. The cumulative GPA can be seen in the table below:

Table 3. GPA Categories

The GPA Categories	
Grade Point Average (GPA)	Description
3.51 - 4.00	With compliment/ <i>Cum laude</i>
2.75 – 3.50	Very satisfying
2.00 - 2.75	Stratified

This table shows that there are three categories. First is stratified, very satisfying, very good/*Cum laude*. The table was used for categorizing students' GPA level.

The Procedure of Data Collection

The researcher searched the questionnaire on the internet. The researcher chose one questionnaire that is appropriate with the study. After that, the researcher

adopted all of the items of the questionnaire because all of the items of the questionnaire is compatible with this study. The researcher shared the questionnaire to the respondent via Google form. The researcher used social media such as Instagram, WhatsApp, and Line to share the questionnaire. The researcher is sent one by one direct message to students until the sample target is met by 132 samples. After the researcher attained the data, the researcher analyzed the data using Microsoft Excel and SPSS version 22.

The second instrument used in this research was the students' GPA score. The researcher requested a letter to the official office. After the letter was received, the researcher asked permission from the head of the department and the supervisor to get the data of GPA score. After that, the letter was given to the official office and the GPA scores were attained. After receiving the document, the researcher analyzed the data using Microsoft Excel and an analysis application.

Data Analysis

There are several methods that can be used to analyze data in quantitative design, which are descriptive statistics and inferential statistics. Cohen et al. (2011) argued that descriptive statistic is quantitative engineering data retrieval on a useful design to know data frequencies, central tendency (means, medians, modes) and

dispersal (standard deviation and range). The researcher used descriptive statistic to seek the mean.

In addition, the researcher also used inferential statistic. Creswell (2012) purposed that inferential statistic is a technique used to know an endorsement or errors of hypothesis. The researcher also used Pearson's Product Moment Correlation (r) in this research. Pearson's Product Moment Correlation was used by the researcher to assist the researcher in analyzing the data and answering the research questions. Pearson's Product Moment Correlation was used to investigate the correlation between student personality type and academic achievement at ELED in one of a private university in Yogyakarta batch 2017. To analyze the data which were in the form of numbers, the researcher used SPSS version 22.

The first research question is about the student's personality types at ELED in one of a private university in Yogyakarta batch 2017. Firstly, the data of student's personality type from the respondent's answer was inputted to Microsoft Excel. The maximum value of students' personality type is one hundred (100) and the minimum value is forty - eight (48). The researcher categorizes students' personality type into two types. The two students' personality types are introvert and extrovert. Supranto's formula (2006) is used to make two categories of personality types. The formula is as follow:

$$C = \frac{\text{Maxvalue} - \text{Minvalue}}{N}$$

C= class width

N= the number of classes

Maxvalue= the maximum value

Minvalue= the minimum value

$$C = \frac{100 - 48}{2}$$

$$C = \frac{52}{2}$$

$$C = 26$$

The result shows that the range value of each personality type is 26. The detail of students' personality types is as follow:

The students' personality types	
Score students personality type	Description
74 – 100	Extrovert
48 – 73	Introvert

The second research question is about students' academic achievement at ELED in one of a private university in Yogyakarta batch 2017. The researcher also

used descriptive statistics. Supranto's formula (2006) is used to determine the level of academic achievement into 3 levels. The three levels are namely good, moderate, low. The formula is as follow:

$$C = \frac{\text{Maxvalue} - \text{Minvalue}}{N}$$

C= class width

N= the number of classes

Maxvalue= the maximum value

Minvalue= the minimum value

$$C = \frac{4.00 - 1.63}{3}$$

$$C = \frac{2.37}{3}$$

$$C = 0.79$$

The maximum score of students' academic achievement is 4.00 and the minimum score is 1.63. After analyzing the level of students' academic achievement, the results

show that the range of each level students' academic achievement is 0.79. The detail of level academic achievement is as follow:

Table 5. GPA Categories

The GPA Categories	
Grade Point Average (GPA)	Description
3.22 - 4.00	Good
2.43 - 3.21	Moderate
1.63 - 2.42	Low

For the last research question, the researcher used inferential statistic to find out the about the correlation between students' personality type and academic achievement. The researcher used inferential statistic to measure the hypothesis and whether the hypothesis was rejected or accepted. Before the researcher conducted inferential statistic, the researcher did a normality test. According to Cohen, Manion, & Morrison (2007), the normality test is a test to measure whether or not the data is normal. In conducting this research, the researcher used Pearson's Product Moment Correlation. Pearson's Product Moment Correlation was used investigate the correlation between student's personality type and academic achievement. Cohen, et al. (2011), p. 345 said that coefficient statistics with a significance value or p-value < 0.05 level means that the variables are correlated.