Chapter Three

Research Methodology

This chapter presents the method of the study. This chapter will discuss about the research design. The second point is research setting. Then, it includes research population and sample. The next point is research instrument, data collection method, validity and reliability, normality test and data analysis. This chapter also provides some literatures to support the research methodology.

Research Design

This study has two variables, the first variable is students' intrinsic motivation and the second variable is the students' academic writing skill. The aim of this study is to know the correlation between intrinsic students' motivation and students' academic writing skill. The researcher used quantitative method to investigate the correlation between students' intrinsic motivation and students' academic writing skill and to analyze the trends, numeric data, and statistical analysis. According to Creswell (2012), quantitative method is used to identify the trends of the issues and to declare the variable that affect each other. Specifically, this study used correlational research design to measure the degree of relationship between students' intrinsic motivation and their academic writing skill. As mentioned by Creswell (2012), "correlational design is a statistical test to determine the tendency or pattern for two (or more) variables or two sets of data to vary consistently" (p. 338).

Research Setting

This study took place in English Language Education Department of higher education institution in Yogyakarta. The reason why choosing this university was because the college provided an academic writing course in the curriculum. The curriculum provided an academic writing from the first semester until sixth semester. In the sixth semester, the students take Language Research course. The final task of Language Research making *skripsi* proposal. In addition to the research setting, the data were collected in June – July 2018.

Population and Sample

This part discusses of population and sample. Population is the biggest part of sampling. Sample is subset of population.

Population. To collect the data, the researcher needed to know the population of the students. Population is the biggest part of sampling. The population of this study was an active student in batch 2014 of English Language Education Department in a university in Yogyakarta. The total students in English Language Education Department at the academic year 2017/2018 were 130 students. The researcher chose the students batch 2014 of English Language Education Department because they already had taken all the academic writing subject. They already have experience in writing. Then, the pattern of students' academic writing has seen. So, they are capable to being selected

Sample. To find out the smaller group or the subset of population, the researcher used simple random sampling to select the respondents. The respondents were selected randomly from the list of population. As stated by

Cohen, Manion, and Morrison (2011) “simple random involves selecting at random from a list of population”. Then, the respondents had equal chance to be selected. To determine the sample of the population, the researcher was used formula from Notoadmojo (2010). The formula is written below.

$$n = \frac{N}{(1 + N.d^2)}$$

$$n = \frac{130}{(1 + 130.(0.05)^2)}$$

$$n = \frac{130}{(1 + 130.0.0025)}$$

$$n = \frac{130}{(1 + 0.325)}$$

$$n = \frac{130}{1.325}$$

n = 99

n = Sample size

N = Population size

d = Level of confidence/accuracy desired (0.05)

Based on the calculating, the sample of this study was 99 students of English Language Education Department at batch 2014. The researcher randomly selected the students from class A – D as the respondents until the required numbers of respondents reached.

Research Instrument

To measure the data, the researcher used questionnaire and document analysis. Questionnaire was the first instrument needed by the researcher in order to collect the data to answer the first research question. Then, document analysis was used to collect the data from students’ academic writing score, the document was used to answer the research question number two.

Questionnaire. Questionnaire is an instrument that consists of survey information, providing structured, and numerical data. The questionnaire used Indonesian language because the students' first language is Indonesia in order to give more understanding so that the students do not misunderstood. The questionnaire was distributed using google form. The questionnaire comprised of 21 items which were about motivation in academic writing. The respondents only needed to give checklist on the likers scale. The researcher developed 4 point of likers scale. The scales are Strongly Agree (*Sangat Setuju*/SS), Agree (*Setuju*/S), Disagree (*Tidak Setuju*/TS), and Strongly Disagree (*Sangat Tidak Setuju*/STS). The criteria of questionnaire item as presented below:

Table 3.1 The Categories of Questionnaire Items

Option	Value
Sangat Setuju (SS)	4
Setuju (S)	3
Tidak Setuju (TS)	2
Sangat Tidak Setuju (STS)	1

Document. The second instrument was the document of students' academic writing skill score. It is to know the level of students' academic writing skill. Then, the researcher used the document of language research subject. The range score of language research is 1 for lowest score and 4 for highest. Then, the score of language research include soft skill.

Data Collection Procedure

This part contains sub-category such as questionnaire and document. The questionnaire used to answer the research question number 1 and the document used to answer the research question number 2. There are some procedures that the researcher did to collect the data in this research.

Questionnaire. First, the researcher looked for the questionnaire in the internet. The researcher chose two questionnaires that are relevant to this study. After that, the researcher selected the items that were suitable with this study. The questionnaire was in fact adapted from Payne entitled development of the academic writing motivation questionnaire and from self-assessment of English writing skills and use of writing strategies. Then, the researcher asked several lecturers to do an expert judgment. Furthermore, the researcher used google form to distribute the questionnaire through the respondents. Before that, the researcher used mobile phone to share the link of the google form. The researcher contacts the respondents one by one until the respondents answer the questionnaire. After getting the data, the researcher analyzed the questionnaire using an application analysis.

Document. The second instrument that researcher used the document of score academic writing in the Language Research subject. The researcher asks the letter from official office with the permission from the supervisor and the head of department. After that the letter was given to the official office to ask the score of academic writing. After get the document, the researcher analyzes using an application analysis. The range score of academic writing is four (4) for highest

score and one (1) for lowest score. This study using final score include final project that make proposal *skripsi* and soft skill.

Validity and Reliability

This study used instrument validity and reliability. Instrument validity used to check whether the data instrument is valid or not. Then, instrument reliability used to make sure the data reliable and trustworthy.

Instrument Validity. It is important to keep the data clear by using instrument validity to avoid bias. Instrument validity is an important key of effective research (Creswell, 2012). The researcher also used Aiken test to make sure the data were valid. Then, the instrument was given to the validators. The validators shall give score (1-4), the scales were 1 for not relevant, 2 for less relevant, 3 for relevant, and 4 for very relevant. After that, the researcher analyzed the data to know whether the items are valid or not. In this part, the researcher used Aiken test to measure the data of validity. The item was valid if the score is 0.4 > 0.8. If the score shows < 0.4, it meant that the item was not valid. Then, if the score showed between 0.4 until 0.8 or more, it means that the item was valid. After analyzed using Aiken test in Microsoft excel the value is 0.8. This means that the instrument was valid because the score is 0.8.

Then, the data instrument was analyze using KMO and Bartlett’s test in an application analysis. The instrument represented that the data instrument was 0.799. It meant that the data instrument was high. The table below showed the result of KMO and Bartlett's Test.

Table 3.2 KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.799
Bartlett's Test of Sphericity	Approx. Chi-Square	693.883
	Df	210
	Sig.	.000

Instrument Reliability. To make the data reliable and trustworthy, the researcher used instrument reliability. Instrument reliability is essentially a synonym for dependability, consistency and reliability overtime, over instrument and over groups of respondents (Creswell, 2012). The researcher used an application data analysis to measure that the instruments were stable and consistent. The indicator of reliability by Cohen et al. (2011) is presented below:

Table 3.3 The Categories of Reliability	
Score	Category
>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

After analyzing the reliability using an application analysis, the result shows that the instrument was reliable. The value of instrument reliability was 0.874 it meant that the instrument was highly reliable. According to Cohen et. al

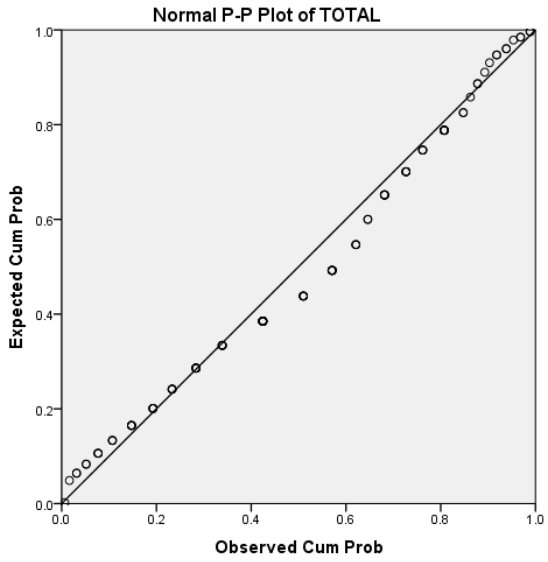
(2011), the instrument is reliable if the value is > 0.70. The table below indicates the data instrument using reliability statistic.

Table 3.4 Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.874	.878	21

Normality Test

To check whether the data were normal or not, the researcher used normality test to analyze the data. This study was used skewness and P-P plot in an application analysis to analyze the data. In the P-P plot, the data called normal if the data close each other in one line. Based on the figure below it can be seen that the data is normal because the data was close each other in one line.

Figure 3.5 Normal P-P Plot



Another way to check whether the data is normal or not it can use skewness in an application analysis. Considering to the skewness that the data curve is -1 until +1 which mean the data is normal. The table below indicate that the data is normal because the questionnaire item shows that the curve is -1 and +1.

Table 3.6 Descriptive Statistic

Items	Mean	Median	Std. Deviation	**Skewness**	Std. Error of Skewness
Q1	3.48	4.00	.541	**-.333**	.243
Q2	3.39	3.00	.568	**-.252**	.243
Q3	2.79	3.00	.760	**-.192**	.243
Q4	3.36	3.00	.597	**-.335**	.243
Q5	3.44	3.00	.557	**-.318**	.243
Q6	2.89	3.00	.713	**-.180**	.243
Q7	2.86	3.00	.685	**-.201**	.243
Q8	2.78	3.00	.790	**-.088**	.243
Q9	3.00	3.00	.589	**.000**	.243
Q10	2.97	3.00	.646	**-.667**	.243
Q11	2.74	3.00	.632	**-.220**	.243
Q12	2.40	2.00	.755	**.479**	.243
Q13	3.19	3.00	.547	**.089**	.243
Q14	3.10	3.00	.678	**-.326**	.243

Q15	2.98	3.00	.606	**.008**	.243
Q16	3.47	4.00	.560	**-.434**	.243
Q17	2.84	3.00	.842	**-.104**	.243
Q18	3.11	3.00	.683	**-.535**	.243
Q19	3.03	3.00	.630	**-.272**	.243
Q20	3.00	3.00	.655	**-.445**	.243
Q21	3.30	3.00	.597	**-.220**	.243

Data Analysis

To analyze the data, the researcher used an application data analysis to measure the data. The researcher used descriptive and inferential statistic to carry out the answer of the research question. Referring to Cohen et al. (2011) "descriptive statistic is described and present data" (p. 606). The descriptive statistic shows the score of the result. Then, the descriptive statistic was used to answer the research question number one and number two.

The interval formula as follows:

$$c = \frac{Xn - X1}{n \text{ category}} \longrightarrow c = \frac{4 - 0}{4} = 1$$

c: assumption of the number (class width, class size, class length)

n category: number of category

Xn: the maximum value

X1: the minimum value

The table below shows the interval of students' intrinsic motivation based on the formula above.

Table 3.7 The Categories of Students' Intrinsic Motivation	
Interval	Category
3.03 > 4.00	High
2.02 – 3.02	Moderate
1.01 – 2.01	Low
0.00 – 1.00	Very Low

Furthermore, to know the level of students' academic writing, the researcher used the academic guideline book. The table below indicate the categories of students' academic writing skill score.

Table 3.8 The Categories of Students' Academic Writing Score	
Interval	Category
3.51 – 4.00	Very Good
2.76 – 3.50	Good
2.00 – 2.75	Satisfying
< 2.00	Poor

On the opposite, inferential statistic shows the correlation. According to Cohen et al. (2011) “inferential statistic is strived to make inferences and prediction based on the data gathered” (p. 606). It was used to answer the question number three. The product moment correlation will correlate the two variables, students’ intrinsic motivation as the independent variable and their academic writing as the dependent variable. According to Sugiyono (2012), the categories of the correlation coefficient of variable one and variable two can be seen in the table.

Table 3.9 Correlation Coefficient Interpretation

Interval	Correlation
0.80 – 1.00	Very high
0.60 – 0.799	High
0.40 – 0.599	Enough
0.20 – 0.399	High
0.00 – 0.199	Very low