CHAPTER III

RESEARCH METHOD

This chapter deliberates the methodology that is used to conduct this research by the researcher. It explains about the research method, population and samples, data collecting techniques, and data analysis.

3.1. Research Design

This research uses a survey study. According to Creswell (2012) survey research design is methodology in quantitative research where the researchers manage a survey to the sample or to the whole population to describe the attitudes, opinions, behaviors, or characteristics of the population. Therefore, this research uses a questionnaire as the instrument to survey on students' motivation.

3.2. Population and Sample

According to Hadi (2015) all residents intended to be investigated are called populations or *universum*. Population is an object or subject that resides in an area and meets certain conditions related to the problem in the study (Riduwan, 2016). A population is a group of individuals who have the same characteristics (Creswell, 2012). The populations of this research will be all of students of English Education Department, Islamic University of Indonesia from batch 2014 until batch 2017, where the students have experienced learning English by using Google Classroom minimum in one semester. The population of this study, there

are 316 students; 45 students in batch 2014, 72 students in batch 2015, 91 students in batch 16, and 108 students in batch 2017.

According to Arikunto (2014) sample is a subgroup or representative of the population of the research. Named sample research if the researcher intends to generalize the results of the sample research. What is called generalizing is to raise the conclusions of the research as something that applies to the population. The technique of selecting sample for this research is using *probability sampling* that is the technique of selecting sample that gives the same opportunities toward the population. In *probability sampling,* the researcher selects individual from the population who are representative of the population (Creswell, 2012, p. 142).

The method sample for this research is using *stratified sampling*. This method is used to select the sample if the population has members or elements that are not homogenous and stratify proportionally. According to Arikunto (2014) stratified samples are used if the researcher believes that there are differences in characteristics for existing strata, while these differences affect variables. The other word, stratified is stratifying the population on some specific characteristic and then using random sampling (Creswell, 2012).

In the random sampling, the researcher "mix" the subjects in the population so that all subjects are considered the same, so the researcher gives each subject the same rights to get the chance to be selected as a sample (Arikunto, 2014). It is also accordance to Cresswell (2012) states that researcher selects the participants for the sample, so any individual has an equal probability of being selected from the populations (Creswell, 2012). Students that will be the

target sample of study uses 5% of error rate. To calculate the number of sample from the population, this research is using Slovin's formula. The Slovin's formula as below:

$$n = \frac{N}{1 + N e^2}$$

Explanation:

n   = Number of sample

N   = Population

e   = Error rate (5% = 0.05)

In determining the number of samples to be selected, the researcher uses an error rate of 5%, because in each study it is impossible to achieve 100% perfect results. The bigger number of the error rate, lesser number of sample size. The number of population for this research is 316 students, with the above calculation, so the results as below:

$$n = \frac{316}{1 + (316)(0.05^2)}$$

$$n = \frac{316}{1.79}$$

$$n = \frac{316}{1.79}$$

$n = 176{,}536$ or 177 students

So, from the members of the population taken as a sample are as many as 176,536 respondents. In calculations that produce fractions (there is a comma) should be rounded up, it is safer than less below it. Then the sample used based on the above population is 177 students. Based on population data taken from batch 2014, batch 2015, batch 2016, and batch 2017, then the sampling must also be calculated every batch strata. The calculation of sampling using stratified sampling technique is presented in the table below:

Table 3.1 The Calculation Data of Stratified Sampling

Batch	Calculation of Stratified Sampling	Results
2014	45/316 x 177	25
2015	72/316 x 177	40
2016	91/316 x 177	51
2017	108/316 x 177	61
Totals (n)		*177*

3.3. Data Collecting Technique

3.3.1. Data Collecting by Using Questionnaire

Questionnaire is a technique of collecting data by giving a set of questions or written statements to the respondent to answer. Questionnaire is an efficient data collection technique when researchers know exactly which variables will be measured and know what to expect from respondents. Questionnaires are also suitable for use when the number of respondents is large enough and spread over a large area (Sugiyono, 2011, p. 142). He continues that there are two types of questions in the questionnaire, namely opened and closed. Opened question is the question that the respondent expects to write the answer in the form of a

description of a thing. Closed question is a question that expects a short answer or expects respondents to choose one alternative answer to each available question. This research uses closed question, which is respondents are asked to choose one alternative answer for each question or statement.

3.3.2. Research Instrument

Research instrument is a tool for measuring, observing, or documenting the quantitative data (Creswell, 2012). Basically, there are two types of instruments; instrument for test which is used to measure academic performance, and instrument for non-test which used to measure attitude. The answer for a test instrument is "wrong or right" answers. Otherwise, there is no wrong or right answer for a non-test instrument, only "positive or negative" (Sugiyono, 2011).

The instrument in this research uses non-test instrument which there is no right or wrong answer. The instrument in this research is Instructional Material Motivation Survey (IMMS) developed by John Keller (2010). The IMMS has four subscales, namely attention, relevance, confidence, and satisfaction. Keller (2010) states that these subscales can be used separately and scored independently.

The content of the original of IMMS questionnaire consist of 36 questions; Attention 12 questions, Relevance 9 questions, Confidence 9 questions, and Satisfaction 6 questions. However, the researcher omits some questions, because those questions are irrelevant to the focus of this research. So, there are only 15 questions can be used to this research; Attention 7 questions, Relevance 1 question, Confidence 5 questions, and Satisfaction 2 questions. The IMMS

questionnaire content and scoring guide are below. The Instructional Material Motivation Survey (IMMS) table of contents and scoring guide below only shows the category for each question. So, this table facilitate researcher to categorize each question, is it Attention, Relevance, Confidence, or Satisfaction.

Table 3.2 IMMS Contents and Scoring Guide

Attention	Relevance	Confidence	Satisfaction
2	11	1	9
6		3 (reverse)	13
7 (reverse)		4	
10 (reverse)		5 (reverse)	
12		8	
14			
15 (reverse)			

As mention on the table above that there are only 15 questions can be used; 10 positive statements and 5 negative statements (reverse). To measure students' motivation, the questionnaire used in this research uses Likert scale with 5 alternative answers. Each instrument item has gradation from very positive to very negative. To fill this questionnaire, students have to choose one answer from 5 alternative answers for each item. There is no right or wrong answer. For the positive statements, the point of "strongly agree" is 5 and "strongly disagree" is 1. The otherwise, for the negative statements (reverse), the point of "strongly agree" is 1 and "strongly disagree" is 5. Based on the tables 3.3 and 3.4 below, it can be seen that the Likert score of the negative statements are reverse of the Likert score for positive statements. For more details, the score for Likert scale for the questionnaire as follows:

Table 3.3 The Score for Likert Scale for Positive Statements

Likert Scale	Score
Strongly Agree	5
Agree	4
Neutral	3
Disagree	2
Strongly Disagree	1
Note. The score for positive statements are the opposite of negative statements score	

Table 3.4 The Score for Likert scale for Negative Statements (reverse)

Likert Scale	Score
Strongly Agree	5
Agree	4
Neutral	3
Disagree	2
Strongly Disagree	1
Note. The score for negative statements are the opposite of positive statements score	

3.3.3. Validity of the Instrument

Validity is a measurement that shows the levels of validity of an instrument (Arikunto, 2014). According to Sugiyono (2011) a valid instrument means that the measuring tool used to get the data is valid. A valid instrument must have internal and external validity. An instrument can be said have internal validity (rational) when the criteria in the instrument rationally have reflected what is measured. An instrument has external validity when criteria in the instrument are arranged based on the existing empirical facts. Internal validity for non-test instruments that used to measure attitudes is sufficient by meeting the validity of constructs. There are already default (standard) instruments in Social Sciences because of its validity and reliability has been recognized. And yet, the instrument of Instructional Material Motivation Survey (IMMS) has been used in many studies and has even been translated into several other languages (Keller,

2010). To test the construct validity, the researcher uses judgment expert. After the instrument is constructed, it will then be measured by experts in further consultation.

3.3.4. Reliability of the Instrument

Reliability refers to a sense that an instrument is reliable enough to be used as a data-gathering tool because the instrument is good (Arikunto, 2010). According to Keller (2010), the Cronbach's Alpha for reliability of this questionnaire is Attention 0.89, Relevance 0.81, Confidence 0.90, and Satisfaction 0.90, so the total score for the Cronbach's Alpha for this questionnaire is 0.96. The internal consistency estimates, based on Cronbach's Alpha, are satisfactory.

Table 3.5 IMMS Reliability Estimates (adapted from Keller, 2010)

Scale	Cronbach α
Attention	.89
Relevance	.81
Confidence	.90
Satisfaction	.92
Total Scale	.96

3.4. Data Analysis Technique

In the quantitative research, data analysis is an activity after data from all respondents collected. Activity in the data analysis refers to the grouping of the data based on the variables and types of respondents, tabulating the data based on the variables of all respondents, presenting the data of each variable researched,

performing calculations to answer the problem formulation, and perform calculations to test the hypothesis that has been proposed (Sugiyono, 2011).

The data of population or samples that have been collected properly if used for information purposes, reports, or advanced analysis should be arranged and presented in a clear, neat, and communicative form. In general, there are several ways to present statistical data that is often used, namely, table, graphic, diagram, group circumstances, and standard deviation (Riduwan, 2016). The technique analysis used in this research is descriptive analysis. Descriptive analysis is analyzing the data in form of sentences, tables, and diagrams (Sugiyono, 2011). The descriptive statistics will help the researcher to summarize the overall trends and tendencies (mean, median, and mode) in the data (Creswell, 2012). The central tendency is used to filter data that shows the center or the middle of the spread of data. The mean (average) of the data is estimated to represent the entire of the data in the group (Riduwan, 2016).

There are several stages in data analysis. According to Riduwan (2016) the steps of processing the data are compilation of the data, classify the data, data processing, and then interpretation of the results of data processing. The first is the compilation of the data; all existing data needs to be assembled in order to make easier to check whether all the data that is needed has been recorded. The next step is classifying the data; this step is an attempt to classify, agglomerate, and select the data based on certain classifications. The next step is data processing; in this step researcher processes the quantitative data by using descriptive analysis. The last step is interpretation of the results; in this step the

researcher interpret the results based on the interpretation of mean. The illustration of the stages in data analysis as follows:
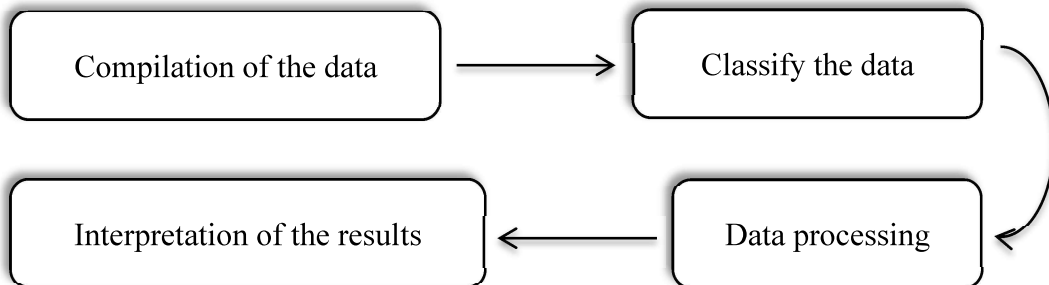

Figure 3.1. The Stages in Data Analysis (Riduwan, 2016)

In order to understand and interpret the data or the results of the questionnaire, the researcher uses the interpretation of mean by using the calculation of percent (%). The interpretation of the calculation of percent (%) is based on Riduwan (2016). According to Riduwan (2016), before calculating the percent, calculate the number of criterion (if each item gets the highest score) first. The number of criterion can help the researcher to calculate the percent score. So, the researcher is able to interpret the result of the questionnaire. The formulation of the number of criterion is: criterion = (the highest score for each item) x (number of items) x (number of respondents). As mention before that the questionnaire for this research uses Likert scale which has five alternative answers with different score. The highest score for each item is 5 and the lowest score is 1.

The first criterion is for general or the cumulative from batch 2014-2017. Based on the formulation above, that: criterion = (the highest score for each item) x (number of items) x (number of respondents). So, the results of the criterion as in the table below:

Table 3.6 The Number of Criterion for General

IMMS Dimension	Respondents	#Items	Criterion
Attention	177	7	6,195
Relevance	177	1	885
Confidence	177	5	4,425
Satisfaction	177	2	1,770
Total	*177*	*15*	*13,275*
Total	*177*	*15*	*13,275*

The second criterion is for batch 2014. Based on the formulation of the criterion, that: criterion = (the highest score for each item) x (number of items) x (number of respondents). So, the results of the criterion as in the table below:

Table 3.7 The Number of Criterion for Batch 2014

IMMS Dimension	Respondents	#Items	Criterion
Attention	25	7	875
Relevance	25	1	125
Confidence	25	5	625
Satisfaction	25	2	250
Total	*25*	*15*	*1,875*

The third criterion is for batch 2015. Based on the formulation of the criterion, that: criterion = (the highest score for each item) x (number of items) x (number of respondents). So, the results of the criterion as in the table below:

Table 3.8 The number of criterion for batch 2015

IMMS Dimension	Respondents	#Items	Criterion
Attention	40	7	1,400
Relevance	40	1	200
Confidence	40	5	1,000
Satisfaction	40	2	400
Total	*40*	*15*	*3,000*

The next criterion is for batch 2016. Based on the formulation of the criterion, that: criterion = (the highest score for each item) x (number of items) x (number of respondents). So, the results of the criterion as in the table below:

Table 3.9 The Number of Criterion for Batch 2016

IMMS Dimension	Respondents	#Items	Criterion
Attention	51	7	1,785
Relevance	51	1	255
Confidence	51	5	1,275
Satisfaction	51	2	510
Total	*51*	*15*	*3,825*

The last criterion is for batch 2017. Based on the formulation of the criterion, that: criterion = (the highest score for each item) x (number of items) x (number of respondents). So, the results of the criterion as in the table below:

Table 3.10 The Number of Criterion for Batch 2017

IMMS Dimension	Respondents	#Items	Criterion
Attention	61	7	2,135
Relevance	61	1	305
Confidence	61	5	1,525
Satisfaction	61	2	610
Total	*61*	*15*	*4,575*

After knowing the number of criterion, the next step is to determine the formula of percent (%) in order to get the calculation of the percent for identifying the students' motivation to learn English by using blended learning in terms of attention, relevance, confidence, and satisfaction (ARCS). According to Riduwan (2016), the formulation of the percent as below:

$$Percent\ (\%) = \frac{Total\ Scores\ of\ Data\ Collection\ Results}{The\ Number\ of\ Criterion} \times 100$$

The formulation of the percentage (%) above will be used for interpreting the results of the questionnaire. The interpretations of the percent (%) as follows:

Table 3.11 The Interpretation of the Percent (%)

Score of percentage	Interpretation
81% - 100%	Very High
61% - 80%	High
41% - 60%	Moderate
21% - 40%	Low
0% - 20%	Very Low

From the table shown above, the score of percentage from 0% to 20%, the interpretation is "very low". The score of percentage 21% to 40%, the interpretation is "low". The score of percentage 41% to 60%, the interpretation is "moderate". The score of percentage 61% to 80%, the interpretation is "high", and the score of percentage 81% to 100%, the interpretation is "very high".

The next is the interpretation of mean score based on Mochtari and Sheorey (2002). This only used to interpret motivation in students perceive Google Classroom in the positive and negative statements. The detailed information about the interpretation of means score as follow:

Table 3.12 The Interpretation of Mean Score

Mean score	Interpretation
3.5 - higher	High
2.5 - 3.4	Moderate
2.4 - lower	Low