CHAPTER III
RESEARCH METHODOLOGY

3.1 Research Method

Suitable research methodology is needed in every research. Research methodology can be used as guide in implementation of a research so that by using suitable research methodology, purpose of the research can be reached. The method that was used in this research is descriptive correlational with quantitative approach. According to Frankel and Wallen (2009, p. 328) correlational study is kind of research methods that in purpose to know the relationship between two variables or more without effort to affect those variables.

Furthermore, Mardalis (2010, p 26) explains that descriptive quantitative is conducted to inform the facts related with all variable that exist. From the statements above, it is concluded that descriptive correlational is kind of research method that is used to find the relationship between all variables then will be described in details about fact that happen in the field.

3.1 Population, Sample, and Sampling Technique

3.2.1 Population

Population is important part in a reseacrh. Arikunto (2013, p 173) states that population means all members which is included in a research. Similarly, Sugiyono (2011, p 80) explains that population is not only about all object and subject that is investigated, but also about the characteristic that is had by the subject. In this case, the population in this research were all of the students at eighth grade of MTsN 01 Lampung Utara Academic Year 2022/2023. The total of

population were 211 students. The total of population is listed in the following table:

TABLE 2
TOTAL OF POPULATION OF EIGHTH GRADE OF MTSN 01 LAMPUNG UTARA

CLASS	TOTAL
VIII A	28
VIII B	30
VIII C	31
VIII D	32
VIII E	32
VIII F	30
VIII G	28
TOTAL	**211**

(Source: Administrative Staff of MTsN 01 Lampung Utara)

3.2.2 Sample

In the research, sample is part of object that is investigated. Arikunto (2010, p. 174) sample is part in the research that is learnt that represent the population. Moreover, Sugiyono (2012, p. 81) state that sample is part of research that have characteristic which is represented the population. From the statements above, it means sample is part of population and have characteristic to be investigated in a research. From those statements, total of sample were based on the population which were the eighth grade students of *MTSN 01 Lampung Utara* and the total were 211 students. In this case, the researcher used *Slovin* as follows:

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

Where:

n = Total Sample

N = Total Population

e = Error Level

In *Slovin* formula, there are three level of error that can be chosen they are 5%, 10%, and 15%. The greater of error level the more sample will be taken. In this research the researcher chose 15% of error level. Thus, the calculation by using *Slovin* formula as follow.

$$n = \frac{211}{1+(211)(0.15)^2}$$

$$n = \frac{211}{1+(211)(0.0225)}$$

$$n = \frac{211}{1+4.75}$$

$$n = \frac{211}{5.75}$$

n = 36.71

The result of calculation is 36.71. Therefore, the researcher took 37 students as sample.

3.2.3 Sampling Technique

Sampling technique means technique in taking the research sample. There are many kinds of sampling technique. Arikunto (2013, p. 177) mention that kinds of sampling technique such as random sampling, stratified sample, area probability sample, proportional random sample, purposive sample, quota sample, double sample, and cluster random sampling. In this case, the researcher used proportional random sampling technique. Proportional random sampling technique means all of the students have same opportunity to be selected as

sample. In taking research sample, the researcher took 6 students from class VIII A, VIII B, and 5 students from VIII C, VIII D, VIII E, VIII F, VIII G. The research used lottery to choose the sample. All of the name of the students were written in small pieces of paper then the researcher took 6 or 5 pieces of paper randomly and the students' name who written in that paper were chosen as sample. The detail of the sample is drawn in the following table:

TABLE 3
TOTAL OF SAMPLE FROM EACH CLASS OF EIGHTH GRADE

CLASS	TOTAL
VIII A	6
VIII B	6
VIII C	5
VIII D	5
VIII E	5
VIII F	5
VIII G	5
TOTAL	**37**

3.2 Research Instrument

In a research, the researcher used tool to measure instrument that called as research instrument. Sugiyono (2017, p. 92) explains that research instrument ia as tool that the researcher used to measure the variables.

3.3.1 Research Instrument of Writing Ability

To collect the data from dependent variable (Y)—students' wriitng ability— the researcher used written test instrument in writing ability descriptive

text form. In this part, the reseacrher discuss about the conceptual definition, operational definition, and specification of writing ability.

3.3.1.1 Conceptual Definition of Writing Ability

Writing is one of skill in language which is productive and expressive that is used to communicate in non verbal form. Writing is communication activity of delivering message in written form as tool or media.

3.3.1.2 Operational Definition of Wriitng Ability

Operationally, the students' writing ability can be measured by unspoken test. In this research, the researcher obtained the score of the students' ability by using written test. The researcher chose type of written test in form of writing ability descriptive text and the researcher gave some topics then the students chose one of the topics that interest to described. The researcher assesed the students' skill in writing in five aspects such as content, organization, vocabulary, grammar, and mechanics. Each aspect had rating scale 0 until 20.

3.3.1.3 Specification of Writing Ability

From the conceptual and operational definition above, the detailed specification of writing ability instrument can be seen below.

TABLE 4

SPECIFICATION OF WRITING ABILITY INSTRUMENT

	Aspect	Indicator	Score
Writing Ability	Content	The students able to deliver a complete content or ideas.	7 – 20
	Organization	The students able to organize paragraphs, coherence, or not (introduction, content, conclusion).	13 – 30
	Vocabulary	The students able to use appropriate vocabulary suitable with the context.	2 – 5
	Grammar	The students able to use appropriate grammar that suitable with the context.	2 – 25
	Mechanics	The students able in use puctuation, spelling, or capitalization correctly.	7 – 20
Total			100

(Source: Nurgiyantoro, 2001:441)

Based on the table above, there are five aspect that was used to measure the students' writing ability they are Organize, Content, Mechanics, Grammar, and Vocabulary. Each aspect have range score and total of score is 100.

3.3.2 Research Instrument of Students' Motivation

To collect the data of independent variable (X) which is the students' motivation, the researcher used instrument in form of questionnaire. This part discusses about the conceptual definition, operational definition and specification of the students' motivation.

3.3.2.1 Conceptual Definition of the Students' Motivation

Motivation is from word *movere* from Latin that havs meaning as energy booster or encouragment from inside of person to act that is directed to get certain purpose. Motivation is impulse that come from someone that encourage them to do an activity.

3.3.2.2 Operational Definition of the Students' Motivation

Operationally, the data of the students' motivation could be obtain by using questionnaire. The researcher used the students' motivation questionnaire that consist of positive and negative statements. The kind of questionnaire was closed questionnaire that consist of 40 items In this case, the researcher used Likert Scale. According to Sugiyono (2012, p. 93), Likert Scale is used to measure group or someone's attitude, opinion, and perception about social phenomenon. The researcher used checklist Likert Scale with five alternative answer. The following is table of Likert Scale questionnaire.

TABLE 5
LIKERT SCALE OF THE STUDENTS' MOTIVATION

Alternative Answer	Score	
	Positive Statement	Negative Statement
Sangat Setuju	5	1
Setuju	4	2
Netral	3	3
Tidak Setuju	2	4
Sangat Tidak Setuju	1	5

(Source: Riduwan, 2015, p. 13)

3.3.2.3 Specification of Students' Motivation

Based on the conceptual definition and operational definition above, the detailed specification of students' motivation instrument can be seen below.

TABLE 6

SPECIFICATION OF STUDENTS' MOTIVATION INSTRUMENT

Variable	Aspect		Indicator	Positive Items	Negative Items	Total
Students' Motivation	Instrinsic Motivation	Strong willingness to learn	The students following learning process enthusiastically	1, 2, 3	4, 5, 39	6
		Willing to be good students	The students obey the students' duty	6, 7, 8	9, 10 11	6
		Students condition	The students want to practice using English	12, 13	15, 16, 40	5
	Extrinsic Motivation	Fear of Punishment	The students afraid to get punishment from teacher	18, 19, 22, 23	20, 21	6
		The role of parents	Parents of the students make the students motivated to learn	24, 25, 26	27,28	5
		The role of teacher	The teacher support the students in learning English	14, 17, 29, 30	31, 32	6
		Environment condition	The condition of environment is motivated the students in learning process	33, 34, 35	36, 37, 38	6
Total				22	18	40

Based on the table above, there are six aspect in measuring the students' motivation. Moreover, total of the statements are 40 items consist of 22 negative statements and 18 items positive statements.

3.3.3 Validity of the Instrument

Valid data is produced from valid instrument. According Sugiyono (2012, p. 121), valid refers the instruments can be measured what is have to measured. Additionally, Sugiyono (2012, p. 123) state that mentioned that there are 3 kinds of validity test such as content validity, construct validity, and external validity.

3.3.3.1 Validity of Writing Ability

To know the validity of variable the students' writing ability (y), the researcher used construct validity. The researcher arranged the writing test based on relevant theory while to get content validity the researcher asked two advisors or called as experts' judgement to determine whether the instrument can be used or not.

3.3.3.2 Validity of the Students' Motivation

To measure the validity of the students' motivation questionnaire, the researcher used construct and content validity. In construct validity, the researcher used expert judgement. Valid instrument refers to the using of the instrument is appropriate with the research data that have been measured. To test the validity of the instrument of the students' motivation, the researcher used *Pearson Product Moment* formula by Arikunto (2010, p. 213), as follows:

$$r_{xy} = \frac{n\Sigma xy - (\Sigma x)(\Sigma y)}{\sqrt{\{n\Sigma x^2 - (\Sigma x)^2\}\ \{n\Sigma y^2 - (\Sigma y)^2\}}}$$

Where:

r_{xy} = Correlation coefficient of each item score

Σx = Number sum of each item score

Σy = Number score of item

N = Number of respondent

Parameter that used by compare the result of r_{count} and r_{table}. If $r_{count} > r_{table,}$ the instrument is valid. Meanwhile, if $r_{count} < r_{table}$ it means the instrument is not valid.

3.3.4 Reliabilty of the Instrument

According to Sugiyono (2012, p. 121), reliable instrument is the instrument that will produced same data eventhough use in different ocassion.

3.3.4.1 Reliability of the Students' Writing Ability

In measuring the studetnts' writing ability instrument, the researcher used inter-rater reliability. Its is the procedure which giving score based on subjective perception toward some aspects that conducted by systematic observation in directly or indirectly. To estimate the reliability of writing test, the researcher used coefficient reliability. The number of coeeficient reliability start from 0.0 until 1.0 can be means reliable. The formula to estimate the reliability from rating done by k raters is:

$$r_{xx'} = \left(\frac{S_s^2 - S_e^2}{S_s^2}\right)$$

Where:

$r_{xx'}$ = Coefficent reliability

S_s^2 = Variance between subject that is influenced by rating

S_e^2 = Variance error (variance interact between subject and rater)

To calculate S_s^2 and S_e^2 was used formula as follows:

$$S_e^2 = \frac{\sum i^2 - \frac{(\sum R^2)}{n} - \frac{(\sum T^2)}{k} + \frac{(\sum i)^2}{nk}}{(n-1)(k-1)}$$

$$S_s^2 = \frac{\frac{(\sum T^2)}{k} - \frac{(\sum i)^2}{nk}}{(n-1)}$$

Where:

i = Rating number that is given by rater to subject

T = The total of rating that is received by a subject to all rater

R = The total of rating is given by rater to all subject

n = The total of subject

k = The total of rater

3.3.4.2 Reliability of the Students' Motivation

The reliability of the students' motivation questionnaire was measured by using *Alpha Cronbach Formula* by Arikunto (2006, p. 196) as follows:

$$r_{11} = \left[\frac{k}{k-1}\right]\left[1 - \frac{\sum_b^2}{\sigma_t^2}\right]$$

Where :

r_{11} = Instrument Reliability

k = Number of question item

$\Sigma\sigma_b^2$ = Sum of item variants

σ_t^2 =Variants Total

Parameter that used is by compare the result of r_{count} and r_{table}. If $r_{count} > r_{table}$, the instrument is reliable. Meanwhile, if $r_{count} < r_{table}$ it means the instrument is not reliable.

3.4 Data Collecting Techique

In this research, the researcher used data collecting technique in form of questionnaire and written test. Questionnaire is used to measure the students' motivation. The students' motivation questionnaire consist of 40 items with positive statements and negative statement which is related with the students' motivation. The researcher used Likert scale in the form of checklist with five alternative answers. The researcher gave around 30 minutes to fill the questionnaire.

Meanwhile, to obtain the data about the students' writing ability, the researcher used written test. In this case, the researcher gave test about writing Descriptive text which is the researcher have been prepare some topics and the students choose one of the topic. The researcher gave around 30 minutes to describe the topic in a paper. The researcher used five aspects in scoring the students' ability in writing Descriptive text such as organization, grammar, content, vocabulary, and mechanics. Furthermore, the researcher conducted try out instrument in MTs ISTIQLAL Sungkai Barat towards eighth grade and the total of the students were 27.

3.5 Data Analalysis Technique

In this research, the researcher conducted normality, homogenity, and hypotesis test. The resarcher used *Microsoft Excel* to make the process calculation easily. The steps of data analysis are described as follows:

3.5.1 Normality Test

To find out whether the data is distributed normally or not, the researcher conducted normality test. To calculate the normality test,

the researcher used *Lilliefor's* formula by Sudjana (2005, p. 466), as follows:

a. Determine raw score by using formula, as follows:

$$Z_i = \frac{X_{i-\bar{X}}}{S}$$

Where :

Z_i = Raw score

x_i = Value that is obtained

$\bar{x}$ = Average

S = Standard deviation

b. Determine opportunity of each raw scores by using following formula:

$$F(Z_i) = P(Z \leq Z_i)$$

c. Determine proportion by using formula as follows;

$$S(Z_i) = \frac{Number\ Z_{i,Z_2 \ldots\ldots Z_n}\ t\square at \leq Z_i}{n}$$

d. Determine absolute number by using formula, as follows:

$$F = (Z_i) - S(Z_i)$$

e. Determine largest absolute value (L_{count}) by comparing with L_{table}. If $L_{count} < L_{table}$ it means the data is distributed normally.

3.5.2 Homogenity Test

Homogenity test was used to know whether the sample is distributed homogenous or not. In this case, the researcher used homogenity test formula by Sugiyono (2012, p. 199). Detail of the formula as follows:

$F_{observed} = \frac{Hig\square est\ Variance}{Lowest\ Variance}$

In testing homogenity by using these formula, the researcher calculated score of variance of both variable and then divided the variance. The criteria of homogenity is if $F_{count} < F_{table}$ it means the data is homogeneous.

3.5.3 Hypothesis Test

After the data is distributed normally and homogenous, the researcher analyzed the correlation between variables. The researcher used parametric formula in analyzing the data. Parametric data that was used by the researcher is *Pearson Product Moment* formula by Arikunto (2010, p. 213), as follows:

$$r_{xy} = \frac{n\Sigma xy - (\Sigma x)(\Sigma y)}{\sqrt{\{n\Sigma x^2 - (\Sigma x)^2\}\ \{n\Sigma y^2 - (\Sigma y)^2\}}}$$

Where:

r_{xy} = Correlation coefficient of each item score

Σx = Number sum of each item score

Σy = Number score of item

N = Number of respondent

TABLE 7
THE INTERPRETATION OF r SCORE

Large of r Value	Interpretation
Between 0,800 – 1,00	Very High
Between 0,600 – 0,800	High
Between 0,400 – 0,600	Enough
Between 0,200 – 0,400	Low
Between 0,000 – 0,200	Very Low

(*Arikunto, 2013, p. 319)*

The hypotheses to be proved as follows:

1. Ho: There is no significant correlation between students' motivation in learning English and their writing ability in descriptive text at the eighth grade of MTsN 01 Lampung Utara Academic Year 2022/2023.
2. Ha: There is significant correlation between students' motivation in learning English and their writing ability in descriptive text at the eighth grade of MTsN 01 Lampung Utara Academic Year 2022/2023.

Because r_{xy} only shows correlation coefficient, to find out significant test the researcher used *t-test* formula by Sugiyono (2011:84) as follows,

$$t = \frac{r\sqrt{n-2}}{\sqrt{1-r^2}}$$

t = Significant correlation

r = Coefficient correlation

n = Total sample

To determine whether the correlationis significant or not, the researcher compared $t_{observed}$ with $t_{table.}$ If $t_{observed}$ is higher than t_{table}, it means the correlation between two variables are significant.