CHAPTER III
RESEARCH METHODOLOGY

3.1 Research Method

This research is descriptive quantitative correlation research. Descriptive research is a non-experimental research, because it is not intended to determine the effects of a treatment. Descriptive research is also research that is intended to investigate circumstances, conditions or other matters whose results are presented in the form of a research report, while correlation research is research conducted by researcher to determine the level of correlation between two or more variables, without making changes, additions or manipulation of data that already exists (Arikunto, 2010:3—4). This research described the correlation between independent variable, namely the *reading habit*, while the dependent variable, namely *reading comprehension*.

3.2 Population, Sample, and Sampling Technique

3.2.1 Population

Population is all subjects in the research (Arikunto, 2010:173). In this research, the population was all of eighth grade in SMP Negeri 4 Kotabumi academic year 2020/2021 which consisted of six grades with 176 students as follow.

TABLE 2
POPULATION OF THE RESEARCH

No.	Grade	Total
1.	VIII A	28
2.	VIII B	28
3.	VIII C	30
4.	VIII D	30
5.	VIII E	29
6.	VIII F	31
Total		176

(Source: English Teacher of SMP Negeri 4 Kotabumi)

3.2.2 Sample

After determining the population, samples that are part of the population are taken. According to Kothari (2004:55) sample is part of the population that chosen to be used as a sample. Therefore, in the sample the conclusion can be implemented to the population. Sample taken from the population must be representative. However, in this research the sample needed to represent the population taken did not allow researcher to investigate all populations in each class due to time constraints and Corona virus (Covid-19).

3.2.3 Sampling Technique

Sampling technique is a selection process for determine of the sample that will be used in research (Kothari, 2004:55). Therefore, the sampling technique used in this research is proportional random sampling, because there is no classification class in this school and the characteristic of students is homogeneous.

Moreover, there are several ways that can be used in random sampling techniques, namely Lottery, Ordinal, and Randomization. Therefore, from several ways the researcher used the random sampling technique *Lottery*, how

to do it as well as lottery, which is to collect data on all populations that have been recorded and then written in a small paper, and put in a place, then taken randomly (Riyanto and Hatmawan, 2020:16). The ways to take the sample in this research are:

1. the researcher wrote the names students in the pieces of paper,

2. the researcher rolls, and shake those roll papers,

3. the researcher take one of them,

4. the chosen students will be the sample.

Furthermore, if the subject is less than 100 preferably taken all, but if the subject is more than 100, it can be taken 10%-15%, 20%-25%, or more (Arikunto, 2010:131). However, the total of students in eighth class of SMP Negeri 4 Kotabumi is 176. Correspondingly, researcher took 15% from each class, because the total of students was more than 100. Therefore, the researcher use the sample taken to represent the population, but the sampling technique must be done properly and can represent the population is 15%, so the sampling technique will be related to the determination of the number of sample using the *Slovin* formula as follow:

$$n = \frac{N}{\left(1 + Ne^2\right)} \quad \text{(Riyanto and Hatmawan, 2020:12)}$$

Descriptions:

n = number of sample

N = total population

e = the level of error in sampling

The size of the research sample using the *Slovin* formula approach will determine the value of the error level, the greater the error level used, the smaller the number of samples taken, so researcher use the *Slovin* formula with an error level of 15%. Therefore, the following is the calculation of the number of samples using the *Slovin* formula with an error level of 15%, with a total population of 176 students:

$$n = \frac{N}{\left(1 + Ne^2\right)}$$

$$n = \frac{176}{\left(1 + 176 \times 15\%^2\right)}$$

$$n = \frac{176}{\left(1 + 176 \times 0.15^2\right)}$$

$$n = \frac{176}{\left(1 + 176 \times 0.0225\right)}$$

$$n = \frac{176}{\left(1 + 3.96\right)}$$

$$n = \frac{176}{\left(4.96\right)}$$

$$n = 35.5$$

The result of sample size is 35.5, so the researcher took 36 students to be a sample of research, and the results as follows:

TABLE 3
SAMPLE OF THE RESEARCH

No.	Grade	Total	Sample
1.	VIII A	28	6
2.	VIII B	28	6
3.	VIII C	30	6
4.	VIII D	30	6
5.	VIII E	29	6
6.	VIII F	31	6
Total		**176**	**36**

3.3 Research Instrument

According to Sugiyono (2017:102) the research instrument is a tool used to measure the observed natural and social phenomenon. In this research, the researcher used questionnaire for reading habit, and multiple choices for reading comprehension.

Furthermore, before the instrument used in the research, the researcher conducted a try out to test the validity and reliability instrument. There are 34 statements of questionnaire test in reading habit, and 40 items of multiple choices test in reading comprehension. Tryout conducted in SMP Negeri 6 Kotabumi, because the researcher assumed that SMP Negeri 6 Kotabumi has closely same characteristic with SMP Negeri 4 Kotabumi.

3.3.1 Instrument of Reading Habit

3.3.1.1 Conceptual Definition of Reading Habit

Habit is the way of acting that is obtained through repeated learning, which in turn becomes settled and becomes automatic or a habit. Furthermore, reading habit is behavior that is carried out by students repeatedly from time to time automatically. Therefore, it can be concluded that reading habit is a

repetitive process of learning to read, persistent and automatic process of learning to read or become a habit.

3.3.1.2 Operational Definition of Reading Habit

Operationally, definition of reading habit is the score obtained from test reading habit in the form questionnaire statements which consist of 34 statements. The students' must choose one of the answer choices that suits with their situation at one of the answers that fits their opinion, because there is no right or wrong answer, so feel free to choose the answer, but do not leave it without answer. Therefore, in this research the questionnaire that used to find out about students' reading habit, and the instrument used by researcher to measure students' reading habit in this research was adapted from Wardani (2019:58—62), and the total of questionnaire from Wardani were 35 statements, but researcher only take 34 statements, because suitable with the title or what will be researched. Moreover, for the aspects of reading habit researcher use from Gaona and Gonzalez (2011:59—60), use multilevel scale with numbers arranged in stages from the smallest in a row to the larger or otherwise. Answer scores are arranged based on a *Likert* scale with 4 alternative answers, namely always (SL/*selalu*), often (SR/*sering*), sometimes (KK/*kadang-kadang*), and never (TP/*tidak pernah*).

However, before the researcher calculates the validity of each statements, the researcher will use 25 valid statements. Meanwhile, the score given ranges between 4-1, and all statements submitted in the questionnaire, namely in the form of positive and negative questions.

3.3.1.3 Instrument Specification, Indicators and Scores of Reading Habit

The questions were given by the teacher in questionnaire forms. Here is the transformation of specification table of reading habit instrument. Table of the specification of reading habit as follows:

TABLE 4
INSTRUMENT SPECIFICATION OF READING HABIT QUESTIONNAIRE

No.	Reading Habit Indicators	Item Number		Total Number
		Positive	Negative	
1.	Attitude Toward Reading	2, 3, 4	1, 5	5
2.	Reading Frequency	6, 7, 8	9, 10	5
3.	Books Read	11, 13, 14, 15	12	5
4.	Making Time for Academic Reading	16, 19, 20	17, 18	5
5.	Making Time for Non-Academic Reading	21, 22, 23, 24	25	5
6.	Motivation in the Family Environment	26, 27, 28, 29	30	5
7.	Motivation for Academic Environment	31, 32	33, 34	4
Total				**34**

(Source: Wardani (2019:57))

Furthermore, the researcher try out the questionnaire instrument, then the researcher analyzed the questionnaire instrument of reading habit. The purpose of this analysis is to find out the instrument whether suitable or not even if it need be fixed or not.

In addition, the indicators and scores of the questionnaire use five alternatives answer based on *Likert Scale* type. Negative statement is on scale 1-4, and positive statement is on scale 4-1. Therefore, for more details, the scale of reading habit questionnaire is presented in the following table.

TABLE 5
INDICATORS AND SCORES OF READING HABIT
QUESTIONNAIRE

Indicators	Scores	
	Positive	Negative
Always (SL/*selalu*)	4	1
Often (SR/*sering*)	3	2
Sometimes (KK/*kadang-kadang*)	2	3
Never (TP/*tidak pernah*)	1	4

3.3.2 Instrument of Reading Comprehension

3.3.2.1 Conceptual Definition of Reading Comprehension

Reading comprehension is the process of comprehend reading in inte-raction and information contained in the text. Each individual has a different ability to read comprehension, to understand the text they can recognize the words and sentences of the text. Reading comprehension is an interaction bet-ween reader and the text. They use their prior knowledge to get the meaning as efficiently as possible. Therefore, reading comprehension is as ability that can make students more understand about the text.

3.3.2.2 Operational Definition of Reading Comprehension

Operationally, definition of reading comprehension is the score obtain-ed from test reading comprehension in the form multiple choice items which consist of 40 items. The students' must choose one of the answer choices which consist of 4 alternative answers, namely A, B, C, or D. It means only one correct answer, while the other becomes a distraction, correct answers are given a score of 1, while incorrect answers are given a score of 0. The total instrument items are 40 items. However, before the researcher calculates the validity of each question, the researcher will use 20 valid questions. Therefore,

before students get a score, the researcher used the formula from Arikunto's

to calculate the pre-test and post-test scores as follows.

$$S = \frac{r}{n} x\,100 \quad \text{(Arikunto, 2010:271)}$$

Descriptions:

S = score of test

r = total of right answer

n = total items

3.3.2.3 Instrument Specification of Reading Comprehension

The questions were given to students' in multiple choice forms. Here is

the transformation of specification table of reading comprehension instru-

ment in tryout test as follows:

TABLE 6
INSTRUMENT SPECIFICATION OF READING COMPREHENSION

No.	Aspect	Indicators	Items Number
1.	Main idea	The students are able to determine the main idea of the text	1, 9, 13, 21, 39
2.	Expression/idiom/phrase	The students are able to determine the expression/idiom/phrase in context of the text	7, 18, 22, 23, 25
3.	Inference (implied detail)	The students are able to recognize the inference in the text	4, 10, 12, 35, 37
4.	Grammatical Features (reference)	The students are able to determine the grammatical features (reference) of the text	2, 32, 33, 34, 40
5.	Detail (scanning for a specifically stated detail)	The students are able to determine the detail (scanning for a specifically stated detail) of the text	11, 28, 30, 31, 36, 38

6.	Excluding fact not written	The students are able to recognize the excluding fact not written of the text	6, 15, 19, 24, 27
7.	Supporting idea	The students are able to determine the detail information or supporting idea (s) of the text	5, 14, 20, 29
8.	Vocabulary in context	The students are able to determine use the correct vocabulary or diction of the text	3, 8, 16, 17, 26
Total			**40**

(Source: Brown (2004:206—207))

Before the instrument is calculated validity and reliability using certain formulas, the instrument specification of reading comprehension consist of 40 multiple choice questions. Therefore, to do the tryout test use 40 multiple choice questions, each question representing learning indicators. In addition, the researcher would try out the test, then the researcher analysed the test instrument. The purpose of this analysis is to find out the instrument whether suitable or not even if it need be fixed or not.

3.3.3 The Validity and Reliability of Reading Habit

3.3.3.1 The Validity of Reading Habit

In this research, the researcher to measure validity questionnaire test items used contents validity. Content validity is designed based on students' reading habit which has each indicator. Therefore, before the reading habit test instrument is given to students' first, content validity is going to consulted with the expert. The researcher ask from the experts to validate the instrument, the expert are Mrs. Rulik Setiani, S.S., M.Pd., and Mrs. Dewi Sri Kuning, S.Pd., M.Pd.

Regarding to the explanation above, to measure the validity of the questionnaire using the *Product Moment* correlation formula (Arikunto, 2010:213). The formula as follows:

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

Descriptions:

r_{xy} : Coefficient of Resolution

N   : The number of students

$\sum X$: Number of value in distribution X

$\sum Y$: Number of value in distribution Y

$\sum XY$: Number of time X and Y

X^2 : Square of X

Y^2 : Square of Y

In calculating the trial results of the instrument, the significance level is 5% with the following validity criteria.

If $r_{observed} > r_{table}$, then the question valid

If $r_{observed} < r_{table}$, then the question is invalid

3.3.3.2 The Reliability of Reading Habit

Reliability that mean can be trusted, so it can be relied upon. Reliability refers to an understanding that an instrument can be trusted enough to be used as a data collection tool because the instrument is already good (Arikunto, 2010: 221). To test the reliability of the questionnaire is using the Alpha Cronbach formula (Sugiyono, 2010:365).

$$r_{11} = \left(\frac{k}{(k-1)} \right) \left(1 - \frac{\sum \sigma_b{}^2}{\sigma_t{}^2} \right)$$

Descriptions:

r_{11} : Instrument reliability

k : The number of items the number of questions

$\sum \sigma_b{}^2$: Number of item variances

$\sigma_t{}^2$: Total variance

To find the item variance the following formula is used:

$$\sigma_b{}^2 = \frac{\sum X_b{}^2 - \dfrac{\left(\sum X_b \right)^2}{n}}{n}$$

Whereas to find the total variance the formula is used:

$$\sigma_t{}^2 = \frac{\sum X_t{}^2 - \dfrac{\left(\sum X_t \right)^2}{n}}{n}$$

Descriptions:

n : Number of students

$\sum X_t{}^2$: Number of the squares of the total score

$\left(\sum X_t \right)^2$: Number of score total that squared

The criteria of reliability instrument if $r_{observed} > r_{table}$ it means that the test is *reliable,* while if $r_{observed} < r_{table}$ it means that the test is *not reliable.* The criteria for the instrument to be said valid is if $r_{observed}$ is greater than r_{table} in significant level 5% and N = 36 and $r_{table\ (36)(0.05)} = 0.329$.

3.3.4 The Validity and Reliability of Reading Comprehension

3.3.4.1 The Validity of Reading Comprehension

The validity means how far the accuracy of a measuring instrument really measured. According to Budiyono (2015:38) an instrument is called valid according to the validity of the content if the instrument has been a representative sample of all the contents of the object to be measure. Validity as an important quality of each test, to measure validity test items used contents validity. Content validity is designed based on reading comprehension aspects which has each indicator. Therefore, before the reading comprehension test instrument is given to students' first, content validity is going to consulted with the experts.

Furthermore, in this research, the researcher ask from the experts to validate the instrument, the expert are Mrs. Rulik Setiani, S.S., M.Pd., and Mrs. Dewi Sri Kuning, S.Pd., M.Pd. The purpose of content validity is to assess the items in accordance with all the specified criteria. The criteria in question include; the specification of instrument is suitable with theory, the theory is suitable with the material at the eighth grade of SMP, the direction is clear and easy to be understood, and the language used is clear to be understood.

Furthermore, to measure of students' reading comprehension, the researcher used *Point Biserial Correlation* formula (Arikunto, 2010:79) is:

$$r_{pbis} = \frac{M_p - M_t}{S_t} \sqrt{\frac{p}{q}}$$

Descriptions:

r_{pbis} : Coeficient of *Point Biserial Correlation*

M_p : Mean score from subjects which answer correctly the item

M_t : Mean of total score (average score of all test participants)

S_t : Deviation standard of total score

p : Proportion of subject which answer correctly the item

q : 1-p

The criteria of validity test is the calculating result of r_{pbis} ($r_{observed}$) consulted by r_{table} score. If $r_{observed} > r_{table}$ it means that the test is *valid,* while if $r_{observed} < r_{table}$ it means that the test is *not valid*. The criteria for the instrument to be said valid is if $r_{observed}$ is greater than r_{table} in significant level 5% and N = 36 and $r_{table\ (36)(0.05)} = 0.329$.

3.3.4.2 The Reliability of Reading Comprehension

According to Budiyono (2015:48) reliability refers to the consistency of measurement results if repeated measurement is carried out on individuals or groups in a population. Testing the reliability of multiple choice tests in this research using the Kuder-Richardson technique formula that used to know of test is K-R 20 (Arikunto, 2010:230). The K-R 20 formula is:

$$r_{11} = \left(\frac{k}{k-1} \right) \left(\frac{V_t - \sum pq}{V_t} \right)$$

Descriptions:

r_{11} : instrument reliability

k : the number of items in the test

V_t : the total variance

p : the proportion of students who answer *correctly* on the item

$$\frac{\text{the number of subjects who scores are 1}}{\text{N}}$$

q : the proportion of students who answer *incorrectly* on the item

$$\frac{\text{the number of subjects who scores are 0}}{\text{N}}$$

The criteria of reliability instrument if $r_{observed} > r_{table}$ it means that the test is *reliable,* while if $r_{observed} < r_{table}$ it means that the test is *not reliable.* The criteria for the instrument to be said valid is if $r_{observed}$ is greater than r_{table} in significant level 5% and N = 36 and $r_{table\ (36)(0.05)} = 0.329$.

3.4 Data Collecting Technique

Data collecting technique is very important in carrying out research and data collection, namely so that the data obtained is relevant to the objectives and subject matter. Data collecting technique used in this research are using questionnaire and multiple choices test. Furthermore, from questionnaire was used to obtain the data about students' reading habit, while from 34 statements used to obtain data on students' reading habit in English, the researcher used 25 statements, answer scores are arranged based on a *Likert* scale with 4 alternative answers, namely always (SL/*selalu*), often (SR/*sering*), sometimes (KK/*kadang-kadang*), and never (TP/*tidak pernah*). In addition, 40 multiple choice test questions used to obtain students' reading comprehension data in English, the researcher used 20 multiple choice test questions, with 4 alternative answers A, B, C, and D.

3.5 Data Analysis

The technique of analyzing the data is begun by conducting normality test and homogeneity test as the pre-requisite test must be done before testing the hypothesis using parametric analysis.

3.5.1 Normality Test

Normality test is used to determine whether all three samples come from populations that are normally distributed or not. According to Sudjana (2005:466—467) normality test is performed parametrically using an average estimator and standard deviation so in this section a nonparametric normality test will be shown. The test used is called the *Liliefors* test. Therefore, in this research, researcher used the *Liliefors* test with the following procedure.

1. Determine the raw number by using the formula:

$$z_i = \frac{X_I - \overline{X}}{s} \quad \text{(Sudjana, 2005:466)}$$

2. Determine the opportunity of each standard number using the formula:

$$F(z_i) = P(z \leq z_i)$$

3. Determine the proportion using the formula:

$$S(z_i) = \frac{\text{Numbers } z_1, z_2, z_3 \dots z_n \text{ that } \leq z_i}{n}$$

4. Calculate the absolute number using the formula:

$$F(z_i) - S(z_i)$$

5. Determine the largest absolute value which is called $L_{observed}$, then compared the $L_{observed}$ with L_{table}. The normal criteria is; H_0 is accepted if $L_{observed} < L_{table}$ (the data have normal distribution).

3.5.2 Homogeneity Test

Before go to the next step to analyzed the data, it was important to conducted homogeneity test, the researcher should to know whether the samples of the research were homogeneous. According to Sudjana (2005:261—263) to measure the homogeneity is used *Barlett* test. The steps of *Barlett* test As follow.

1. Counting variance for every sample,

2. Making table for *Barlett* test,

3. Calculating joining variances from all sample by using formula:

$$S^2 = \frac{\sum (n_i - 1) S_i^2}{\sum (n_i - 1)}$$

   Descriptions:

   n_i : The total of students

   s^2_i : Variance of every students

4. Calculating price of B unit by using formula:

$$S^2 = (Log S^2) \sum (n_i - 1)$$

5. *Barlett* test using statistic of Chi-quadrate by using formula:

$$\chi^2{}_{observed} = (\ln 10) \left[B - \sum (n - 1) \log S_i^2 \right]$$

   With ln 10 = 2,3026, called the original logarithm of the number 10.

6. In this test, the criterion to accept H_0 is if $\chi^2{}_{observed}$ is smaller than $\chi^2{}_{(1-\alpha)(k-1)}$, where $\chi^2{}_{(1-\alpha)(k-1)}$ getting from Chi-square distribution list with opportunities $(1 - \alpha)$ and df = $(k - 1)$.

3.5.3 Hypothesis Test

The hypothesis test used in analyzing the data in this research is correlation analysis, and if the data is normally distributed and homogeneous then the statistical technique uses parametric statistics, namely by using *Product Moment* correlation. Therefore, to find out the correlation between two variables using the *Product Moment* correlation formula as follows (Arikunto, 2010:213).

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

Descriptions:

r_{xy} : Coefficient of correlation

N : Total sample

xy : Total x and y

X   : Independent variable

Y   : Dependent variable

X^2 : The sum square of x variable

Y^2 : The sum square of y variable

Then proceed to test the significance correlation coefficients by looking at the price of critiques at a significant level of 5%. r_{xy} results were tested by *t test* with the following formula:

$$t = \frac{r\sqrt{n-2}}{\sqrt{1-r^2}} \quad \text{(Sugiyono, 2010:230)}$$

Descriptions:

t : $t_{observed}$

r : the result of correlation between two variable

n : the total of sample

The criteria are as follow.

If $t_{observed}$ is greater than the t_{table} at the significant level of > 0.05, the correlation is significant. From on the formula of the hypothesis test, the hypothesis in this research as follows:

a. H_0 : There is no significant correlation between students' reading habit and reading comprehension in English at the eighth grade of SMP Negeri 4 Kotabumi academic year 2020/2021.

b. H_a : There is significant correlation between students' reading habit and reading comprehension in English at the eighth grade of SMP Negeri 4 Kotabumi academic year 2020/2021.