

CHAPTER III

METHOD OF RESEARCH

This chapter describes: (1) research design; (2) research variables; (3) operational definitions; (4) subject of the study; (5) data collection; (6) research instrument analysis; and (7) data analysis

3.1 Research Design

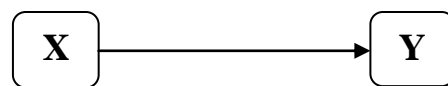
In conducting this research, correlational research was used to find out the correlation between variables and explain and interpret the appeared results. The procedure will be, first; the student's reading maturity will be identified by using reading maturity questionnaire. Second; by taking reading test, students' reading comprehension was obtained. Then the correlation and influence between variables was analyzed through Statistical Package for Social and Science (SPSS) 24.00 based on the results of the questionnaires and reading comprehension test. Last, explanation and interpretation of the results was discussed.

This is a correlational study to find out the relationships between reading maturity and reading comprehension of the undergraduate EFL learners. Johnson and Christensen (2012) state that in correlational research, the researcher studies the relationship between one or more quantitative independent variables and one or more quantitative dependent variables. There is correlation coefficient, which is a numerical index that provides information about the strength and direction of the relationship between two variables. It provides information how variables are associated. More specifically correlation coefficient is a number that can range from -1 to 1, with zero standing for no correlation at all. If the number is greater than zero, there is a positive correlation. If the number is less than zero, there is a negative correlation. If the number is equal to zero, there is no correlation between the two variables. If the number is equal to +1.00 or

equal to -1.00, the correlation is called perfect. Positive correlation is present when scores on two variables tend to move in the same direction while negative correlation is present when score on two variables then to move in opposite direction – as one variable goes up, the other tends to go down, and vice versa. The research design can be seen in the following figure as follows:

Figure 1

Correlation Research Design



X =ReadingMaturity

Y = ReadingComprehension

3.2 Research Variables

According to Fraenkel, et.al.(2012) stated that a common and useful way to think about variables is to classify them as independent or dependent. The independent variable is a stimulus variable or input, it is that factor which is measured, manipulated, or selected by the researcher to determine its relationship to an observed phenomena. Meanwhile, the dependent variable is response variable or output, it is that factor which is observed and measured to determine the effect of the independent variables. In this research, the students' reading maturity is the independent variable and symbolized by X, and the students' readingcomprehensionis the dependent variable and symbolized by Y.

3.3 Operational Definitions

To avoid the possibility of misunderstanding about some terms in this research, especially those used in the title, the definitions are provided.

Correlation is the study to measure one or more independent and dependent variable in identifying whether or not the variables related each other. In this research, there are two variables that will be correlated which are students' readingmaturityand readingcomprehension.

Reading-maturityis comprehending the reading text because of the reading habits, reading interest, reading experience, etc.

*Readingcomprehension*refersthe ability of students' in comprehending text that obtained as a score of reading comprehension. The level of students' reading comprehension are following.

3.4 Subject of the Study

3.4.1 Population

Population is the number of living people that live together in the same place. According to Creswell (2005) stated that population is a group of individuals who have the same characteristic. Fraenkel et al. (2012) stated that define population asthe larger group to which one hopes to apply the results.The population of this study is all the active students of tenth grade students of SMA Muhammadiyah 1 Palembang in the academic year of 2018-2019. The distribution of population of the study can be seen below.

Table 1
The population of the study

CLASS	TOTAL STUDENTS
X IPA OL	30
X IPA 1	35
X IPA 2	32
X IPA 3	35

X IPA 4	32
X IPA 5	35
X IPA 6	35
X IPA 7	40
X IPA 8	35
X IPS OL	30
X IPS 1	35
X IPS 2	35
X IPS 3	37
X IPS 4	40
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Total	486

Source: SMA Muhammadiyah Palembang academic year of 2018/2019

3.4.2 Sample

A sample is a smaller, manageable version of a large group. Fraenkel et al.,(2012) stated that a sample in a research study is the group on which information is obtained. The sample of this study will be taken by using purposive sampling method. Johnson and Christensen (2012) stated that purposive sampling (judgmental sampling) is used in both qualitative and quantitative research. Based on Creswell (2005) stated that in this method, I selected individuals and sites to learn and understand about the topic whether they are information rich. Moreover, Johnson and Christensen (2012) added that in purposive sampling, they specified the characteristics of a population of interest and then tries to locate individuals who have those characteristics.

There should be at least 30 participants in correlation method to establish relationship. According to Creswell (2012), approximately 30 participants for a correlational study that relates variables. So the sample of this research are 102students from eleventh grade of IPA 1, IPA 2 and IPA 3. I choose this class because this class described the characteristic which researchers needs to study. Those characteristics are ; students in the tenth grade have a lot of experience in

learning reading, since most of English lesson from their book focus on reading text material. And based on teachers' information they have different ability in reading. The distribution of the sample is as follows:

Table 2
Distribution of Sample

Class	Number of Students
X IPA 1	35
X IPA 2	32
X IPA 3	35
Total	102

Source: SMA Muhammadiyah Palembang academic year of 2018/2019

3.5 Data Collection

In collecting the data, there were two kinds of instruments which were used to get the data student's reading maturity. It was identified by using questionnaire and reading test to measure students' reading comprehension test. Before I used the test, I did try out the reading test to make sure the test was valid and reliable.

3.5.1. Reading-Maturity's Questionnaire

Johnson and Christensen (2012) defined that questionnaire as a Reading-report data-collection instrument that each research participant fills out as part of a research study. The data about students' reading maturity was collected by Reading Maturity survey from Thomas (2001). Items on the scales was anchored at Likert scale below:

Table 3

Score	Scale
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1	a lot not like me
2	not like me
3	Undecided
4	like me
5	a lot like me

There was 60 items in the questionnaire consisting of 6 subscales of reading maturity. Questions was done and responded by students in 30 minutes. The following is the table of reading maturity questionnaire specification.

Table 4

ReadingMaturity questionnaire specification

Reading Maturity	Items in the Questionnaire
Reading Attitudes and Interest	1-10
Reading Purposes	11-20
Reading Ability	21-30
Reaction to and Use of Ideas Apprehended	31-40
Kinds of Reading Material	41-50
Personal Adjustment to Reading/Transformational	51-60

Reading

Source : Thomas (2001)

To know the students' reading maturity level. The score from each items was calculated. According to Silver, Claret, Davies, Downing, and Ziv (2010) there are three level of reading maturity, those are high, medium, and low. They add that in categorizing reading maturity level, it can be obtained by calculating the total score divided with the total items. It can be obtained the highest range is 5, and the lowest range is 0. If the score is under (>2.50), the level is low. If the score is from 2.50-3.45 the level is medium, and if the score is greater than >3.45 the level is high. The details are following:

$$\text{Reading Maturity level} = \frac{\text{Total Score}}{\text{Total Items}}$$

The range of the score can be obtained follow:

Table 5
Reading Maturity Level

Range	Categorize	Specification
< 2.50	Low	<ul style="list-style-type: none">- Students can not enjoy in reading.- Students read for unpleasure.- Students do not understand what they read.
2.50 – 3.45	Medium	<ul style="list-style-type: none">- Students sometimes fell comfortable in reading, but sometimes not.- To get ideas, student needs to repeat more than once.- Students get difficult to draw

conclusion from what they read.

- 3.46 – 5.00 High
- Students have high interest in reading.
 - Reading helps them to make decisions.
 - Students are able to apply what they have learn from reading.

(Source :Thomas, 2001)

3.5.2 Reading Comprehension Test

Based on Brown (2007) stated that test is a method of measuring persons' ability or knowledge in a given domain. To obtain the students' reading comprehension, Reading test was conducted in the form of multiple choice questions. In reading test, there was 5 articles that consist of some question. The details of the articels are following :

Table 6
Specification of the Test

Objectives	Test Materials	Indicators	Number of Items	Type of test	Answer Key
The students are able to understand the meanings in short simple essays in the term of recount,	Narrative, Descriptive, and Recount Text	The students are able; 1. Finding the detail and factual information	1, 5, 7, 9, 10, 13, 14, 15, 18, 25, 26, 31, 34, 35,36,37,38	Multiple choice	B, A, A, D, A, B, C, D, A, B, A, B, D, B,B,B,C

narrative and descriptive text to interact with surrounding environment	2. Detecting the main idea	17,21,29,33	A, B, A, A
	3. Identifying the reference word	, 11, 16, 23, 27, 28	B, B, A, A, A, C
	4. Recognizing the synonym of word	3, 4, 12, 22, 30, 39, 40	A, C, C, B, D, A, A
	5. Identifying the purpose of text	6, 19, 20	D, C, A
	6. Deducing the moral lesson	8, 24	B, A

Source: Sofyan, Fahmi. (2011). Kiat Sukses Lulus Ujian Bahasa Inggris: Pustaka Tarbiyah Baru.

Reading comprehension level of is categorized as the table below:

Table 7
Reading Proficiency Level

No	Score	Category	Specifications
1	81-100	Excellent	Students tend to be highly subject-specific and require extensive background knowledge among readers. Jargon tends to be used

			extensively, and readability is often sacrificed for precision.
2	71-80	Very Good	Students understand of more specialized vocabulary than is common for intermediate readers. Some subject-specific jargon is likely to be used without explanation, but a heavy reliance
3	61-70	Good	Students may comprehend new vocabulary from the context and usage
4	51-60	Fair	Students make sentence structures may be more diverse, and more difficult vocabulary is often not explained.
5	<50	Poor	Students have some difficulties with pronunciation and comprehension when new vocabulary is encountered

Source : Brown(2004)

3.6 Research Instruments Analysis

Before the questionnaire and real testareconducted, the researcher checked their validity and reliability. Johnson and Christensen (2012) explain that validity and reliability are the two most essential psychometric properties to consider in using a test or assessment procedure.

Validity refers to the accuracy of the inferences or interpretations made from the test scores, while reliability refers to the consistency or stability of the test scores.

3.6.1 Validity Test

Validity test is a test that is conducted to find out whether the test level can measure what is intended to measure. Fraenkel, et. al. (2012) argue that validity is the most important idea to consider when preparing or selecting an instrument for use. It is supported by Creswell (2012) validity is the development of sound evidence to demonstrate that the test interpretation (of scores about the concept or construct that the test is assumed to measure) matches its proposed use. In this research, Reading Maturity questionnaire from Thomas (2001) was ready made. It was piloted to 82 college students. Mathers, Hunn, and Fox (2007) indicate that questionnaire can be designed by the researcher or they can be taken based on some ready made index including the fact of these have been validated and tested for reliability, Also be normative data available as a baseline to compare the results. It was checked for the validity of questionnaire, because it was valid.

Other ways, to find out the validity of the test question items of reading comprehension test, I analyzed the items of the test by conducting a try-out in order to find out the validity of each question items. The instrument of the test was tested to 32 students (X IPA 4) of the tenth grade students at SMA Muhammadiyah 1 Palembang. The result of the test was analyzed by using Pearson Correlation Coefficient formula. The result of significant score of Pearson Correlation was compared with r_{table} (0.349). It means that the item was valid. From Pearson Correlation Formula, it was also found that there were 16 questions were considered invalid. They are questions item number 1, 5, 11, 16, 19, 26, 30, 31, 34, 44, 46, 49, 53, 54, 56 and 60, since the score of significance are lower than 0.349. Then, 44 questions item were considered

valid. They are questions item number 2, 3, 4, 6, 7, 8, 9, 10, 12, 13, 14, 15, 17, 18, 20, 21, 22, 23, 24, 25, 27, 28, 29, 32, 33, 35, 36, 37, 38, 39, 40, 41, 42, 43, 45, 47, 48, 50, 51, 52, 55, 57, 58 and 50, since the score of significance are higher than 0.349. Since there were 44 questions are considered valid, the writer just took 40 valid questions item.

3.62. Reliability Test

Reliability test is one of the most important elements in test quality. It has to do with the consistency, or reproducibility, or examinee's performance on the test. In accordance with Creswell (2012), reliability means that scores from an instrument are stable and consistent. Scores should be nearly the same when researchers administer the instrument multiple times at different times. Also, scores need to be consistent. Johnson and Christensen (2012) state that when used to check reliability of scores, the coefficient should be at least 0.70, preferably higher. Therefore, the questionnaire will be reliable if the coefficient is 0.70 or higher. Reading Maturity questionnaire from Thomas (2001) is ready made, and it was reliable, since the cronbach alpha score is 0.957. It means that *highly reliable*.

Further, to know the reliability of the reading comprehension test, internal consistency reliability in Split half reliability coefficient with Spearman-Brown formula was used. The calculation was done by using SPSS version 20. Freankel et al. (2012, p. 157) state that a useful rule of thumb is that reliability should be at least 0.70 and preferably higher. It can be stated that the reliability of reading test items is reliable since the p-output is higher than r-table (0.394) with sample (N) is 32 students. The analysis result of reliability test is described in table 5.

Table 8
Result of Reliability Analysis Using Split Half

N	Guttman Split-Half Coefficient
32	.739

3.7 Data Analysis

In analyzing the data in this research. There were some analysis related to research problems in this research. The data analysis in this research are questionnaires' analysis, reading comprehension test analysis, Pearson Product Moment correlation analysis was applied to answer the first research problem to find out the correlation between variables. Last, regression analysis was used to find out the influence related to the second research problem.

3.7.1. Questionnaire Analysis

Firstly, the data from questionnaire was analyzed and calculated to decide the students' reading maturity level by identifying their answer and count the score of students' reading maturity. The scoring system was used likert scale (a lot not like me(1), not like me(2), neutral(3), like me(4), a lot like me(5)). The score is from 1 to 5. The results score was classified into reading maturity score. Reading maturity each students was applied. The students' reading maturity level score was determined by dividing total item scores with the total item.

Manual formula for reading maturity score:

$$M = \frac{S}{L}$$

Source: Pintrich, Smith, Garcia & McKaechie, 1991

M = Students Score

S = Total Items Score

L = Total Items

3.7.2. ReadingComprehension Analysis

Reading comprehension will be analyzed by using school scoring system. The reading comprehensiontest consisted of 40 items. The correct answers will be given score 1 (one), other ways incorrect is 0 (zero). The total number of correct answers will be calculated by using formula below:

$$\frac{\text{The Number of Correct Answer}}{\text{The Total of Questions}} \times 100$$

3.7.3. Pre-requisite Analysis

As the matter of fact, it was essential to do pre-requisite test since the study was be in the notion of parametric statistics, correlation and regression. Thus, before analyzing the data, I did try to find out whether the data distribution from each variable was normal and linear or not between two variables.

3.7.3.1. Normality Test

Normality test was used to determine whether sample data draw from a normally distributed population or not. It was conducted due to many parametric statistical methods, including Pearson correlation test and regression test. Therefore, I applied Kolmogorov-Smirnov test by using SPSS 24. The data was normally if the p-value is greater than 0.05 ($p > 0.05$).

3.7.3.2. Linearity Test

The linearity test was conducted in order to recognize whether the data between the variables are linear or not. Test for linearity by using SPSS 24 will be conducted in order to recognize whether the data of the variables are linear or not. Therefore, if the p- value (linearity) is less than 0.05 ($p\text{-value} < 0.05$), the data correlation is linearly. Then, after the researcher

conduct those test. If the data are normal and linear, the further analysis was able to be administered.

3.7.4. Correlation Analysis

Correlation analysis was applied after analyzing the data from questionnaire and student's reading test. In order to find out the correlation between students' readingmaturity as a whole and their readingcomprehension, Pearson – Product Moment Correlation was used. Specifically correlation coefficient is a number that can range from -1 to 1, with zero standing for no correlation at all. If the number is greater than zero, there is a positive correlation. If the number is less than zero, there is a negative correlation. If the number is equal to zero, there is no correlation between the two variables. If the number is equal to +1.00 or equal to -1.00, the correlation is called perfect.

3.7.5. Regression Analysis

Regression analysis was applied after analyzing the data from readingmaturity questionnaire, and student's readingcomprehension. If there is a significant correlation between readingmaturity and readingcomprehension, it was be continuedto find out the influence between two variables. To know the influence and percentage between variable. It can be obtained from the $P < 0.05$ means there is significant influence. If $P > 0.05$, means there is no significant influence. To know the percentage R-Square² will be administered. Regression analysis was applied by using the Statistical Package for Social and Science (SPSS) 24th version computer program.