CHAPTER III

RESEARCH METHODOLOGY

A. The Design of the Research

This research is a correlational design which consists of two variables. The first variable is the students' self efficacy. It is an independent variable symbolized by X and the second variable is the students' reading comprehension and it is as a dependent variable symbolized by Y.

According to John W. Creswell, 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[1].

Correlational research invloves collecting data in order to determine whether, and to what degree, a relationship exists between two or more quantifiable variables. The purpose of a correlational research is to determine relationships between two variables to make predictions[2].

Correlational studies provide a numerical estimate of how relate two variables. Clearly, the higher the correlation is, the more the two variables are related and the more accurate are predictions are based on the relationships. Rarely two variables are perfectly uncorrelated, but many are sufficiently related to permit useful predictions[3].

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[1] John W. Creswell. *Educational Research Third Edition.* (New Jersey: Prentice Hall, Inc, 2000), p. 356
[2] L. R Gay and Peter Airasian. *Educational Research; Competencies for Analysis and Application Sixth Edition.* (New Jersey: Prentice Hall, 2000), p. 321
[3] Ibid, p. 322

| Students' Self Efficacy (X) | ⟶ | Students' Reading Comprehension (Y) |

B. The Location and Time of the Research

This research was conducted on October 2013 in the academic year of 2013/2014. This research was conducted at the second grade students SMA N 1 Moro Karimun Regency.

C. The Subject and Object of the Research

The subject of this research was the second grade students at SMA N 1 Moro Karimun Regency and the objects of this research was the students' self efficacy and reading comprehension.

D. The Population and Sample of the Research

The population of this research was the second grade students SMA N 1 Moro Karimun Regency. The total population of this research was 137 students from the 4 classes. There were two for science classes (SIA) and two classes for social class (SIS). The specification of the population can be seen on the table below[4]:

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[4]Source: *Documentation of SMA N 1 Moro Karimun Regency*

Table III.I

The population and the Sample of the Students of SMA N 1 Moro Karimun Regency

No	Classes	Population		
		Female	Male	Total
1	XI IPA 1	22	14	36
2	XI IPA 2	20	14	34
3	XI IPS 1	17	16	33
4	XI IPS 2	16	18	34
	Total			137

According Arikunto, if population is more than 100 responses, we can take 25% or more than it. Therefore, the writer took 30% from the population to be the sample[5]. Here, the writer took the science class (SIA) as a sample. The sample of this research was two classes. The samples were selected with simple random sampling technique. The random sampling is the process of selecting a simple in such a way that all individuals in the defined population have an equal and independent chance of being selected for the sample[6]. The science class consist of two classes. XI IPA 1 is 26 students and XI IPA 2 is 25 students and the total 70 students students. The writer will take 30% of the total. So, the sample is 49 science students.

E. The Technique of Collecting Data

In order to collect the data needed to support this research, the writer applied the technique as follows:

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[5] Suharsimi Arikunto. *Prosedur Penelitian: Suatu Pendekatan Praktis*. (Jakarta: Rhineka Cipta, 2006), p. 134

[6] *Op. Cit*, 123

1. Questionnaire

Based on the quantitative design, the writer used the questionnaire as the main technique in collecting the data. It consisted of some statements to collect self efficacy, the writer carried out a set of questionnaires. Questionnaire used to know the students' self efficacy in reading comprehension.

Table III.2
The Blue Print of Self Efficacy

No	Indicators	Total item	Number of item
1.	Students believe towards their ability in reading comprehension	9 Items	1, 6, 14, 22. 10, 12, 20, 21, 28
2.	Students strengthen their ability towards reading comprehension	11 Items	2,4, 5, 7, 13, 15, 18, 29, 26, 27, 29.
3.	Students have adequate fluency in reading comprehension	10 Items	3, 8, 9, 11, 16, 17, 23, 24, 25, 30.
Total		**30**	**30**

2. Test

In addition to collecting the data using questionnaire, the researcher also used test that was used to find out the students' comprehension in reading. The data of this research were the scores of the students' reading comprehension obtained by using reading test. And for the test, the researcher used multiple choices which consisted of 20 items based on the indicators, already proposed for measuring students' reading comprehension.

Table III.3

Blueprint of the Reading Comprehension Test

No	Indicators	Total item	Number of item
1	The students are able to identify the entire needed information of the text	5 items	1, 7, 9, 14, 19
2	The students are able to infer the meaning of unknown words of the narrative as their major reading text	5 items	2, 6, 10, 15, 20
3	Students are able to find out the main idea, supporting ideas, etc.	5 items	3, 5, 11, 16, 18
4	Students are able to identify the language features of narrative text.	5 items	4, 8, 12, 13, 17

F. The Validity and the Reliability of the Test

1. Validity

In this research, to know the validity of the test, the writer used content validity. The writer used test instrument in which questions were based on categories studied in reading comprehension at the second grade students of SMA N 1 Moro Karimun Regency. For this reason, the instrument must be tried out.

The purpose of try out was to obtain validity and reliability of the test. The test is said to be valid if it measures accurately what it is intended to measure[7]. It was determined by finding the difficulty level of each item. The formula of item difficulty is as follows:[8]

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[7] Arthur Hughes, *Testing for Language Teacher, 2nd Edition*, New York: Cambridge University Press, 2003, p.26

[8] Suharsimi Arikunto, *Dasar-Dasar Evaluasi Pendidikan* . (Jakarta: Bumi Aksara, 2011), p.208

$$P = \frac{B}{Js}$$

Where

P   : index of item difficulties

B   : the number of correct answers

JS   : the number of examinees or students taking the test

The standard level of the difficulty used was >0.30 and < 0.70, it means that the level difficulty was between 0.30 and 0.70.

Table III.4
The Students are Able to Identify the Most Information of the Text

Variable	Identify the Most Information					N
Item no	1	7	9	14	19	22
Total of correct item	12	11	15	7	14	
P	0.55	0.50	0.68	0.50	0.64	

Table III.5 shows that item numbers used to identify the most favorable responses; they are 1, 7, 9, 14, and 19. It showed that the proportion of correct answer for item number 1 was 0.55, the proportion of correct answer of item number 7 was 0.50, the proportion of correct answer of item number 9 was 0.68, the proportion of correct answer of item number 14 was 0.50, and the proportion of correct answer of item number 19 was 0.64. Then, based on the standard difficulty "p" was > 0.30 and <0.70. So, the items of difficulties for identifying the most selected information were accepted.

Table III.5
The Students are Able to Infer the Meaning of an Unknown of Narrative Text

Variable	Infer the Meaning					N
Item no	2	6	10	15	20	22
Total of correct item	11	7	8	12	10	
P	0.50	0.32	0.36	0.55	0.45	

Table III.6 shows that item numbers 2, 6, 10, 15, and 20 have got dominant choice by the respondents. It showed that the proportion of correct answer of item number 2 was 0.50, the proportion of correct answer of item number 6 was 0.32, the proportion of correct answer of item number 10 was 0.36, the proportion of correct answer of item number 15 was 0.55, and the proportion of correct answer of item number 20 was 0.45. Then, based on the standard difficulty of "p" was > 0.30 and < 0.70. So, the items of difficulties for inferring the meanings were accepted.

Table III.6
The Students are Able to Find out the Main Idea, Supporting Ideas, etc.

Variable	Find out the Main Idea, Supporting Ideas, etc					N
Item no	3	5	11	16	18	22
Total of correct item	9	7	10	13	9	
P	0.41	0.32	0.45	0.59	0.41	

The item numbers as presented on Table III.7 described the item numbers for finding out the main idea, supporting ideas, etc. Items number 3, 5, 11, 16, and 18 showed that the proportion of correct answer of item number 3 was 0.41, the proportion of correct answer of item number 5 was 0.32, the proportion of correct answer of item number 11 was 0.45, the proportion of correct answer of item number 16 was 0.59, and the proportion of correct answer of item number 18 was 0.41. Then, based on the standard difficulty of "p" was > 0.30 and < 0.70. So, the items of difficulties for finding out the main idea, supporting ideas, etc were accepted.

Table III.7
The Students are Able to Identify the Language Features
of Narrative Text

Variable	Identify the Language Features					N
Item no	4	8	12	13	17	22
Total of correct item	15	10	13	7	12	
P	0.68	0.45	0.59	0.32	0.55	

For item numbers that refer to the identification of language features were presented on Table III.7. They were item number 4, 8, 12, 13, and 17. The results showed that the proportion of correct answer of item number 4 was 0.68, the proportion of correct answer of item number 8 was 0.45, the proportion of correct answer of item number 12 was 0.59, the proportion of correct answer of item number 13 was 0.32, and the proportion of correct answer of item number 17 was 0.55. Then, based on the standard difficulty of "p" was > 0.30 and < 0.70. So, the items of difficulties for identifying the language features were accepted.

2. Reliability

A test must first be reliable at measuring any kinds of instrument. It is a necessary characteristic of any good test. Reliability refers to whether a test measure something well.[9] The researcher used K-R 20 to find out the Reliability of the test.[10] The formula was as follows:

$$R_{11} = \frac{n}{n-1} \quad \frac{S^2 - \sum pq}{S^2}$$

Where :

R11   = Reliability of the test

P   = Proportion subject that answer the true of item

Q   = Proportion subject that answer the false of item (q= 1-p)

pq   = Total equals between p and q

n   = Total of the item

S   = Standard Deviation

$$S \quad = \sqrt{\frac{\sum X^2}{N}} = \sqrt{\frac{212}{22}} = \sqrt{9.63} = 3.10$$

S   = **3.10**

n   = 20

pq   = 4.61

x^2 = 212

N   = 22

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[9] Jeremy Miles and Philip Banyard, *Understanding and Using Statistics in Psychology*, New York: Pearson Education, 2007, p. 270

[10] Suharsimi Arikunto, *Dasar-Dasar Evaluasi Pendidikan,* Jakarta: Bumi Aksara, 2009, p.87

So,

$$R_{11} = \frac{20}{20-1} \quad \frac{3.10^2 - 4.61}{3.10^2}$$

$$= \frac{20}{19} \quad \frac{9.63 - 4.61}{9.63}$$

$$= 1.05 \quad 0.521$$

$$= \textbf{0.548}$$

$r_{ii} > r_t$

The statistical computation of the reliability test above showed the coefficient of 0.548. To know whether or not the items of the test were reliable, they must be compared with the "r" product moment that reads the r_{ii} must be higher that r_{table} at 5% level of significant at 0.537. While at 1% significant level, the score was 0.423. So, it can be analyzed that r_{ii} was higher than r_t. **5% < r_{ii}> 1% or (0.537<0.548>0.423).** As a result, the instrument was reliable.

The reliability coefficients for good identified kinds of structure text and reading comprehension test were expected to exceed 0.0 and closed 1.00. Suharsimi also states that the reliability of the test was considered is follows:

    a. 0.0-0.20   = reliability is poor

    b. 0.21-0.40   = reliability is satisfactory

    c. 0.41-0.70   = reliability is good

    d. 0.71-1.0   = reliability is excellent[11]

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[11]Ibid, p.218

G. The Technique of Data Anaysis

In order to analyze students' self-efficacy and reading comprehension, the graduated cumulative score of English lesson at SMA N 1 Moro Karimun Regency was to be the standard. The score was 70 for students' ability in English subject. It means that for those get score < 70, they failed graduated cumulative standard (SKL), while for those who got score 70, they passed the standard.

The research was a quantitative correlation research with percentage. It attempts to describe and interpret the data collected as objectively as possible. Then, the collected data were quantitatively analyzed into qualitative categories. The writer operated serial correlation formula from the results of distributing questionnaire and test.

The formula[12] used to analyze the data in this research is as follows:

$$r_{ser} = \frac{\sum \left[\frac{o_r - o_t}{} \, M \right]}{SD_{tot} \, \sum \frac{o_r - o_t}{P}^2}$$

r_{ser} = Correlation Coefficient

O_r = The lower Ordinate

O_t = The higer Ordinate

M = Mean

$Sdtot$ = The total Standard Deviation

P = The proportion of individuals in the group

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[12] Hartono, *Statistik untuk Penelitian*, Yogyakarta: CV Pustaka Pelajar, 2008, p. 129

The writer used this formula because serial correlation technique was suitable to determine the degree of correlation between variable which used ordinal scale (students' self-efficacy) and variable which used variable interval scale (students' reading comprehension).