

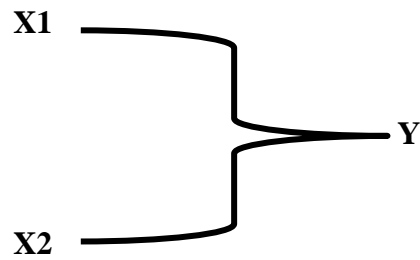
CHAPTER 3 RESEARCH METHODS

This chapter contains of research design, population and sample of the research, data collections, and the instruments of the research, the procedures of data collection, data analysis, and hypothesis testing.

1.1. Research Design

The design of this research is ex post facto research design by using comparative study. Moreover, Hatch and Farhady (1982:26) states that ex post facto design was used when the researcher does not have control over the selection and manipulation of the independent variable (the researcher do not give treatment in the research). This research attempts to get the empirical data as a quantitative research that intended to investigate whether there is a significant difference between the students who have high motivation and the students who have low motivation in reading comprehension achievement.

The research design is formulated as follows:



X1 : Students' high motivation (Questionnaire)

X2 : Students' low motivation (Questionnaire)

Y : Students' Reading Comprehension Achievement (Test)

1.2. Variables

In this research, there are two variables: dependent variables and independent variables. Dependent variable is a product from all interaction that involve in the research. In other hand, independent variables is a variables in the research that determining the effect of the dependent variable. There are the variables follow:

- a. Students' motivation as independent variable, so that it can be assumed that students' motivation influences the students' reading comprehension achievement. Students' motivation divides into 2 levels: high and low motivation.
- b. Students' reading comprehension achievement as dependent variable, so that it can be assumed that achievement is a result of students' motivation.

1.3. Population and Sample

The population of this research is the second grade of SMPN 1 Gedung Aji, Tulang Bawang. There are 99 students; they are the students of VIII A, VIII B and VIII C, are placed on second year of SMPN 1 Gedung Aji. The writer will take two classes; VII C as a try out class which consists of 30 students and class VIII A and VIII B which consists of 56 students as a subject class. There is no favorite class that consists of clever students only and each of the students may have the similar opportunity to become sample of the research. Therefore, the samples of the research are chosen randomly in order to avoid subjectivity in this research.

1.4. Data Collecting Technique

The data of this research are collected by means of two research instruments:

a. Questionnaire of Students' Motivation

Questionnaire is one of the variables assessment that contains some questions to be answered by the certain students related with the students' motivation.

b. Students' Reading Comprehension Test

The test is an objective test, in the form of *multiple-choice type*, to measure the students' reading comprehension. Multiple-choice type can be scored objectively and can measure learning outcome directly.

1.4.1. Questionnaire of Students' Motivation

This questionnaire is used to investigate the students' motivation and to know the level students' motivation: high, medium and low motivation by calculating the score from the criteria. The criteria are:

30 – 75 Low Motivation

76 – 90 Medium Motivation

91 – 120 High Motivation

It consists of 30 questions which refers to MRQ (Motivation for Reading Questionnaire) intended to reflect 11 constructs of reading motivation (Guthrie & Wigfield, 2004):

No	Elements	Number of Items	Statements
1.	Reading Efficacy	2 Items	1,2
2.	Reading Challenge	3 Items	3,4,5
3.	Reading Curiosity	4 Items	6,7,8,9
4.	Reading Involvement	3 Items	10,11,12
5.	Importance of Reading	2 Items	13,14
6.	Reading Work Avoidance	2 Items	15,16
7.	Competition in Reading	3 Items	17,18,19
8.	Recognition for Reading	3 Items	20,21,22
9.	Reading for Grades	3 Items	23,24,25
10	Social Reasons for Reading	3 Items	26,27,28
11.	Compliance	2 Items	29,30

Table 1. The Construction of Reading Motivation

The instructions are:

If the statement is **very different from yours**, circle a 1.

If the statement is **a little different from yours**, circle a 2.

If the statement is **a little like yours**, circle a 3.

If the statement is **a lot like yours**, circle a 4

1.4.2. Written Test for Reading

This test is used to measure the students' reading comprehension achievement. It consists of 40 questions that the students answer for about 45 minutes. The correct answer was scored 1 and the wrong one was scored 0.

The scoring system used this formula as follows:

$$\text{Score} = \frac{\text{The Number of Correct Number}}{\text{The Number of Items}} \times 100$$

1.5. Procedure of Data Collection

The procedures of collecting data are as follows:

1. Selecting instruments material of questionnaire and test

The instrument material was elaborated by the researcher between the focus of the research and the Guidelines of students' competence especially in the reading aspect. And the questionnaire also refers to MRQ to investigate their motivation in reading.

2. Determining research instruments

A test was administered in multiple choice form about reading comprehension and the questionnaire about their motivation in reading.

3. Determining the sample of the research

The sample of the research comprise VIII A and VIII B classes of the second grade of SMPN 1 Gedung Aji, Tulang Bawang consisting of 56 students chosen by using simple probability sampling.

4. Administering Test

The test is divided into two parts: the first is questionnaire about their motivation in reading, which consists of 30 items. The second is reading comprehension, which also consists of 40 items.

5. Analyzing, interpreting, concluding the data gained

After data are collected, those data about students' motivation and reading comprehension scores were thoroughly analyzed to see the differences between high and low motivated students in reading comprehension achievement by using comparative study (One Way Anova), then interpret the data and conclude the result.

3.6. Reliability

3.6.1. Reliability of the Questionnaire

Reliability is a consistency of certain measurement in getting the result. The reliability of the questionnaire is described by using *Cronbach's alpha* called *correlation coefficient* which is has range between 0 and 1, (Setiyadi, 2006: 189-192).

3.6.2. Reliability of Test

Reliability of the test is found by using this formula:

$$r_1 = \frac{\sum XY}{\sqrt{\sum X^2 \sum Y^2}}$$

Where:

r_1 = coefficient of reliability between first and second half group

X = total numbers of first half group

Y = total numbers of first second group

X^2 = Square of X

Y^2 = Square of Y

After that, it will continue the calculation by using formula of Spearman

Brown (Hatch and Farhady, 1982: 268)

$$r_k = \frac{2 r_l}{1 + r_l}$$

Where:

r_k = the reliability of the test

r_l = the reliability of the half test

The criteria of reliability:

0, 90 – 1, 00 = high

0, 50 – 0, 89 = moderate

0, 00 – 0, 49 = low

3.7. Validity

Validity refers to the test measures what was intended to be measured. There are four types of validity: face validity, content validity, construct validity and empirical validity. The writer tends to use content and construct validity in this research.

3.7.1. Content Validity

Content validity is related with the test items in the measurement. It means that the test should cover the focus of the course and represent the subject matter content. In this research, the material given is suitable with the Guidelines of SMP Curriculum of English (KTSP for English) in second grade of Junior High School. In order to get construct validity, the test was adopted from the students' handbook and determines with the material that was taught by the teachers in second semester period. In order to measure the reading comprehension test, according to Nuttal (1985), there are five aspects of readings that should be fulfilled as follows in table of specification below:

No	Reading Specification (Aspects of Reading)	Item Number	Percentage
1.	Determining main idea	1, 11, 13, 15, 17, 23, 29, 33, 40	22, 5 %
2.	Making inference	12, 14, 19, 20, 21, 30, 34	17, 5 %
3.	Identifying reference	4, 16, 25, 27, 31, 36, 38	17, 5 %
4.	Finding detail information	2, 3, 5, 18, 22, 24, 26, 32, 37, 39	25 %
5.	Understanding difficult vocabulary	6, 7, 8, 9, 10, 28, 35	17, 5 %
	Total	40	100 %

Table 2. Reading Specification(Aspects of Reading)

3.7.2. Construct Validity

Construct validity plays an important role to measure what should be measured related to the theories. The construction of test refers to the theory in line with Nuttal (1985) about five aspects of reading skills, i. e. determining main idea, identifying inference, identifying reference, finding detail information understanding vocabulary. Therefore, reading specification that related to aspects of reading skills are construct validity, and the item number that refers to materials students' handbook the are a part of content validity.

3.8.Discrimination Power

The discrimination power relates to know which the items are can be differentiated between the high and low students in answering the test. It means that, the good items of tests can be done by the good students and the bad students got fails in answering the test. To calculate the discrimination power, the researcher uses the following formula:

$$DP = \frac{U - L}{\frac{1}{2} N}$$

Notes:

DP = Discrimination Power

U = the proportion of upper group students

L = the proportion of lower group students

N = number of students

The criteria are:

DP = 0.00 – 0.19 : poor

DP = 0.20 – 0.39 : satisfactory

DP = 0.40 – 0.69 : good

DP = 0.70 – 1.00 : excellent

It means that:

1. If the value is positive discrimination a large number of more knowledgeable students then poor students got the item correct. If the value is zero, no discrimination.
2. If the value is negative, it means that more low-students than high level students got the item correct.
3. In general, the higher the discrimination index, the better. In the classroom situation most items should be higher than 0.20 indexes. (Shohamy, 1983: 81)

3.9.Level of Difficulty

Level of difficulty refers to how easy and difficult the test by considering the students' point of view. To see the level of difficulty, the researcher will use the following formula:

$$LD = \frac{U - L}{N}$$

Where:

LD : level of difficulty

U : the number of students who answer correctly

L : the proportion of lower group students

N : the total number of students following the test

The criteria are:

< 0.30 = difficult

0.30 – 0.70 = average

> 0.70 = easy

(Shohamy, 1985: 7)

3.10. Result of Try Out

In order to make sure that the instruments i.e. questionnaire and reading test are reliable and valid, the researcher already measured the reliability of questionnaire. The data showed (See Appendix 11) that the reliability of questionnaire is 0.870. It means that the reliability of questionnaire was high; therefore, it can be used to measure the students' motivation. The questionnaire of motivation refers to MRQ (Motivation for Reading Questionnaire) intended to reflect 11 constructs of reading motivation (Guthrie and Wigfield, 2004); reading efficacy, reading challenge, reading curiosity, reading involvement, importance of reading, reading work avoidance, competition in reading, recognition for reading, reading for grades, social reasons for reading, and compliance.

In addition, the reading comprehension achievement is measured by using multiple choice reading tests with providing four alternative answers (a, b, c, d). The result showed that the test had reliability 0.928 (See Appendix 10), therefore, it means that the reading test had high reliability.

In this research, the validity of reading test consists of content and constructs validity. Therefore, to make sure that the test represents the content of subject (content validity), the researcher use the materials that was adopted from the students' handbook (narrative and recount text). Besides that, the construct of

reading test (construct validity) refers to the five aspects of reading comprehension i. e. determining main idea, identifying inference, identifying reference, finding detail information and understanding vocabulary (Nuttal: 1985). Moreover, validity of questionnaire refers to the 11 constructs of motivation in reading that is developed by Guthrie and Wigfield (2004).

Reading test consist of 40 questions with four options for each item that should be answered by the students about 60 minutes. Data shows that the try out test had 16 (40%) difficult items, 7 (17. 5%) easy items, and the 17 (42. 5%) are in average. In addition, the discrimination power indexes show that 8 items are in good, 10 items are in satisfactory, 10 items are in poor and 8 items are in bad.

3.11. Hypothesis Testing

The hypothesis testing was used in order to prove the hypothesis proposed in this research was accepted or not.

The hypothesis of this research is “there is a significant difference between students who have high motivation and the students who have low motivation in reading comprehension achievement”.

The hypothesis was statistically analyzed using Comparative Study (One Way Anova) that draws the conclusion in significant level if $P > 0.05$, H_0 accepted, and $P < 0.05$, H_1 accepted.

H_0 there is no significant difference between students who have high motivation and the students who have low motivation in reading comprehension achievement.

H_1 there is a significant difference between students who have high motivation and the students who have low motivation in reading comprehension achievement.