

CHAPTER III

RESEARCH METHOD

A. Research Design

This research is an experimental research focus on the quantitative approach. In conducting the research the writer used quasi-experimental research. Quasi experiment is a research design having some but not all of the characteristics of a true experiment. It is focused on nonequivalent control group design. Both of groups take pretest and posttest and only the experimental group takes the treatment. Creswell stated that in experimental research; researcher test an idea (practice or procedure) to determine whether it influences an outcome or dependent variable³⁴. This research uses two classes to get the data. One class was an experimental class given the treatment by using Interactive Instructional Model and one class was a control class which is a not given the treatment by using Interactive Instructional Model.

This research consists of two variables, they are: Independent variable (variable x) refers to the effect of using Interactive Instructional Model and dependent variable (variable y) refers to reading comprehension. In conducting this research, the researcher used two classes. The first class is the experimental class which is taught by Interactive Instructional Model. Meanwhile the second one is the control class, as the comparative class, was taught by using conventional technique. And there are two variables that become the focus of this research.

³⁴John W Creswell.2008.*Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research*. New Jersey:Pearson Educational International. p.299

In working with such intact nonequivalent groups, the nonequivalent control group design show below³⁵:

Experimental Group O __X__ O

Control Group O _____ O

O = Test

X = giving treatment by using interactive instructional model

B. The Location and the Time of the Research

The research was conducted at the second year of Junior High School 1 Tembilahan Hulu which is located on Pendidikan Street Tembilahan Hulu. The research was conducted from July until September 2013.

C. The Subject and the Object of the Research

The subject of this research was the second year students of State junior High School 1 Tembilahan Hulu. The object of this research was students' reading comprehension through Interactive Instructional Model.

D. The Population and Sample of the Research

The population of this research was the second year students at State Junior High School 1 Tembilahan Hulu in 2012-2013 academic year. It consisted 10 classes. The number of second year students of State junior High School 1 Tembilahan Hulu was 296 students.

³⁵Bruce W Tuckman. 1999. *Conducting Educational Research Fifth Edition*. New York: Harcourt Brace College Publisher. p.141

Table III.I
Population of the Second Year in Academic 2012-2013

NO	Classess	Total
1	VIII ¹	28
2	VIII ²	30
3	VIII ³	31
4	VIII ⁴	29
5	VIII ⁵	31
6	VIII ⁶	31
7	VIII ⁷	30
8	VIII ⁸	29
9	VIII ⁹	27
10	VIII ¹⁰	30
TOTAL		296

Based on number of population, the writertook only two classes after doing clustering sample randomly; VIII⁶as an experimental class, and VIII⁵ as a control class. Those are as the sample of the research by number 62 students; 31 students for the experimental and also 31 students for the control class.

Table III.2
Sample of the Second Year in Academic 2012-2013

No	Classess	Male	Female
1	VIII ⁶ (Experimental Class)	11	20
2	VIII ⁵ (Control Class)	15	16
Total		26	36
		62	

E.The Technique of Collecting Data

In this research the writer used multiple choices to collect the data of the students reading comprehension. The numbers of the questions were 20 questions. The questions were related to the indicators of reading comprehension. The test was divided into two kinds of tests; pre-test and post-test. Pre-test was given one

time before treatment and post-test was given after treatment. The treatment was given for eight meetings in the classroom. The test was given twice. First, test was given in pre-test. The purpose of giving pre-test is to know the students' ability in reading comprehension. Then, the post-test was given, the purpose of the post test is to know about the significant effect of using interactive instructional model toward students' reading comprehension. Before doing the test, the writer tried out the test items before students were given the test of this research.

1. Validity

Before the tests were given to the sample, both of tests were tried out to 25 students at the second year. The purpose of try out was to obtain validity and reliability of the test. The test given to students was considered not too easy than often show the low reliability. Item difficulty was determined as the proportion of correct responses. This is held pertinent to index difficulty, in which it was generally expressed by the percentage of the students who answer the questions correctly. The formula for item difficulty is as follows:³⁶

$$FV = \frac{R}{N}$$

Where: FV : Index of difficulty or facility value

R : The number of correct answer

N : The number of examines or students taking test

³⁶J.B.Heaton.1998. *Writing English Language Tests*.NewYork: Longman Group.p.178

The formula above was used to find out the easy of difficulties of each item test that researcher gave to the respondents. The items that did not reach the standard level of difficulty was excluding from the test and they were changed with the new items that were appropriate. It was stated that prepared in practice to accept items with facility values between 0.30 and 0.70. An instrument was valid if it was able to measure what must be measured. In validity of instrument of the test, it can be seen by the difficulties of the test. On the other hand, the test was not too easy and the test was not too difficult. The standard level of difficulty is 30 and 70. Then, the proportion of correct is represented by “p”, whereas the proportion incorrect is represented by “q”. it can be seen in the following tables:

Table III.3
General information of descriptive text.

Indicator	General information of text.					N
Item no.	1	5	9	13	17	27
Correct	10	13	9	13	16	
P	0.37	0.48	0.33	0.48	0.59	
Q	0.63	0.52	0.67	0.52	0.41	

Based on the table III.3 above ,the proportion of correct answer for item number **1** shows the proportion of correct **0.37**, item number **5** shows the proportion of correct **0.48**, item number **9** shows the proportion of correct **0.33**,item number **13** shows the proportion of correct **0.48** and item number **17** shows the proportion of correct **0.59**. Based on the standard level of difficulty “p” <0.30 and >0.70, it is pointed out that item difficulties in average of each item number for finding general information is accepted.

Table III.4
Answer the question of meaning vocabulary in descriptive text.

Indicator	Answer the question of meaning vocabulary in the text.					N
Item no.	2	6	10	14	18	27
Correct	13	14	13	15	13	
P	0.48	0.52	0.48	0.56	0.48	
Q	0.52	0.48	0.52	0.44	0.52	

Based on the table III.4, the proportion of correct answer for item number 2 shows the proportion of correct **0.48**, item number 6 shows the proportion of correct **0.52**, item number 10 shows the proportion of correct **0.48**, item number 14 show the proportion of correct **0.56** and item number 18 show the proportion of correct **0.48**. Based on the standard level of difficulty “p” <0.30 and >0.70 , it is pointed out that item difficulties in average of each item number for finding meaning vocabulary is accepted.

TABLE III.5

Generic structure in descriptive text.

Indicator	Generic structure from the text.					N
Item no.	3	7	11	15	19	27
Correct	11	15	14	10	14	
P	0.41	0.56	0.52	0.37	0.52	
Q	0.49	0.44	0.48	0.63	0.48	

Based on the table III.5, the proportion of correct answer for item number 3 shows the proportion of correct **0.41**, item number 7 shows the proportion of correct **0.56**, item number 11 shows the proportion of correct **0.52**, item number 15 shows the proportion of correct **0.37** and item number 19 shows the proportion of correct **0.52**. Based on the standard level of difficulty “p” <0.30 and >0.70 , it is pointed out that item difficulties in average of each item number for finding generic structure is accepted.

TABLE III.6

Functional of the text which are stated in descriptive text.

Indicator	Functional of the text					N
Item no.	4	8	12	16	20	2
Correct	14	15	12	9	14	
P	0.52	0.56	0.44	0.33	0.52	
Q	0.48	0.44	0.56	0.67	0.48	

Based on the table III.6 above, the proportion of correct answer for item number **4** shows the proportion of correct **0.52**, item number **8** shows the proportion of correct **0.56**, item number **12** shows the proportion of correct **0.44**, item number **16** shows the proportion of correct **0.33** and item number **20** shows the proportion of correct **0.52**. Based on the standard level of difficulty “p” <0.30 and >0.70, it is pointed out that item difficulties in average of each item number for finding functional of the text is accepted.

2. Reliability

A test must first be reliable as measuring instrument. Reliability is a necessary characteristic of any good test. Heaton explains that “reliability is of primary importance in the use of both public achievement and proficiency test and classroom test”. Knowing the instrument is reliable or not, the writer used KR-20 as follows:³⁷

$$r_i = \frac{k}{k-1} \frac{St^2 - \sum p_i q_i}{St^2}$$

Where:

k : total items

³⁷Sugiono.2011. *Statistika untuk Penelitian*. Bandung : Alfabeta. p. 359

p_i : proportion the correct scores

q_i : $1 - p_i$

S_t^2 : total variances

The data of students' score can be seen at Appendix based on the data that showed at appendix, the writer got:

$$\begin{aligned} Xt^2 &= Xt^2 - \frac{(\sum Xt)^2}{n} \\ &= 2523 - \left(\frac{257}{27}\right)^2 \\ &= 2523 - (9.51)^2 \\ &= 2523 - 90.44 = 2432.56 \end{aligned}$$

$$\begin{aligned} St^2 &= \frac{Xt^2}{n} \\ &= \frac{2432.56}{27} = 90.09 \end{aligned}$$

$$\begin{aligned} r_i &= \frac{k}{(k-1)} \left\{ \frac{St^2 - \sum p_i q_i}{St^2} \right\} \\ &= \frac{20}{20-1} 90.09 - \frac{4.88}{90.09} \\ &= \frac{20}{19} \frac{85.21}{90.09} = 1.052 (0.945) \\ &= 0.994 \end{aligned}$$

Knowing the reliability of the test, r_i must be compared with r product moment, r_i must be higher than r_t , on the other hand $r_i > r_t$. For the degree of significant 5% is 0.388 and the degree of significant 1% is 0.496. While, on statistical above, the score of reliability of the test is 0.994. So, it can be

analyzed that t_i is higher than r_i , and it can be seen from value of correlation coefficients that is categories in to **Very High** (Between 0.800 to 1.00) on other hand, the instrument test is reliable.

According to Arikunto the value of correlation coefficient is as follows³⁸;

1. **Between 0.800 to 1.00 = Very High**
2. Between 0.600 to 0.800 = High
3. Between 0.400 to 0.600 = Enough
4. Between 0.200 to 0.400 = Low
5. Between 0.00 to 0.200 = Very Low

F. The Technique of Data Analysis

To analyze the data, the writer established categories to classify the result of the test as main instruments of this research. The table below is the classification score based on Arikunto³⁹, They are as follows:

Table III.7
Classification of score

SCORE	CATEGORY
Very Good	80-100
Good	70-79
Enough	60-69
Less	50-59
Bad	0-49

The techniques of data analysis used in this research are independent sample T test formula and paired sample T test. According to Hartono, T-Test is one of the statistic test that is used to know whether any or not the significant

³⁸Suharsimi Arikunto. *Dasar-Dasar Evaluasi Pendidikan*. Jakarta: Bumi Aksara, 2009. p. 75

³⁹*Ibid.* P.245

effect of two samples of mean in two variables³⁴.The data were analyzed by using SPSS version 16.0.Then, the hypothesis is:

$$H_a : t_o > t_{table}$$

$$H_o : t_o < t_{table}$$

H_a is accepted if $t_o > t_{table}$ or there is significant difference of using interactive instructional model toward students' reading comprehension.

H_o is accepted if $t_o < t_{table}$ or there is no significant difference of using interactive instructional model toward students' reading comprehension.