CHAPTER III

RESEARCH METHODOLOGY

A. Research Design

In this research, the researcher used a quasi experimental research. The quasi experimental research was intended to measure the result of experimental treatment.[1] In quasi experimental research, every effort should be made to use groups that are as equivalent as possible. If differences between the groups on any major extraneous variables are identified. Analysis of covariance can be used to statistically equate the groups[2]. In this research, the researcher used non equvalent control group design. Non equvalent control group design is one of the most widespread experimental designs in educational research that involves an experimental group and a control group both given a pretest and a posttest, but in which the control group and the experimental group do not have pre-experimental sampling equivalence. The groups constitute naturally assembled collection such as classrooms, similar to availability permits that one can dispense with the pretest. The assignment of X to one group or the other is assumed to be random and under the experimenter's control.

This research was intended to find out the use of Memory Matrix technique on students' reading comprehension in narrative text. This research used two groups as sample. The first group was an experimental group (X)

[1]Ag. Bambang Setiyadi. 2006. *Metode Penelitian Untuk Bahasa Asing: Pendekatan Kuantitatif Dan Kualitatif*. Pekanbaru: Graha Ilmu. p. 135-136

[2] L.R. Gay. 2000. *Educational Research: Competencies For Analysis and Application.* New Jersey: Prentice Hall. p. 422

treated by Memory Matrix, and the second was the control group (Y) treated without Memory Matrix. Before applying the treatment, the researcher gave a pretest to know the students' comprehension, after that the researcher gave treatment to the students, and finally the students were given posttest to know their reading comprehension after being given the treatment.

B. The Location and Time

The location of this research was at the first year students of senior high school 3 kuala merbau. This research was conducted from February to March 2013.

C. The subject and The Object

The subject of this research was the first year students of senior high school 3 Kuala Merbau. Besides, the writer also picks up some interrelated personnel, such as the English teacher. The objects of this study were the use of Memory Matrix techniqueand students' reading comprehension. The aspects were investigated as follows:

1. The students' comprehension on structure of narrative text (orientation, complication, and resolution).
2. The significant effect of using Memory Matrix technique on students' reading comprehension in narrative text.

D. The Population and The Sample

The population of this research was the students at the first year of senior high school 3 Kuala Merbau that consisted of three classes. The total number

of the first year students of senior high school 3 Kuala Merbau was 87 students.

The researcher took only two classesafter doing clustering sample randomly; X A as an experimental class and X B as a control class. Those were as the sample of the research with 87 students; 29 students for experimental class and 29 for control class. The specification of the population can be seen on the table below:

Table III.1
The Population of the First Year Students of Senior High School 3

No	Class	Total	Male	Female	Sample
1	1 A	29	9	20	Experimental Group
	1 B	29	14	15	Control Group
3	1 C	29	14	15	
4	Total	87			

E. The Data Collection Techniques

In data collection techniques, the researcher used two techniques to collect the data as follows:

a. Test

The researcher gave two tests, pre-test and post-test in the same treatment to gain the data about reading comprehension. Pre-test was used to gain the data before doing treatment and the researcher gave post-test after doing treatment to obtain students' reading comprehension.

1) Validity

An instrument is valid if it is 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 is not too easy and the test is not too difficult. The standard level of difficulty is ≤ 30 and ≥70. Based on the result there are all of the valid items (20 items). Therefore, the pre test and post-test used 20 items that involved in the indicators of Reading comprehension.

TABLE III.2
The Score Items of Validity

No	Items Number	Students' correct	P (R/N)	<0.30 and >0.70	Description
1	1	19	0. 66	0. 66>0.30 and <0.70	Valid
2	2	16	0. 55	0.55>0.30 and <0.70	Valid
3	3	14	0.48	0.48>0.30 and <0.70	Valid
4	4	15	0.51	0.51>0.30 and <0.70	Valid
5	5	16	0. 55	0. 55>0.30 and <0.70	Valid
6	6	11	0.37	0.37>0.30 and <0.70	Valid
7	7	18	0. 62	0. 62>0.30 and <0.70	Valid
8	8	12	0.41	0.41>0.30 and <0.70	Valid
9	9	12	0.41	0.41>0.30 and <0.70	Valid
10	10	13	0.44	0.44>0.30 and <0.70	Valid
11	11	18	0. 62	0. 62>0.30 and <0.70	Valid
12	12	13	0.44	0.44>0.30 and <0.70	Valid
13	13	18	0. 62	0. 62>0.30 and <0.70	Valid
14	14	18	0. 62	0. 62>0.30 and <0.70	Valid
15	15	17	0. 58	0. 58>0.30 and <0.70	Valid
16	16	17	0. 58	0. 58>0.30 and <0.70	Valid
17	17	17	0. 58	0. 58>0.30 and <0.70	Valid
18	18	13	0.44	0.44>0.30 and <0.70	Valid
19	19	16	0. 55	0.55>0.30 and <0.70	Valid
20	20	16	0. 55	0. 55>0.30 and <0.70	Valid

2) Reliability

The good quality of instrument is determined by the instrument reliability. On the other hand, if the instrument is reliable, it has good

quality. Knowing the instrument is reliable or not, the writer used Alpha Cronbach's follows:

TABLE III.3
Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.644	.615	20

Based on the table III 3, we can see that cronbach's Alpha is .644, cronbach's alpha based on standardized items is .615, and number of items are 20.The score obtained compares to r table of product moment that the degree of freedom was 48 "r" product moment at the level of 5% is 0.273 and 1% is 0.354. The score obtained of Cronbach's Alpa was .644.

According to Suharsimi Arikunto the value of correlation coefficients as follow[3];

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

In conclusion, validity of the test is including as **High** category while reliability of the test is including as **High** category.

[3] *Ibid.* p. 75

3) Homogeinity

The data should be homogeneity variances. In pre-test, the writer analyzed the data to identify the homogeneity variances between experimental and control groups. The result could be showed in the following table:

TABLE III.4

The Homogeneity of Pre- Test

Sample Variance	**Variables**		$F_{obtained}$	F_{table}	
	Experimental	**Control**		**5%**	**1%**
S^2	44.48	45	**0.91**	1.87	2.44
N	25	25			

Based on the calculation by using F formula, the result was 0.919. It was compared to F_{table} at 5% significant level and at 1% significant level.

The testing criteria:

If : $F_{obtained} > F_{table}$=there is no homogeneity data

If : $F_{ontained} < F_{table}$= there is homogeneity data

Based on the result,$F_{obtained} < F_{table}$ (1.87>0.91<2.44). It means that the variances were homogeneity variances. Further, the complicated calculating can be seen on the appendix.

4) Normality

TABLE III.5

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	Df	Sig.
Preexp	.128	29	7.200	.932	29	9.061

precontr	.139	29	5.159	.942	29	8.114

a. Lilliefors Significance Correction

After checking in chi-quadrat table (significance 5%) and k – 1 = 6 - 1 = 5 , the writer got the chi-quadrat table score = 11.070. So, the writer concluded that the data were Normal.

b. Classroom Observation

This technique was used to gain the data about the implemetation of memory matrix technique and students' action in teaching learning process. The researcher found in the research location of first year students at senior high school 3 Kuala Merbau.

F. The Technique of Analysis Data

To analyze the collected data, the writer established some categories to classify the result of the test as main instruments of this research; the writer used T-test formula, adopted from Hartono[4]:

$$t_o = \frac{Mx - My}{\sqrt{\left(\frac{SDx}{\sqrt{N-1}}\right)^2 + \left(\frac{SDy}{\sqrt{N-1}}\right)^2}}$$

Note:

t_o : t observation

Mx : Mean of variable X (independent variable)

My : Mean of variable Y (dependent variable)

SDx : Standard error of mean of variable X

SDy : Standard error of mean of variable Y

N : The number of case

[4]Hartono.2006. *Statistik Untuk Pedidikan.*Yogyakarta: Pustaka Pelajar Offset. p. 171