CHAPTER III

RESEARCH METHODOLOGY

A. The Research Design

This research was an experimental research, Creswell explained experimental research is testing an idea (practice) to determine whether or not it influences an outcome or dependent variables[1]. Cohen stated an experiment involves making a change in the value of one variable – called the independent variable – and observing the effect of that change on another variable – called the dependent variable.[2]

This research was designed as a quasi experimental research which was intended to find out the effect of using paragraph hamburger strategy on students' writing abilty in narrative paragraph. This quasi experimental design was focused on Nonequivalent Control Group Design. In conducting this research, the writer used two classes. The first class was used as experimental class (X) taught by using paragraph hamburger strategy and a control class (Y) taught without using paragraph hamburger strategy. Both of two classes were given pre-test and post-test, but only the experimental class was treated by using paragraph hamburger strategy. In brief, this research was designed by the following table:[3]

[1]John.W.Cresswell. Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research. New Jersey : Pearson Eduction.2008.p 299

[2] Louis Cohen, Lawarence Manion and Keith` Marrison. Research Methods in Education Sixth Edition .(New York : Routlrdge.2007), p.272

[3] John W. Creswell, Op.Cit, p.314

Research Design

Experimental	O_1	X	O_2
- - - - - - - - - - - -			
Control	O_3		O_4

Where:

E : Experimental group

C : Control group

O_1 : Pre-test of experimental group

O_3 : Pre-test of control group

X : Receive particular treatment

O_2 : Post-test of experimental group

O_4 : Post-test of control group[4]

This research consisted of two variables, they were : Independent variable (Variable X) referred to The effect of using paragraph hamburger strategy and Dependent variable (variable Y) referred to students' writing ability in narrative pargaraph.

B. The Subject and the Objective of the Research

Based on the title of this research, the subject of this research was the first year students of MA Darel Hikmah Pekanbaru. Meanwhile, the objective of this research was to find out the effect of paragraph hamburger strategy on students' writing ability in narrative paragraph.

[4] Louis Cohen, Lawarence Manion and Keith Marrison. *Op. Cit, p. 283*

C. The Location and the Time of the Research

This research was conducted at Madrasah Aliyah Darel Hikmah Pekanbaru located on Jalan Manyar Sakti. This research was held from February to March 2014.

D. The Population and the Sample

The population of this research was the first year students of MA Darel Hikmah Pekanbaru. It consisted of 6 classes. The number of the students was in the following:

Table III.1

The Population of the Research

No.	Class	Female	Male	Total
1	X 1	33	_	33
2	X 2	30	_	30
3	X 3	36	_	36
4	X 4	_	22	22
5	X 5	_	22	22
6	X 6	_	22	22
Total				164

Based on the table above, the population of the students of the first year of MA Darel Hikmah pekanbaru was 164 students. The population was too large, therefore the writer needed to take sample by using Cluster Sampling. The writer used this technique because the students were homogenous and this technique selecting the sample was not individual but group. According to Gay and Airasian, Cluster sampling Randomly selects groups, not individuals. All the members of selected groups have similar characteristics.[5] And According to Suharsimi Arikunto if the amount of the subject is less than 100, it is better to take all of the population and if the amount of the subject is more than 100, it is better to take 10-15 or 20-25% of the population.[6] So, the writer used cluster sampling in taking sample because all samples had the same characteristic. So the writer used two classes as sample. The writer randomly chose X4 for experimental class and X5 for control class.

Table III.2

The Number of Sample of the First Year students at MA Darel Hikmah Pekanbaru

No.	Class	Students		Number of Students
		Male	Female	
1	X.4 (Experimental Class)	22	-	22

[5] L.R. Gay and Peter Airasian, *Educational Research Competencies for Analysis and Application, Sixth Edition* , (New Jersey: Prentice Hall, 2000) , p. 129

[6] SuharsimiArikunto. *ProsedurPenelitian: SuatuPendekatanPraktikEdisiRevisisi VI*. (Jakarta: RinekaCipta, 2006), p. 134

2	X.5 (Control Class)	22	-	22
Total				44

Based on the table above, it is clear that the experimental class consisted of 22 students and control class also consisted of 22 students. So the number of both experimental class and control class was 44 students.

E. Technique of Collecting Data

In this research, the writer collected the data by using:

1. Observation

Observation is the way to organize and control students' behaviour, movement and interaction by writer as a teacher in the class. In this reseach, obsrvation was used to collect data on paragraph hamburger strategy in teaching learning process.

2. Test

According to Brown test is " a method of measuring of a person's ability, knowledge or performancein s given domain"[7]. In this research, test was divided into two ways; pretest was given before the treatment and posttest was given after doing treatment. Both pretest and postest either from experimental group or control group were assessed by two raters. To measure the students' writing ability in narrative paragraphs, the writer used writing assessment used by the English teacher of MA Darel Hikmah pekanbaru.

[7] H. Douglass Brown.*Op. Cit.,* p.3

Table III.3

ASSESSMENT ASPECTS OF WRITING NARRATIVE PARAGRAPH

No.	Aspect Assessed	Score			
		1	2	3	4
1	Content				
2	Organization a. Orientation b. Complication c. Resolution				
3	Vocabulary				
4	Grammatical Features a. Action Verb b. Temporal Connectives c. Past Tense				
5	Spelling and Punctuation				
Total					
Maximum Score		20			

Explanation of score:

1 = Incompetent

2 = Competent enough

3 = Competent

4 = Very Competent

Final Score = $\frac{TotalScore}{MaximumScore} x\ 80$

F. Technique of Analyzing Data

In this research, to analyze the students' writing ability in narrative paragraph, the writer used graduated standard of English lesson in Darel Hikmah Pekanbaru (SKL) that is75 for students' ability in writing narrative paragraph. It means that for those who get score <75, they do not pass graduated standard (SKL), while for those who get score ≥75, they pass graduated standard (SKL).

To find out there was any significant difference or not of students' writing ability in narrative paragraph by using Paragraph Hamburger strategy, the data were analyzed by using statistical method. The writer used score of post-test of the students' writing test from control group and experimental group. The writer analyzed the data by using independent sample t-test formula and the data were analyzed through SPSS 17 Version. The data were analyzed by using formula below:[8]

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

Where:

t_o = the value of t-obtained

M_x =Mean score of experimental class

M_y = Mean score of control class

SD_x =Standard deviation of experimental class

[8]Hartono.*StatistikuntukPenelitian.* (Yogyakarta: PustakaPelajar, 2004),p. 208

SD_y = Standard deviation of control class

N = Number of students/ sample

G. Reliability and Validity

The reliability can be defined as consistency of measurement across different characteristics or facet of a testing situation.[9] The following table is the categories of reliability test used in determining the level of the reliability of the test:

Table III.4

The Level of Reliability

No	Reliability	Level of Reliability
1	0.0 – 0.20	Low
2	0.21 – 0.40	Sufficient
3	0.41 – 0.70	High
4	0.71 – 1.0	Very high

(Taken from Tinambunan in Meltiawati in Zelly)[10]

To determine the reliability of the test in this research, the writer used inter-rater reliability formula because the writer used two raters in assessing and giving the score of the students' writing. The scores given by rater 1 were correlated to scores given by rater 2. As explained by Henning, if rating of students' result of the test is rated by two or more judges or raters, the correlation between raters

[9]Sara Cushing Weigle, *Assessing Writing: Cambridge Language Assessment Series*. J. Charles Alderson & Lyle F. Bachman.(Cambridge: Cambridge University Press, 2002), p. 49

[10]ZellyPutriani. "The Correlation between Reported speech Mastery and Speaking Ability of the Second Year Students of SMKN 1 Pekanbaru". (Pekanbaru: Unpublished, 2011), p. 35

should be inter correlated. Then, the intercorrelation of the raters is used in finding the reliability of the test.[11]

To determine the correlation between scores given by rater 1 correlated to scores given by rater 2, the writer used *Pearson Product Moment* formula through SPSS 17 version.

*r*product moment can be obtained by considering the degree of freedom (df) as follows:

df = (N1+N2) - nr

where:

df= the degree of freedom

N1= Number of students of experimental class

N2= Number of students of control class

nr= the total variable correlated

Statistically the hypotheses are:

H_o: $r_o < r_t$

H_a: $r_o \geq r_t$

H_o is accepted if $r_o < r_t$or there was no significant correlation between scores given by rater 1 and rater 2.

[11]Grant Henning,*AGuide to Language Testing: Development, Evaluation and Research*. (Boston:Heinle&Heinle Publisher, 1987) pp. 82-83

H_a is accepted if $r_o \geq r_t$ or there was a significant correlation between scores given by rater 1 and rater 2.

Next, the writer used the *Spearman-Brown Prophecy* formula to find the final reliability obtained between two raters. The following formula is:

$$r_{tt} = \frac{nr_{A,B}}{1+ n-1\ r_{A,B}}$$

Where:

r_{tt} = inter-rater reliability

n = the number of raters whose combined estimates from the final mark for the examinees

$r_{A,B}$ = the correlation between raters, or the average correlation among all raters if there are more than two[12]

The following table describes the correlation between scores given by rater 1 and rater 2 by using *Pearson Product Moment* formula through SPSS 17 version.

Table III.5

Correlations

		rater1	rater2
rater1	Pearson Correlation	1	.550**
	Sig. (2-tailed)		.008
	N	22	22

[12] Ibid, p. 83

rater2	Pearson Correlation	.550**	1
	Sig. (2-tailed)	.008	
	N	22	22

**. Correlation is significant at the 0.01 level (2-tailed).

From the table above, it can be seen that the coefficient of correlation product moment $r_{obtained\ (}r_{o)}$between scores given by rater 1and rater 2 is 0.550. Before comparing it to $r_{table}(r_t)$, the writer obtained the degree of freedom

df= N-nr

df= 22-2 = 20

After obtaining the degree of freedom (df) = 20, the coefficient product moment $r_{obtained}$was compared to r_{table}either at level 5% or 1%. At level 5% $r_{table}$is 0.423; while at level 1% is 0.537. Based on $r_{table,}$ it can be analyzed that (r_o) is higher than (r_t) either at level 5% and 1%. It is clear that 0.423<0.550>0.536. So that, the writer concluded that $H_o$is rejected and H_a is accepted. It means that there was a significant correlation between scores given by rater 1 and rater 2. In other words, the writing test was reliable. Then, $r_{obtained}$is adjusted by the *Spearman-Brown Prophecy* formula below:

$$r_{tt} = \frac{nr_{A,B}}{1+ n-1\ r_{A,B}}$$

$$r_{tt} = \frac{2\ (0.550)}{1+ 2-1\ (0.550)}$$

$$r_{tt} = \frac{1.1}{1+0.550}$$

$$= \frac{1.1}{1.550}$$

= 0.709

Based on the calculation above, the writer obtained that inter rater reliability was 0.709. So, it can be concluded that the reliability of writing test included high level.

Besides, the test also used validity. A test said validity if it measures accurately what it is intended to measure.[13] In this research, the writer used content validity. According to Sugiyono, content validity is a kind of test that is used to measure achievement, the test must be created based on appropriate material; it is easy to be comprehended or suitable with student level.[14] The test of the research was appropriate to students' knowledge and it was familiar materials to the students' daily life.

[13]Athur Hughes, *Testing for Language Teachers* . Second Ed. (Cambridge: Cambridge University Press, 2003), p. 26

[14] Prof. Dr. Sugiyono. *MetodePenelitianPendidikan: PendekatanKuantitatif, Kualitatifdan R&D.* (Bandung: Alfabeta, 2011), p. 176