CHAPTER III

RESEARCH METHOD

A. The Research Design

The design of this research was quasi-experimentalresearch with pre-test and post-test design.Pre-testwasdonebeforeteachingandlearningprocess, whilepost-test wasdoneatthe end of the study. Post-test score were compared to determine the effectiveness of the treatment.[1] This research consisted of two variables; the independent variable symbolized by "X" that was usingText-Based Modeling Strategy (TBMS)and the dependent one was "Y" that referred to writing ability on narrative paragraph of the eleventh grade students at State Senior High School2Dumai. In brief, it can be seen from the table below:

Table III.1
The Research Design

Class	Pre-test	Treatment	Post-test
Experiment Class	O_1	X	O_2
Control Class	O_1		O_2

Note:

O1   : Pre-test to experiment and control class

O2   : Post-test to experiment and control class

X   : Receiving treatment, that is using Text-Based Modeling Strategy (TBMS)

O̶: No treatment

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[1]Gay, L.R and Peter Airasian, *Educational Research Competencies for Analysis and Application*, (New Jersey: Prentice-Hall. Inc, 2000), p. 392.

B. The Location and Time of The Research

The research was conducted at the eleventh grade students at Senior High School 2 Dumai. This research started from July to Agustus 2014.

C. TheSubject and Object of the Research

The subject of the research was the eleventh grade students at Senior High School 2 Dumai and the object has the effect of using Text-Based Modeling Strategy (TBMS) on the ability in writing narrative paragraph by the eleventh grade students' at Senior High School 2 Dumai.

D. The Population and Sample of the Research

    1. Population of the Research

The population of this research was the first semester of the eleventh grade students at Senior High School 2 Dumai, in academic year of 2014/2015. There were six classes of IPA. The total number of the eleventh grade students at Senior High School 2 Dumai was 80 students.

    2. Sample of the Research

Table III.2
The Population and Sample of the Research

No	Class	Population	Sample
1	XI IPA 1	40	**Control Class**
2	XI IPA 2	40	**Experimental Class**
Total			**80**

Based on the total population above, the researcher took sample by using cluster random (random assignment) sampling. According to Gay *et al*, cluster

sampling selects groups, not individual[2]. So, the researcer selected two groups of students to be taken as samples, that consisted of 80 students, they are XI IPA 1 and XI IPA 2.

E. The Technique of Collecting the Data

The researcher used test to find the data of the students' writing ability. The test was distributed to measure the students' writing ability. The test consisted of pre-test and post-test.

1. **Pre-test**

    The pre-test wasgivento determine the early background ability of the students' writing ability on narrative paragraph. It was given to the students before giving the treatment. The type of the test was writing test in which the students were given a command to write a narrative paragraph. The material of the test was based on the syllabus given to the Eleventh Grade students of State Senior High School 2 Dumai.

2. **Post-test**

    The post-test was conducted after giving the treatment in teaching and learnin gprocess. It was used to know whether there was an improvement of students'writing ability. The test used in post-test was the same as the test of pre-test. Therefore, the total score who correctly was 100 points.

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

F. The Technique of Data Analysis

In this research, the data were analyzed by using statistical method. The researcher used students' post-test scores of the experimental and the control group as the data of the research. The data from the classroom used the category standard as follows:

Table III.3
The Aspects Assessed in Writing[3]

No	Aspects Assessed	Score			
		1	2	3	4
1	Content (Fluency)				
2	Organization (Coherence & Cohesion)				
3	Vocabulary				
4	Language Usage (Grammar)				
5	Mechanics				
	Maximum Score	**20**			

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[3] Arthur Hughes, *Testing for Language Teachers*,(Cambridge : Cambridge University Press,2003), 2ndEdition, p. 104.

The criteria of scoring each aspect was based on the table below:

Table III.4
The Indicators of Writing Ability

No	Aspect	The indicators
1.	**Content / Fluency**	1. Very poor: doesn't show knowledgeable of subject, non substantive, non pertinent, or not enough to evaluate. 2. Fair to poor: limited knowledgeable of subject, title substance, inadequate development of topic. 3. Good to average: some knowledgeable of subject, adequate range, limited development of thesis, mostly relevant to topic, but lacks detail. 4. Excellent to very good: knowledgeable substantive, thorough development of thesis, relevant to assigned topic.
2.	**Organization**	1. Very poor: does not communicate, no organization,or not enough to evaluate 2. Fair to poor: not-fluent, ideas confused/disconnected, lacks logical sequencing and 3. Good to average: somewhat choppy, looselyorganized but main ideas stand out, limited support, 4. Excellent to very good: fluent expression, ideasclearly stated, succinct, well-organized, logicalsequencing, cohesive.
3.	**Vocabulary**	1. Very poor: essentially translation, little knowledgeof English vocabulary, idioms, word form, or not enough to evaluate. 2. Fair to poor: limited rangefrequent errors ofword/ idiom form, choice, usage but meaning confusedor obscured. 3. Good to average: adequate range, occasional of word/ idiom form, choice, usage, bit meaning is not obscured. 4. Excellent to very good: sophisticated range, effective word/ idiom choice and usage, word form mastery, appropriate register.
4.	**Language Usage** **(Grammar)**	1. Very poor: virtually no mastery of sentenceconstruction rules, dominated by errors, does notcommunicate, or not enough to evaluate. 2. Fair to poor: major problems in simple/ complex construction, frequent errors of negation, agreement, tense, number, word order/function, articles, pronouns, prepositions and/or fragments, run-ons, deletions,meaning confused or obscured. 3. Good to average: effective but simple construction, minor problems, in complex construction, several errors of agreement, tense, number, word order/function, articles, pronouns, preposition but meaning seldom obscured. 4. Excellent to very good effective complex construction, few errors of agreement, tense, number, word order/function, articles, pronouns, prepositions.
5	**Mechanics**	1. Very poor: no mastery of conventions, dominated byerrors of spelling, punctuation, capitalization, paragraphing, paragraphing, handwriting illegible, ornot enough to evaluate. 2. Fair to poor: frequent errors of spelling, punctuation, capitalization, paragraphing, poor handwriting, meaning confused or obscured. 3. Good to average: occasional errors of spelling, punctuation, capitalization, paragraphing but meaning not obscured. 4. Excellent to very good: demonstrates mastery of conventions, few errors of spelling, punctuation, capitalization, paragraphing.

After the scores were classified, the scores were analyzed by using statistical analysis t_{test}. The process to analyze the data is as follows:

1. Find out the means score of experimental class (M_x) and means score of control class (M_y). The formula is as follow:

$$M_x = \frac{\sum x}{N} \text{ and } M_y = \frac{\sum y}{N}$$

Where:

M_x = Mean score of experimental class

M_y = Mean score of control class

x = Difference score of experimental class

y = Difference score of control class

N = Number of students

2. Find out the Standard Deviation of experiment class (SDx) and the Standard Deviation of control class (SD_y).

3. Find out the variance of control class $\left(\sum x^2\right)$ and the variance of experimental class $\left(\sum y^2\right)$. The formula is as follows:

$$\sum x^2 = \sum X^2 - \frac{(\sum x)^2}{N} \text{ and } \sum y^2 = \sum Y^2 - \frac{(\sum y)^2}{N}$$

Where: x^2 = Variance of control class

y^2 = Variance of experimental class

x = Difference score of control class

y = Difference score of experimental class

N = Number of students

4. Find out homogeneity test. The formula is as follows:

$$f_{calculated} = \frac{the\,greater\,\mathrm{var}\,iance}{the\,lesser\,\mathrm{var}\,iance}$$

5. Find out whether there is a significant difference of writing ability on narrative paragraph between both classes after being taught by using Text-Based Modeling Strategy (TBMS) for experimental and conventional technique for control class. It was be analyzed by using t-Test formula[4]. It is one of the statistic tests used for knowing "there is/there is no" differences from two variable.

The formula as follows:

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

Where:

t_o : the t-value or $t_{observation}$

M_x : the mean of variable X

M_y : the mean of variable Y

SD_x: standard deviation of variable X

SD_y: standard deviation of variable Y

N : the number of cases

The t-table has the function to see if there is a significant difference between the mean of the score of both experimental and control groups.

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[4]Hartono.*StatistikUntukPenelitian*. (Yogyakarta:PustakaPelajar, 2008) . p.208

After finding out t-score, the final step was to figure out the degree of freedom of two group. The degree of freedom was used to determine whether the t-score was a significant value. To find the degree of freedom, this following formula was used:

df = $(N_1-1) + (N_2-1)$

where

df = The degree of freedom of the two groups

N = The number of the individual in two groups

1   = Constant number

The t-calculate to the value of the table, if the value of t-calculate is the same or less than the value of the t-table, the null hypothesis is accepted, on the other hand, if the value of t-calculate is more than the value of the t-table, the alternative hypothesis is accepted.