

CHAPTER III

RESEARCH METHODOLOGY

A. Research Design

The design of this research was a quasi-experiment design. The type used was the static-group comparison. This design required at least two groups; experiment class and control class. Experiment class was treated by Power Notes strategy. Control class was treated by conventional strategy.

Both groups were given pre test to know their writing ability before doing the research at experimental class and post test after giving the treatment. In this case, $X_1 (X)$ = in-service training and $X_2 (0)$ = no in-service training.¹⁶ Post-test score was compared with the pre-test to determine the effectiveness of the treatment. This research consisted of two variables; the independent variable was symbolized by “X” that was the effect of using Power notes strategy and the dependent one as “Y” which referred to students’ writing ability on procedure text. In brief, the research was designed by the following table

¹⁶ Gay, L.R and Peter Airasian. Educational Research, New Jersey: (Prentice-Hall. Inc. 2000). .. p 389.

Table III.1
Research Design

Class	Pre-Test	Treatment	Post-Test
Experiment	O1	X	O2
Control	O1		O2

Where:

O1 : Pre-test

O2 : Post-test

X : Treatment of using power notes strategy

: No treatment

B. Location and Time of the Research

The research was conducted at the social science class of eleventh grade students at State senior high school 1 Bangkinang Seberang on September 2013.

C. Subject and Object of the Research

The subject of this research was the eleventh grade students of social science at State senior high school I (SMAN I) Bangkinang Seberang, while the object was the students' writing ability on procedure text by using Power Notes Strategy.

D. Population and Sample

The total of population of this research was all the Eleventh grade students of State senior high school 1 Bangkinang Seberang. They were divided into 4 classes. It consisted of one class of Science and 3 classes of Social science. Science consisted of 23 students, while Social 1 consisted of 25 students, Social 2 consisted of 29 students and Social 3 consisted of 25 students. Based on the data above, all of the populations were 102 students. Since the research was a quasi-experimental research; In addition, researcher took only two classes from four classes as sample of the research by using clustering random sampling, because the four classes were divided into one Science class and three social classes, in order to make the same level, then researcher only took two Social classes with the same English teacher. Furthermore, the researcher took two classes only. They were Social 1 of eleventh grade that consisted of 25 students as control group, and Social 3 of eleventh grade that consisted of 25 students as experimental group. So, the total of sample was 50 students.

Table III.2

The Sample of the Research

No	Class	Explanation	Number of Sample
1	XI Social 1	Control	25
2	XI Social 3	Experiment	25
Total			50

E. The Technique of Data Collection

The researcher used two kinds of instruments. They were test and observation. These instruments were used to find out how students' ability in writing procedure text taught by using Power Notes Strategy was, to find out how students' ability in writing procedure text taught by conventional technique was and to find out whether there was or not significant effect of using Power Notes Strategy toward students' ability in writing procedure text.

1. Observation

Observation was used to know teaching activity in teaching and learning process by using a strategy. This technique was carried out to observe directly the process of Power notes strategy toward the researcher and the result on the effect of Power notes strategy toward student's writing ability. The observation was applied in the classroom. It was carried out for eight meetings along the research. Person who did and gave the tick on this instrument was the English teacher at the research classes. The form of observation is presented below:

Table III.3

Observation Sheet for Researcher's Activities in Control Class

No	Teacher's Activity	Observation							
		I	II	III	IV	V	VI	VII	VIII
1	The teacher introduces the vocabulary word and the map to the students								
2	The teacher teaches the students how to use the map by putting the target word in the central box								
3	The teacher asks the students to suggest word or phrases to put in the other boxes which answer the following questions: "what is it?", "what is it like?", "what are some examples?".								
4	The teacher encourages students to use synonyms, antonyms, and picture to help illustrate the new target word or concept.								
5	The teacher models how to invite a definition using the information on the word map.								
Total									

The English teacher also observed researcher's activities in the experimental class below:

Table III.4**Observation Sheet for Researcher's Activities in Experimental Class**

No.	Researcher's Activity	Observation							
		I	II	III	IV	V	VI	VII	VIII
1.	The researcher introduces procedure text to the students by using brainstorm.								
2.	Next, the researcher introduces the concept of POWERS by showing student a simple example that In writing procedural text								
3.	The researcher models a short example power note using the assigned topic or text								
4.	The teacher asks the student to write the procedure text and reminds them to start with Power 1s and record examples by providing Power 2s, and finally to elaborate and expand by adding Power 3 details								
5.	The researcher and the students discuss students' works about writing procedure text by using POWER Note Strategy								
	Total								

Both observation sheets above were filled when conducting the research.

The English teacher sometimes gave comment to the activity as the reflection for the research. The comment means to be additional point to complete the data.

2. Test

The test was distributed to measure the students' writing ability. The test was divided into two parts; pre-test was given before the treatment, and post-test was given after the treatment. The type of the test was writing test where the students were given a command to write a procedure text by using Power Notes Strategy for experimental class and conventional technique for control class. The material of the test was based on the syllabus given at the Eleventh Grade of State Senior High School 1 Bangkinang Seberang.

F. The Techniques 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.

In here, the writer used the statistical calculation of independent sample T-test formula and Non independent sample T-test Formula.

1. Independent sample T-test

Independent sample t-test formula is used to find out whether there is significant difference or there is no significant difference between two or more variables can be analyzed by using independent sample t-test.¹⁷ Gay added that the t-test for independent sample is used to determine whether there is probably a significant difference between the means of two independent sample.¹⁸ Independent sample t-test was used to find out the result of the first and second hypothesis. They were as follow:

1. To find out whether there was a significant difference of writing ability on procedure text between both classes before being taught by using Power notes strategy for experimental and conventional technique for control class.
2. To find out whether there was a significant difference of writing ability on procedure text between both classes after being taught by using Power notes strategy for experimental and conventional technique for control class. In this research, the writer analyzed by using SPSS 16.

The formula as follows:

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

Where:

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

M_x : the mean of variable X

M_y : the mean of variable Y

¹⁷ Hartono =, *Statistik Untuk Penelitian* (Pekanbaru: Pustaka, 2010), p. 177

¹⁸ L.R Gay, *Op.Cit.* p. 484.

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 group.

Furthermore, the data from the classroom used the category standard as follows:

Table III.5
The Aspects Assessed in Writing¹⁹

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			

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

Table III.6

¹⁹ Arthur Hughes, *Testing for Language Teachers*,(New York: Cambridge University Press,2003), 2ndEdition, p. 104.

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, loosely organized but main ideas stand out, limited support, 4. Excellent to very good: fluent expression, ideas clearly stated, succinct, well-organized, logical sequencing, cohesive.
3.	Vocabulary	1. Very poor: essentially translation, little knowledge of English vocabulary, idioms, word form, or not enough to evaluate. 2. Fair to poor: limited range frequent errors of word/ idiom form, choice, usage but meaning confused or 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 sentence construction rules, dominated by errors, does not communicate, 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 by errors of spelling, punctuation, capitalization, paragraphing, paragraphing, handwriting illegible, or not 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.

The t-test was obtained by considering the degree of freedom (df) = (n1+n2)-2 statistically, the hypotheses were:

$$H_0: t_o < t\text{-table}$$

$$H_0: t_o > t\text{-table}$$

H_a is accepted if $t_o > t\text{-table}$ or there is a significant effect after using power notes strategy on the writing ability procedure text.

H_0 is accepted if $t_o < t\text{-table}$ or there is a significant effect after using power notes strategy on the writing ability procedure text.

2. Non independent sample T-test Formula

Non independent sample t-test is known also as Paired sample t-test. The writer used this formula to obtain the result of the third hypothesis that was to find out whether there was a significant effect of using Power notes strategy on the writing ability procedure text of the eleventh grade of social sciences class at state senior high school I (SMAN 1) Bangkinang seberang. L.R Gay states that t-test for non independent sample is used to compare groups that are formed by some type of matching or to compare a single group's performance on a pre-test and post-test or on two different treatments.²⁰ In this research, the writer use used pre-test and post-test score of the experimental class in order to find out the significant effect of using Power notes strategy on the writing ability procedure text of the eleventh grade students of social sciences at state senior high school I (SMAN 1) Bangkinang seberang. To obtain the data, the writer used SPSS 16. The formula of paired sample t-test is as follows:

$$t = \frac{\frac{\sum d}{N}}{\sqrt{\frac{\sum d^2 - \frac{(\sum d)^2}{N}}{N(N-1)}}$$

²⁰ L.R Gay, Op cit, p. 488.

The t-table has the function to see if there a significant difference between the mean of the score of both pre-test and post-test. The obtained value is consulted with the value of t-table at degree of freedom (df)= N-1 which is statistically hypothesis.

$H_0: t_o > t\text{-table}$

$H_0: t_o < t\text{-table}$

H_a is accepted if $t_o > t\text{-table}$ or there is a significant effect after using power notes strategy on the writing ability procedure text.

H_0 is accepted if $t_o < t\text{-table}$ or there is a significant effect after using power notes strategy on the writing ability procedure text.

Test for normality of data

The abbreviated hypothesis is tested by using parametric statistic, among used *T-test for one sample, Correlation and regression, Varian analysis, and T-test for two samples*. In behalf of parametric statistic is required each of data have to distribute normally. Therefore, before the testing for hypothesis done, the test for normality of data should be done first. There were some techniques that could be used to test the normality of data such as *Paper chance and Chi Quadrate*.²¹

And to know the score of the post test of students from control class and experiment class was distributed normally or not automatically, the researcher used Kolmogorov Smirnov analysis in SPSS 16.

After analyzing by using SPSS 16, the result is as follows :

²¹ Sugiyono. *Metode Penelitian Pendidikan (Pendekatan Kuantitatif, kualitatif, and R&D)*. Bandung : Alfabeta,2012. p. 241

a. Control Class

Table III.7
One-Sample Kolmogorov-Smirnov Test

		Post control
N		25
Normal Parameters ^a	Mean	47.1200
	Std. Deviation	6.63526
Most Extreme Differences	Absolute	.361
	Positive	.361
	Negative	-.220
Kolmogorov-Smirnov Z		1.804
Asymp. Sig. (2-tailed)		.003

a. Test distribution is Normal.

Based on the table above, it can be seen that the

mean of the post test from control class is 47.1200 and the standard deviation was 6.63526 also the Kolmogorov-Smirnov Z is 1.804 and the distribution of the scores of test is normal.

b. Experimental Class

Table III.8
One-Sample Kolmogorov-Smirnov Test

		Post experiment
N		25
Normal Parameters ^a	Mean	59.4400
	Std. Deviation	7.14796
Most Extreme Differences	Absolute	.189
	Positive	.189
	Negative	-.093
Kolmogorov-Smirnov Z		.943
Asymp. Sig. (2-tailed)		.336

a. Test distribution is Normal.

Based on the table above, it can be seen that the mean of the post test from experimental class is 59.4400 and the standard deviation is 7.14796 also the Kolmogorov-Smirnov Z is 0.934 and the distribution of the scores of test is normal.