CHAPTER III

METHODOLOGY

This chapter will discuss the method that the researcher uses in conducting the study. It involves the Research Design, Population and Sample, Data Collection, and Data Analysis.

3.1 Research Design

Experimental research is the design of this study. According to (Miller, 1984: 4) experiment is a research collection of data to know the effect of variable and the other variable. Its purpose is to examine the theory, so the aim of this study is to examine the effect of Four Square Writing Method (4SWM) through Picture Series in Writing Narrative Text. This study uses quasi-experimental design. Dinardo (2008) found that quasi-experiment use to predict the cause and effect of the relationship between independent and dependent variable. The researcher uses quasi-experiment because the school does not allow the researcher to do randomization and do true experiment at SMA Nusantara Balongpanggang. It is because the classification of the class at SMA Nusantara Balongpanggang had been determined by the school. It means that the researcher cannot change the classification of the group. So that, the researcher does not have accesses to full control the target.

There are two variables in this study. The first is Writing Narrative Text as dependent variable and the second is Four Square Writing Method as independent variable. There will be two groups; those are control group which will be given the treatment by the teacher's strategy that is "Think Pair Share" and experimental group which will be given a treatment by using "Four Square Writing Method". The researcher gives pre-test and post-test to collect the data in

order to find out the result between the students of control group and experimental group in pre-test and post-test and also to see the effect of using four square method through Picture Series in students' writing Narrative Text for XIth grade at SMA Nusantara Balongpanggang.

Table 1 Pre-test, Post Test Quasi Experimental Design

Group	Pre-test	Treatment	Post-test
Experimental	√	√	√
Control	√	-	√

Criteria:

√: With the treatment of Four Square Writing Method

- : With the treatment of teacher's strategy "Think Pair Share"

3.2 Population and Sample

3.2.1 Population

According to Gay and Airasian (2000), population is the group that researcher wants to generalize the result of the study. The population of this research is the students of SMA Nusantara Balongpanggang who are in eleventh grade. There are 2 classes with 31 students as the total of subjects. They are divided into two groups, one is experimental group and another is control group.

3.2.2 Sample

Sample is part of population (Sugiyono, 2009 in Hanglopo, 2013). In this research, the technique is cluster sampling. Ary (1990), argue that cluster

Sampling is choosing a group already together not an individual. The researcher uses technique of cluster sampling because the school has been determining the classification of the class. Here, XI IPA will be as experimental group which consist of 16 students and XI IPS will be as control group which consist of 15 students.

3.3 Data Collection

3.3.1 Instrument

Research instrument is an important role in doing the research. In this study, the researcher uses tests as an instrument. The instrument is writing on narrative text in order to measure the student's writing skill. It is very important to measure the validity of the tests to make sure that the tests are valid. Research instrument is a tool, which is used by the researcher to collect the data. The instrument is created whether the research success or not.

3.3.1.1 Test

There are two tests in this study, pre-test and post-test. Pre-test will be given to the students before the treatment. It is to gain the data of students' entry in mastering writing ability. Besides, the post-test will be given to the students after giving the treatment. The test checks the content validity. The content of the item is based on the standard of competence in the syllabus (school-based curriculum or KTSP) in XIth grade of Senior High School.

3.3.1.1.1 Pre-test

The pre-test will be given before the students get the treatment. Its form is written test to measure students' writing skill on narrative text. The researcher asks the students to

compose the narrative story that they know by their own language. The students will make a narrative text about the story that they ever heard. From the result of the pre-test, the researcher will get the students' writing skill.

3.3.1.1.2 Post-test

Post-test is to find out whether the students make progress in their writing skill or not. Post-test will be given after the students get the treatment which is Four Square Writing Method for experimental group and Think Pair Share for control group. The test in this research is written text, especially narrative text. Post-test becomes comparator between experimental group and control group.

3.3.1.2 Validity

Before doing pre-test and post-test as an instrument of the research, the test should be tried out in terms of validity. In this study, the test will be analyzed by using content validity. The content validity is measured related to the content of the instrument in Indonesia curriculum. To test the content validity, the researcher should compare the content of instrument to the materials based on English curriculum and English syllabus. If its content reflects the curriculum guides and syllabus, then the item of the tests is valid.

Standard Competence	Basic Competence	Pre-Test	Post-Test
Mengungkapkan makna dalam teks esei berbentuk *report, narrative,* dan *analytical exposition*	Mengungkapkan makna dan langkah retorika dalam esei dengan menggunakan ragam bahasa tulis	Compose a narrative text with free topic as you	Compose a narrative text from one of the title below! -Mousedeer

dalam konteks	secara akurat, lancer	know by	and Crocodile
kehidupan sehari-hari	dan berterima dalam	your own	-Cinderella
	konteks kehidupan	language	-Malin
	sehari-hari dalam teks		Kundang
	berbentuk: *report,*		-Nyi Roro
	narrative, dan		Kidul
	analytical exposition		

3.3.2 The Procedure of Collecting the Data

The researcher uses procedures to collect data; the first is the researcher makes English writing test for pre and post-test which consists of making a narrative text. The second, the researcher divides subjects into two groups as experimental and control group. The third, the researcher gives the treatment to the experimental group by using Four Square Writing Method while control group get the treatment by using the teacher strategy which is Think Pair Share. The treatment will be done for four times. In the first meeting, the researcher will give the topic about "**Fable**", the second meeting gives the topic "**Fairy Tale**", the third meeting gives the topic "**Legend**" and the last meeting gives the topic "**Myth**". In each meeting, the researcher will give the evaluation. In the evaluation process, the researcher will discuss with the English teacher about the meeting. The fourth, researcher gives the post-test for control and experiment group. The last is analyzing the data from pre-test and post-test by using SPSS 16.0 program. The schedule as follow:

Table of the schedule

No	Meetings	Topic	Total of Students
1.	1st Meeting	Narrative "**Fable**" theme	31
2.	2nd Meeting	Narrative "**Fairy Tale**" theme	31

3.	3rd Meeting	Narrative "**Legend**" theme		31	
4.	4th Meeting	Narrative "**Myth**" theme		31	

3.3.3 Scoring Guide

The scoring guide is used to guide the teacher to correct the students' test. Because the researcher only focus on students' generating and organizing the ideas, so the rubric has 4 aspects which is generating the ideas (topic sentence), generating the ideas (supporting sentence), organizing the ideas (unity), and organizing the ideas (coherence).

To correct the test of this research, the researcher will use three correctors because writing is the subjective test which needs an accurate in correction. The first corrector is a researcher, the second is an English teacher at SMA Nusantara Balongpanggang who has been teaching in eleventh grade for 12 years, and the last is the English teacher at SMA Nusantara Balongpanggang and he becomes the lecture in University. The scoring guide can be seen as follow:

Criteria/Aspect	Weight	81-100	61-80	41-60	20-40	Score
Topic sentence (main ideas)	25%	Clear topic sentence, correctly placed, and introducing the characters are detail mentioned	Clear topic sentence, correctly placed, introducing the characters are little mentioned	Clear topic sentence, incorrectly placed, introducing the characters are not mentioned	Unclear topic sentence, incorrectly placed, introducing the characters are not mentioned	
Supporting sentences (details)	25%	Three or more supporting	Two supporting details	One supporting details	No supporting details that	

		details related to main ideas	related to main ideas	related to main ideas	related to main ideas
Organizing ideas (Unity)	25%	☐ Discussing only one ideas in a paragraph	☐ Discussing two ideas in a paragraph	☐ Discussing three ideas in a paragraph	☐ Discussing many ideas in a paragraph
Organizing ideas (Coherence)	25%	☐ Focus is clear. All information is complete and there is moral value	☐ Focus is clear. All information is complete but there is no moral value	☐ Focus is clear but information is incomplete and there is no moral value	☐ Focus is unclear or weak, the information is incomplete and there is no moral value
		TOTAL			

https://www.rcampus.com/rubricshowc.cfm?sp=yes&code=TAWW33&

SCORING TECHNIQUE

Scoring student's each aspect   = Score obtained **X** Weight

Scoring student's total score   = Sum each aspects

NOTE

85 – 100   = Excellent

70 – 84   = Good

55 – 69   = Fair

54 – 25   = Poor

3.4 Data Analysis

After collecting the data, the researcher will analyze the data. Analyzing the data is very important in a research because it answers the research problem which is taken from pre-test and post-test. The researcher analyzes the data using SPSS program which is Independent sample t-test. Moreover, the samples are small and the groups are independent, t-test for independent samples is carried out to determine whether there is any significant between experimental and control group.

The assumption for Independent t-test where: (1) Independence: Observations within each sample must be independent, (2) Normal Distribution: The two population must be normally distributed. This study is included in parametric research which divides into two kinds of data; ratio and interval. The data of this study is ratio because zero has value or absolute zero. Ratio data is defining homogeny and normal distribution. The last, (3) Homogeneity of Variance: the two populations must have equal variance.

3.4.1 Normality Distribution Test

To analyze the normal distribution, this study uses Kolmogorov Smirnov Sample Test in SPSS version 16.0. It is aim to find whether or not the distributions of pre-test score in two groups are normally distributed. In this case, the result of the normality distribution is also used to find out whether or not the hypothesis that has determined is accepted. The first step in calculating the normality distribution test state that the hypothesis: H0: the score of the experimental and control group are normally distributed.

The second step is calculating the normality distribution test tried to compare the Sig. with the level of significance for testing the hypothesis. If the sig. is more than the level significance (0.05) the null hypothesis is accepted; the score normally distributed. On the other hand if the sig. is less than the level of significance (0.05) the null hypothesis is rejected. The

procedure analyze is press menu, click Analyze, click Descriptive Statistic, click Explore and move all variable to Dependent List box, click Plots and tick Normality Plots with Test then Continue.

3.4.2 Homogeneity Test of Variance

For homogeneity test, the researcher used one Levene's test of homogeneity test in SPSS 16.0 version. The purpose of this test is to analyze the variances of the observation in Control Group and Experimental Group are equal. Because the researcher cannot random the students, so homogeneity test is necessary to make sure the students in both of the class have the same ability in writing or not and the researcher can conduct the treatment. The test of Levene's test, or P, defined as follow:

$$W = \frac{(N-k)}{(k-1)} \frac{\sum_{i}^{k} = 1 \, Ni \, (Zi - Z)^2}{\sum_{i}^{k} = 1 \sum_{j}^{Ni} = 1 \, (Zij - Zi)^2}$$

The symbols defined as follow:

W   : the result of the test

K   : the number of different groups which the sample belong

N   : the total number of sample in all groups

Ni   : the number of sample in i group

Yij   : the value of the sample from the jth case from i^{th} group

Z_{ij} $\quad : \begin{cases} \left(|Y_{ij} - \bar{Y}_i|\bar{Y}_i \right) \text{is a mean of } i^{th} \text{ group} \\ \left(|Y_{ij} - \bar{Y}_i|\bar{Y}_i \right) \text{is median of } i^{th} \text{ group} \end{cases}$

The significance of P is tasted a gained $F(\alpha, k-1, N-k)$ where F is a quintile of the test distribution, with $k-1$ and $N-k$ its degrees of freedom, and α is the chosen level of significance (0.05). To analyze the homogeneity, the researcher uses SPSS 16.0. The homogeneity will be checked in SPSS by Levene's test with the following procedure. The first step is inserting the pre-test score of both groups using data view. The second is going to the analyze menu, selecting compare means and the choosing independent sample t-test. The last procedure is interpreting the homogeneity test output, the researcher looks (sig.) at the Levene's test columns to know whether the quality of variance in group of scores was homogeneity or not. If the sig. $> \alpha$ (0.05), two populations of variance were homogenous or equal but if sig. $< \alpha$ (0.05) two populations of variance were not homogenous or not equal.

3.4.3 Hypothesis Testing

Independent t-test is used to find out the significant difference of using four square writing method in writing narrative text between experimental and control group. The steps of t-test calculation are: First, test the hypothesis of the research and the setting α (alpha) level at 0.05 (two-tailed test). The hypothesis in this research could be formulated as follow:

H0 : There is no significant difference of using Four Square Method through Piture Series in Writing narrative text between experimental and control group.

H1 : There is significant difference of using Four Square Method through Piture Series in Writing narrative text between experimental and control group.

The second step is finding t-value using Independent - Sample T-Test and comparing the probability with the level of significance for testing the hypothesis. After the scores computed in SPSS 16.0 version, then to see the output of Independent- Sample T-Test and interpret the output that if sig. (2-tailed) > α (0.05), the researcher should accept the H0, but if sig. (2-tailed) < α (0.05), the researcher can be rejected the H0, it means H1 is accepted.

T-test calculates to find out the comparison of two means between pre and post test score of experimental and control group. In analyzing the data, the researcher uses independent t-test formula to analyze the data. The formula for calculating t-test is:

$$t = \frac{(x_1 - x_2) - (\mu_1 - \mu_2)}{Sx_1 - x_2}$$

Where:

t   : t value

x_1 : Average group 1

x_2 : Average group 2

S   : Standard error of two groups

$\mu_1 - \mu_2$: Always a default to 0

Pooled variance: the average of two-sample variance, allowing the large sample to weight more heavily:

Formula:

$$Sx_1 - x_2 = \sqrt{\frac{S^2pooled}{n_1} + \frac{S^2pooled}{n_2}}$$

Where :

$Sx_1 - x_2$: Standard error of two groups

$S^2pooled$: Variants of two groups

n_1 : Number of sample group 1

nn_2 : Number of sample group 2

Standard Error of the differences

$$Sx_1 - x_2 = \sqrt{\left(\frac{SS^2pooled}{n_1}\right)\left(\frac{S^2pooled}{n_1}\right)}$$

In calculating t-test, the researcher uses SPSS 16.0 version. The first steps, input the data of post-test in SPSS program between experimental and control group, then click Analyze then Compare Mean then Independent Sample T-Test. In Independent Sample T- Test, input the score variable into Test Variable column, and group variable Grouping Variable column, then clicks Define Group, Choose group 1 (for experimental) and group 2 (for control), then click OK.