

CHAPTER III

METHODOLOGY

This chapter discusses the research design, the subject of the study, population and sample, research design, procedure of the experiment, instruments of the study, scoring system, and technique of data analysis.

3.1. Research Design

In this study, the researcher use a kind of quantitative research, According to (Aliaga and Gunderson: 2002 in Muijs) quantitative research is explaining phenomena by collecting numerical data that are analyzed using mathematically based methods in particular statistics. In this term, quantitative data refer to the use of statistical analysis to calculate the numeral data that are gathered. These data are expressed in the mathematics and must be evaluated and interpreted by means of appropriate statistical procedure. Because of the design of the study was quantitative, so the researcher used experimental research study.

This study used pre-test and post-test to obtain the data. According to Best (1995: 151) the design of the experiment can be describes as follows:

Experimental Group	= O ₁ , X ₁ , O ₁
Control Group	= O ₁ , X ₂ , O ₂

As can be seen from the diagram above, there was two groups employed in this design; one group was the experimental group, it received a treatment (X₁) while second group is the control group, it received another treatment (X₂). Here, both of the groups received pre-test (O₁) to obtain first data. Then, the experimental group is present to treatment of using

T3(Think,Talk,Text) strategy by using procedure text (X1) while the control group will present conventional teaching with T3(Think,Talk,Text) strategy by using procedure text (X2). Finally, both of the groups will give post-test (O2) to obtain second data. The effectiveness of Applying T3 strategy by using procedure text and the relative improvement of the two groups could be seen from the gain score that is the post-test and the pre-test score of the two groups.

3.2. Population and Sample

A population is any group of individuals that have one or more characteristics in common that are interesting. The population is the ten grades at SMK Maskumambang 2 Dukun Gresik. This school is located at Dukun. There are two department at that school, Such as Software Engineering and Marketing. In the class has 25 students, so the total population is 210 students. it has class Software engineering and Marketing department. There are Many school of Vocational High School at Gresik, there are some schools in Gresik but which didn't accept because the strategy not appropriate with that school but the researcher find once a school which apply the strategy of Think,Talk,Text By Using Procedure text, that is at SMK Maskumambang Dukun Gresik.

A sample is a small proportion of population selected for observation or analysis. The researcher also add the definition of sample based on Arikunto (2002:109), sample is a part that can represent all the population observed. So, by observing the characteristic of the sample, one can make certain inferences about the characteristic of the population from which it is drawn. The sample consisted of the students from the population who were chosen to participate in the 50 student. Two classes were selected from Software engineering department as the sample by using cluster sampling technique in choosing the class. The researcher using that sample because the researcher want to know the strategy can apply or not at that school. There are many previous study also which research by

using that strategy not significant. that's because the sample is so little, so the researcher here using many sample to research.

3.3. Data Collection

Data Collection is used to collect specific information from students of applying T3 strategy by using procedure text. In this research, the writing test (Pre-test and Post-test).

3.3.1. Instrument

A set of test of English learning especially in teaching writing for this study identify to applying T3 strategy by using procedure text. The test focuses on how student applying T3 strategy on students achievement by using procedure text. The items of the test are taken from student ten grade at SMK Maskumambang 2 Dukun Gresik. Then distributed to 50 participants at two clases from Software Engineering department. The data were collected by giving a writing test are pretest and a posttest to both experimental and control groups. While the writing test is use to be a research instrument for both pre and posttest. Pretest will be given in the first time before treatment to measure the first achievement of the students. Whereas the post test will be given after the researcher do the treatment of the strategy of teaching writing in the experimental group. Finally, the scores of the test both of pretest and post test will be compared to see wheather there is any improvement of the students's achievement in writing skill or not.

3.3.1.1. Test

The kind of the test that will be used in this research is a subjective test. The general concept of the test will be elaborated as follows:

- a. Pretest

This test is for both sample which are X A and X B of software engineering department at SMK Maskumambang 2 Dukun Gresik. This test is aimed to test the student's first proficiency level before the treatment and to see the homogeneity of the sample whether those sample comes from an homogenous population or not. This test also important for the researcher to decide which one is the experimental group and which one is the control group.

The test will be match from the level of the students. pre test carried out to initial different between experimental and control groups as they had similar level in writing ability. The test present in form of written test. The reason why the researcher give pretest, the researcher will give a written test its about a text, because the researcher wants to know about the student's ability.

b. Post test

Post test was distributed to both groups to find out whether the students made progres in their writing skill or not. In this study, the criteria of test scoring system proposed by jacobs (1996) are used to assess the results of student score. The post test had the same procedure with the test. It was administered in the last program of this research after giving same treatment and exercise to the experimental groups in a period of time.

3.3.1.2. The validity of the test

McMilan, (1992:100) state that validity is a judgment of the appropriatenes of measure for the specific inference of decisions that result from the score generated by the measure. Heaton (1975:154) state that content validity depends on a careful analysis of the language being tested and of the particular course objectives.

Before conducting post the and pretest as instrument of the research,the test should be tried out in terms of its validity and reliability. In order to check the validity

of the test, the research did it into one steps. Those were checking content validity to determine the content validity, the instrument validity conduct pre test and post test in order to measure whether there is significance change toward the students score in writing skill. Pretest will present administere before the treatment initiate in pretest will discuss about the topic. Posttest will present after the treatment. Before receiving the treatment, the test was in form of written test or in the other hand the students have to be finish the test. then their work present asses by the teacher based on the criteria given.

The treatment will be done in six times. The topic will do appropriate with the Software engineering department which about the computer, in the pretest or first meeting will discuss about the topic "How to organize the computer ", a second meeting will discuss the topic "How to clean faster the computer ", a third meeting will discuss the topic "How to transfer files the computer " and the post test or last meeting will discuss the topic " How to send email via computer ". 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 to control and experiment group. The researcher helped by the English teacher to check the instrumental based on curriculum and syllabus. Here is the detail:

Standard Competence	Basic Competence	Test	
		Pre-test	Post-test
1.1.Berkomunikasi dengan bahasa Inggris secara setara level	1.1.Memahami Penggunaan dan proses computer	<p>I. Arrange sentences into correct procedure text.</p> <p>II. fill in the blank the sentence.</p> <p>III. Please summary based on the text!</p> <p>IV. Create with your own based on the text.</p>	<p>I. Arrange sentences into correct procedure text.</p> <p>II. fill in the blank the sentence.</p> <p>III. Please summary based on the text!</p> <p>IV. Create with your own based on the text.</p>

3.4. Data Analysis

This research using quantitative data analysis which there is fundamental statistic the researcher used SPSS 16,0 to compute descriptive statistics include frequency, percentage, mean, standard deviation, with criteria of data interpretation. The dependent sample t-test and the independent sample t-test were also used. The researcher using quasi experimental and interval scale will analyze by using T-Test (Paired sample) to calculate the pre-test and post-test. All the answers of tests are manually counted and tabulated into frequency count and percentage. First, the researcher groups the tests based on the data resources (class A and class B) two class from Software engineering department. Then, the researcher counts all the answers of the tests generally. After that, the researcher tabulates the result of each class into percentage. After counting and tabulating the responses generally, the researcher makes conclusions to applying T3 strategy on students achievement by using procedure text.

The assumption for Independent t-test where:

- Normal Distribution
- Homogeneity of Variance
- Hypothesis Testing.

3.4.1. Normality Distribution

Normality distribution test is aimed 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 had been determined is accepted. To analyze the normal distribution, this study use Komogorov Smirnov Sample Test in SPSS version 16.0. It is aimed to. 32

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 Asymp.Sign.(probability) with the level of significance for testing the hypothesis. If the Asymp is more than the level significance (0.05) the null hypothesis is accepted; the score normally distributed. On the other hand if the Asymp is less than the level of significance (0.05) the null hypothesis is rejected. The procedure analyze is press menu, choose nonparametric test after that you choose 1= sample K-S click exact, choose monte carlo 99% and click OK.

3.4.2. Homogeneity Test of Variance

Homogeneity test of variance uses to know whether two groups are in the same position. For homogeneity test, the researcher uses Levene's test of homogeneity in SPSS 16.0 version because Levene's test of the homogeneity uses to assess the equality of the variance for a variable calculates for two or more groups. In this study has two groups; experimental and control groups. So, in this study uses Levene's test. This test will present use to see the score both of the experimental and the control group same ability or not, if the ability is same so the ability include the homogeneity class and if the ability is not same so the ability is not include the homogeneity class. The test of Levene's test, or P, defined as follow:

$$P = \frac{(N - k) \sum_{i=1}^k N_i (Z_i - Z_{..})^2}{(k - 1) \sum_{i=1}^k \sum_{j=1}^{N_i} (Z_{ij} - Z_i)^2}$$

The symbols defined as follow:

P : the result of the test

K : the number of different groups which the sample belong

N : the total number of sample

N_i : the number of sample in the ith group

Y_{ij} : the value of the jth sample from ith group

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

Hypothesis:

H₀ : The sample is derived from the population of homogeneous

H₁ : The sample is not derived from the population of homogenous

In the significant degree is >0,05

The significance of P is tested against a F-distribution (α, k - 1, N - k) where F is a quantile 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. First, a procedure is inserting the pre-test score of both groups using data view. The second is going to the analyze menu, selecting compare means and 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. > α (0.05), two populations of variance were homogenous or equal but if sig. < α (0.05) two populations of variance were not homogenous or not equal.

3.4.3. Hypothesis Testing

Independent t-test uses to find out the significant difference of using four square method for increasing student's writing ability between experimental and control group. The steps of t-test calculation are : First, the tests 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 applying t3 strategy on students achievement in writing skill by using procedure text between experimental and control group.

H1 : There is significant difference of applying t3 strategy on students achievement in writing skill by using procedure 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 compute in SPSS 16.00 version, then see the output of Independent- Sample T-Test and interpret the output that if sig. (2-tailed) $> \alpha$ (0.05), the researcher should accept the H0, but if sig. (2-tailed) $< \alpha$ (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. In calculating t-test, the researcher uses SPSS 16.00 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.