

CHAPTER III

RESEARCH METHODS

This chapter presents and discusses methods of the research which consists of place and time of the study, research design, variable, population, sampling, sample, data sources, research instrument, validity and reliability testing, normality and homogeneity testing, data collecting method, data analysis, and hypothesis testing.

A. Place and Time of the Study

This Research was conducted at MAN 1 Tulungagung that is located in Jl. Ki Hajar Dewantara, Beji, Boyolangu, Dusun Krajan, Beji, Kec. Tulungagung, Jawa Timur 66233. This research was conducted from 20th January 2020 until 12th February 2020 in the academic year 2019/2020.

B. Research Design

As stated previously, the research was intended to find out if there is any significant effect of Think-Talk-Write strategy on students' writing descriptive text ability. To prove that this research used a quasi-experimental two-groups pre-test post-test research design with quantitative approach. The quasi-experimental research design was used to identify any casual impact between the independent variable and dependent variable with groups that were nonrandomized assigned. In the quasi-experimental there were two types of groups, they were experimental and control group. Those groups were

given a pretest and a posttest. What made two groups different was that the experimental group was given a certain treatment after pretest. The following table shows the design of the study.

Table 3.1 Quasi-Experimental Design

Group	Pretest	Treatment	Posttest
Experimental	✓	TTW	✓
Control	✓	a Conventional strategy	✓

As shown in the table above the study involved two classes; experimental class and control class. The two groups of students were given a pretest and a posttest. Different treatment was given to the two groups in which in experimental class, the students were given treatment by using Think-Talk-Write strategy, whereas in the control class the students were given a conventional treatment.

C. Variable

Variable is one of key terms in any research or the focus of a study. Variable is delivered from the words *very* and *able*. So, variable is characteristics of subjects of a research which tend to be different from one individual to another or from time to time. Nurul Chojimah (2019:4).

Since the study was directed to find cause and effect relationship between two variables, this reasearch had independent variable and dependent variable. Independent variable is the one affecting another variable and dependent variable is the one affected by another variable. The independent

variable of the study was Think-Talk-Write (TTW) strategy and the dependent variable was students' writing descriptive text ability.

D. Population

Population is defined as all members of any well-defined class of people, event, or object. Ary et. al. (2010:148). Population is all subjects being studied, for instance, all students of the tenth grade, all sentences in a novel and many others. The population of this research were the tenth grade students at MAN 1 Tulungagung in the academic years 2019/2020 which consisted of ten classes with around 29-35 students in each class. The total population was 320 students.

E. Sampling

Since the population of the study was too big, sampling was needed to be taken. According to Gay (1992:123) sampling is the process of selecting a number of individuals for a study in such a way that the individuals represent the large group from which they were selected. Sampling is a method of taking sample. In this research the sampling used was purposive sampling. Purposive sampling is selecting sample by using a certain criterion. For the study was intended to measure the effect of a certain variable on another variable dealing with cognitive aspect, the criterion was also concerning with cognitive (competency). That is why the selected sample was group of students who had similar and average competency. The sample with average

competency was believed to be a normal sample meaning that their cognitive tent to grow when they were given a certain stimulation (being taught by using TTW and a conventional strategy).

F. Sample

Sample is part of population that being studied. Nurul Chojimah (2019:3). Sample is a limited number of elements from a proportion to represent population. As previously mentioned, two groups were used to verify the existing theory dealing with the effectiveness of TTW. Based on the set criterion, class X IPS 2 and class X MIPA 5 were selected as the sample of the study. The X IPS 2 class consisted of 35 students was used as the control class and the X MIPA 5 class comprised 29 students as the experiment class.

G. Data Sources

Data source means the source from where the data of the study are collected. The data sources of this study was the students' results of both pre-test and post-test of writing descriptive text, The students' works in the tests were scored by using a scoring rubric. From the result of scoring the data were in the form of scores. That is why the data of the study belonged to quantitative data.

H. Research Instruments

Research instrument is a tool used to collect data that should be valid and reliable. Arikunto (2006:149). Among some kinds of instruments, such as interview guide, observation checklists, observation sheets, questionnaire, in this study test was used as the instruments. Practically, in this study, both pre-test and post-test were used.

Regarding to the procedures of the study, the pre-test was administered to both experimental and control groups before each of the group was given a certain treatment. Meanwhile the posttest was administered to the two groups four meetings after implementing the treatment to each group. It was a subjective test. In this test (both of the pre-test and post-test) the researcher asked the students of the two groups to write a descriptive text. In the pre-test the students were asked to describe a thing with the topic “Describe your favorite pet”. The time allocation in this test was 40 minutes. The description was minimum 150 words and maximum 200 words. This pre-test was done on January 22, 2020 for experimental class and on January 20, 2020 for control class.

The post-test, on the other hand, was given after the treatment in which the two groups, as it was done in the pre-test, were also asked to make descriptive text. The topic was “describing your favourite person”. The time allocation in this test was 40 minutes with minimum 150 words and maximum 200 words. This test was done on February 12, 2020 for experimental class and on February 10, 2020 for control class. Table 3.2 below is a scoring

rubric used to determine students' writing descriptive score in the pre-test and post-test. The researcher classifies the score using writing analytical scoring rubric by Cohen (2008:328-329). It consisted of five aspects, they were content, organization, vocabulary, grammar and mechanics. Each of the aspects had different weighting showing the importance of each of the elements to constitute a piece of good descriptive text.

I. Validity and Reliability Testing

1. Validity of the Test

Heaton (1989:159) defines the validity of a test as the extent to which it measures what it is supposed to measure and nothing else. To measure whether the test has a good validity, the researcher analyzed the test from content validity, construct validity and face validity.

a. Content Validity

Content validity is the degree to which a test measures an intended content area (Gay, 1992:156). In this research the researcher asked the students to write a Descriptive Text based on the given topic. The instrument of the study fulfilled the requirement of having content validity for the activity of the test was suited with the syllable used in the school as it is presented in the following matrix:

Table 3.2: The Matrix of the Content Validity

No.	Material	Basic Competence	Indicator
1	Descriptive Text	- Basic competence that are used 4.4, 4.4.1 and 4.4.2 about the material of descriptive text	<ul style="list-style-type: none"> - The students able to write about descriptive text - The students able to found out the mean of each sentence in descriptive text - The students able to apply writing descriptive text - The students able to identify descriptive text

Based on the matrix above, it shows that the test was valid based on content validity.

b. Construct Validity

Construct validity is capable of measuring certain specific characteristics in accordance with a theory of language behavior and learning. Brown (2004:25) mentioned that a construct is any theory, hypothesis, or model that attempts to explain observed phenomena in our universe of perception.

In this research, the researcher ask the students to write about Descriptive text to measure the students' skill in writing. The researcher classify the score using writing analytical scoring rubric by Cohen (1994:328- 329). The technique of scoring is based on five

aspect, they are content, organization, vocabulary, grammar, and mechanic.

Table 3.3: Scoring Writing Descriptive Text Rubric

Aspect of Content		
Score	Information	Explanation
30-27	Very Good to Excellent	Main Ideas and opinion very clearly and accurately
26-23	Average to Good	Main ideas and opinion fairly clearly and fairly accurately
22-19	Poor to Fair	Main ideas and opinion lesss clearly and less accurately
18-15	Very Poor	Main ideas and opinion not clear and not accurrate
Aspect of Vocabulary		
Score	Information	Explanation
25-22	Very Good to Excellent	Very effective choice of words and use of idiom and word forms
21-18	Average to Good	Adequate choice of words but some misuse of vocabulary, idioms and forms
17-14	Poor to Fair	Limited range, confused use of words, idiom and word forms
13-10	Very Poor	Very limited range, very poor knowledge of words, idiom, and word form
Aspect of Organization		
Score	Information	Explanation
20-17	Very Good to Excellent	Well Organized and perfectly coherent
16-13	Average to Good	Fairy well organized and generally coherent

12-9	Poor to Fair	Ideas disconnected, lacks logical sequencing
8-5	Very Poor	No organized, no coherent
Aspect of Grammar		
Score	Information	Explanation
15-12	Very Good to Excellent	No error, full control of complex structure
11-8	Average to Good	Some error, fair control of structure
7-4	Poor to Fair	Many error, poor control of structure
3-0	Very Poor	Dominated by errors, no control of structure
Aspect of Mechanics		
Score	Information	Explanation
10-8	Very Good to Excellent	Mastery of spelling and punctuation
7-5	Average to Good	Few error in spelling and punctuation
4-2	Poor to Fair	Frequent error in spelling and punctuation
1-0	Very Poor	No control over spelling and punctuation

Regarding to the scoring rubric each student gained score was taken from the combination of scores of each of component of the scoring rubric.

c. Face Validity

Face validity refers to the extent to which examinees believed the instrument was measured what it was supposed to measure. In checking the face validity of the test, the researcher asked the English teacher of the classes that was used to check, whether the test could

measure the ability especially in writing descriptive text. This research was done to know the effect of using Think-Talk-Write (TTW) strategy as method to improve students' writing descriptive text ability. So, the test should in the form of writing test. Related to this research, the researcher also asked the students to write descriptive text. So, the test was valid based on face validity.

2. Reliability

According to Heaton (1989:162) reliability is necessary characteristic of any good test for it to be valid at all, a test must first be reliable as a measuring instrument. The reliability of the test is its consistency. Thus, reliability is a measure of accuracy, consistency, dependability, or fairness of scores resulting from administration of particular examination. In addition, the test is reliable if the score is steady over time. There were some factors that may contribute to the unreliability of the result of a test such as fluctuations in the student, the way to score, the process of administering the test, and the test itself. In anticipating those problems in the reliability of the test, the researcher gave sufficient and clear instructions before administering the test, the existence of test specification (time allocation, class, date) and readability of the test instruction.

Practically when the test was given, the first page of the test sheet was given clear instructions about how to do the test, the time allocation

for doing the test with the class and date was definitely given. Besides the topic of descriptive text that they would be written was also included.

From the test results point of view reliability of the result of the test was determined the availability of two row scores in writing descriptive text. To get the two row scores try out of the test for post-test was done. The try out was done on February 6, 2020. In this try out the students were asked to write a descriptive text based on the given topic. By using the prepared scoring rubric, the students' descriptive writings were scored. As it was previously mentioned to determine the level of the reliability there must be two row scores, the researcher employed interrater scoring. It was a process of scoring by involving two scorers; the researcher herself and Meico Dwi Prasetyo who was the english teacher in Nganjuk. The two row scores taken from the rater 1 and the rater 2 were statistically computed by using Person Product moment with SPSS 16.0 application. The result of the reliability testing can be seen on Table 3.5 below.

Table 3.4. The Result of Reliability Testing Correlations

		SCORE1	SCORE2
SCORE1	Pearson Correlation	1	.864**
	Sig. (2-tailed)		.000
	N	35	35
SCORE2	Pearson Correlation	.864**	1
	Sig. (2-tailed)	.000	
	N	35	35

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

From the correlation analyzing, the researcher got the correlation of two score. The value of correlation is 0.864 and sign value is 0,000. It means that correlation and signification of two row scores taken from the rater 1 and the rater 2 very strong because the value is $0.864 > 0,76$, and sign value is $0,000 < 0,05$. From this explanation, it was found that this test is very reliable.

J. Normality and Homogeneity Testing

Normality testing was used to examine whether a set of data was belong to normal distributed or not. After doing the normality testing then the researcher determined whether the statistical test used parametric test or non-parametric test. In this research the normality testing was done toward students score in pre-test and post-test. Because the variable is the achievement or score so the variable is interval, which is why we used the parametric test. Then, the data of the research itself belong to independent samples which the step of statistical testing are:

1. Homogeneity testing

The variances of data was tested to find out if they were equal or homogeneous. This testing was done by getting the score of the students then we subtracted the lowest value to the highest value, the higher the range the more heterogeneous the class is. Finding the standard deviation was also helped to know the variability of the class. To achieve this data,

Levene statistic test on SPSS 16.0 was applied in this research with the similar rule of the normality that is $\alpha = 0,05$.

- a. If the homogeneity test resulted $< \alpha = 0,05$ the data were not homogeneous.
- b. If the homogeneity test resulted $> \alpha = 0,05$ the data were homogeneous or have equal variances.

2. Normality testing

Normal distribution is the distribution on variables such as scores or a normal distribution in statistical research is one of the important assumptions before T-test was performed. Its to know whether the samples collected were normally distributed or not. The analysis of normality test in this research used Kolomogorov-Smirnov on SPSS 16.0 with the rules $\alpha = 0,05$:

- a. If the normality test resulted $< \alpha = 0,05$. the data are not normally distributed and H_0 is rejected
- b. If the normality test resulted $> \alpha = 0,05$. The data are distributed normally and H_0 is accepted

3. T-test

T-test is a type of statistical test that was used to compare the means of two groups. T-test was a typed of parametric method; it was used when the samples fulfill some criteria such as, the conditions of normality, equal variance, and independence. There were two types of t-tests they were, independent t-test, which used when the two groups under

comparison were independent of each other, and the paired t test, which used when the two groups under comparison were dependent on each other. In this research, independent t test was used. It can be done in SPSS 16.0 application.

After the T-test, the effect size is calculated to measure the level of significance effect. As T-test give statistical result of the significance, the effect size results a statistic data but at the same time determined whether the effect size is strong or weak. In this research, the Cohens' *d* effect size formula is adopted as follow.

<p>Formulation:</p> <p>(1). $\sigma \text{ pooled} = \frac{\text{Std. Deviation 1} + \text{Std. Deviation 2}}{2}$</p> <p>(2). $d = \frac{\text{Mean of group 1} - \text{Mean of group 2}}{\sigma \text{ pooled}}$</p>
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Figure 3.1. The Formulation of Effect Size

To interpret the effect size, the Cohens' *d* effect size criteria is used as the bases to determine the level of significance. The effect size criteria of Cohens' *d* are:

- 1) 0 - 0.20 = Weak Effect
- 2) 0.21 – 0.50 = Modest Effect
- 3) 0.51 – 1.00 = Moderate Effect
- 4) > 1.00 = Strong Effect

K. Data Collecting Method

Collecting data is a systematic and standardized procedure to obtain the data. The technique of data collection for this research was administering two kinds of tests. The first test was pretest that was administered for control and experimental class before being given treatments. The second test was posttest that was administered for control and experimental group after they were given treatments. The tests were in the form of subjective test in which based on the given instruction the students were asked to write a descriptive text by describing a certain topic. By using a scoring rubric, the students' writings were scored and it yielded numerical number showing the gained score of each of student.

L. Data Analysis

Data analysis is an effort made by way of working with data, organizing data, sorted them into manageable units, synthesizing, seek and find patterns, discovering what is important and what was learned. In this study the researcher used quantitative data analysis in term of t-test statistical analysis. This technique was used to find out significant different writing scores of the first grade students of MAN 1 Tulungagung in writing descriptive text taught by using Think-Talk-Write (TTW) strategy and those who are taught by using a conventional strategy. T-test was a type of statistical test that was used to compare the means of two groups (experimental class and control class). The result of this statistical computation was used to test the

proposed hypothesis. Before analyzing the data, the distribution of normality and the homogeneity needed to be tested.

M. Hypothesis Testing

The research was intended to identify if there is any significant difference in the use of Think-Talk-Write (TTW) strategy on students' writing descriptive text ability. After computing the data using t-test with SPSS 16.0 for windows and determining that the significance level (α) is 0,05 or 5% (it has been programmed on the application) the next step was determining whether or not the Null Hypotheses was rejected. The basis of rejecting or not rejecting the null hypothesis was:

1. If P-value or *sig* $< \alpha = 0.05$ (5 %). It means that null hypothesis (Ho) is rejected and alternative hypothesis (Ha) is accepted.
2. But, if P-value or *sig* $> \alpha = 0.05$ (5 %). It mean that null hypothesis (Ho) is accepted and alternative hypothesis (Ha) is rejected.