CHAPTER III

RESEARCH METHOD

A. Research Design

This research was conducted to identify the effectiveness of using TPS with realia to teach descriptive text writing. This research is a quantitative one. In this research, the researcher used experimental research. According to Sugiyono, an experimental research is a research method are used to search for a specific treatment effect against the other in uncontrolled conditions. Therefore, in experimental research there is a treatment and control group.[1]

The essential feature of experimental research is that investigators deliberately control and manipulate the conditions which determine the events, in which they are interested, introduce an intervention and measure the difference that it makes. An experiment involves making a change in the value of one variable – called the independent variable – and observing the effect of that change on another variable –called the dependent variable.[2]

[1] Sugiyono, *Metode Penelitian Kuantitatif, Kualitatif dan R&D*, (Bandung: Alfa Beta 2006), p. 72

[2]Louis Cohen, Lawrence Manion and Keith Morrison, *Research Methods in Education, 6th Edition*, (New York: Routledge, 1994), p. 272.

An experimental research involved two groups: experimental group and control group. An experimental group will receive a new treatment while control group receives a usual treatment.

This study used pre-test and post-test. The design of the experiment could be described as follows:

E	O_1	X	Q_2
C	Q_3	Y	Q_4

Adopted from Arikunto[3]

Explanation:

E : Experiment group.

C : Control group.

Q_1 &Q_3 : Pre-test of experiment and control groups.

Q_2 &Q_4 : Post-test of experiment and control groups.

X : Treatment (Teaching descriptive writing by using TPS with realia)

[3] Suharsimi Arikunto, *Prosedur penelitian Suatu Pendekatan Praktik*, (Jakarta: PT Rineka Cipta, 2006), p. 86

Y : Treatment (Teaching descriptive writing without using TPS with realia)

B. Setting of the Research

1. Time of the research

   This research was implemented on 25 October – 12 November 2016, counted since the proposal was submitted until the end of research.

2. Place of the research

   The writer did the research at SMP NU 03 Islam Kaliwungu which is located in Jl. Ngaglik, Kutoharjo, Kaliwungu Selatan, 51372.

C. Subject of the Research

1. Population and Sample

   Population is a part of generalization which consisting of subjects that have certain qualities and characteristics defined by the researchers to be studied and then drawn conclusions.[4] The population in this study was the eighth grade of SMP NU 03Islam Kaliwungu in the academic year of 2015/2016. The eighth grade of SMP NU 03 Kaliwungu was divided into two classes. There were classes VIII A with the number of students are 30, and VIII B with the number

[4]Sugiyono, *Metode Penelitian Pendidikan: Pendekatan Kuantitatif, Kualitatif, dan R&D*,… , p. 117.

of students were 30. The total number of population was 60 students.

Due to the number of population in this study only 60 students, the researcher did not require samples. Researchers used all of the population as an subject in this study. So the participants of the study were class VIII A as an experimental class and class VIII B as a control class.

D. Variable and Indicator

There are two variable in this research, variable X and variable Y.

1. Independent variable (variable X)

   Independent variable is variable that influences or becomes the cause of change or emergence the dependent variable.[5] The independent variable in this research was the use of TPS with realia in the teaching writing descriptive text.

2. Dependent variable (variable Y)

   Dependent variable is variable that was affected or that became the result because of the existence of the

[5]Sugiyono, *Metode Penelitian Pendidikan: Pendekatan Kuantitatif, Kualitatif, dan R&D*, … ,p. 61

independent variable.[6] Dependent variable in this study was the student's achievement on descriptive writing which was indicated by students' score. The indicators for dependent variable are identifying the social function of descriptive text, identifying the generic structure of descriptive tex, identitying the language feature of descriptive text, using simple present tense, and creating simple functional descriptive text.

E. Data Collection Technique

1. Documentation

Documentation is used to look for the data concerning matters or the variable that are taken in the form of the note, transcript, book, newspaper, magazine, inscription, notulen, legger, agenda, etc.[7]

The researcher used documentation to get the data that related with object research such as the list of name that included in the population, the documentation of students' activities when followed in learning process in the experimental research.

[6]Sugiyono, *Metode Penelitian Pendidikan: Pendekatan Kuantitatif, Kualitatif, dan R&D*,… , p. 61.

[7]Suharsimi Arikunto, *Dasar – Dasar Pendidikan*, ... ,p. 158.

2. Test

Test is set of question or exercises and other tools which are used to measured skill, intelligence, knowledge, and ability those are had by individual or group.[8] The test in this study was an essay test or subjective test. In essay test of writing, the students were given a free chance to think as much as possible. They can freely express and organize their ideas in written form.

This method is used to get data about score of the pre-test and post-test that was given for both groups.

a. Pre-test

Pre-test was given before the teacher introduced TPS method with realia in writing descriptive text. Pre-test was given to the experimental and control class in same way. This test was given before the experiment was run.

b. Post-test

Post-test was given to the experimental and control class. The test was given to know student's achievement after they studied descriptive text writing through TPS method with realia

[8]Suharsimi Arikunto, *Prosedur Penelitian Suatu Pendekatan Praktik*, ... p. 10

(experimental class) and without TPS method with realia (control class).

F. Data Analysis Technique

1. Technique of scoring test

In this research, the researcher used a writing test to measure students' ability in writing descriptive text. According to Douglas Brown, there are five major items or categories in analytic scoring writing test, namely content, organization, vocabulary, grammar, and mechanic.[9] The percentage of the elements of writing can be seen in the table 3.

Table 3.1

Percentage of the Element of Writing

Element of Writing	Score
1. Content	30
2. Organization	20
3. Vocabulary	20
4. Grammar	25
5. Mechanic	5
Total of Score	**100**

[9]H. Douglas Brown, Language Assessment: Principles and Classroom Practice, (New York: Longman, 2001), p. 246.

The researcher employs scoring guidance criteria by Arthur Hughes[10]

Table 3.2

Scoring Guidance and the Explanation of Criteria

Categories	Score	Criteria
Content	30-27	**Excellent to very good:** knowledgeable; substantive; through development of thesis; relevant to assigned topic.
	26-22	**Good to average:** some knowledge of subject; adequate range; limited development of thesis; mostly relevant to topic, but lacks detail
	21-17	**Fair to poor:** limited knowledge of subject; little substance; inadequate development of topic.
	16-13	**Very poor:** does not show knowledge of subject; non substantive; not pertinent; OR not enough to evaluate.
Organization	20-18	**Excellent to very good:** fluent expression; ideas clearly stated/supported; succinct; well-organized; logical sequencing; cohesive.

[10]Arthur Hughes, *Testing for Language Teachers,* (New York: Cambridge University Press, 2003), p. 104.

	17-14	**Good to average:** somewhat choppy; loosely organized but main ideas stand out; limited support; logical but incomplete sequencing.
	13-10	**Fair to poor:** non-fluent; ideas confused or disconnected; lacks logical sequencing and development.
	9-7	**Very poor:** does not communicate; no organization; OR not enough to evaluate.
Vocabulary	20-18	**Excellent to very good:** sophisticated range; effective word/ idioms choice and usage; word form mastery; appropriate register.
	17-14	**Good to average:** adequate range; occasional errors of word/ idiom form, choice, usage but meaning not obscured.
	13-10	**Fair to poor:** limited range; frequent errors of word/ idiom form, choice, usage; meaning confused or obscured.
	9-7	**Very poor:** essentially translation; little knowledge of English vocabulary, idioms, word form; OR not enough to evaluate.
Grammar	25-22	**Excellent to very good:** effective complex constructions; few errors of agreement, tense, number, word order/function, articles, pronoun, prepositions.
	21-18	**Good to average:** effective but simple constructions; minor problems in complex constructions; several errors of agreement, tense, number, word order/function, articles, pronoun, prepositions but meaning seldom obscured.
	17-11	**Fair to poor:** major problems in simple/complex constructions; frequent errors of negotiation, agreement, tense, number, word order/function, articles, pronoun, prepositions and/or fragments, run-ons, deletions;

		meaning confused or obscured.
	10-5	**Very poor:** virtually no mastery of sentence construction rules; dominated by errors; does not communicate; OR not enough to evaluate.
Mechanic	5	**Excellent to very good:** demonstrates mastery of conventions; few errors of spelling, punctuation, capitalization, paragraphing.
	4	**Good to average:** occasional errors of spelling, punctuation, capitalization, paragraphing but meaning not obscured.
	3	**Fair to poor:** frequent errors of spelling, punctuation, capitalization, paragraphing; poor handwriting; meaning confused or obscured.
	2	**Very poor:** no mastery conventions; dominated by errors of spelling, punctuation, capitalization, paragraphing; handwriting illegible; OR not enough to evaluate.

2. Pre- test

It was done to know the normality and homogenity of the initial data in the experimental class and control class after conducting the test.

a. Normality Test

Normality test is used to know the distribution of data is normal or not. To find out the distribution

of data, it can be used the normality test with Chi-square.[11]

The steps of Chi-square test are as follows:

1) Determine of the range (R): the largest data reduce the smallest data.
2) Determine the many class intervals (K) with the formula: K= 1+ (3,3) log
3) Determine the length of the class, using the formula:

$$P = \frac{range\ R}{number\ of\ class}$$

4) Make a frequency distribution table
5) Determine the class boundaries (bk) of each class interval.
6) Calculating of the average Xi ($\overline{x}$), with the formula:

$$\overline{X} = \frac{\sum f_i x_i}{\sum f_i}$$

7) Calculate variance with the formula:

$$s^2 = \frac{n\sum f_i x_i^2 - (\sum f_i x_i)^2}{n-(n-1)}$$

8) Calculate the value of Z, with the formula:

[11]Sudjana, *Metode Statistika,*… , p. 272.

$$Z = \frac{\mathrm{x} - \overline{x}}{s}$$

X = Limit class

$\overline{x}$ = Average

S = standard deviation

9) Define the wide area of each class interval.
10) Calculate the frequency expository (Ei), with the formula:

    Ei = n x wide area with the n number of sample.

11) Make a list of the frequency of observation (Oi)
12) Calculate the Chi-square χ^2, the formula:

$$\chi^2 = \sum_{i=1}^{k} \frac{(O_i - E_i)}{E_i}$$

13) Determine dk = k-3, where k is the number of class intervals and α = 5%
14) Determine the value of x^2 table.
15) Determine the distribution normality with test criteria:

    If $\chi^2_{count} \geq \chi^2_{table}$ so the data is not normal distribution and other way if the

$\chi^2_{count} \leq \chi^2_{table}$ so the data is normal distribution.

a. Homogeneity Test

Is used to know whether the experimental group and control group are taken from population have same variant or not.

The formula is:[12]

$$F = \frac{Vb}{Vk}$$

Where:

Vb : Bigger variant

Vk : Smaller variant

The hypotheses in homogeneity test are:

Ho : homogeny variance = $\sigma_1^2 = \sigma_2^2$

Ha : non homogeny variance = $\sigma_1^2 \neq \sigma_2^2$

If the calculation result of F_{count} is lower than F_{table}

[12]Sudjana, *Metode Statistika,*…, p. 250.

($F_{count} \leq F_{table}$) by 5% degree of significant, so Ho is accepted, it means the data is homogenous or both of group have the same variance.

b. Test of Average

It is used to examine average whether experiment group and control group have been decided having different average.[13]

T-test is used to analyze the data of this research.

Hypothesis:

Ho: $\mu_1 = \mu_2$

Ha: $\mu_1 \neq \mu_2$

μ_1 :Average of data of experiment group

μ_2 :Average of data control group

$$t = \frac{\bar{X} - \bar{X}_2}{S\sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

With $s = \sqrt{\frac{(n_1-1)s_1^2 + (n_2-1)s_2^2}{n_1+n_2-2}}$

Where:

$\overline{X_1}$: The mean of experimental group

[13]Anas Sudijono, *Pengantar Statistik Pendidikan*, (Jakarta: PT. Raja Grafindo Persada, 2009), p. 326-327.

$\overline{X_2}$: The mean of control group

n_1 : Number of experiment group

n_2 : Number of control group

S_1^2 : variance of experiment group

S_2^2 : variance of control group

Ho is accepted if the $-t_{table} \leq t_{count} \leq t_{table}$ and there is significant difference of average value from both groups.[14]

3. Post-test

Post-test was held after all treatments were conducted. This test was used to measure student's achievements after they were given treatments. The result of test was analyzed statistically by looking for the mean and the percentage of the result. The aim is to compare between the pre-test and post-test. Then, the overall result is counted by using t-test formula in order to know the significance of the research. To examine the hypothesis that have been stated, these following steps are used:

1) Normality Test

[14]Anas Sudijono, *Pengantar Statistik Pendidikan*, …, p. 272-273.

Steps normality second step is the same as the normality test on the initial data.

2) Homogeneity Test

Steps homogeneity second step is the same as the homogeneity test on the initial data.

3) Hypothesis Test

The formula that used in the t-test as follows:[15]

Hypothesis:

Ho: $\mu_1 = \mu_2$

Ha: $\mu_1 \geq \mu_2$

With $t = \frac{\overline{X} - \overline{X_2}}{s\sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$

$$S = \sqrt{\frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{n_1 + n_2 - 2}}$$

Where:

$\overline{X_1}$: Average of experimental class

$\overline{X_2}$: Average of control group class

n_1 : The number of the experimental group

[15]Sudjana, Metode Statistika, …, p. 239.

n_2 : The number of control group

S_1^2 : variance of experiment group

S_2^2 : variance of control group

Testing criteria that apply is that Ha is accepted if $t_{count} \geq t_{table}$ by determining df : $(n_1 + n_2 - 2)$ and the significance of $\alpha = 5\% \ (1 - 1/2\alpha)$.