CHAPTER III

METHOD OF THE RESEARCH

A. Research Design

The design of this research was an Experimental research. According to Creswell (2008, p.299) experiment is you test an idea (or practice procedure) to determine whether it influences an outcome or dependent variable. The type of experimental research was quasi experimental design. Quasi-experimental design is consisted of both experimental and control group. The research would be carried out at the eighth-grade student of SMPN 1 Kampar Timur. The population of the research is the eighth grade of junior high school at SMPN 1 Kampar Timur. They are consisting of two classes. The total number of students is 38. There are two variables in this research, and independent and dependent variable. Variable (X) is Sentence Race Game, while Variable (Y) is the students' writing recount text ability. The following formulas are used in this research:

$$T_0 \frac{Mx - My}{\sqrt{\left(\frac{SDx}{\sqrt{N-1}}\right)^2 + \left(\frac{SDy}{\sqrt{N-1}}\right)^2}}$$

T_0 = the value of T-obtained

M_x = the mean of experimental sample (variable X)

M_y = the mean of control (variable Y)

SD_x = Standard deviation of variable X

SD_y = Standard deviation of variable Y

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N   = Number of the students

B. Time and Location

This research was conducted from April to May 2017. This research was conducted at State Junior High School 1 Kampar Timur.

C. Subject and Object of the Research

The subject of this research was the eight grade students of SMPN 1 Kampar Timur and the object of this research was using Sentence Race Game on students' recount text ability.

D. Population and Sample of the Research

a. Population

The population of this research was the eight grade students of SMPN 1 Kampar Timur in 2016/2017 academic year. The number of the eight grades at SMPN 1 Kampar Timur is 137 students. They are divided into 7 classes.

Table III.1

Population

No.	Class	Students
1	VIII. 1	20
2	VIII.2	20
3	VIII.3	20
4	VIII.4	19
5	VIII.5	19
6	VIII.6	20
7	VIII.7	19
TOTAL		137

b. Sample

The population was too large to be taken as the sample. The researcher takes sample by using purposive sampling. Pertaining to Gay and Airasian (2000, p.120) sampling is the process of selecting a number of individuals for a study in such a way that they represent the larger group from which they were selected. According to Cohen et.all (2007, p.114) purposive sampling, often (but by no means exclusively) a feature of qualitative research, researchers handpick the cases to be included in the sample on the basis of their judgement of their typicality or possession of the particular characteristics being sought. The sample has been choosen for a specific purpose. The teacher in this school suggested to take VIII.4 and VIII.7 as the sample, because the teacher teach in this class. Besides, the teacher also said that students in this class more active in the learning process than another class. So, the researcher takes VIII.4 and VIII.7 as a sample. In taking the experimental class and control class, the researcher named the cards as VIII.4 and VIII.7 then mixed them. After mixing the cards, the researcher took first card as experimental class and another card as control class. Therefore, the researcher took VIII.4 as experimental class and VIII.7 as control class. The total samples are 38 students.

Table III.2

The Sample of the Research

No.	Group	Classes	Number of Students
1	Experimental Class	VIII.4	19
2	Control Class	VIII.7	19
	Total		38

E. Technique of Collecting Data

In this research, the researcherused written test to measure the students' writing recount text ability. Cohen Et.all (2007, p. 418) suggested that The purposes of a test are several, for exampleto *diagnose* a student's strengths, weaknesses and difficulties, to measure *achievement*, to measure *aptitude* and *potential*, to identify *readiness* for a programme.The researcherused pre-test and post-test for collecting data. Pre-test that was used to know students' writing recount text ability before doing treatment. In pre-test the students wrote a recount text based on the topic for 40 minutes. After that, the researcher began to do the treatment by using Sentence Race Game in teaching writing recount text and gave an exercise of writing. At the last meeting, the researcher gave post-test for students.

The research procedure:

1. Experiment Group

   a. Pre-test

Pre-test was given by the researcher to the students taught before using Sentence Race Game for experimental class. In pre-test, the students wrote recount text based on the topic given.

b. Treatment

The treatment was conducted for experimental class only by using Sentence Race Game. It is given after the students are done pre-test. Teacher gave explanation to the students what the recount text is, and teach them how to write recount text by using sentence race game. After the teacher explain about recount text, teacher treat students using Sentence Race Game based on the procedure.

c. Post-test

Post-test was given to the students after they are taught by using Sentence Race Game for experimental class. The teacher asked to students to make a recount text based on the topic given. It is to know their writing recount text ability by using Sentence Race Game.

2. Control Group

a. Pre-Test

The pre-test given to control class to know their writing recount text ability. The test same as for experimental group.

b. Teaching by using Three Phase Technique

Teacher was explain about recount text and asked them to wrote recount text.

c. Post-test

Post test was given to the students after teach by using three phase technique.

Table III.3

Assessment Aspects of Writing Recount Text

No.	Aspect Assessed	Score			
1	Content				

2	Organization
	
	   a. Orientation
	   b. Event
	   c. Re-Orientation				

3	Vocabulary				

4	Language Use
	
	   a. Use of nouns and pronouns
	   b. Use of actions verbs
	   c. Use of past tense
	   d. Use of conjunctions and connectives				

5	Mechanics (Spelling and Punctuation)				

Table III.4

The Criteria of Assessment Aspect of Writing Ability

Aspects	Range	Criteria
Content	30-27	Excelent to Very Good
	26-22	Good to Average
	21-17	Fair to Poor
	16-13	Very Poor
Organization	20-18	Excellent to Very Good
	17-14	Good to Average
	13-10	Fair to Poor
	9-7	Very Poor
Vocabulary	20-18	Excellent to Very Good
	17-14	Good to Average
	13-10	Fair to Poor
	9-7	Very Poor
Language Use	25-22	Excellent to Very Good
	21-18	Good to Average
	17-11	Fair to Poor
	10-5	Very Poor
Mechanics	5	Excellent to Very Good
	4	Good to Average
	3	Fair to Poor
	2	Very Poor
Total Score : 100		

After the students did the test, then the researcher took the total score from the result of the writing ability test. According to Arikunto (2009, p. 245), the classification of the students' score can be seen below:

Table III.5
The Classification of Students' Score

Score	Categories
80-100	Very Good
66-79	Good
56-65	Enough
40-55	Less
30-39	Fail

1. Validity of the Test

According to Fraenkel and Norman (2006, pp.150-151), the term of validity in the research refers to appropriateness, correctness, meaningfulness, and usefulness of the specific inferences researchers make based on the data they collect. Validity depends on the amount and type of evidence there is support the interpretation researchers wish to make concerning data they have collected. There are three types of validity. They are content validity, criterion-related validity, and construct validity.

In order to know the validity of writing ability test, the researcher uses content validity. Content validity is partly a matter of determining if the content that the instrument contains is an adequate sample of domain of content, it is supposed to represent. Content validity refers to the content and format of the instrument. How appropriate the content or format is. Thus, the researcher gave the test based on the

material that is studied by the students. The material of the test is taken from the textbook.

2. Reliability of the Test

Pertaining to Gay and Airisian (2000, p.169) stated that reliability is the degree to which a test consistently measures whatever it is measuring. The testing of students' writing ability must have reliability in order to get the same scores obtained when the test done more than once. In reference to Brown (2003, p.20) stated that a reliable test is consistent and dependable. So, reliability here is used to measure the quality of the test score and consistent of the test.

In this research, the researcher used the rater agreement type of reliability concerned with inter rater reliability as the scores are given by two raters. Then, intercorrelation of the raters is used to finding the reliability of the test. Based on Henning (1987, p.85) stated that to know the level of correlation through *Spearman-Brown Prophecy Formula* as follows:

$$r_{tt} = \frac{nrA,B}{1+(n-1)rA,B}$$

where:

r_{tt} = inter-rater reliability

n = the number of raters whose combined estimates the final mark for the examines

$r_{AB}=$ the correlation between raters, or the average correlation among all raters if there are more than two

In reference to Arikunto (2009: 75) the following table is category of reliability test used in determining the level of the test.

Table III.6
The Level of Reliability

No.	Reliability	Level of Reliability
1.	0.0 – 0.200	Very Low
2.	0.21 – 0.400	Low
3.	0.41 – 0.600	Sufficient
4.	0.61 – 0.80	High
5.	0.81 – 1.00	Very High

The following table described the correlation between scores given by rater 1 and rater 2 by using Pearson Product Moment formula through SPSS 16 version.

Table III.7
Correlations

		Rater 1	Rater 2
Rater 1	Pearson Correlation	1	.495[*]
	Sig. (2-tailed)		.031
	N	19	19
Rater 2	Pearson Correlation	.495[*]	1
	Sig. (2-tailed)	.031	
	N	19	19

*. Correlation is significant at the 0.05 level (2-tailed).

From the table above, it can be seen that r_o ($r_{obtained}$) is 0.495 will be correlated to r_t (r_{table}). It is necessary to find the df (degree of freedom).

$$\mathbf{df = N - nr}$$

Where:

df : degree of fredom

N : Number of cases

nr : number of correlated variable

df = 19 − 2 = 17

The researcher took df = 17 to be correlated at level 5 %. At level 5 %, r_{table} is 0.456. thus, the $r_{obtained}$ is higher than $r_{table,}$ at level 5%. So the researcher concluded that there is a significant correlation between score given by rater 1 and score given by rater 2. In otherwords, the writing test is reliable. Then, $r_{obtained}$ is adjusted by the *Spearman-Brown Prophecy* formula below:

$$r_{tt} = \frac{nr_{A,B}}{1 + (n-1)r_{A,B}}$$

$$r_{tt} = \frac{(2)(0.495)}{1 + (2-1)(0.495)}$$

$$r_{tt} = \frac{0.99}{1 + 0.495}$$

$$= 0.66$$

Based on the calculation above, the researcher obtained that inter rater reliability was 0.66. So, it could be concluded that the reliability of writing test included was high level.

3. **Normality of the Data**

The technique of collecting the data was using test. The data analyzed by using statistical analysis. In analyzing the data, the researcher used scores of post-tset of experimental and control classes.

This score was analyzed statistically. In order to found the answer, the researcher analyzed the data by using SPSS 16 as follows:

Table III.8
Tests of Normality

	Kolmogorov-Smirnov[a]		
	Statistic	Df	Sig.
PosttestExperiment	.139	19	.200[*]
PosttestControl	.114	19	.200[*]

a. Lilliefors Significance Correction

*. This is a lower bound of the true significance.

Hypothesis:

H_0 (Null Hypothesis)   : Data is normally distributed

H_a (Alternative Hypothesis)   : Data is abnormally distibuted

Testing Criteria:

If probably (sig) > 0.05, H_a is accepted

If probably (sig) < 0.05, H_o is rejected

According to Priyatno (2012;36) if the sig column of either test is higher than 0.05, the data are normally distributed. From the table III.6 above, the significant value of post-test experimental and control classes were 0.200 and 0.200. because of sig > 0.05 (0.200 > 0.05) and (0.200> 0.05), the data were normally distributed. Therefore, the researcher used independent sample t-test.

4. Homogeneity of the data

According to Siregar (2013:167), the purpose of homogenity test is to know whether the object of the research has the same variance or not. The method used in this test was comparing the biggest variance with the smallest one. In this research, the researcher asssessed the homogenity of the data by using SPSS 16 version. The result of the test as follows:

Table III.9
Test of Homogenity of Variances

Levene Statistic	df1	df2	Sig.
.187	1	36	.668

Based on the table above, the probability (sig) was 0.668. it was higher than 0.05 (0.668> 0.05). it can be concluded that the data was homogen.

F. The Technique of Data Analysis

The technique of collecting data used test. The data was analyzed by using statistical analysis. In analyzing data, the researcher used scores of pre-test and post-test of experimental and control classes. This score was analyzed statistically. In order to get the answer, the researcher analyzed the data by using SPSS 16 as follows:

1. Independent Sample T-test

According to Pallant (2003, p.177) an independent sample t-test is used to compare the mean score, on some continuous variable, for two different groups of subjects. Furthermore, Miles and Philip (2007)

also defined that the independent sample t-testis (usually) the most powerful and is the test most likely to spot significant differences inthe data. However, we cannot use it with all independent groups data, and you have to be sure that your data satisfy some conditions before we choose this test. To use an independent samples t-test, we have to make two (or three) assumptions about our data:

a. The data are measured on a continuous (interval) scale.

b. The data within each group are normally distributed.

c. The standard deviations of the two groups are equal.

Hartono (2015, p.177) has mentioned about independent sample t-test also. He said that independent sample t-test is used to find out whether there is or not significant difference between two variables. In order to get the answer, depend to the column labeled Sig. (2-tailed), which appears under the section labeled t-test for Equality of Means. Choose whichever your Lavent's test result you should use two steps below:

a. If the value in the Sig. (2-tailed) is equal or less than α (0.5), H_a is accepted.

b. If the value in the Sig. (2-tailed) is above α (0.5), H_o is accepted.

The formula of eta squared is as follows:

$$\eta^2 = \frac{t^2}{t^2 + (N1 + N2 - 2)}$$

Where:

η = eta squared

t^2 = t_o

N   = number of students

The guidelines proposed by Cohen (1988, pp. 284-287) quoted in Pallant for interpreting these value are:

.01   = small effect

.06   = moderate effect

.14   = large effect

2. **Effect Size**

One way to much know about the magnitude of the intervention's effect is used an effect size. Pallant point out that effect size is a set of statistics which indicates the relative magnitude of the difference between means. In other words, it describes the amount of the total variance in the dependent variable that is predictable from knowledge of the levels of the independent variable. There are a number of difference effect size statistic. The most common of which are Eta squared, Cohen's d and Cohen's f. In this research, researcher used Eta square.

The following are the formula of Eta Squared paired samples t-test:

$$\eta^2 = \frac{t^2}{t2 + N - 1}$$

Where:

η^2 : eta squared

t^2 : t o

N : number of students

To interpret the eta squared value the following guidelines:

.01 = small effect

.06 = moderate effect

.14 = large effect

(Adapted from Pallant,2003:184)