CHAPTER III

RESEARCH METHOD

In this chapter the researcher presents some points related to this research include research design, subjects of the study, research variable, research instrument, validity and reliability testing, normality and homogeneity testing, procedures of the research, data collecting method, and data analysis.

A. Research Design

Sukardi (2003: 183) explains that research design is all the process needed in designing and implementing research. Research design is a plan on how to collect and process data that can be implemented to achieve the research objectives. This research was conducted in an experimental design. According to Prasetyo (2008: 160) there are many kinds of experimental research design that is Classical-Experimental design, Pre-Experimental design, Quasi-Experimental and Special design. An experimental usually involves two groups of subject, an experimental group, and a comparison group, although it is possible to conduct an experiment with one group.

The researcher was conducted Quasi-Experimental research design. Quasi-Experimental research is one of experimental research design which suggests causal relationship in result finding. This is one of quantitative research that is different from other types of research. The researcher controls or manipulates one or more independent variables then, measure how the treatment effective each group (Lodico et al., 2006:204). This research can be done in laboratory, in the

class and in the field. In this study, the experimental research was done in the class with taking students as population. The researcher chose the design to determine the validity of this study. Conclusion can be drawn from the study.

This study conducted in experimental research to know the effectiveness of hangman game on the eighth grade students' vocabulary achievement. This study used Quasi-Experimental research design because this type of design is commonly used as a cost effective way to conduct exploratory research to see if there is any evidence that warrants a full scale experimental study. In this case, the researcher determines to select two intact group. The first was given treatment, called experimental group and the other group was not being given a treatment, called control group. Then, both of two groups would be given pre-test to know the beginning condition that was there any differences between control group and experimental group.

In this research, the researcher uses design of experimental research design; Nonrandomized control group, pretest-posttest design (Ary et al., 2010:316). Experimental Nonrandomized control group, pretest-posttest design is conducted with two groups; experimental group and control group, which both group is given pre-test and post-test. Lodico et al., (2006:183) states the control group is a separate group that receives no treatment or a different treatment, while the experimental group is the group which will receive a treatment. The designed as follow:

Table 3.1 Nonrandomized Control Group, Pretest-Posttest Design

(Ary et al., 2010:316)

Group	Pre-test	Independent Variable	Post-test
E	Y_1	X	Y_2
C	Y_1	-	Y_2

Note:

E   : Experimental group

C   : Control group

Y1 : Pre-test in experimental group before treatment (VIII H)

Y1 : Pre-test in control group (VIII I)

Y2 : Post-test in experimental group after treatment (VIII H)

Y2 : Post-test in control group (VIII I)

X   : Treatment in Experimental group (VIII H)

-     : The group without treatment or using conventional strategy (VIII I)

According to the table above, there are two groups. The first was E group, namely experimental group. The students in experimental group receive hangman game as the treatment of the study. The second group was C group, namely control group. In other hand, the students in control group receive a conventional strategy without treatment. It means that the researcher wants to know if there is any significant differences in students' vocabulary achievement by using hangman game and without using hangman game. The researcher used hangman game in experimental class but did not use it in controlled class. Finally, both experimental and control group was given test before (pretest) and after (posttest) the treatment.

B. Subjects of the Study

This sub-chapter represents population, sample, and sampling that are used by the researcher, there are:

1. Population

Population is the objects/subjects that have some qualities and characteristics that are chosen to be learned and to be concluded by the researcher (Nurhayati 2018: 40). The population of this study is the eighth grade students of SMPN 1 Kalidawir in 2018/2019 academic year that consists of 284 students. The eighth grade students of SMPN 1 Kalidawir consisted of 9 classes.

Table 3.2 List of Population

Class	Male	Female	Total
VIII A	18	14	32
VIII B	14	16	30
VIII C	20	12	32
VIII D	16	16	32
VIII E	13	18	31
VIII F	16	16	32
VIII G	17	14	31
VIII H	16	16	32
VIII I	16	16	32
Total			284

2. Sampling

Sampling was the process of taking sample. The researcher used purposive sampling. Then researcher used two class that had been researched. According to Palys T. (2008), a purposive sample is non-probability sample that is selected based on characteristics of a population and the objective of the study. Purposive

sampling is also known as judgmental, selective, or subjective sampling. This type of sampling can be very useful in situations when the researcher needed to reach a targeted sample quickly, and where sampling for proportionally is not the main concern. In purposive sampling, the researcher used expert judgment to take some representative of typical cases from population. First, identify important variation sources of population, then choose the cases that were suitable with the variation sources. Purposive sampling used the researcher based on a certain consideration and the main consideration was the chosen classes had homogeneous in vocabulary achievement. In other words, the students had same average proficiency.

3. Sample

A sample is a research study is the group on which information is obtained (Jack R. Frankel, et al., 1932). The sample of this research take two group purposively. One group as experimental group and one group as control group.

In this study, the researcher takes two classes from 9 classes. The sample class is class VIII H and VIII I as a sample which the samples were class VIII H as experimental class and class VIII I as a control class. The reason of the researcher; first, they have a same level of knowledge in learning English and the students of this class has difficulties to follow vocabulary learning in English subject based on suggestion from the English teacher who taught English in both of the class.

Table 3.3 The Research Sample by Class

No.	Class	The Number of Students
1.	VIII H	32
2.	VIII I	32

C. Research Variable

Variable is anything that will be researched by the researcher. According to Frankel and Wallen (2006:40), variable is a concept a noun that stands for variation within a class of subject such as gender, color, motivation, chair, eye, achievement, or running speed. Based on the title of this research, there were two variables:

1. Independent Variable

   Independent variable is the one affecting another variable. In this research teaching vocabulary using Hangman Game was an independent variable because it affected the students' vocabulary mastery.

2. Dependent Variable

   Dependent Variable is the one affected by another variable. In this research students' vocabulary achievement was a dependent variable.

D. Research Instrument

Every research is always needed an instrument for collect the result of data. Sugiyono (2013) stated that research instrument is a tool for measuring and observing, in order to produce the result of quantitative data. He also said that research instrument uses to measure the value of research variable. Cresswell (2008:5) stated that the researcher uses instrument to measure achievement, asses

individual ability, observe behavior, develop a psychology profile of an individual, or interview a person. Thus, research instruments were the ways of gathering the data, without them, data would be impossible to put in hand.

To obtain the data, the researcher applied test as a research instrument. According to Ary (2010:210), test is a set of stimuli presented to an individual in order to elicit responses on the basis of which a numerical score can be assigned. Moreover, Burhan (2014:117) stated that there were two types of test used as instrument, namely essay test and objective test. Essay test is a form of question that demands the answer of students in the form of descriptions using their own language. Then, objective test is a short answer test that demands students only by giving a short answer by selecting a specific code that represents an alternative answer that has been provided. In this research, the vocabulary test served as the research instrument. The vocabulary test was held twice, in the pre-test and post-test. The test was multiple choice test that consisted of twenty items of vocabulary. The students were ordered to give the best answer in the test. The post-test had the same format as the pre-test.

The pre-test was administered before given treatment or before teaching by using Hangman Game. The purpose was to measure the students' vocabulary mastery before be given a treatment. By knowing the results of pre-test, it can be concluded that there was significant difference score before and after the treatment was given. After getting the result of pre-test form experimental group and control group, the researcher was given treatment to teach vocabulary for experimental group by using Hangman Game. Meanwhile, the researcher did not

give treatment or given conventional method to teach vocabulary for control group. After that, the researcher had given post-test to experimental group and control group. Post-test was used to know the students' vocabulary mastery after taught by using Hangman Game and from the one not using Hangman Game. Finally, the test was used to indicate the significant difference in the vocabulary mastery between the eighth grade students of junior high school who were taught by using Hangman Game and those who were not.

In addition, before the instrument was used to collect the data, the researcher was conducted try out. It was used to find out the validity and reliability of the instrument. Try out was administered in another class which was not involved during the research process. Try out will be implemented to 10 students of VIII G at SMPN 1 Kalidawir. Researcher choose this subject based on characteristic of students' ability that near same with the sample.

E. Validity and Reliability Testing

1. Validity Testing

Based on Gary (2005), validity is the complement to reliability and refers to the extent to which what we measure reflects what we expected to measure. From Ary et al. (2010) statement, the process of gathering evidence to support (or fail to support) a particular interpretation of test scores is referred to as validation. We need evidence to establish that the inferences, which are made on the basis of the test results, are appropriate.

According to Lodico et al., (2006), validity is generally divided into two concepts: internal validity and external validity. Internal validity is the degree or

extent to which the differences in the dependent variable are due to the experimental manipulation and not some extraneous variable therefore, external validity is the degree to which the results are generalizable beyond the sample used for a study. There were four types of validity, such as content validity, criterion-related validity, construct validity and face validity. The researcher used content validity, construct validity and face validity in analyze the test. The aim is to measure whether the test has a good validity.

a. Content Validity

Content validity is the test that the content is relevant with the purpose of the test. According to Ary et al. (2010), the question on a test is representative of some defined universe or domain of content. It means the researcher must seek evidence that the test to be used represents a balanced and adequate sampling of all the relevant knowledge, skills, and dimensions making up the content domain. Content validity is the test that if has a good content is looked at from the content of test. It means a test has valid if the content of test is a representative among lesson given. Thus, the researcher can conclude that the test was valid in content validity because the materials are tested have been taught to the students. The researcher made this test based on the course objective in the syllabus of SMPN 1 Kalidawir. The test instruments can be seen in the Appendix 1. Therefore, this test was valid in term of content validity. The content validity can be seen in the Table 3.4.

Table 3.4 Content Validity

Main competence	3.7 Menerapkan fungsi sosial, struktur teks, dan unsur kebahasaan teks interaksi transaksional lisan dan tulis yang melibatkan tindakan memberi dan meminta informasi terkait keadaan/tindakan/kegiatan/kejadian yang dilakukan/terjadi secara rutin atau merupakan kebenaran umum, sesuai dengan konteks penggunaannya. (Perhatikan unsur kebahasaan simple present tense)
Basic competence	4.7 Menyusun teks interaksi transaksional lisan dan tulis sangat pendek dan sederhana yang melibatkan tindakan memberi dan meminta informasi terkait keadaan/tindakan/ kegiatan/kejadian yang dilakukan/terjadi secara rutin atau merupakan kebenaran umum, dengan memperhatikan fungsi sosial, struktur teks dan unsur kebahasaan yang benar dan sesuai konteks
Indicator	- Membedakan penggunaan kata kerja yang diawali dengan subject I, You, We, They, He, She, It. - Membuat kalimat dengan pola simple present tense. - Menyebutkan kata kerja dalam bentuk simple present tense.
Technique	Written test
Instrument	- Pre-test - Post-test

Based on the Table 3.4 above, the instrument of the test could be said have the content validity because the test has equal purpose with the core competence and basic competence in syllabus of Curriculum of 2013, which was testing the students' ability in vocabulary with the correct structures.

b. Construct Validity

Construct validity shows how far the tests are suitable with the theory in composing those tests. According to Muijs (2004), construct validity is a slightly more complex issue relating to the internal. The instrument is constructed concerning aspects that measured. In this research, the researcher administered a writing test. To measure the construct validity, the researcher was consulted to the expert. The expert who was chosen by researcher was

advisor of this research a lecturer of IAIN Tulungagung, he was Mr. Dr. Susanto, SS, M.Pd. The expert would give their opinion about the instrument which researcher made. In addition, the researcher also consulted with the teacher of English lesson of SMPN 1 Kalidawir. After got the judgment from expert, the instrument could be tried out to the eighth grade students of SMPN 1 Kalidawir which consisted 10 students to find out the validity of the test.

c. Face Validity

According to Ary et al (2010: 225), face validity refers to the extent to which examines believe the instrument is measuring what it is supposed to measure. Henning (1987: 192) defines face validity as a subjective impression, usually on the part of examinees, of the extent to which the test and its format fulfills the intended purpose of measurement.

2. **Reliability Testing**

After having tested the validity of the instrument, the next step was to examine the reliability. Reliability is the consistency of measurement. By reliability, we know whether test is good or not. According to Ary et al (2010:237) stated that reliability is concerned with the effect of errors of measurement on the on the consistency of scores. A test said reliable if the test is consistent and dependable. It means that whenever the test was administered, it would show the similar or even the same result in any situation of test. In this research, the researcher used SPSS *16.0 for windows* to know the reliability of test instrument. The researcher was gave try out to

the students in other class in the same grade. The try out is used to know the reliability of the pre-test and post-test. The output of the try out test can be seen in the table below.

Table 3.5 The Score of Try Out Post-Test

No.	Students' Name	Test	Retest
1	AA	55	60
2	ADS	60	70
3	AR	80	90
4	AEF	75	80
5	AFA	40	40
6	AP	60	70
7	AEP	40	40
8	AA	60	70
9	AFS	60	40
10	DRP	55	50

Based on the Table 3.5 above, the researcher used VIII G twice in the different days to get data in the form of score to get the reliability of the test that measured in experimental class and control class. The researcher concluded that the score of the students were same in the difficulties level test.

The criteria of reliability instrument can be divided into 5 classess as follows (Ridwan: 2004), those are:

1. If the alpha cronbach score 0.00 – 0.20: less reliable.

2. If the alpha cronbach score 0.21 – 0.40: rather reliable.

3. If the alpha cronbach score 0.41 – 0.60: enough reliable.

4. If the alpha cronbach score 0.61 – 0.80: reliable.

5. If the alpha cronbach score 0.81 – 1.00: very reliable.

The result of reliability testing by using SPSS 16.0 can be seen from the table:

Table 3.6 The Result of Reability Test

Case Processing Summary

		N	%
Cases	Valid	10	100.0
	Excluded[a]	0	.0
	Total	10	100.0

Reliability Statistics

Cronbach's Alpha	N of Items
.644	20

a. Listwise deletion based on all variables in the procedure.

Table 3.7 The Result of Reability Retest

Case Processing Summary

		N	%
Cases	Valid	10	100.0
	Excluded[a]	0	.0
	Total	10	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.690	20

To know the items was reliable or not it can be seen from Alpha Cronbach's column. If the Alpha Cronbach's under 0,60 mean was not reliable. But if the Alpha Cronbach's upper 0,60 means that was reliable. The Alpha Cronbach's score of test is = 0,644 it means that was reliable. Then, the Alpha Cronbach's score of retest is = 0,690 it means that was reliable.

F. Normality and Homogenity Testing

Before analyzing the significant difference score in vocabulary of the students' taught by using Hangman Game and those taught by using conventional method, the data should be normal distribution and homogenous. Normality and Homogeneity is one of the pre-requisite tests used to analyze data at independent sample T-test. The purpose was to find out whether the data has been distributed normally and is there any difference variance in the two groups above. In addition, to measure the data computation were normal distribution and homogenous, the researcher conducted normality testing and homogenity testing. The definition as follow:

1. Normality Testing

Normality tests are used to determine whether a data set is well modeled by a normal distribution or not, or to compute how likely an underlying random variable is to be normally distributed. The purpose of using normality to know the normality, the researcher used Kolmogorv-smirnove test with SPSS.16.0.

Kolmogorov-smirnove is a test for normality for large samples. Basic decisions making in normality testing are as follows:

a. If the significance value > 0.050, then the data has normal distribution.

b. If the significance value < 0.050, then the data does not have normal distribution.

2. Homogeneity Testing

Homogeneity testing is intended to make sure that the collected manipulation data in analysis truly taken from population which is too different each other. To know the homogenity, the researcher used T-test of Homogeneity of Variances with SPSS 16.0. Basic decisions making in homogeneity testing are as follows:

a. If the significance value > 0.050, then the data distribution is homogeneous.

b. If the significance value < 0.050, then the data distribution is not homogeneous.

G. Procedures of the Research

In this study, the treatment administered four meeting completed with pre-test and post-test since the researcher has no authority to conduct more than it moreover the class did not belong to the researcher herself. The treatment was given after conducted the pre-test and before the post-test. To know the schedule of the research, it can be seen in Table 3.8 below:

Table 3.8 The Schedule of the Research

No.	Group	Meeting	Date	Activity	Time
1.	Control (VIII I)	I	Thursday, Mei 9th 2019	Pre-test and treatment 1 by conventional	5-6
2.	Experimental (VIII H)		Saturday, Mei 11th 2019	Pre-test and treatment 1 by Hangman Game	6-7
3.	Control (VIII I)	II	Friday, Mei 10th 2019	Treatment 2 by conventional and post-test	1-2
4.	Experimental (VIII H)		Tuesday, Mei 14th 2019	Treatment 2 by Hangman Game and post-test	6-7

The test was given by conducted pre-test and post-test which consisted with vocabulary test. Those test was done on first meeting and the last meeting. While, the treatment was given after pre-test and before the post-test. In this study, the group was got the treatment by using Hangman Game is experimental group only. Thus, the researcher would explain more about those treatment. The procedures of treatment can be seen as follow:

1. First, treatment was conducted on Saturday, Mei 11th 2019

Before beginning applied the Hangman Game as a media, the researcher conducted a pre-test. After that, the researcher introduced the Hangman Game used in a treatment for teach vocabulary by completing the verbs in a sentence about simple present tense. Then, the researcher drew a dash for each letter, the students call out letters which they think may be in the word. If the students guessed correctly, write the letter above the appropriate dash. For each incorrect guess, draw one part of the 'hanged man'. The game proceeds in this manner either until the learners guess the word, the drawing has been completed, and the students have been 'hanged'. The researcher may then reveal the answer.

2. Second, treatment was conducted on Tuesday, Mei 14ᵗʰ 2019

In the second treatment, the researcher wrote the definition of a verb and the students answered it. The students studied in group discussions and applied the Hangman Game as a media. After the treatment is complete, at the end of meeting the researcher conducted a post-test to get the result of the treatment that has been done.

H. Data Collecting Method

Data collecting method is the way the researcher to collect the data. Researcher used two kinds of tests and one treatment after given a pre-test. They were:

1. Pre-Test

   Pre-test was given to the students before the researcher taught by using Hangman Game. Pre-test is needed to know how far the students' vocabulary achievement in English subject without using Hangman Game. The form of pre-test is multiple choices which consisted 10 items and matching the meaning consisted of 10 items about verbs of simple present tense. The pre-test given to measure their ability and to know them earlier knowledge before they get treatment. The students answered the task of pre-test is 25 minutes.

2. Treatment

   The treatment was conducted after the administration of the pre-test. The treatment consists of 2 meetings. The purpose of treatment is to help

students in understanding vocabulary achievement. The treatment was taught by using Hangman Game to the students.

3. Post-test

After the treatment, the post-test was given to the students. The test item in the post-test was different with the pre-test, but both of them had same indicators and the text was almost same in level of difficulties. This test is to measure students' reading comprehension after treatment applied. The form post-test was also multiple choices which consisted 10 items and matching the meaning consisted of 10 items about verbs of simple present tense. It was given to measure students' achievement after they get treatment. Time allocation to answer the task is 25 minutes.

I. Data Analysis

The collected data were analyzed to know the effectiveness of using Hangman Game toward students' vocabulary achievement. The researcher divided the test result into two groups, they were the test result from the experimental group and the test result of the control group. Data obtained from the post-test from both of Experiment class and Control class would be analyzed statistically using Independent-Sample T-test through SPSS *16.0 for windows*. The researcher used T-test to know the significant value was higher or smaller than 0.05. The technique of data analysis used by the researcher belonged to quantitative data analysis.