CHAPTER III

RESEARCH METHODOLOGY

3.1. Research Design

This research is using by quantitative method. Quantitative research is collecting data by using statistics. This research design is experimental design. This study analyzes the effect of the independent variable and the dependent variable. The dependent variable is experimental research class to get treatment of the research. In this study, the researcher wants to see whether the treatment will be significant or not. There is a pre-test and post-test to measure students' abilities.

Table 3.1. Experimental Research

Class	Treatment	Post-Test
Experimental Group	By using Visualization, Auditory, and Kinesthetic (VAK) Learning Model	Experimental Group
Control Group	Without using Visualization, Auditory, and Kinesthetic (VAK) Learning Model	Control Group

3.2. Population and Sample

3.2.1. Population

Population is a generalization area that consist of object/subject have to certain quality and characteristic to determined by researcher studied and make conclusions.

So, population is not only person, but also object and another natural objects. And also population is not just amount in object/subject studied, but includes all of characteristics/own properties by the subject or object.

Table 3.2. Population of the Study

No.	Class	Population
1	VIII-A	27
2	VIII-B	27
	Total of students	54

3.2.2 Sample

Sample is a research subject that can represent from the entire research population. According to Sugiyono (2016:81) the sample is part of the number and factors that are owened by the population. If the population is large and it is impossible for the researcher to study everything in the population, then the researcher can use a sample take from the population. The sampling technique in this research are two classes, one the experimental class and the other one as the control class. They are VIII-A class and VIII-B class which is consisting of 27 students. Therefore, there are 54 students in the sample.

Table 3.3. The Samples of the Study

Number	Group	Students	Classes
1	Experimental	27	VIII-A
2	Control	27	VIII-B

3.3. Treatment

In this research, the researcher gives treatments. There are 4 meetings for each group and each groups are consisting of 27 students. The researcher gives picture aids that contain vocabulary lists on the whiteboard, the students must remember of vocabulary about classroom things and then they are doing to verbal instructions and the last they are doing to tactile-touch, feel. Steps in applying the Visualization, Auditory, and Kinesthetic (VAK) Learning Model. The researcher gives pre-test and post-test which is related to the English vocabulary:

Table 3.4 The Treatment in Experimental Class

Meeting	Teacher's Activity
I	**Opening** The teacher greeted students. **Main Activity** • Stimulation The teacher asked students to introduce themselves. The students introduced themselves. • Problem Statement Some of students had difficulty how to pronounce and meaning

	vocabulary to make sentences. • Data Collection The teacher asked students to write down their names, class, and hobbies on paper. **Closing** The teacher asked students. If they did not understand. The teacher ended the first meeting.
II	**Opening** The teacher greeted to the students. **Main Activity** Data Procesing The teacher gave vocabulary lists in teaching material to students. The teacher asked students in reading vocabulary one by one. Verification The teacher gave definition of vocabulary. Generalization The students wrote definition of vocabulary. **Closing** The teacher asked students. If they did not understand. The teacher ended the second meetings.
III	**Opening** The teacher greeted students.

	Main Activity Explanation The teacher gave explanation again about the definition of vocabulary and the teacher gave the function of vocabulary. The teacher used VAK learning model in teaching English vocabulary. **Closing** The teacher asked students. If they did not understand. The teacher ended the third meetings.
IV	**Opening** The teacher greeted students. **Main Activity** Creating The students answered multiple choices sheets by the teacher. Share The students answered multiple choices. Which is related to explain by teacher. **Closing** The teacher asked students. If they did not understand. The teacher ended the fourth meetings.

Table 3.5 The Treatment in the Control Class

Meeting	Teacher's Activity	Students Activity
I	**Opening** The teacher greeted students. The teacher asked students to introduced themselves. **Main Activity** The teacher asked students to wrote their names, class, and hobbies on paper. **Closing** The teacher ended the first meeting and talked the next lessons.	The students answered greetings. The students introduced themselves. The students wrote their names, class and hobbies on paper.
II	**Opening** The teacher greeted students. The teacher asked	The students answered greetings**.** The students answered

	students in previous lessons . **Main Activity** The teacher gave definition of vocabulary. **Closing** The teacher ended the second meetings and tells the next lessons.	teacher questions. The students wrote definition of vocabulary in their notebooks.
III	**Opening** The teacher greeted the students. The teacher asked students in previous lessons. **Main Activity** The teacher gave explanation the function of vocabulary.	The students answered greetings. The students talked difficulties in previous lessons. The students must pay attention to the teacher's explanation and students wrote the function of

		vocabulary.
	Closing The teacher ended the third meetings and talked the next lessons.	
IV	**Opening** The teacher greeted students. **Main Activity** The teacher gave multiple choices test to see how far the students already mastered the lessons. **Closing** The teacher ended the fourth meetings.	The students answered greetings. The students answered multiple choices test which is related to the English vocabulary.

3.4. Research Instrument

In this research, the researcher applies two tests, that namely are pre-test and post-test. The instruments in the form of multiple choice test, there is 20 items (the score is 5 for item). To get the final score is 20 x 5 = 100. So if students can answer all the question correctly the score is 100.

Table 3.6. Research instruments of types vocabulary

No.	Types of Vocabulary	Items
1.	Description	4
2.	Synonym to measure of vocabulary balance with adjectives	4
3.	Antonym to measure of vocabulary balance with adjectives	4
4.	Vocabulary Builder	4
5.	Vocabulary of Dialog	4

3. 5. Reliability and Validity of Instrumen

3. 5. 1. Realibility

If there are similarities of reliable result. The object was red yesterday, now and tomorrow it is still red.

$$ri = \frac{k}{(k-1)} \left\{ \frac{st2 - \sum piqi}{st2} \right\}$$

Where:

k : the number of item in the instrument

pi : proportion of the number of subject who answer item 1

qi : 1-pi

St^2 : the number of variant

The value of realibility coefficient (Guilford, 1956) as he following:

0,80 – 1,00 : the realibility is very good

0,60 – 0,80 : the realibility is good

0,40 – 0,60 : the realibility is significant

0,20 – 0,40 : the realibility is low

-1,00 – 0,20 : the realibility is very low (Not reliable)

3.5.2. Validity

The valid result of research, if there are similarities of the data collected is between the data found that actually in the object research. If the object is red, while the data collected is white. The research is invalid.

$$r_{xy} = \frac{n \Sigma xy - (\Sigma x)(\Sigma y)}{\sqrt{[n\Sigma x^2 - (\Sigma x)^2][n\Sigma y^2 - (\Sigma y)^2]}}$$

Pearson Moment Products formula:

r_{xy} = Is the product of the total amount of variable x and the total amount of variable y

N = Is the number of data pairs X and Y

ΣX = Is total of the variable X

ΣY = Is total of the variable Y

ΣX2 = Is squared total amount of variable X

ΣY2 = Is squared total amount of variable Y

3.6. Technique of Data Collection

There are two the main affect that of the data result, they are quality of instrument and quality of the data collection. The data collection are using pre-test and post-test.

3.6.1. Pre-test

The experimental and control groups giving a pre-test before treatment.

3.6.2. Post-test

The post-test giving to students after conducting treatment using Visualization, Auditory, and Kinesthetic (VAK) Learning Model. It aims to find out the difference in their average score.

3.7. Technique of Data Analysis

The data collecting all of the test, the data will calculating by using t–test. In analyzing the data, this following formula of t–test is :

$$t = \frac{Ma - Mb}{\left[\frac{da2 + db2}{Na + Nb - 2}\right]\left[\frac{1}{Na} + \frac{1}{Nb}\right]}$$

Where:

t : total score

Ma : the mean of experimental group

Mb : the mean of control group

da : the standart deviation of experiment group

db : thestandart deviation of control group

Na : the total number sample of experiment group

Nb : the total number sample of control group.