

## **CHAPTER III**

### **RESEARCH METHODOLOGY**

This chapter presents the discussion of the research method. The researcher attends to explain about research design, population and sample, research instrument, the technique of data collection, and technique of data analysis. The explanation of each section as follows:

#### **3.1 Research Design**

This analysis is a quantitative research with a quasi-experimental design since it investigates the influence of playing Kahoot games on students' vocabulary knowing capacity. Furthermore, there are some characteristics of quantitative research (Creswell, 2012): Describing research problem through a description of trends, creating purpose statements, research question and hypotheses specifically, collecting numeric data from a large number of people who used the instruments, analyzing in comparing groups by using statistical analysis. The research design could be seen as follow:

***Table 3. 1 The Research Design***

<b>Intact Groups</b>	<b>Measurement</b>	<b>Application of Independent Variable</b>	<b>Measurement</b>
Experimental Group	Pre-test	Experimental treatment (Using Kahoot Game)	Post-test

Control Group	Pre-test	Conventional Class (Using Quizizz Game)	Post-test
---------------	----------	--	-----------

There are two classes engaged in this study, one as an experimental group and the other as a control group. The first class will be responsible for the use of the experimental procedure, while the second class will be in charge of the control class. Both will be taught through a variety of methods. For experimental research, an examination of the influence that one variable (s) systematically manipulates on another variable is required. The independent variable, or experimental treatment, is referred to as the controlled variable.

### **3.2 Research Variable**

The variable represents the study's variation object. Variables are divided into two types: dependent (y) and independent (x). The dependent variable is the main variable that will be the subject of any relationship between other variables. The researcher selects the independent variable to determine its relationship with the dependent variable. Variables are objects researched that become important points in study. This study involves two factors. There are two variables in this study:

1. Independent variable (x) In this study, the independent variable for the experimental group is students who taught vocabulary using a Kahoot game, while the control group is students who taught vocabulary using Quizizz game.

2. Dependent variable (y) Dependent variable in this study is the vocabulary of student at eleven grades of MA Al – Huda Kota Kediri.

### **3.3 Population and Sample**

#### **1. Population**

According to Arikunto (2013: 173) population is all subjects in the research. Gay (2006) stated that population is a certain group of things (people, objects, events, etc) chosen by the researcher whose study or research can be generalized to the group. There are seven classes as the population and the researcher used one class as the sample of this research. The population of this research is students of 11th grader of Senior High School MA Al-Huda Kota Kediri. MA-Al-Huda Kota Kediri is located in the address is at Jl. Masjid Al Huda No.196,641, Kota Kediri. prov. East Java.

#### **2. Sample**

McMillan and Schumacher (1984:32) state that sample is a group of subject selected from the population. The researcher used two class as the sample of this research. For sample, the writer only took 40 students that came from two classes: XI IPS 1 (20 students) as the control class and XI IPS 2 (20 students) as the experimental class. Those classes were selected after the writer gained permission from school to do research and a discussion with Mr. Syaifulloh, M.Pd. as an English teacher for the eleven grade. The sample is part of the population. The sample is the selected group of the population to be observed in a study.

For samples, researchers taken with a total sampling technique, namely class XI IPS 1 and XI IPS 2.

### **3.4 Research Instrument**

Research instruments used test to collect the data. It was used to gauge how well the pupils understood the previously delivered material and to determine the extent to which the learner could become interested in it and attain its goal. According to Arikunto (1986), a test is a set of questions, an activity, or another tool intended to gauge a person's aptitude, knowledge, intelligence, or attitude. Both the experimental and control groups took the test. In this research, the research instrument employed consisted of a pre-test, and post-test.

#### **1. Try out**

The researcher used try-out to measure the device. A tryout is used to evaluate the validity and reliability of the test. Accurately evaluating the ability under examination is a key component of validity. A crucial factor to take into account while creating a test is reliability. Tryouts were calculated using SPSS. Multiple-choice questions made up the entire set of 40 questions. 48 trustworthy and legitimate questions were employed in this investigation.

#### **2. Validity**

The suitability of the means was tested by validity. Nowadays, validity is crucial for both quantitative and qualitative research. It's of high quality. Using SPSS for Windows, the researcher verified the test.

Fifty test items were used to determine the validity. If the Pearson correlation is greater than the r table, the test is considered valid. Nonetheless, the test is deemed invalid if the person correlation is smaller than the r table.

***Table 3. 2 Validity Result***

<b>No.</b>	<b>Pearson Correlation</b>	<b>R table</b>	<b>Result</b>
1	0.492	0.361	VALID
2	0.783	0.361	VALID
3	0.498	0.361	VALID
4	0.681	0.361	VALID
5	0.533	0.361	VALID
6	0.205	0.361	INVALID
7	0.425	0.361	VALID
8	0.871	0.361	VALID
9	0.598	0.361	VALID
10	0.483	0.361	VALID
11	0.554	0.361	VALID
12	0.22	0.361	INVALID
13	0.572	0.361	VALID
14	0.491	0.361	VALID
15	0.502	0.361	VALID
16	0.596	0.361	VALID
17	0.078	0.361	INVALID
18	0.480	0.361	VALID
19	0.451	0.361	VALID
20	0.105	0.361	INVALID
21	0.587	0.361	VALID
22	0.557	0.361	VALID
23	0.578	0.361	VALID
24	0.565	0.361	VALID
25	0.322	0.361	INVALID

Based on the table above, the researcher concluded that there are 20 valid items, because  $r\text{-itung (Pearson Correlation)} > r\text{-table}$ . There are 2 items are invalid because  $r\text{-itung (Pearson Correlation)} < r\text{-table}$

### 3. Reliability

Reliability is known as the degree to which a test delivers consistent findings when administered under identical conditions. It refers to the consistency of test results throughout time. The data is dependable if the test is repeated, and the results are the same. If the Cronbach's Alpha value is  $> 0.359$ , then the test items in the study can be considered reliable. If the Cronbach's Alpha value is  $< 0.359$ , then the test items in the study are regarded as not reliable.

**Table 3. 3 Validity Result**

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.876	.868	25

The reliability coefficient of the instrument states that the questions the reliability coefficient are 0.876. Based on the classification of the reliability coefficient, the reliability is classified in the Very High reliability.

**Table 3. 4 The characteristics of Reliability of The Test**

No.	Reliability	Category
1.	0.800 – 1.000	Very High
2.	0.600 – 0.700	High
3.	0.4000 – 0.500	Average
4.	0.200 – 3.00	Low
5.	$> 0.200$	Very Low

#### 4. Pre - Test

The pretest was conducted in order to know the students' vocabulary mastery before the treatment are administered. The material based on the curriculum for the second grade of Junior High School students. The researcher used the objective test in the form of multiple choices which consists of 20 items with four options (A,B, C, and D) of each item and 10 items in the form of true-false question. One of the options is the correct answer and the others are distracters. It was allocated 60 minutes for the test. The pre-test required students in both the experimental group and the control group to choose the correct answer. Pre-test data compares with the posttest data find out whether is there any significant improvement after being taught by Kahoot.

***Table 3. 5 Blueprint of Pre-Test***

<b>No.</b>	<b>Indicators</b>	<b>Items of Question</b>	<b>Test Format</b>	<b>Item</b>
1.	Students can identify antonym of the word	1, 5, 7, 8, 10, 11, 15, 18	Multiple Choice	8
2.	Students can identify synonym of the word	2, 3, 4, 6, 9, 12, 13, 14, 16, 17, 19, 20	Multiple Choice	12
<b>Total</b>				<b>20</b>

## 5. Post-test

The post-test was conducted after the treatment had been administered. This test aims to find out whether the results at teaching learning process after the treatment have progressed or not. The posttest was conducted in 30 minutes and it is administered once. The questions or the items in posttest are the same as the pre-test. However, the researcher changed the questions number. This test has the same difficulty as pre-test

***Table 3. 6 Blueprint of Post-Test***

No.	Indicators	Items of Question	Test Format	Item
1.	Students can identify antonym of the word	2, 5, 7, 8, 14, 17	Multiple Choice	6
2.	Students can identify synonym of the word	1, 3, 4, 6, 9, 10, 11, 12, 13, 15, 16, 18, 19, 20	Multiple Choice	14
<b>Total</b>				<b>20</b>

## 3.5 Treatment Procedure

This treatment was used to determine the effectiveness of the Kahoot game on students' vocabulary mastery. The experimental group will be learning about using Kahoot games so that students can understand the effectiveness of the Kahoot games in vocabulary material. In the control class, researchers created vocabulary through Quizizz.



**Table 3. 7 Treatment Procedure**

<b>Activity</b>	<b>Activities</b>	
	<b>Experimental class (Kahoot Game)</b>	<b>Control class (Quizizz)</b>
<b>Pre-Teaching Activity</b>	<ul style="list-style-type: none"> <li>▪ Opening</li> <li>▪ Check attendance and explain the material</li> </ul>	<ul style="list-style-type: none"> <li>▪ Opening</li> <li>▪ Check attendance and explain the material</li> </ul>
<b>Main Teaching Activity</b>	<ul style="list-style-type: none"> <li>▪ The teacher explains about Kahoot game application</li> <li>▪ Students are asked to pay attention so they know how to use this Kahoot application for vocabulary learning.</li> <li>▪ The teacher also explained material about narrative text.</li> <li>▪ To help student understanding, the teacher used game from the application.</li> <li>▪ The teacher gives quiz question about vocabulary via the Kahoot application, for each question there is a processing time.</li> <li>▪ Students must also be able to work on the questions</li> </ul>	<ul style="list-style-type: none"> <li>▪ The teacher explains about Quizizz application.</li> <li>▪ Students are asked to pay attention so they know how to use this Quizizz application for vocabulary learning.</li> <li>▪ The teacher also explained material about narrative text.</li> <li>▪ To help student understanding, the teacher used game from the application.</li> <li>▪ The teacher gives quiz question about vocabulary via the Quizizz application, for each question there is a processing time.</li> <li>▪ Students must also be able to work on the questions quickly, then after completing the work the score</li> </ul>

	quickly, then after completing the work the score will appear automatically.	will appear automatically.
<b>Post -Teaching Activity</b>	<ul style="list-style-type: none"> <li>▪ Teacher and students have a discussion on the correct answer to the game.</li> <li>▪ Teacher giving feedback and evaluation to the students.</li> <li>▪ Teacher tells students to say hamdalah together.</li> <li>▪ Closingan.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Teacher and students have a discussion on the correct answer to the game.</li> <li>▪ Teacher giving feedback and evaluation to the students.</li> <li>▪ Teacher tells students to say hamdalah together.</li> <li>▪ Closingan.</li> </ul>

Kahoot and Quizizz are learning platforms that can enhance student engagement and learning experiences. The reason I use Kahoot and Quizizz, is to increase student involvement in learning, can capture and organize valuable data for students, helps measure increases in student competency by calculating the difference between post test and pre test, helps reduce paper use because it is relevant to students' habits today, helps foster creativity in the use of technology, Quizizz focuses more on customization and detailed analysis, while Kahoot emphasizes game-based learning experiences

### 3.6 Data Collection

Data collection tools include pre-, treatment-, and post-tests. The identical test was used as a pre-test for the experimental and control groups. The exam was administered by the researcher to obtain precise data regarding the increase in vocabulary understanding by the students

following their instruction using Kahoot games. According to Brown (2004), a test is a way to gauge a person's performance, knowledge, or aptitude in a particular profession. According to the aforementioned statement, tests can be used to gauge pupils' aptitude or level of learning success.

Following the pre-test, the researcher will administer the treatment three times, each time using a different topic. The post-test comes next. The purpose of the test, which was administered to both groups following treatment, was to ascertain whether the scores of the student groups that received instruction utilizing the Quizizz and Kahoot games differed significantly. To analyze the vocabulary test results, the researcher employed ANCOVA.

### **3.7 Data Analysis**

Data analysis is crucial aspect of the research process. The researcher has for analysing, describing, and illuminating all data result. Several approaches are used to analyse the data in this study. The researcher collected data by giving pre-test and post-test to the experimental and control groups. Then, the data analyzed and compared by the researcher.

The researcher used ANCOVA to analyse the data in SPSS 21. ANCOVA was used to control parameters that cannot be randomized but can be calculated on an interval scale. After analyzing, the researcher determines whether learning vocabulary through Kahoot game is effective or not. If the p-value is less than 0.05, the null hypothesis is rejected and the

alternative hypothesis is accepted. And if the significant value is more than 0.05, the null hypothesis is alternative hypothesis is rejected.

### **3.8 Interpretation of the Research Result**

1. If the Sig.<0,05 then Ho (null hypothesis) is rejected.

This indicates that the Kahoot game is a useful tool for teaching vocabulary to senior high school students, as the experimental group's mean scores are noticeably higher than the control group's mean scores.

2. If the Sig.>0,05 then Ho (null hypothesis) is accepted.

This suggests that the Kahoot game is ineffective for helping senior high school students master vocabulary because the experimental groups' mean scores are either substantially the same as or lower than those of the control group.