CHAPTER III

RESEARCH METHOD

This chapter presents the research method. It contains the method used in conducting this study which includes Research Design, Place and Time of Study, Population, sample, and sampling, Data Sources, Research Instruments, Validity and Reliability Testing, Normality and Homogeneity Testing, Data Collecting Method, Data Analysis and Hypothesis Testing.

A. Research Design

The research about the effectiveness of student's vocabulary using Hello English application would took place at the tenth grade students of Senior High school. This research used Quasi Experimental research using post-test. The type of this research is an experimental research that is testing an idea (or practice or procedure) to determine whether it influences an outcome or dependent variable (Cresswell: 2008: 299). According to Cohen, (2007) the essential feature of experimental research is that investigators deliberately control and manipulate the events, which they are interested in introducing an invention and measure the difference that it makes. In addition, Gay and Peter (2000: 15) state that an experimental is the quantitative approach that provides the greatest degree of control over the research procedures. This research uses quasi-experimental research that focuses on non-equivalent control group design. Creswell (2008, p. 313) states that quasi-experiment is experimental situation in which the researcher assigns participants to groups, but not random. Gay and Airasian (2000, p. 15) states that quasi-

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Experimental design is used when the researcher keeps the students in existing classroom intact and the entire classrooms are assigned to treatments. The research intended to solve the problems found by the teacher in the teaching of vocabulary.

B. Place and Time of the Study

This Research was conducted at SMAN 1 Durenan which is located in Jl. Raya Durenan No. 16, Kendal, Kendalrejo, Kec. Durenan, Kab. Trenggalek, Jawa Timur 66381. This research was conducted from 13th February 2020 until 6th March 2020 in the academic year 2019/2020.

C. Population, Sampling, and Sample

1. Population

Polit and Hungler (1999:37) refer to the population as an aggregate of all the objects, subjects or members that confirmed to a set of specifications. In this research, the population was all of students in two of class tenth IPA at SMAN 1 Durenan. The total population of this research was 71 students. There were 46 females and 25 males.

2. Sampling

Sampling is the process of obtaining a sample of selecting a number of individuals for a study in such a way that individuals represent the large group from which they were selected (Porte, 2002:234, Gay, 1992:123). In this study, sampling used purposive sampling. According to Singh, 2007: 108 purposive sampling can be useful for situations where you need to reach a targeted sample quickly and where a random process

of selection or proportionality is not the primary concern. This sampling was conducted at tenths grade students of the SMAN 1 Durenan. Students in this class might still be easy to direct and have high motivation to master English.

3. Sample

A sample is a subset of a population selected to participate in the study, it is a fraction of the whole, selected to participate in the research project (Brink 1996:133; Polit & Hungler 1999:227). A sample is a finite part of a statistical population whose properties are studied to gain information about the whole (Webster, 1985).The researcher takes the tenth grade students as the sample of this research. Class X IPA 2 and class X IPA 3 were selected as the sample of the study. The class X IPA 2 as experimental class that was taught by using Hello English application consisted of 35 students and class X IPA 3 as control class that was taught by using a conventional strategy consisted 36 students.

In both of these classes the students had equal abilities in learning English. From the data values obtained during learning English which had been calculated used t-test and the results shows an equivalent. It can be seen the results of t-test in table below:

Table 3.1 The Result of t-test

Group Statistics

	Kelas	N	Mean	Std. Deviation	Std. Error Mean
nilai ujian	kelas A2	35	83.66	2.127	.360
	kelas A3	36	83.36	3.053	.509

Based on table above there is no significant difference of the ability's students in learning English. In class X IPA 2 gained an average 83.66 and in class X IPA 3 gained an average of 83.36. So it only used the value of the post test compared because two classes have almost the same equality.

D. Data Sources

The data collected in this research was quantitative research. Creswell (2002) noted that quantitative research is the process of collecting, analyzing, interpreting, and writing the results of a study, while qualitative research is the approach to data collection, analysis, and report writing differing from the traditional, quantitative approaches. This research used test as a data collected procedure. The sources of this research were for students. This research focused on Hello English application to teach student's vocabulary on the tenth grade students of SMAN 1 Durenan.

E. Research instruments

Research Instrument is a tool for collecting data that should be valid and reliable. According Fraenkel (1996) stated that "Instrument is the device the researcher uses to collect data. For getting the data about the student's achievement, writer uses the instrument of test.

The researcher used a test in her study as the instrument for collecting data. The test was Post-test. The purpose of giving a post test was to know the student's ability in mastering English vocabularies. The test was 15 multiple choice questions and 10 short answer questions to conduct this study.

F. Validity and Reliability Testing

1. Validity of the Test

    Heaton (1989:159) defines the validity of a test as the extent to which it measures what it is supposed to measure and nothing else. To measure whether the test has a good validity, the researcher analyzed the test from content validity, construct validity and face validity.

a. Content Validity

    Content validity is the degree to which a test measures an intended content area (Gay, 1992:156). In this research the researcher asked the students to write a Recount Text based on the given topic. The instrument of the study fulfilled the requirement of having content validity for the activity of the test was suited with the syllable used in the school as it presented in the following matrix:

Table 3.2 The Matrix of the Content Validity

No.	Material	Basic Competence	Indicator
1	Recount Text (Past experience, Past event)	3.7 Membedakan fungsi sosial, struktur teks, dan unsur kebahasaan beberapa teks recount lisan dan tulis dengan memberi dan meminta	- The students able to complete paragraphs about an event with the right vocabulary. - Students can find similarities / opposites of words that are appropriate. - Students can complete dialogue that is overlapping.

		informasi terkait peristiwa bersejarah sesuai dengan konteks penggunaanny a	
		4.7 Teks recount peristiwa bersejarah 4.7.1 Menangkap makna secara kontekstual terkait fungsi sosial, struktur teks, dan unsure kebahasaan teks *recount* lisan dan tulis terkait peristiwa bersejarah 4.7.2 Menyusun teks recount lisan dan tulis, pendek dan sederhana, terkait	-

		peristiwa bersejarah, dengan memperhatika n fungsi sosial, struktur teks, dan unsure kebahasaan, secara benar dan sesuai konteks.	

Based on the matrix above, it shows that the test was valid based on content validity.

b. Construct Validity

Construct validity is capable of measuring certain specific characteristics in accordance with the theory of language behavior and learning (Heaton, 1975:59). Brown (2004:194) stated that multiple choices is one of tests for making testing that be simple but may serve as a vocabulary check. Haynie (1983) stated that short answer items are relatively easy to prepare and may be scored more quickly than essay items. Based on theory above, in the test, the researcher asked the students to answer the multiple choice and short answer based on topic to measure the students' ability in vocabulary and this fulfill the construct of vocabulary test.

The biggest disadvantage of this kind of testing is that we do not have to worry about subjectivity because only one answer should be

corrected. It is very easy and quick for the examiner to correct this test because it just puts ticks or crosses (Hughes, 61). According to Barbara Gross Davis, (1993, 272) "Essay tests let students display their overall understanding of a topic and demonstrate their ability to think critically, organize their thoughts, and be creative and original. Moreover, essay tests can suffer from unreliable grading; that is, grades on the same response may vary from reader to reader or from time to time by the same reader. For this reason, some faculties prefer short-answer items to essay tests." So, use short answer is measured to test vocabulary testing.

c. Face Validity

According to Ary (2010:228) Face validity refers to the extent to which examinees believed the instrument was measured what it was supposed to measure. A test was said to have face validity if it looks as what is considered to measure. In checking the face validity of the test, the researcher asked the opinion English teacher of the classes X IPA 2 and IPA 3. The English teacher says that the test is appropriate for students especially in learning vocabulary.

2. Reliability of the test

According to Heaton (1989:162) reliability is necessary characteristic of any good test to be valid at all, a test must first be reliable instrument. The reliability of the test is consistency. Thus, reliability is a measure of accuracy, consistency, dependability, or fairness of scores

resulting from administration of particular examination. In addition, the test was reliable if the score was steady over time. There were some factors that may contribute to the unreliability of the result of a test such as fluctuations in the student, the way to score, the process of administering the test itself. In anticipating those problems in the reliability of the test, the researcher gave sufficient and clear instructions before administering the test, the existence of test specification (time allocation, class, date) and reliability of the test instruction. Practically when the test was given, the first page of the test sheet was given clear instructions about how to do the test, the times allocate for the class and date was definitely given.

To get the one row scores try out of the test for post-test was done. The try out was done on February 14, 2020. In this try out the students were asked to answer the questions that consist 15 multiple choice and 10 short answer questions based on the given topic. To calculate the score the researcher uses SPSS 16.0. The result of the reliability testing can be seen on Table 3.3 below.

3.3 The Result of Reliability Testing

Reliability Statistics

Cronbach's Alpha	N of Items
.510	26

From table 3.3 shows that reliability testing under 0.60 was low. Because the reliability value was low the researcher gives clearer

instruction before the test. So, the results of the reliability of the test higher in the post test. The results of reliability testing in the post test can be seen from the following table.

3.4 The Result of Reliability Testing

Reliability Statistics

Cronbach's Alpha	N of Items
.653	26

Based on the table above, it showed that the reliability of Cronbach's Alpha was 0.653. It can be concluded that the instrument of this research was in category reliable because the value is between 0,61 – 0.80.

G. Normality and Homogeneity Testing

1. Normality Testing

Normality testing was conducted to know whether the gotten data is normal or not. Normal here means the data has a normal distribution. To test the normality of the data, researcher uses the *One Sample Kolmogrov-Smirnov* test with the provision that if Asymp Sig > 0.05, the data was normality distributed. If the value is smaller than 0.05, the data is not normal. If the value is higher than 0.05, the data is vividly normal. In this case, the researcher uses SPSS (Statistical Product and Service Solution) 16.0 for windows.

Basic decisions making in normality testing as follows:

a. If the normality test resulted < 0.05, the data was not normally distributed and H_0 was rejected.

b. If the normality > 0.05, the data was distributed normally and H_0 was accepted.

2. Homogeneity Testing

The variance of data was tested to find out if they were equal or homogeneous. This testing was done by getting the score of the students then we subtracted the lowest value to the highest value, the higher the range the more heterogeneous the class is. Finding the standard deviation was also helped to know the variability of the class. To achieve this data, *Levene statistic* test on SPSS 16.0 was applied in this research with the similar rule of the normality that is $\alpha = 0{,}05$.

a. If the homogeneity test resulted < α = 0,05 the data were not homogeneous.

b. If the homogeneity test resulted > α = 0,05 the data were homogeneous or have equal variances.

H. Data Collecting Method

Data collection method was used by researcher to collect the data. The aim of the data collecting was to get material that needed by the researcher. The technique of collecting data was summarized as follows:

1. Treatment

The researcher didn't used pre test, because already get students learning outcomes data so writer already know the ability in learning English. The score that already calculated through t-test from both classes have means almost same. In experimental class has mean 83.66 while in control class has mean 83.36. These two mean scores were equal by having t-test. The results of t-test the p-value (0.000) is less than sig $\alpha = 0.05$ (5%). So, the null hypothesis (Ho) is rejected and the alternative hypothesis (Ha) is accepted. The researcher applies the technique or treatment using Hello English Application. The treatment would be conducted in two meeting.

The procedures of treatment are as follows:

a) The researcher asked the students about vocabulary in recount text

b) The researcher began to introduce the Hello English application to the students.

c) The researcher gave stimulation to the students by giving some exercises. Then, the students discuss to answer the questions with suitable words.

d) In discussing the questions, the researcher tries to use Hello English application as enjoyable to guess the answer.

2. Post Test

Post test was conducted after the treatment was done. Post-test was conducted to measure the student's ability after they received a treatment. The score of the post test from both classes would be compared. Then, the

researcher can find out the differences between before being taught by using Hello English application and after being taught by using Hello English application on the teaching vocabulary. The procedures of post test as follows:

a) The researcher distributes the tests to the students.

b) The researcher explains to the students how to work out the test.

c) The students do the test in 45 minutes.

d) The researcher collects the test.

I. **The Process of Teaching Vocabulary Using Hello English Application**

In practice the treatment of using the Hello English application to teach vocabulary. There are processes of practicing the treatment:

1. The researcher explained about Recount text about experience with the generic structure, language features, and example of recount text.

2. The researcher gave students a question about recount text with the generic structure, and language features.

3. The researcher asks students to discuss with her friend to observe a recount text about experience then show the generic structure, and language features.

4. The researcher indicates one of the students to read result from their discussion in front of class.

5. The researcher introduces Hello English application before student makes recount text about experience.

6. The researcher asked students to try Hello English application with answer questions about past tense and play game in this topic about vocabulary.

7. Next meeting use Hello English application to find new vocabularies that can be used to make a recount text.

8. The researcher asks students to make a text about their experience with that they found when learn some topic in Hello English application.

9. After finished, researcher asks the students to convey the result of the text that is made in front of the class.

10. The final activity of learning is to make reflections and conclusions on the material.

J. Data Analysis

After collecting data, the next step of the research was analyzing data. The data was analyzed by comparing the student's score of post-test both of experimental and control class. In this case the researcher uses t-test in analyzing data. The technique of data analysis used by the researcher belonged to quantitative data analysis.

The data was analyzed using statistical methods. The researcher uses SPSS 16.00 for the post-test results of the experimental group and the control group. The data was analyzed using independent sample t-tests to study whether the results of this study were statistically significant in hypothesis one and two.

Descriptive statistics is the one functioning to describe a certain condition, without any intention to make a generalization, a prediction, and others.

According to Bluman, 1998 "Activities in descriptive statistics include collection, organization, summation, and presentation of data.

Inferential Statistic is the one functioning to make a generalization from sample to population, to make prediction, to see the effectiveness, and others. The main activities in inferential statistics are performing hypothesis testing and generalization from samples to population.

K. Hypothesis Testing

The research was intended to identify if there is any significant difference in the use of Hello English application in teach. After computing the data using t-test with SPSS 16.0 for windows and determining that the significant level (α) is 0,05 or 5% (it has been programmed on the application) the next step was determining whether or not the Null Hypotheses was rejected. The basis of rejecting or not rejecting the null hypothesis was:

1. If P-value or *sig* $< \alpha = 0.05$ (5 %). It means that null hypothesis (H_0) is rejected and alternative hypothesis (Ha) is accepted.

2. But, if P-value or *sig* $> \alpha = 0.05$ (5 %). It means that null hypothesis (H_0) is accepted and alternative hypothesis (Ha) is rejected.