

## **CHAPTER III**

### **RESEARCH METHOD**

In this chapter, the researcher describes the research design, research variables, population, sampling, sampling, research instruments, validity and reliability tests, normality and homogeneity tests, hypothesis formulation, testing procedures and data analysis.

#### **A. Research Design**

In this research, the researcher used Quasi Experimental research. This type of experimental research design is generally used to determine causality. This involves the manipulation of the independent and the dependent variable. Abraham & MacDonald (2011) stated that there is similarity between Quasi-Experimental to experimental research where the independent variable is manipulated. This experimental research is different in that there is no control group, no random selection, no random assignment, and or no active manipulation. Even though the independent variables were manipulated, conditions or order of conditions were not randomly assigned to the participants (Cook & Campbell, 1979).

In this research, experimental research design is conducted by the researcher to determine the effectiveness of the U-dictionary application as a learning medium in eleventh grade students' pronunciation learning. This research uses a quasi-experimental research design because this type of research is carried out many times in cases where creating a control group is not possible or a random selection is not able to be made. This research

involved two groups of subjects called the experimental group and the control group. The first group is called the experimental group where treatment is given and the group without treatment is called the control group. Both experimental and control groups will be given a pretest to find out the initial results where there is any differences.

A quasi-experimental research design was used by the researcher with a nonrandomized control group, pretest-posttest design (Ary et al., 2010). Nonrandomized experimental control group, pretest-posttest design was carried out with an experimental group and a control group in which both groups were given a pretest and posttest. Experimental group is also known as the treatment group which received treatments, and the one with no treatment is called control group (Lauren Thomas, 2020). The procedure can be designed as follows:

**Table 3.1 Nonrandomized control group, Pretest-Posttest design:**

<b>Group</b>	<b>Pretest</b>	<b>Treatment</b>	<b>Posttest</b>
<b>E</b>	<b><i>Y1</i></b>	<b><i>X</i></b>	<b><i>Y2</i></b>
<b>C</b>	<b><i>Y1</i></b>	<b>-</b>	<b><i>Y2</i></b>

(Taken from Ary et al., 2010)

Note:

E : Experimental group

C : Control group

Y1 : Pretest in experimental group before treatment (XI OTKP 1)

Y1 : Pretest in control group (XI OTKP 2)

Y2 : Posttest in experimental group after treatment (XI OTKP 1)

Y2 : Posttest in control group (XI OTKP 2)

X : Treatment in experimental group (XI OTKP 1)

- : The group without treatment or using conventional strategy (XI OTKP 2)

On the table 3.1, it showed that they are consisted of two groups. The first experimental group was E group in which U-Dictionary was used by the students as the treatment of the study. The second, C group which was called as control group received a conventional learning method as their treatment. In other word, U-Dictionary was used by the researcher for the experimental class and a conventional strategy for control class. In conclusion, the research was purposed to know whether there was major differences from students' pronunciation skill after being taught conventionally and by using U-Dictionary. Finally, the researcher give the test before treatment namely pretest and after treatment namely posttest.

## **B. Variable, Population, Sampling, Sample**

This sub-chapter represents population, sample, and sampling that used by researcher which can be defined as follows:

### **1. Population**

One big group of many individuals is called population. According to Arikunto (1998:115-117), the whole or research subject is called population. Sugiyono (2015-215) also stated that population is meant generalization region consisting of the object or subject that has certain qualities and characteristics that set by the researcher to learn and then

drawn conclusion. Similarly, Furqon (2008:146), states that population is collection of object, person or situation that has one general the same characteristic. The population in this research was the eleventh grade students of SMK Islam 1 Durenan which was consisted of 30 classes that divided into 6 specialty classes based on each students' interest, there are Teknik Komputer Jaringan (Computer Engineering), Multimedia (Multimedia), Administrasi Perkantoran (Management), Akuntansi (Accounting), Pemasaran (Marketing), and Animasi (Animation).

**Table 3.2 List of Population**

<b>Class</b>	<b>Male</b>	<b>Female</b>	<b>Total</b>
X-Teknik Komputer Jaringan	86	57	153
XI- Teknik Komputer Jaringan	112	67	179
XII- Teknik Komputer Jaringan	128	76	204
X-Multimedia	28	17	45
XI- Multimedia	21	41	62
XII- Multimedia	16	28	44
X-Administrasi Perkantoran	0	65	65
XI- Administrasi Perkantoran	0	64	64
XII- Administrasi Perkantoran	0	73	73
X-Akuntansi	1	48	49

XI- Akuntansi	0	32	32
XII- Akuntansi	0	74	74
X-Pemasaran			
XI- Pemasaran			
XII- Pemasaran			
X-Animasi	1	48	49
XI- Animasi	0	32	32
XII-Animasi	0	74	74
Total			1024

## 2. Sampling

Sampling is a way of taking samples. In this study, purposive sampling was used by the researcher in two classes. According to Arikunto (2010: 183), purposive sampling is the process of selecting samples by taking subjects that are not based on regional levels, but are taken based on certain objectives. A non-probability sample which was selected based on population characteristics and research objectives is called purposive sampling or also well known as judgmental, selective, or subjective sampling.

This type of sampling is very useful for researcher in situations where a targeted sample need to be reached quickly. This method of sampling requires the researcher to have prior knowledge of the research objectives so that the researcher can select participants who meet the requirements appropriately. Thus, the purposive sampling used by researchers is based on the ability to

describe certain themes, concepts, or phenomena. Therefore, the researcher chose a class that had homogeneous pronunciation.

### 3. Samples

A sample is where a larger population is picked and selected into a smaller data set. According to Neuman (2000: 518), a sample is a smaller collection of cases that the researcher selects from a larger group, and generalizes to the population. In this study, two groups were selected purposively. There is one group with the role as the experimental group and one other group as the control group. As a sample, researcher took two of the 18 classes. The experimental class is XI OTKP 1 while the control class is XI OTKP 2. The researcher has chosen the two classes on the grounds that the OTKP class needed speaking skills in good public communication so that students needed good pronunciation.

**Table 3.3 Research Sample**

No.	Class	The Number of Students
1.	XI OTKP 1	24
2.	XI OTKP 2	26

### C. Research Variable

A variable is a named unit of data that may be assigned a value. According to Jacobs and Sorensen (2010:37), characteristic or construct that is able to take on different or scores or value is called variable. Two types of variables are available which classified as follows:

1. Independent Variable

Independent variable is controlled inputs. Ary et al (2010:37) stated that independent variables are antecedent to dependent variables and are known or are hypothesized to influence the dependent variable, which is the outcome. In this research, the independent variable was U-Dictionary.

## 2. Dependent Variable

Dependent variable is the output or outcome resulting from altering these inputs. According to Ary, Jacobs and Sorensen (2010:26), the observed and measured variable is called the dependent variable. The dependent variable in this research was the students' ability on pronouncing words.

## **D. Research Instrument**

Research Instrument is measurement tools which can include interviews, tests, surveys, or checklist. Based on what Arikunto (2006:126) said, Instrument is the device that used by the researcher to do data collection. Moreover, Arikunto (2010) also said that the variations of instruments that can be used are many, such as test, questionnaire, interview, rating scale, observation, and documentation. In this research, the research instrument was test. According to Ary (2010), 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.

Two kinds of instrument were presented in this research. They were pretest and posttest which the total items were 25 for a test. Before the instrument was implemented, the researcher conducted of try out which is administered in another class, it was in the XI AK 1 at SMK Islam 1 Durenan Trenggalek. The subjects consist of 26 and it was based on the English teacher of SMK Islam 1 Durenan Trenggalek suggestion, the researcher chose the research subjects.

## **E. The Validity and Reliability Testing**

### **1. Validity**

Validity should measure what is supposed to measure. According to Ary, Jacobs and Sorensen (2020:225), validity is the main consideration to develop as well as evaluate the measuring instrument. While, Frankel and Wallen (2006:150) stated that validity is the most important idea to consider when preparing or selecting an instrument for use. In other words, validity can be defined as the instrument that measures what is supposed to be measured. Content validity, criterion-related validity, construct validity and face validity are the four main types of validity. The purpose was to measure if the validity of the test. All of the main types of validity have the purpose to measure the validity of the test.



a. Content Validity

Content Validity is the test if it measures knowledge of the content domain of which it was designed to measure knowledge. According to Haynes, Richard, and Kubany (1995) content validity is the degree to which elements of an assessment instrument are relevant to and representative of the targeted construct for a particular assessment purpose. It means that the good content of the test can be seen from the content of the test. If the content of the test is emblematic with lesson given, than means it is a well-grounded test. Based on the 2013 curriculum as the schools' standard and basic competence, the researcher designed the test. The Content validity is showed in the table below:

**Table 3.4 Content Validity**

<b>Kompetensi Inti</b>	<b>Kompetensi Dasar</b>
3.23.2. Menemukan atau menentukan dan mengkategorikan teks interaksi transaksional terkait memberi dan meminta informasi terkait analytical exposition text dengan memperhatikan fungsi sosial, struktur teks, dan unsur kebahasaan: passive voice, secara benar dan sesuai dengan konteks penggunaannya.	4.23 Menyusun teks biografi tokohlisan dan tulis, pendek dan sederhana, dengan memperhatikan fungsi sosial, struktur teks, dan unsur kebahasaan yang benar dan sesuai konteks

**Table 3.5 Content Validity of Test**

<b>Competence</b>  <b>Indicators</b>	<b>Instrument Test Items</b>	
	<b>Pretest</b>	<b>Posttest</b>
Students are able to create spoken recount text about biography text by pronunciation correctly	Speaking test (pronunciation)	Speaking test (pronunciation)

From what it shows in the table above, the test and indicator is compatible with the course objectives based on the syllabus of the eleventh grade of Vocational High school which mean that the test has the content validity.

b. Construct Validity

When the predicted theory is confirmed with the proof of relation between the test and other variable, that means a constructed validity is established. According to Brown (2004:45), construct validity is any theory that attempts to explain, observed phenomena in the universe perception so, the construct validity refers the theory of language. The researcher in this research constructed the instrument according to the aspects that measured with administer written test and the scoring technique of students' pronunciation based on three aspects namely vowel, diphthong and consonant. The construct validity in this study is measured by consulted to the expert.

c. Face Validity

A test has to measuring what is meant to be measured is the main matter of 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”. A test can be said to have face validity when it is measuring what is supposed to be measured. The test of this research is designed to measure students’ pronunciation. The face validity was achieved by the researcher with providing the instructions on the paper test to ask students pronounce skill. The professional has validated the face validity of this research.

**2. Reliability Testing**

Reliability is the degree of consistency of a measure. A reliable test is when a test was given repeatedly wish same condition and the result does not shows any differences. According to Ary et al., (2010:237) reliability is concerned with the effect errors of measurement on the on consistency of scores. Furthermore, to get the validity of the test, the researcher used test-retest reliability which measure for 26 students by *Pearson Product Moment*. The try out score results can be seen in the table below:

**Table 3.6 Try Out Score**

<b>NO</b>	<b>Name</b>	<b>Pretest</b>	<b>Posttest</b>
1	AN	61	63
2	APM	35	45

3	BN	50	53
4	DRS	53	55
5	DEN	61	61
6	EPS	59	59
7	EPO	41	41
8	EAH	50	50
9	EJN	77	79
10	INR	51	53
11	IM	52	50
12	ICN	60	63
13	INS	32	42
14	MUA	70	68
15	MW	41	41
16	MIL	65	66
17	NPI	64	67
18	NIM	52	54
19	NDAS	40	45
20	NT	62	64
21	PDP	50	50
22	PNA	65	57
23	RNC	37	40
24	SM	31	41
25	SLI	50	50
26	SA	42	40

According to table 3.6, the researcher conducted the research twice at XI AK 1 in different days to get the reliability which measured in experimental and control class. The researcher concluded that the scores of the students were same in the difficulties level test. The output of the reliability test is as it shows below:

**Table 3.7 Pearson Product Moment from IBM SPSS Statistical 16.0**

		<b>Correlations</b>	
		test	retest
test	Pearson Correlation	1	.952**
	Sig. (2-tailed)		.000
	N	26	26
retest	Pearson Correlation	.952**	1
	Sig. (2-tailed)	.000	
	N	26	26

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Based on table 3.4, the test-retest reliability value is obtained at 0.952, and to get the reliability of the instrument the Person Product Moment results must be more than 0.050. The instrument is not reliable if the Pearson Product Moment result is below 0.050. Thus, the researcher concluded that the instrument used by researchers was reliable because 0.952 was higher than 0.050.

## **F. Normality and Homogeneity Testing**

### 1. Normality Testing

To determine whether the data is normally distributed or not, normality testing is used. In this research, the normality test was carried out using the SPSS 16.0 One-Sample Kolmogorov-Smirnov test with a significance value ( $\alpha$ ) = 0.050. Normality testing must meet the following criteria:

- a. Data is normally distributed if the significance value is  $> 0.050$
- b. If the significance value is  $< 0.050$  that means the data is abnormally distributed.

### 2. Homogeneity Testing

Homogeneity testing is intended to determine whether the data variance is homogeneous or not. In this study, the researchers conducted a homogeneity test using SPSS 16.0 with a significance value ( $\alpha$ ) = 0.050. Homogeneity testing must meet the following criteria:

- a. Homogeneous data if the significance value  $> 0.050$
- b. Data is not homogeneous if the significance value  $< 0.050$ .

## **G. Testing Procedure**

Data collection methods are data collection procedures in research. The aim of collecting data is to get the data needed for the researcher when conducting scientific research. In this research, the data collection method used tests, namely learning outcomes tests. According to Isnawati (2014: 14), a learning outcome test is a type of test that measures how successful an individual student, group of students or subject is in achieving goals. The test

is used to measure the students' pronunciation score achievement before and after using the Dictionary U application. The data collection procedures are as follows:

#### 1. Pretest

The test which is given to measure initial knowledge is called pretest. The purpose of the pretest in this research was to determine the basic competencies of students before getting treatment about pronunciation. According to Creswell (2012: 297), pretest provides a measure of several attributes or characteristics that assess participants in an experiment before they receive treatment. The test is a pronunciation test which consists of 25 items of biographical texts of Ki Hadjar Dewantara without using the Dictionary U application. The time allocation for the test is 120 minutes and the test time is 5 minutes for students.

#### 2. Treatment

There were four treatments in the experimental and control groups. There is one treatment for a week. The research schedule is as it shows in the table 3.5 as follows:

**Table 3.8 The Schedule of Research**

No	Class	Meeting	Date	Activity
1	Experimental (XI APK 1)	I	Monday, February 24 <sup>th</sup> 2020	Treatment 1 (Conventional Method)
2	Control (XI APK 2)		Saturday, February 29 <sup>th</sup> 2020	Treatment 1 (By using U-Dictionary)

3	Experimental (XI APK 1)	II	Monday, March 2 <sup>nd</sup> 2020	Treatment 2 (Conventional Method)
4	Control (XI APK 2)		Saturday, March 7 <sup>th</sup> 2020	Treatment 2 (By Using U-Dictionary)
5	Experimental (XI APK 1)	III	Monday, March 9 <sup>th</sup> 2020	Treatment 3 and Pretest (Conventional Method)
6	Control (XI APK 2)		Saturday, March 14 <sup>th</sup> 2020	Treatment 3 and Pretest
7	Experimental (XI APK 1)	IV	Monday, March 16 <sup>th</sup> 2020	Treatment 4 and Posttest (Conventional Method)
8	Control (XI APK 2)		Saturday, March 21 <sup>st</sup> 2020	Treatment 4 and Posttest (By Using U-Dictionary)

Based on table 3.8 above, the first treatment was carried out in the experimental class on Monday, February 24, 2020. Researchers asked students to download the U-Dictionary application on their smartphones. After that, the researcher asked students to look for 10 words in the U Dictionary application. And then, students listen first, practice after listening. Then the first treatment was carried out in the control class on Saturday, February 29, 2020. Researchers used conventional methods, namely explaining pronunciation and practicing how to speak with good pronunciation. After that the researcher said 10 words then the students followed them one by one.



The second treatment was carried out in the experimental class on Monday, March 2, 2020. The researcher asked students to practice in front of a class whose treatment was the same as the first treatment. Students practice 10 words using the U-Dictionary. In the last treatment, the researcher asked students to learn more about the U Dictionary application. The second treatment was carried out in the control class on Saturday, March 7, 2020. The treatment was the same as the first treatment, namely the researcher said 10 words then the students followed after the teacher spoke. The difference is that the researcher asks students to practice in front of the class.

The third treatment was carried out in the experimental class on Monday, March 9, 2020. The researcher asked students to remember how to speak with good pronunciation. Then, the students read the biographical text "Ki Hajar Dewantara". After being checked, students are given time to practice. Then the third treatment was carried out in the control class on Saturday, March 14, 2020. The researcher reads the biographical text of Ki Hadjar Dewantara. Then students practice one by one in front of the class. At the last meeting, the researcher conducted a pretest in the control and experimental class to get the results of the treatment that had been done in the form of a score.

The fourth treatment was carried out in the experimental class on Monday, March 16, 2020. Students read the biographical text "Cut Nyak Dien" and checked first in the U-Dictionary. After being checked,

students are given time to practice. Then the fourth treatment was carried out in the control class on Saturday 21 March 2020. The researcher read the biographical text "Cut Nyak Dien". Then students practice one by one in front of the class. At the last meeting, the researcher conducted a posttest in the control and experimental class to get the results of the treatment that had been carried out in the form of a score.

### 3. Posttest

After the students were given a treatment process, the researcher conducted a posttest. The purpose of the posttest was to know the students' pronunciation skill after applying the treatment. According to Creswell (2012: 297), posttest is a measure of an attribute or characteristic that participants assess in an experiment after treatment. The test is a pronunciation test which consists of 25 biographical items "Cut Nyak Dien" using the U-Dictionary application. The allocation of test time is 120 minutes and test time is 5 minutes for students.

## **H. Data Analysis**

Process of collecting and organizing data or techniques to analyze data to determine the results of a study is called data analysis. According to Ary et al (2010: 530), data analysis is action research involves reviewing the data while it is being collected and trying to synthesize and understand what is being observed. Quantitative data analysis with statistical method was used by the researcher. The collected data were processed by comparing the pretest

and posttest scores to see if there were significant differences after being given treatment. SPSS version 16.0 statistical program was used by researcher to determine any significant differences. The output of the t-test is shown in Chapter 4.