

## **CHAPTER III**

### **RESEARCH METHOD**

In this chapter the researcher presents the research method. It discusses the methodology consist of reseach design, place and time of the study, population, sample, and sampling, data and data sources, research instruments, validity and reliability testing, normality and homogeneity testing, data collecting method, treatment, data analysis.

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

In this study the writer used an experimental research design. The researcher used a quasi-experimental the design with two groups pre-test and post-test. according to Creswell (2012:295) the experimental study is research that examines the cause and effect relationship between the dependent and independent variables. The experimental method is the quantitative research method used to determine the effect of the independent variable (treatment) on the dependent variable (outcome) under controlled conditions. Conditions are controlled so that no other variables (other than the treatment variable) affect the dependent variable. For conditions to be controlled, in experimental research using a control group. In this study, the researcher manipulates one variable and controls the other variable, the researcher also creates a control group, the subjects are not randomly placed between the groups, and the researcher only test one effect at a time.

This study, the researcher used a quasi-experimental the design of the research to see the effectiveness of using Hello English application to teach

students grammar achievement at first grade of MTSN 6 Tulungagung. Creswell (2008, p. 313) states that quasi experimental is experimental situation in which the researcher assigns participants to groups but not random. The researcher determines to select two intact groups. The first group that was given treatment using the Hello English application was called the experimental group and the second group that was not given treatment was called the control group. Data collection was obtained from the pre-test and post-test to obtain a significant difference in student scores on grammar taught using the Hello English application and those taught using conventional methods. The table 3.1 below shows the design of the research.

**Tabel 3.1 Quasi experimental research design:**

<b>Group</b>	<b>Y1</b>	<b>X</b>	<b>Y2</b>
Experimental Class	Pre-test	By using Hello English Application	Post-test
Control Class	Pre-test	Conventional Method	Post-test

Notes:

Y1: Pre-test

Y2: Post-test

X: Treatment on the independent and dependent group

from table 3.1 above, to conduct experimental research using two groups of pre test-post test design, namely:

1. Administering a pretest to both classes (experimental class and control class) with a purpose of measuring score of grammar mastery of the first grade students from MTSN 6 Tulungagung in pandemic covid-19 before being given a treatment.
2. Applying the experimental treatment in experimental class to teach grammar by using Hello English Application and to teach control class by using a conventional method to the first grade students from MTSN 6 Tulungagung in pandemic covid-19.
3. Administering a post test in a both class with a purpose of measuring score of grammar mastery of the first grade students from MTSN 6 Tulungagung in pandemic covid-19 after being given a treatment.

## **B. Place and Time of the Study**

This research was conducted at MTSN 6 Tulungagung which is located in Jl. Dahlia, Karangrejo, Kec. Karangrejo, Kab. Tulungagung, Jawa Timur 66253. This research was conducted from 12<sup>th</sup> July 2021 until 25<sup>th</sup> August 2021.

## **C. Population, Sample and Sampling**

### **1. Population**

Population is all elements that become the areas of the research. It consist of a whole set of research objects, or score observation that have something in common. According to Jhon W. Cresswell (2012: 142) the population is a group of people and has same characteristics this statement. The population in this research included were the first grade students at

MTSN 6 Tulungagung in pandemic covid-19 which consisted of five classess with around 28- 30 students in each class. The total population of this research are 148 students.

## 2. Sample

Sample is defined by Ary et al (2010:148) sample is the small group that is observed. Sample is a portion of a population. Since the population is too large, the researcher needs a sample. The sample of this research was two class at MTSN 6 Tulungagung in academic year 2021. Based on the criteria the sample of this research as the students of class A as a experimental class and class B as a control class at MTSN 6 Tulungagung in which total of class A was 30 students and class B was 30 students, so the total sample was 60 students.

## 3. Sampling

Sampling is to take the data. In this study, the researcher used purposive sampling technique. Purposive sampling is one of types in non probability sampling. According to Sugiyono (2016: 85) purposive sampling is a technique of sampling data sources with certain considerations. The researcher used purposive sampling because the researcher found some characteristics of the sample. They were good attitude, active in the class, and almost have the same average ability. Sampling was carried out on first grade students of MTSN 6 Tulungagung. The classroom having those characteristics 7A class and 7B class. Judging

from the scores during the teaching and learning process, students in grade 7A actively participated and scored higher scores than grade 7B.

#### **D. Data and Data Sources**

The data of this research are information about students' abilities in the form of scores obtained from the grammar test. These data are very important for quantitative research. This research used test as a data collected procedure. The researcher to get the data from pre-test and post-test. The data sources of this research were students at first grade of MTSN 6 Tulungagung that provides information for the research. This research focused on Hello English application to teach students grammar on the first grade students of MTSN 6 Tulungagung.

#### **E. Research Instruments**

In collecting the data, the researcher needs instruments. Instrument has significant function in conducting research. Therefore, the researcher should choose an instrument in the process of collecting data. The research instrument was applied by the researcher in this study was a test. Test is giving a task or a series of tasks in the form of questions or orders that must be done by students. The results of the implementation of these tasks are used to conclude the abilities of students. Test which was conducted was aimed to measure the achievement of the students before and after being taught using Hello English application at first grade at MTSN 6 Tulungagung in pandemic covid-19.

In this case study, the researcher gave the academic grammar test to collect the data or information. In this present research the researcher prefer to apply multiple choice test. The reason of using multiple choice items is because there were undoubtedly the most commonly used types of item in objective test. This test provides the students with the various answer, however there is only one correct answer of each question.

In this present research the test was conducted twice, there were pre-test and post-test. The pre-test is used to see students' grammar achievement before treatment is given and the post-test is used to see students' grammar achievement after given treatment. The questions consisted twenty five items in the form of multiple choice with the topic around animal, people and things whic should be done for about maximal 45 minute.

The scoring technique that applied in the pre-test and post-test were same. There was only one correct answer for each item. The reseacher used Arikunto's formula. The ideal highest score is 100. The score of the test will be calculated by using the following formula:

$$S = \frac{r}{n} 100$$

In which :            S: the score of the text

                          r: the total of the right answer

                          n: the total items

**Table 3.2** Criteria Scores of Grammar mastery

Score	Criteria
85-100	Excellent
75-80	Good
55-70	Average
35-50	Poor
0-30	Very Poor

Before the pre-test and post-test is tested on the sample, the test was tried out on 60 students of two class to know the validity and reliability of the instrument.

## **F. Validity and Reliability Testing**

### 1. Validity

Validity is one of the main requirements of good educational testing which can represent the acceptance of the research. According to Ary et al (2010:225) validity is the most important reference in developing and evaluating measuring tools. This means that validity is the most complex criterion of an effective test and the most important principle of a language test. To measure whether the test has a good validity to be given the students, the researcher analyzed the test from content validity, construct validity and face validity.

#### a) Content Validity

Content validity is a kind of validity which depends on a careful analysis of the language being tested and of the particular test.

According to Rossiter, (2008) the degree to which elements of an assessment instrument are relevant to a representative of the targeted construct for a particular assessment purpose. According to Haynes, et al (1995: p.238) content validity includes several aspects, e.g., the validity and representativeness of the definition on the construct, the clarity of the intructions, linguistic aspects of the items (e.g., content, grammar), representativeness of the item pool, and the adequacy of the response format. The researcher made this test based on the course objective in the syllabus of MTSN 6 Tulungagung. Therefore, this test was valid in term of content validity.

**Table 3.3 Content Validity**

<b>Material</b>	<b>Basic Competence</b>	<b>Indicator</b>	<b>Test Items</b>
Simple Present Tense	4.2 Menyusun teks lisan dan tulis untuk menyatakan dan menanyakan tentang perbandingan jumlah dan sifat orang, binatang, benda dengan memperhatikan fungsi sosial,	<p>- Students can answer the question corretly multiple choice questions.</p> <p>1. The use of verb 1 (s/es)</p> <p>2. The use of auxiliary (do/does,is,am,are)</p> <p>3. The use of negative/interogative</p> <p>- Students can write complete the</p>	<p>1,4,5,8,10,13 16,18 2,6,7,11,14,17 3,9,12,15,19,20</p>



	struktur teks, dan unsur kebahasaan yang benar dan sesuai konteks.	missing sentence in the essay questions . - Students can make negative and interogative sentences correctly in the essay questions.	21,22,23,24,25
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#### b) Construct Validity

Construct validity is used to determine how well a test measures what it is supposed to measure. It refers to whether a test measures the construct adequately (every aspects in curriculum such as score competence basic competence and indicator). The word construct refers to any underlying ability which hypothesized in a theory of language ability. The form of the test must be suitable to the test grammar, no other skill. According to Uno and Koni (2012 : 113) stated that multiple choice test is a text that contains incomplete information, and to complete it, by choosing from various alternative choices that have been provided. According to Heaton (1975:34) there are ways in measuring grammar mastery such as multiple-choice items, error recognition items, rearrangement items, completion items. And the type of multiple-choice items favored by many constructors of grammar test is the incomplete statement type, with four of five options. From the statement above the researcher conducted a multiple-choice test for measuring grammar mastery. Haynie (1983)

stated that Short answer items can be graded relatively quickly and are easier to create than essay items.

Based on the theory above, in the test, the researcher asked students to answer multiple choice questions and answer essay questions based on topics to measure students' ability in mastery of grammar and this fulfilled the construct of the grammar test.

### c) Face Validity

Face validity was very important. Face validity refers to how far the test instrument measures what is supposed to measure. It means the test must be clearly visible or the instruction must be understandable for the students. To achieve face validity, the researcher analysed the students level by consulting the instrument to the expert. The expert here were the advisor, English lecture of IAIN Tulungagung and English teacher of the first grade at MTSN 6 Tulungagung in pandemic covid-19 In this test, there are several factors that are taken into consideration from this test to make a good test based on validity, the test is suitable with syllabus and their level. The English teacher says that the test is appropriate for students especially in grammar mastery.

## 2. Reliability

Another characteristic from test a good is reliability and to be valid and must be a reliable meaning instrument. Brown (2004:20) stated a reliable test was consistent and dependable. Reliability was used to know whether the test was consistent and reliable to be used at another time. To

calculate the score the researcher uses SPSS 26.0. The research get the reliable data used try-out to given 30 students of MTSN 6 Tulungagung. In this try out the students were asked consists to answer the questions that consist of 25 questions in form of multiple-choice with 45 minutes time allocation. After doing this try-out, the Researcher will get consistent scores. The result was matched with the result of Cronbach's alpha to determine the reliability of the test. According to Triton in Sujianto (2009:97) the value of Cronbach's alpha can be interpreted as follows:

**Table 3.4 Interpretation of Cronbach Alpha**

<b>Cronbach Alpha</b>	<b>Interpretation</b>
<b>0.00 – 0.20</b>	<b>Less Reliable</b>
<b>0.21 - 0.40</b>	<b>Rather Reliable</b>
<b>0.41 – 0.60</b>	<b>Quite Reliable</b>
<b>0.61 – 0.80</b>	<b>Reliable</b>
<b>0.81 – 1.00</b>	<b>Very Reliable</b>

From the table, if the value of Cronbach alpha  $> 0.81$  the value is very reliable. If the Cronbach alpha  $0.61 - 0.80$  the value is reliable. If the Cronbach alpha  $0.41 - 0.60$  the value is quite reliable. If the Cronbach alpha  $0.21 - 0.40$  the value is rather reliable. If the Cronbach alpha  $0.00 - 0.20$  the value is very low reliable.

**Table 3.5 The Result of Reliability from try-out**

<b>Case Processing Summary</b>			
		N	%
Cases	Valid	30	100,0
	Excluded <sup>a</sup>	0	,0
	Total	30	100,0
a. Listwise deletion based on all variables in the procedure.			

<b>Reliability Statistics</b>	
Cronbach's Alpha	N of Items
,835	25

To know the items were reliable or not can see in the result on the table test from Cronbach's Alpha score. The test scores from Cronbach's Alpha were = 0.835. so, it means the instrument was very reliable.

## **G. Normality and Homogeneity Testing**

### **1. Normality**

Normality testing is needed to determine whether the data set is well represented by a normal distribution or not, or to calculate how likely it is that the underlying random variables are normally distributed. The data is assumed in a normal distribution if the significant value was higher than 0.05. since the data was normal, test was chosen for the data analysis. In this research the data which is used to test the normality is pre-test and post-test score of experimental class. To measure the normality, the researcher used SPSS 26.0 one sample Kolmogorov-Smirnov test with

significance value ( $\alpha$ ) = 0.05. the ways to know the data is normal or not as follows:

- a)  $H_0$ : if the significance value ( $\alpha$ )  $>$  0.05, the data has normal distribution and  $H_0$  is accepted.
- b)  $H_1$ : if the significance value ( $\alpha$ )  $<$  0.05, the data hasn't normal distribution and  $H_0$  is rejected.

When the distribution of the analysis data is normal, then the homogeneity test analysis is then carried out.

## 2. Homogeneity Testing

Homogeneity testing is intended to ensure that the manipulated data collected in the analysis are actually taken from different populations from each other. The data which is used to test the homogeneity is the pre-test and post-test scores of the experimental class. The homogeneity testing in this research using SPSS 26.0. that is a test of homogeneity of variances by the value of significance ( $\alpha$ ) = 0.05. the hypothesis of testing homogeneity is as follows:

- a) If the homogeneity test result  $>$   $\alpha = 0.05$  the data is distributed homogeneous and  $H_0$  is accepted.
- b) If the homogeneity test result  $<$   $\alpha = 0.05$  the data not homogeneous distributed and  $H_0$  is rejected.

Meanwhile, the data is not homogeneous if the significant value is more less that 0.05 ( $\alpha < 0.05$  ). In other word, if the data is not homogeneous, it would be heterogeneous data.

## H. Data Collecting Method

The data collecting method is the way the researcher collects data. The researcher used the instrument that was pre-test and post-test in the form of a written test which consisted of a grammar test. The researcher collected the data from students' scores of pre-test and post-test. The researcher gave students a pre-test to know students' grammar achievement before teaching by using the Hello English application technique and gave a post-test after teaching by using the Hello English application technique. The procedure of collecting data in this research is as follows:

### 1. Pre-test

The pre-test is given to students to know the students' grammar achievement. It was conducted to know how far the students' score in grammar achievement of text before being taught by using the Hello English application technique as the treatment in this study. Researchers come to class, and explain the material to students and tell students what they should do. The researcher asked students to answer questions including 25 items in the form of multiple-choice and essay questions with a time allocation of 45 minutes.

### 2. Post-test

The post-test was given in the last meeting after the students get all their treatment. The researcher gave a post-test to investigate and measure their achievements in grammar mastery after being taught by using the Hello English application technique. The test type instruction was similar

to the pre-test. In this section, the students were asked to answer 25 questions and given 45 minutes to finish the post-test. Then the researcher compared the result of both pre-test and post-test. If there was any different score, it showed that treatment was successful and if there was no differences score, it showed that treatment was not successful.

### I. Treatment

The treatment was carried out after the students were given a pre-test. The treatment consisted of 4 meetings. Treatment aims to help students understand and facilitate students in mastering grammar for first graders. The experimental treatment was formulated as X. The treatment in this study was that students were treated to apply experimental teaching grammar by using the Hello English application as a technique for subjects in first grade at MTSN 6 Tulungagung. The teaching procedure is as follows:

**Table 3.6 Teaching Meeting**

<b>Experimental Class</b>	<b>Control Class</b>
<ul style="list-style-type: none"> <li>- The researcher met in the google classroom the class A for explaining the material with PowerPoint in the simple present tense.</li> <li>- The researcher explained using Hello English application for students to the material simple present tense. After that the researcher to the students to prepare their smartphones and</li> </ul>	<ul style="list-style-type: none"> <li>- The researcher met in google classroom the class B for explaining the material with PowerPoint in the simple present tense.</li> <li>- The researcher explained the material using a conventional method the same as their teacher.</li> <li>- The students also can write the grammar in the book with the purpose they can read again in</li> </ul>

<p>download the Hello English application. Next, the students must be login by their account. After the application is ready to use, the researcher asks the student about the Hello English application.</p> <p>- After the students open the application, The students also can write the grammar in the book with the purpose they can read again in their house. The last activity question-answer already in a share via google classroom</p>	<p>their house. The last activity question-answer is already in a share via google classroom.</p>
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## J. Data Analysis

Data analysis is activities after data from all respondents or other data sources have been collected. After collecting the data of the students, the researcher will analyze the data. In this research, the researcher used quantitative data analysis it means the result of data is served in numeral form. The researcher analyzed data by comparing students' post-test control class scores and post-test experimental class scores. It was purposed to know whether there was a significant difference in students' grammar between the students who are taught by using Hello English application and those who are not taught by using Hello English application at the first grade of MTSN 6 Tulungagung in pandemic. If the result of the post-test experimental class is higher than the score of the post-test control class, it means that teaching



grammar by Hello English application technique is effective. To get the achievement of grammar mastery test. The researcher gave the students a test after got treatment by Hello English application technique. All the data collected were accounted for by using SPSS 26.0 for windows, in this was paired sample test.

#### **K. Hypothesis Testing**

This study is intended to identify whether there are significant differences in the use of the Hello English application in teaching. After computing the data using a t-test with SPSS 26.0 for windows and determining the significance level ( $\alpha$ ) is 0.05 or 5% (programmed in the application), the next step is to determine whether the Null Hypothesis is true or not. rejected. The basis for rejecting or not rejecting the null hypothesis is:

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