CHAPTER III

RESEARCH METHOD

The research methodology is discussed in this chapter. It encompasses the methodology that was used in the process of carrying out this research, which comprises the Research Location, the Population, the Sample, the Research Method, the Research Instrument, and the Data Analysis.

3.1 Location of Research

This study was done at SMP Cerdas Murni, Jl. Bringin Pasar VII, No. 33, Bandar Khalifah, Kec. Percut Sei Tuan, Kabupaten Deli Serdang, North Sumatera, 20371. The researcher chose the first semester as the time period for the study's location since it had the most participants:

1. This school had been never taught by Hello English app for increasing speaking ability
2. The data was easy access this research could be found in this school
3. The English teacher still used the old method in teaching learning process of speaking skill in the class.

3.2 Population and Sample

1. Population

According to Suharsimi Arikunto (1998, page 226), a population is a set or (collection) of all components processing one or more attributes of interest. He defined these attributes as being of interest. Since it is essential to make a decision about the population that is used in this study, it is necessary for that population to make a decision. The participants in this research would come from the students who are currently enrolled in the tenth grade at SMP Cerdas Murni for the

Academic Year 2023/2023. There were a total of three different courses, and there were a total of 37 kids in the school. There are 16 students in Class VII, 7 of them are male and 9 of whom are female. There are 21 pupils in Class VII (13 male and 8 female).

TABLE 3.1 : TOTAL POPULATION

No	Class	Male	Female	Number of students
1	IX-1 : CG	7	9	16
2	IX-2 : EG	13	8	21
	Total	20	17	37

2. Sample

According to JW Creswell (2002, page 130), the sample is a representation of the population in terms of both the numbers and the qualities that it has. According to Komariah Ulfa (2009, page 28), the sample may alternatively be considered a portion of the population or a representative of the population as a whole, and still accurately reflect the characteristics of the population as a whole. Jalaluddin Rakhmad in thesis Komariah Ulfa "The sample for this study was calculated using the Torayomane method, and the total number of samples for this study was determined by using the following formula.":

$$n = \frac{N}{N\ (d)^2+1}$$

Where :

n = The number of sample

N = The number of population

d = The precision is decided 10%

So the sample is :

$$n = \frac{37}{37\ (10)^2 + 1}$$

$$= \frac{37}{37 .0,01 + 1}$$

$$= \frac{37}{2,23}$$

$$= 55,15$$

Table 3.2 Total of Sample

No	Class	Male	Female	Number of students
1	IX-1 : CG	7	9	16
2	IX-2 : EG	13	8	21
	Total	20	17	37

According to Arikunto "The process of selecting and collecting samples is referred to as "sampling." Random sampling and non-random sampling are the

two methods of collecting samples, as stated by Djarwanto PS and Subagyo ". The explanation is as follows. a. Random sampling is a method of sampling in which every person in a population, either on their own or as a group, is provided with an equal chance to be chosen as a member of the sample. There are three methods for conducting a random sample:

a. Lottery method
b. Ordinal method
c. Randomization method

According to Suharsimi Arikunto (1998, page 226), the lottery system is the one that has the most users and is also the easiest. To collect a sample for the study, the researcher will, in this approach, choose participants at random using the lottery technique. The Lotto Method's primary concentration is on students in the seventh grade of junior high school and the ninth grade of SMP. At this school, there are two ninth grade classes: 9-1 and 9-2. Cerdas Murni's class is in 9-1. According to the findings of the drawing, grade 9-1 will serve as the experimental group, while grade 9-2 will serve as the control group.

3.3 Research Method

The use of quantitative and experimental research was essential to the conduct of this study. According to Emzir (2015, page 64), in experimental research, the researcher must have manipulated at least one variable, must have controlled all other relevant variables, and must have observed the impact that the manipulation had on one or more dependent variables. In addition, the researcher demanded that time priority, consistency, and the size of the connection all be satisfied. As a result, the results of experimental study indicated that a research

would be conducted to determine whether or not there was any influence treatment had on the behaviors of participants or the participants' internal processes.

The application of therapy would be the subject of this study endeavor. This investigation would take place at SMP Cerdas Murni over the years 2023 and 2023. While carrying out the experiment involving the experimental group and the control group. In this study, the group that would be taught by the Hello English Application was considered to be part of the experimental group, while the group that would not be taught by the Hello English Application was considered to be part of the control group..

3.4 The Instrument Data

The test regarding speaking ability in conversation was the instrument that was used for data collection in this study. The test consisted of a series of standardized questions that were given to a person and administered by an examiner with the goal of measuring the subject's attitude or accomplishment. The exam was used to observe a natural phenomena using a mobile phone application like Hello English. The students' responses were to be assessed in order to determine the source of the issue that was seen in the natural event. The student's ability to fluently communicate their feelings on the significant subject matter that will be covered in the exam, as well as their ability to organize those feelings in appropriate sentence structures, will be evaluated.

According to Brown, H. Donald, and others' (1985) statement on page 3, the data for this research will be collected by having participants take tests. A test, in

its most basic sense, was a technique of measuring an individual's ability, knowledge, or performance in a certain field. The researcher was planning on using two different types of testing. There was a pre-test and there was also a post-test. In order to improve speaking ability, a pre-test and post-test were administered before beginning an experimental research study or beginning instruction using the Hello English application, respectively. The pre-test was administered before the experimental research study, and the post-test was administered after the instruction using the Hello English application.

1. **Pre- Test**

The preliminary examination would take place before the treatment. In order to study the students' speaking, particularly their ability to have conversations, the identical pre-test was given to both the experimental group and the control group. These observations were utilized to construct a brief discussion of the earlier description that the students received when they were given the opportunity to speak in class.

2. **Treatment**

After the completion of the pre-test, the therapy would be administered to the experimental group. The students would be split into two groups: the experimental group, who would learn using the Hello English app, and the control group, who would learn using the traditional way. The experimental group and the control group were both instructed using the identical content.

3. **Post – Test**

The post-test was a task that needed to be completed by the student, and it may be in the form of questions that needed to be answered by the student after

the completion of the learning process. The purpose of the post exam was to get an understanding of how successful the whole study process was. Conversational practice using the Hello English app will be used in the post-test to help students improve their speaking abilities. The purpose of this was to collect information regarding the outcome of the therapy so that it could be examined in order to determine how effective the Hello English app is at improving students' speaking abilities.

3.5 Data Analysis

For the purpose of putting the hypothesis to the test, data would be gathered via a test that has previously been assessed through the use of quantitative analysis and statistical computation. The procedures were as detailed below:

1. The classification students' score

Table 3.3 Classification Students' Score

Score	Predicate	Categories
80-100	A	Very Good
66-79	B	Good
56-65	C	Enough
40-55	D	Less
30-39	E	Bad

1. Validity Test

It might feel reasonable safe to assume that the test was valid for the purpose of the research if there was sufficient evidence that test score correlated fairly highly with actual ability in the skills that were being tested.

This is how a test would be considered to be valid according to Arikunto. The investigator verifies each and every item to determine whether or not each of them is legitimate. The formula for product moments was used to count it

Explanations: $$r_{xy} = \frac{N(\sum XY) - (\sum X)(\sum Y)}{\sqrt{\{N\sum X^2 - (\sum X^2\} - \{N\sum Y^2 - (\sum Y^2\}}}$$

r_{xy} : Correlation coefficient between X variable with Y variable

N : Total of test participant

X : Score for each item

Y : Total Score

After getting the result, the writer categorized it into the standard validity as follows:

Table 3.4 Standard Validity

Value	Category
0, 80 - 1, 00	Very Valid
0, 60 - 0, 79	Valid
0, 40 - 0, 50	Valid Enough
0, 20 - 0, 39	Less Valid
0, 00 - 0, 19	Not Valid

A test was said valid when it could measure what was intended to measure. Calculation result of r_{xy} was compared with r-table of product moment by 5% degree of significance. If r_{xy} was higher than r-table, the item of question is valid.

2. Reliability Test

According to Sugiyono (2013, p.121), it was said that dependability was the instrument's capacity to create the same results when it was used several times to measure the same thing. Reliability Since the instrument score was not meant to be a challenge, but rather an indication of whether anything was right or incorrect, it was determined using the Kuder Richardson (KR 20) method. According to Formula KR 2 from Sugiyono (2013, page 359), the following were considered to be:

$$r_i = \frac{k}{(k-1)}\left\{\frac{s_t{}^2 - \sum p_i q_i}{s_t{}^2}\right\}$$

Explanation:

r_i: Instrument reliability coefficient

k : Number of item in the instrument

p_i : Proportion of the number of subject who answered on item 1

q_i: 1 - p_i

s_t : Total variance

After get r_{count}, then compared with the criteria from Guilford to know about the interpretation of reliability had been calculated. Guilford Criteria split into 5 reliability criteria like very low, low, moderate, high and very high.

Table 3.5 Classification Reliability Coefficient

Value	Category
0, 80 - 1, 00	Very Valid
0, 60 - 0, 79	Valid
0, 40 - 0, 50	Valid Enough
0, 20 - 0, 39	Less Valid
0, 00 - 0, 19	Not Valid

A test was said valid when it could measure what was intended to measure. Calculation result of r_{xy} was compared with r table of product moment by 5% degree of significance. If r_{xy} was higher than r-table, the item of question was valid.

3. Normality Test

Sudjana (2014, p.273) stated that normality test will test the normally data that would be tested in this study. Researcher used Chi-Square test of Sudjana as follow:

a. The significance Level

The significance level used $\alpha = 5\%$

b. Statistic test $x^y = \sum_{i=1}^{k} \frac{(O_i - E_i)2}{E_1}$

Explanation:

Oi: Frequency of hope

EI: the expected Frequency

K: the number of observations

This test uses program SPSS 22.o of Kolmogrov Smirnov Test of normality in the study carried out using the program SPSS 17.0. With the provisions if the significance is greater than 0.05 then it can be inferred.

4. Homogeinety Test

It is used to know whether experimental group and control group, that are decided, come from population that has relatively same variant or not. The formula is:

Notice: F= $\frac{Vb}{Vk}$

Vb : bigger variant

Vk : smaller variant

1) Hyphoteses Test

Hypothesis will be counted with:

H_0 : □1 □□0

H_a : □1 □□0

Hypothesis test will use formula as follow:

$$tcount = \frac{\text{x} - \mu 0}{\frac{s}{\sqrt{n}}}$$

Where:

Ẋ : mean from *post-test*

μ : mean from *pre-test*

S : deviation standard *post-test*

n : total of sample

Test Criteria as follow:

If $t_h \leq t_o$, H_o accepted

If $t_o \leq . t_h$, H_o ignored