

CHAPTER III RESEARCH METHOD

3.1 Place and Time of the Research

The research has taken place at SMP Islam Terpadu Nurul 'Ilmi at the seventh grade students in the academic year of 2022/2023. It is located in the district of Percut Sei Tuan, Deli Serdang, North Sumatera. The address of this school is at Jl. Kolam no 01 Medan Estates. The research held on March 10th, 2023 until finish. The reason the researchers chose the Nurul 'Ilmi Integrated Islamic Middle School as the place for this research was that the headmaster and teachers accepted the research activities carried out at the school and the research entitled "The Effectiveness of Spelling Bee Game to Improve The Students' Pronunciation at the Seventh Grade of SMP Islam Terpadu Nurul 'Ilmi" which had never been carried out to find out more about the teacher's strategy in improving student pronunciation at the school.

3.2 The Population and Sample of the Research

3.2.1 Population

A population, according to Creswell (2012), is a group of people who share the same characteristics. The population in this research is from all of students in SMP IT Nurul 'Ilmi Percut Sei Tuan Medan in the academic year 2022/2023, there are three classes: VII, VIII, IX. The number of the students in this school is 136 students.

UNIVERSITAS ISLAM NEGERI
Table 3.1
SUMATERA UTARA MEDAN
The population of the research

No	Class	Total
1	VII 1	20
2	VII 2	20
3	VIII 1	25
4	VIII 2	24
5	IX I	22

6	IX 2	25
Total		136

3.2.2 Sample

Arikunto (2010) states that a sample is a selection or representative sample of the population being researched. For the samples, the researcher attended two classes. In this research, the samples are VII-1 as the *experiment class* and VII-2 as the *control class*. Sample was part of the number and characteristics possessed by the population. The researcher observes not at all of the classes but only a class that is seventh grade. The reason the researcher chose class VII as the research class or sample is that class VII students at the school had already learned about the subject of pronunciation taught by their English teacher and based on the results of observations and interviews that had been conducted by the researcher with the English teacher at the school that the researcher found several problems, especially in terms of the skills of pronouncing English words for class VII students who still lack of pronuncitaion and there were several students in that class who did not learn English since they were in elementary school at all. Therefore, the researcher tries to use a method that is considered suitable to answer the problems that exist in the class to get the solution as well.

In this research, the researcher used *purposive sampling*. The researcher took the sample from judgment that is representative of the population or included subject with needed characteristics. In this study, the researcher took the sample by interviewing the English teacher in sequence to know which classes that have the same ability in English lesson, had same facilities, and also on the same level. Two classes that had chosen become control and experimental class. Finally the samples of this research are; class VII-1 as the control class and VII-2 as the experimental class.

Table 3.2
The sample of the research

No	Class	Total
1	VII 1 (Experiment class)	20
2	VII 2 (Control class)	20
Total		40

3.3 Method and Procedure of the Research

3.3.1 Method

This study used quantitative research and used a quasi-experimental research method. A concept (or practice) is tested in an experiment to see if it affects the result or the dependent variable, according to Cresswel. The researcher applied quasi-experimental methods in this study (Cresswell, 2012).

3.3.2 Procedure

In this research, two classes recruited. The first class is an experimental class that taught through spelling bee game, while the control class taught by using the conventional method which is discovery learning. The study employed a nonequivalent control group design as a result. A nonequivalent control group design is one that gives each group a pre-test before treatment begins and a post-test following treatment but does not use random sampling selection. The table below shows the research design:

Table 3.3
Quasi experiment design

Group	Pre-test	Treatment	Post-test
Experiment (VII-1: spelling bee game)	O	X	O
Control (VII-2: discovery learning)	O	-	O

In term:

O: Pretest = Posttest

X: Treatment

The researcher used two groups in this Quasi-experimental research. The first is experimental group and the second is control group. Automatically, the experimental group used spelling bee game as the treatment. In this case, the researcher used the same grade for both groups. The researcher decided to take the students from VII-1 as the experiment class and VII-2 as the control class. Pre-test was administered before the application of the experimental and control treatment, for the post-test was administered at the end of the treatment.

1.4 Instrument of the Research

The researcher used listening test research instruments. The researcher used a test in the form of a filled-in test. The filling test is a form of determining the correct answer of several listening test questions and the questions listened by students using the audio in which students are asked to write down the correct answer for each question that given by the teacher. The test consists of 40 questions which is 20 questions for pre-test and 20 questions for post-test.

3.4.1 Variable of the Research

Arikunto says that variable is research objects or points attention in one research. There ware two variables in this research. They are independent and

dependent variable. The researcher then will use the two variables in the way described below (Arikunto, 2013).

1. Independent Variable

According to Arikunto (2013:162) the independent variable is the casual variable or free variable. The purpose of this study was to evaluate the effectiveness of spelling bee games in improving students' pronunciation. Thus, teaching using "Spelling bee games" was considered as the independent variable and symbolized "X".

2. Dependent Variable

According to Arikunto (2013:162) the dependent variable is the effect variable from the independent variable. In this research, the dependent variable is "pronunciation" and symbolized with "Y".

3.5 Instrument Test

3.5.1 Validity test

Validity or validity is a concept related to the extent to which the test has measured what it is supposed to measure (Sudaryono., Margono, G. & Rahayu, 2013).

According to Arikunto (2016) to determine the validity coefficient, the Product Moment correlation technique is used with the following formula:

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

(Arikunto, 2016)

Information:

r_{xy} = Coefficient of validity of the test

X = Score received by students for each item

Y = Total score of all students

N = The total number of students who took the test

To determine the level of validity of the test used the criteria in the table below:

Table 3.4
Test validity level table

Range	Classification
0.80-1.00	Very high validity
0.60-0.80	High validity
0.40-0.60	Enough validity
0,0,240	Low validity
0.00-0.20	Very low validity

1.5.2 Reliability Test

The reliability test is carried out so that the test has a high level of confidence so that it gives consistent results. To test the reliability, the KR-20 formula proposed by Kuder-Richardson is used, namely:

$$r_{11} = \left(\frac{n}{n-1} \frac{S^2 - \sum pq}{S^2} \right)$$

Information :

r_{11} : Reliability of the test sought

p.s : The proportion of subjects who answered the item correctly

q : The proportion of subjects who answered incorrectly

n : The number of items

S : Standard deviation of the test

To interpret the value of the reliability of the test, the price is confirmed by comparing the rcount value with the rtable value. With a significant level, significance (α) =0.05, if rcount is rtable, then the item is said to be reliable and vice versa. The reference criteria for the reliability index of questions can be seen in Table 3.5

Table 3.5
Reliability Reference Criteria

Range	Classification
0.810-1.00	Very high
0.610-0.800	High
0.410-0.600	Enough
0.210-0.400	Not enough
0.000-0.200	Very less

(Arikunto, 2016)

1.6 Technique of Analysis Data

The researcher used the results of the post test for the experimental classes and the control classes to analyze the data. Using statistical analysis, these scores were examined. The researcher focused on the scoring classification in Brown's category of speaking skill because pronunciation is one part of speaking skill adapted from Brown as shown below: (Brown, 2004)

Table 3.6
Rubric of content assessment in Pronunciation

	Achievement	Category	Proficiency Description
90-100	5	Fluency	Equivalent to and fully accepted by educated native speakers.
70-89	4	Pronunciation	Errors in pronunciation are quite rare
50-69	3	Comprehension	Errors never interfere with understanding and rarely disturb the native speaker. An accent

			may be obviously foreign.
30-49	2	Grammar	An accent is intelligible though often quite faulty.
0-29	1	Vocabulary	Errors in pronunciation are frequent but can be understood by a native speaker used to dealing with foreigners attempting to speak his language.

After classifying the components items from Brown using SPSS 16, the researcher provided a score classification. The researcher applied the classification of the student's scores from Arikunto (2009), it can be shown below:

Table 3.7

The classification of student's score

No.	Classification	Score
1.	Excellent	90-100
2.	Good	70-89
3.	Sufficient	50-69
4.	Fairly sufficient	30-49
5.	Low	0-29

3.6.1 Data Collecting Procedure

Collecting the data is the most crucial thing to do in conducting a research. This research used pre-test and post-test to collect the data of students' pronunciation in using Spelling Bee Game. The data collection procedure as described below:

1. Pre-test

Before providing material and an explanation of the Spelling Bee game,

the researcher gave the students a pretest to assess their prior pronunciation knowledge. The test contained 20 questions and the time allocation is 45 menit.

2. Treatment

After conducting the pre-test, the researcher conducted the treatment. The experimental group gave the treatment and taught by researcher as the experimenter while the control group taught also by the researcher. Both groups teach in same material. Here are the following steps of the treatment:

- 1) The teacher divided the students into several groups.
- 2) The teacher asked the students who as the first group come to the front of class and stand in line.
- 3) The teacher gives each of groups' member 4 different words to pronounce and the words will be spelled by native speaker using an audio recording.
- 4) The game is played from the first group until the last group.
- 5) The teacher asked the student to pronounce the word loudly which have been spelled by native speaker using an audio recording.
- 6) If the student answered or pronounced the word correctly she/he will receive 5 points, otherwise she/he will receive 0 point for incorrectly pronunciation.
- 7) Then the teacher gives a new word to be pronounced.
- 8) The winner is the student with the high score or point at the end of the game.

3. Post-test

The researcher took a post test to determine the students' pronunciation knowledge. When learning has occurred, a post-test is conducted. To determine what the students have learnt, it is given at the end of a lesson or instruction period. While teaching, the amount of progress a student has made is determined by comparing pre- and post-test results. Although the question changed from the pre-test but the meaning stayed the same. After teaching

pronunciation through spelling bee games, a post-test was conducted. It is do to know the students' pronunciation mastery after they get the treatment. The test contained 20 questions, and 45 minutes were allowed for it.

1.6.2 Analysis Data

Data analysis required by the researcher after collecting data. This research used experimental quantitative research methods. The analysis related to the computation in answering the problem statement and the hypothesis. There are two categories of data analysis methods:

1. Descriptive Analysis

The descriptive analysis used to describe the variable of this research. The descriptive analysis included the measurement of central tendency (mean, median, and mode), and the measurement of group variance (range, variance, and standard deviation). The researcher discussed the variable under study based on the mean and standard deviation. In addition, mean, mode, median, standard deviation, the highest, and lowest scores are also use to analyze the data. The discussion of mean and standard deviation explained as follow:

1) Central Tendency

a. Mean

Sugiyono (2012:49) states that mean is the average score obtained by the subject of the study. Actually, there is a difference between mean in central tendency and mean in group data. The researcher will use the following formula to determine the mean:

$$M = \frac{\sum xi}{N}$$

In term:

M : Mean (average)

$\sum xi$: Total of score observed

N : Population (Sugiyono, 2012)

b. Median

Median is got by organizing the data beginning from the lowest score to the highest score in a group of data and then to find the score in the middle of data.

c. Mode

The researcher will use the formula of mode to find the group data. The formula is written as follow:

$$M_o = b + p \left(\frac{b_i}{b_1 + b_2} \right)$$

M_o : Mode

b : Low limit in mode

p : Interval

b₁ : Frequency above the interval of mode

b₂ : frequency under the interval of mode (Sugiyono, (2012:52))

2) Dispersion

a. Range

Range is a way talk about the spread of distribution of scores. The range formula is as follow:

$$R = X_t - X_r$$

In term:

R : Range

X_t : The highest data on the gorup

X_r : the lowest data on the group

b. Variance

The formula is as follows:

$$S^2 = \sqrt{\frac{\sum(x-x)^2}{N-1}}$$

In term:

S^2 : The square of devinition standard

N : Number of variance (Sugiyono, 2012:57)

3) Standrd Deviation

The standard deviation is the way of showing spread of the score. In other words, it shows how all scores than the range, which simply describe the gap between the highest and the lowest scores and ignore the information provided by all the remaining scores (Sugiyono,2012:56-57). The formula to calculate Standard Deviation is as follows:

$$SD = \sqrt{\frac{\sum(x-x)^2}{N-1}}$$



In term:

SD : The square of devinition standard

$\sum(x-x)^2$: The square of each score subtracted by mean

N : number of variance (Sugiyono, 2015:56-57)

2. Inferential Analysis

In order to support the hypothesis, the researcher analyzes the data. The purpose of this analysis is to determine whether using spelling bee games to improve students' pronunciation in SMP IT Nurul 'Ilmi Medan at the seventh grade during the academic year 2022/2023 is successful. This study's inferential statistical analysis aims to test the research hypothesis. Following are explanations for the normality, homogeneity, and T-test discussions:

1) Normality Test

Sugiyono (2012:79) gives a certain technique in the testing the normality of data with use Chi Square (χ^2). It is done by comparing normal curve that is found from the gathered data (B) with the standard normal (A). If B is not different significantly with A, B will belong to the normal distribution data. The formula is as follows:

$$\chi^2 = \sum \frac{(f_o - f_h)^2}{f_h}$$

In term:

χ^2 : The Chi-Square value

f_o : The observed frequency

f_h : The expected frequency

2) Homogeneity Test

To determine the t-test formula, the researcher will apply the variance of homogeneity test to test variance of one sample. To know whether the variance of one sample is homogeneous or not, the researcher use F-test. The formula is as follows:

$$F = \frac{\text{the highest variance}}{\text{the lowest variance}}$$

3) T-test

After knowing that the data were normally distributed the researcher need Independent sample T-test analysis in order to know whether or not there is effective or uneffective using spelling bee game to improve students' pronunciation for seventh grade students in SMP IT Nurul 'Ilmi Medan in the academic year of 2022/2023. According to Cohen the T-test is employed to see whether there is significant difference on the mean score of both experimental class and control class. Furthermore, the SPSS 25 result of independent sample T-test can be interpreted as follows: (Cohen, 2007)

Testing Criteria:

If the value in Sig. (2-tailed) < 0.05, then H_0 is rejected and H_a is accepted.

If the value in Sig. (2-tailed) > 0.05, then H_a is rejected and H_0 is accepted.

3.7 Statistical Hypothesis

If t-value smaller than t-table, the null hypothesis (H_0) is rejected and (H_a) is

accepted, and if t-value is bigger than t-table, the null hypothesis (H_a) is rejected and the alternative hypothesis (H_o) is accepted. The hypothesis is tested in this study by the independent sample t-test by using manual computation and by using SPSS 16.0. The researcher uses t-test analyzing as the data analysis. The reason for choosing t-test is that the researcher compares the mean of the data sample in pre-test without treatment and post-test after doing the treatment.

The t-test formula is as follows:

Formula 1

The researcher uses formula 1 if the data is homogeneous.

$$t = \frac{x_1 - x_2}{\sqrt{\frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{n_1 + n_2 - 2} \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

Formula 2

The researcher will use formula 2 if the data is not homogeneous.

$$t = \frac{x_1 - x_2}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}}$$

In term:

T : T-test

x_1 : The mean score of experimental group

x_2 : The mean score of control group

n_1 : The number of experimental group

n_2 : The number of control group

s_1 : Deviation of experimental group

s_2 : Deviation of control group



UNIVERSITAS ISLAM NEGERI
SUMATERA UTARA MEDAN