

CHAPTER IV

FINDING AND DISCUSSION

The researcher in this study provides an explanation of the data that was gathered for the investigation. The data's discovery and analysis are utilized to address the research questions raised in the first chapter.

4.1 Research Finding

The researcher employed a pronunciation test instrument to collect data in order to get the study's conclusions. To get the data, Pre-test and Post-test were used. Two tenth grade classes from Senior High School 1 Ujung Padang were selected as the research sample. The test was separated into a pre-test and a post-test. These test equipment were gathered from a number of previous researchers' theses.

After completing pre- and post-tests for both classes, the data were collected and graded using a pronunciation checker, formulae, and SPSS version 22. The conclusions comprise: 1. Data Descriptive Analysis, 2. Data Statistical Analysis of Students' Pronunciation test.

4.1.1 Data Descriptive Analysis

The students' pre-test and post-test were scored to obtain the data. The procedures of gathering the data were explained as follows:

- a) Students in both classes (experiment and control) were given pre-test and post-test consist of some words (see appendix 1A & B) and students were asked to pronounce those words.
- b) Students pronouncing words using Google Voice in order to check the pronunciation.
- c) The researcher evaluated the students' pronunciations by using Arikunto's formula to score the data.

1. Pre Test and Post Test in Experimental Class

Three weeks were dedicated to conducting the study the measure of pronunciation was an objective test that the researcher utilized. The pre-test was conducted on July 17, 2023, with 20 participants drawn from the experimental group's 20 students. As was indicated in the preceding section, the pre-test's goal is to evaluate students' fundamental pronunciation skills. On August 7, 2023, 20 participants from the experimental group of 20 students took part in the post-test. Many of the test forms from the post-test were also used for the pre-test. After the students finished their pre-test and post-test, the test were calculated by researcher by using Arikunto (2012) formula (see page 36). The result of the test as follow:

Table 4.1
Students' of Pre-Test and Post-Test (Experiment Class)

No	Students	Score (Pre-Test)	Score (Post-Test)
1.	S-1	45	80
2.	S-2	45	85
3.	S-3	50	90
4.	S-4	50	70
5.	S-5	50	80
6.	S-6	50	75
7.	S-7	55	80
8.	S-8	60	80
9.	S-9	70	95
10.	S-10	45	80
11.	S-11	65	85
12.	S-12	65	75
13.	S-13	45	70
14.	S-14	55	80
15.	S-15	30	65
16.	S-16	55	90
17.	S-17	70	90
18.	S-18	35	75
19.	S-19	35	65
20.	S-20	40	90
Total		1015	1600
Maximum		70	95
Minimum		30	65

The mean of the students' pre-test score was calculated by using formula as follow:

$$\begin{aligned} M &= \frac{\sum N}{X} \\ &= \frac{1015}{20} \\ &= 50.75 \end{aligned}$$

Based on the calculations above, it was determined that the pre-test had a mean score of 50.75 and a total score of 1015, with the greatest score being 70 and the lowest score being 30.

The mean of the students' post-test score was calculated by using formula as follow:

$$\begin{aligned} M &= \frac{\sum N}{X} \\ &= \frac{1600}{20} \\ &= 80 \end{aligned}$$

Based to the calculations above, the pre-test had a total score of 1600, with an average score of 80, the best score being 95, and the lowest being 65. As shown in the table below, the researcher utilized SPSS version 22 to calculate the frequencies and percentages of the results from the pretest and posttest:

Table 4.2
The Distribution of Frequency of Students' Pre-test on Experiment Class

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	30	1	5.0	5.0	5.0
	35	2	10.0	10.0	15.0
	40	1	5.0	5.0	20.0
	45	4	20.0	20.0	40.0
	50	4	20.0	20.0	60.0
	55	3	15.0	15.0	75.0
	60	1	5.0	5.0	80.0
	65	2	10.0	10.0	90.0
	70	2	10.0	10.0	100.0
	Total	20	100.0	100.0	

From the table before, it can be concluded that from 20 students, there were 1 students (5%) got score 30, 2 students (10%) who got score 35, 1 students (5%) got score 40, 4 students (20%) got score 45, 4 students (20%) got score 50, 3 students (15%) got score 55, 1 student (5%) got score 60, 2 students (10%) got score 65, and 2 students (10%) got score 70.

Table 4.3
The Distribution of Frequency of Students' Post-test on Experiment Class

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	65	2	10.0	10.0	10.0
	70	2	10.0	10.0	20.0
	75	3	15.0	15.0	35.0
	80	6	30.0	30.0	65.0
	85	2	10.0	10.0	75.0
	90	4	20.0	20.0	95.0
	95	1	5.0	5.0	100.0
	Total	20	100.0	100.0	

From the table above, it can be concluded that from 20 students, there were 2 students (10%) got score 65, 2 students (10%) who got score 70, 3 students (15%) got score 75, 6 students (30%) got score 80, 2 student (10%) got score 85, 4 students (20%) got score 90, and 1 student (5%) got score 95.

2. Pre Test and Post Test in Control Class

Over the course of a week, the research was conducted. The measure of pronunciation was an objective test that the researcher utilized. The pre-test was conducted on August 7, 2023, with 20 pupils in the control group. As was indicated in the preceding section, the pre-test's goal is to evaluate students' fundamental pronunciation skills. On August 12, 2023, the post-test was administered to 20 students in the control group. Many of the test forms from the post-test were also used for the pre-test.

After the students finished their pre-test and post-test, the test were calculated by researcher by using Arikunto (2012) formula (see page 36). The result of the test explained as follow:

Table 4.4
Students' of Pre-Test and Post-Test
(Control Class)

No	Students	Score (Pre-Test)	Score (Post-Test)
1.	S-1	45	85
2.	S-2	40	40
3.	S-3	30	40
4.	S-4	50	75
5.	S-5	40	55
6.	S-6	30	65
7.	S-7	35	40
8.	S-8	60	80
9.	S-9	35	70
10.	S-10	50	65
11.	S-11	45	50
12.	S-12	40	80
13.	S-13	55	65
14.	S-14	55	75
15.	S-15	35	60
16.	S-16	60	70
17.	S-17	60	80
18.	S-18	45	55
19.	S-19	40	60
20.	S-20	45	45
Total		895	1255
Maximum		60	85
Minimum		30	40

The mean of the students' pre-test score was calculated by using formula as follow:

$$\begin{aligned}
 M &= \frac{\sum N}{X} \\
 &= \frac{895}{20} \\
 &= 44.75
 \end{aligned}$$

Based to the calculations above, the pre-test had an overall score of 895, with a mean score of 44.75, a maximum score of 60, and a minimum score of 30.

The mean of the students' post-test score was calculated by using formula as follow:

$$\begin{aligned} M &= \frac{\sum N}{X} \\ &= \frac{1255}{20} \\ &= 62.75 \end{aligned}$$

Based to the calculations above, the total pre-test score was 1255, the mean was 62.75, the maximum score was 85, and the lowest score was 40.

For the frequencies and percentages score of pretest and posttest, the researcher used SPSS version 22, it can be seen from the table below:

Table 4.5
The Distribution of Frequency of Students' Pre Test on Control Class

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	30	2	10.0	10.0	10.0
	35	3	15.0	15.0	25.0
	40	4	20.0	20.0	45.0
	45	4	20.0	20.0	65.0
	50	2	10.0	10.0	75.0
	55	2	10.0	10.0	85.0
	60	3	15.0	15.0	100.0
	Total	20	100.0	100.0	

From the table above, it can be concluded that from 20 students, there were 2 students (10%) got score 30, 3 students (15%) who got score 35, 4 students (20%) got score 40, 4 students (20%) got score 45, 2 students (10%) got score 50, 2 students (10%) got score 55, and 3 students (15%) got score 60.

Table 4.6
The Distribution of Frequency of Students' Post Test on Control Class

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	40	3	15.0	15.0	15.0
	45	1	5.0	5.0	20.0
	50	1	5.0	5.0	25.0
	55	2	10.0	10.0	35.0
	60	2	10.0	10.0	45.0
	65	3	15.0	15.0	60.0
	70	2	10.0	10.0	70.0
	75	2	10.0	10.0	80.0
	80	3	15.0	15.0	95.0
	85	1	5.0	5.0	100.0
	Total	20	100.0	100.0	

Based on the table above, it can be concluded that from 20 students, there were 3 student (15%) got score 40, 1 student (5%) got score 45, 1 student (5%) got score 50, 2 students (10%) got score 55, 2 students (10%) got score 60, 3 students (15%) got score 65, 2 students (10%) got score 70, 2 students (10%) got score 75, 3 students (15%) got score 80, and 1 student (5%) got score 85.

4.1.2 Data Statistical Analysis of the Test

1. Normality Test

The data distribution for a certain data variable is determined using a normality test. This test looks at whether the data was taken from a normal population or is normally distributed. The researcher calculated the data using Shapiro-Wilk technique and SPSS version 22.

The hypothesis formulas for normality test are:

H_0 = the data have normal distribution

H_a = the data do not have normal distribution

While the criteria acceptance or rejection of hypothesis were:

H_0 is accepted if Sig (Pvalue) $\geq \alpha = 0.05$

H_a is accepted if Sig (Pvalue) $\leq \alpha = 0.05$

a) Normality Test of Pre-test in both Experiment and Control Class

Table 4.7
Normality test of Pre-test from Experiment and Control Class

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Experiment Class	.126	20	.200*	.961	20	.570
Control Class	.140	20	.200*	.934	20	.184

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Because there were only 20 students in the sample, the researcher used the Shapiro-Wilk method to determine the normality test based on the table above. The experimental class's normality pretest score was .570, which was greater than the significant level of 0.05, indicating that the data was normally distributed. Additionally, the control class's normality pretest result was 0.184, which was higher than the threshold for significance of 0.05, indicating that the control class's normality pretest result was similarly normal.

b) Normality Test of Post-test in both Experiment and Control Class

Table 4.8
Normality Test of Posttest from Experiment and Control Class

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Experiment Class	.150	20	.200*	.947	20	.319
Control Class	.112	20	.200*	.937	20	.211

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Based to the preceding table, the experimental class's normality posttest result was .319. This number was higher than the significant level of 0.05, indicating that the data was normally distributed. Additionally, the control class's normality posttest result was .211, which was greater than the threshold for significance of 0.05,

indicating that the control class's normality pretest result was similarly normal.

2. Homogeneity Test

Before administering the data to t-test, it is necessary to be certain that the data are homogeneous or not. The researcher used SPSS version 22 to count homogeneity test by using Levene Statistic method.

The hypothesis for the homogeneity test are:

H_0 = The variance of the data is homogeneous

H_a = The variance of the data is not homogeneous

The test criteria:

H_0 is accepted if $\text{Sig} \geq \alpha = 0.05$

H_a is accepted if $\text{Sig} \leq \alpha = 0.05$

Table 4.9
Homogeneity Pretest of Experimental and Control Class

Levene Statistic	df1	df2	Sig.
.333	1	38	.567

Based on the table, it can be concluded that the variance data is homogeneous because the result was .567 which was higher than significant value 0.05.

Table 4.10
Homogeneity Posttest of Experimental and Control Class

Levene Statistic	df1	df2	Sig.
6.859	1	38	.013

According to the table above, the variance data was homogenous because the result of posttest from both experimental and control class

was higher than significant value 0.05 which is 0.013. So, it can be concluded that H_0 is accepted.

3. Hypothesis Test

Because the data are normal and homogenous, the researcher decided to use T-test to determine which hypothesis is accepted, whether H_0 or H_a . Researcher used Independent T-test and Paired Samples T-test and calculated both of the T test by using SPSS version 22.

The hypothesis of the research are:

H_a : There is an effect of tongue twister game on pronunciation ability.

H_0 : There is no an effect of tongue twister game on pronunciation ability.

Where the criteria of hypothesis are:

H_0 is accepted if $\text{Sig} \geq \alpha = 0.05$

H_a is accepted if $\text{Sig} \leq \alpha = 0.05$

a) Independent Samples T-test

Independent samples t-test is used to determine whether there is a statistically significant difference between the means in two unrelated groups (posttest of experiment and control class).

Table 4.11
Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	T	df	Sig. (2-tailed)
Result of Pronunciation	Equal variances assumed	6.859	.013	4.587	38	.000
	Equal variances not assumed			4.587	30.910	.000

The score in the table before can be checked in three stages. Check Levene's homogeneity test score first. The value of Levene's score is 6.859 ($p=0.013$), which indicates that the data was either variable or homogeneous based on the aforementioned result. After determining whether the data are homogenous or not, check the equal variance assumed if they are, and the equal variance not assumed if they are not. Third, due to the data is homogeneous then it can be seen from the table that independent test Sig. (2-tailed) was $0.000 \leq 0.05$ it means that H_a is accepted.

Table 4.12
Group Statistics of Independent Samples Test

	Experiment and Control Class	N	Mean	Std. Deviation	Std. Error Mean
Result of Pronunciation	Experiment Class	20	80.0000	8.58395	1.91943
	Control Class	20	62.7500	14.46184	3.23377

From the table above, it is clear that there is a considerable difference between the two scores, with the mean score of the experiment class being higher ($80.00 > 62.75$) than the control class. The use of tongue twister games in the tenth grade academic year of 2023–2024 at SMA N 1 Ujung Padang had a substantial impact on students' pronunciation skills.

b) Paired Samples T-test

Paired samples test is test that used to measure two paired related groups, such as pre-test/post-test scores in experiment class. This test is used to measure whether or not both pre-test and post-test are significantly different.

Table 4.13
Paired Samples Test

		Paired Differences					T	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pre-test - Post-test	-29.25000	9.49723	2.12365	-33.69484	-24.80516	-13.773	19	.000

The result of Paired Samples Test is determined by significant value. This value later is used to determine which hypothesis is accepted. H_0 is accepted if significant value is higher than 0.05. On the contrary, H_0 is rejected if significant value is lower than 0.05. Based on the result above, the value of paired samples test Sig. (2-tailed) was $0.000 \leq 0.05$ it means that H_a is accepted.

Table 4.14
Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre-test	50.7500	20	8.38732	1.54628
	Post-test	80.0000	20	11.58395	2.91943

Table paired sample test above shows some of the descriptive value from each test. The mean score of pretest in experiment class is 50.75 from 20 data. Standard deviation of pretest is 8.387 with standard error 1.546. While the mean score of posttest is 80.00 from 20 data, standard deviation of posttest is 11.583 and standard mean score is 2.919. So it can be concluded that posttest gathers higher score than pretest so that the standard deviation of posttest and standard error are getting higher. Sum up, there was a significant effect of using tongue twister game on students' pronunciation ability at SMA N 1 Ujung Padang on tenth grade academic year of 2023/2024.

4.2 Discussion

The tongue twister game made a considerable change in the kids' ability to pronounce words correctly. The pupils who were taught using the tongue twister game performed better than those who were taught using the traditional way. In chapter II, it was made clear that tongue twisters are one of the ways teachers can use to assist pupils pronounce difficult sounds more accurately. Tongue twisters are extremely beneficial in all aspects of teaching foreign languages because of their briefness, capacity, and full sense.

In Khoirunisa BTR used quantitative research method with experiment design, technique analyzing data in this research with Preliminary Analysis doing Normality Test, Homogeneity Test, T-test (Dependent Sample test and Independent sample test), and hypothesis test, and in this research the researcher found From the calculated above it was found that $t(\text{observed}) = 3,125$ whereas the $t(\text{table}) = 2,024$. It shows that the students pronunciation skill by using tongue twister game was significant at 0,05. The study's findings showed that the tongue twister game had a substantial impact on the students' pronunciation ability. This suggests that tongue twister games were a more effective teaching tool than traditional methods for teaching pronunciation to students. The alternative hypothesis (H_a) is accepted and the null hypothesis (H_0) is rejected in this study by Asilfa, who employed the quantitative research approach with experiment design, technique data analysis, and pronunciation checker. This indicates that the use of tongue twisters has an impact on students' ability to pronounce words, particularly those with dental and palatoalveolar fricative consonants. The results of this study showed that State Islamic Senior High School 2 pupils' pronunciation skills, which were taught by using the tongue twister technique, had a beneficial impact. But, The focus of this research is on the pronunciation of dental and palatoalveolar fricatives consonant sounds that are unfamiliar to the students such as /ʃ/, /ʒ/, /θ/, and /ð/. Additionally, Nur Trisina Juniarti employed a quantitative research methodology. And this study discovered that the experimental

class's mean posttest score was 2,4, whereas the control class's mean pretest score was 2. The control class had a mean posttest score of 2,7 while the experimental class had a mean posttest score of 3,3. It is clear that the experimental class's students achieved superior learning results than those of the control group. Meanwhile, this study discovered that the experiment class's mean pretest score is 50.75 from 20 data. The pretest's standard deviation is 8.387 and its standard error is 1.546. The posttest had a mean score of 80.00 from 20 data points, a standard deviation of 11.583, and a standard mean score of 2.919. Therefore, it may be said that while the posttest yields greater scores than the pretest, the posttest's standard deviation and standard error are also increasing. In conclusion, the use of tongue twisters in the tenth grade academic year of 2023–2024 at SMA N 1 Ujung Padang had a substantial impact on students' pronunciation skill. Since the Alternative Hypothesis (or H_a) is accepted, it may be said that the Tongue Twister Game has a considerable impact on students' pronunciation skills and that the study issue has been well addressed.