

CHAPTER IV

RESEARCH FINDING AND DISCUSSION

In this chapter the researcher is going to present the research findings and discuss how the researcher analyzes the data. The researcher conducted a research about the effectiveness of using spelling bee games in teaching learning activity. The researcher used the test as the instrument of the research, its means that the test becomes the most collected from 40 students of the seventh grade students at SMP IT Nurul 'Ilmi Medan in the academic year 2022/2023.

The researcher analyzed the result of the test, which conducted in experimental group and control group to find out whether the use of spelling bee games is effective in improving students' pronunciation.

4.1 Data Description

Before analyzing the data, the researcher is going to give some explanation. In conducting this research took two groups from two classes as the sample in the research. Each class consists of 20 and 20 students. The two classes named as experimental group and control group. Class VII A is the experimental group and class VII B is the control group of SMP IT Nurul 'Ilmi Medan in academic year of 2022/2023.

The researcher collected the data by using test. To compute the test result, the classification of the result based on criteria of scoring is needed. The criteria are listed below. The criterion in the table is based on the criteria referenced scales (Arikunto, 2009:245).

Table 4.1
Classification of the Students' Achievement

Score	Grade	Category
90-100	A	Excellent

70-89	B	Good
50-69	C	Sufficient
30-49	D	Fairly Sufficient
<29	E	Low

The researcher collected some data by giving word, so, it concerned on the test result. The researcher collected the data from experimental group and control group. First, the researcher analyzed the experimental group' data and then analyzed the control group' data.

1. The Students' Achievement of Control Class

There were 20 students in pre-test and post-test of control class. Below is the table of pronunciation test result of control class.

Table.4.2
Pre-test and Post-test Control Class

NO	NAME	SCORE	
		PRE-TEST	POST-TEST
1	Ananta Khamahesa	55	75
2	Asyila Putri	75	80
3	Amirah Giana	70	85
4	Dzaky Abiyu	50	75
5	Fahruzain	75	85

6	Fatih Al-fayyadh	65	80
7	Fauzan Dwi	70	80
8	Haykal	55	65
9	Hazel	65	75
10	Irvine Savira	70	80
11	Khairian Muarrofa	65	70
12	M. Azzam Hermawan	60	70
13	Maulana Rizky	40	55
14	Mifta Sahil	55	65
15	M. Azzam Fahrizia	60	85
16	Muhammad Habibi	70	80
17	Muhammad Riza	55	70
18	Salam Karim	60	75
19	Salsabila Zahra	60	80
20	Nasyifa	65	85
MEAN		62	75,75
STANDAR DEVIASI		8,79	7,99

2. The Students' Achievement of Experimental Class

There were 20 students in pre-test and post-test of control class. Below is the table of pronunciation test result of control class.

Table.4.3
Pre-test and Post-test Experimental Class

NO	NAME	SCORE	
		PRE-TEST	POST-TEST
1	Aisyah Khalila Putri	65	85
2	Alvito Yusuf	60	80
3	Annisa Fitria Zulmi	60	80
4	Aswangga Wira	75	90
5	Desvina Haura	65	75
6	Deswita Haura	55	70
7	Dhiya Salwa	70	85
8	Faisyifah Haniyah	55	65
9	Ghaiza Syahmira	70	75
10	Haikal Al-habibi	75	85
11	Humairah Dalimunthe	65	90
12	Ishaz Yazid	60	80
13	Jogi Riansyah	70	85
14	Kahla Mubaraisyah	75	85
15	Khalifatu Ar-rizqi	80	95
16	Muhammad Farid	70	90
17	Nahya Mahira	65	85
18	Muhammad Zaidan	60	75
19	Muhammad Zayyan	60	80
20	Nurul Fadhilah	65	80

MEAN	66	81,75
STANDAR DEVIASI	6,99	7,30

4.2 Data Analysis

4.2.1 Analysis of Student Learning Outcomes Data

The results of students who are taught and not taught using the spelling bee game can be categorized using Arikunto's guidelines (2007) by looking at student learning outcomes scores on pretest and posttest scores. The following is a table of pretest and posttest values in the control class and experimental class.

Table 4.4

Pre-test Category in Control Class

<i>No</i>	<i>Pre-test score</i>	<i>Frequency</i>	<i>Means</i>	<i>std. deviation</i>	<i>Category</i>
1	90-100	-	62	8.79	Excellent
2	70-89	6			Good
3	50-69	13			Sufficient
4	30-49	1			Fairly sufficient
5	0-29	-			Low

UNIVERSITAS ISLAM NEGERI

SUMATERA UTARA MEDAN

Table 4.5

Post-test Category in Control Class

<i>No</i>	<i>Pre-test score</i>	<i>Frequency</i>	<i>Means</i>	<i>std. deviation</i>	<i>Category</i>
1	90-100	-	75.75	7.99	Excellent
2	70-89	17			Good
3	50-69	3			Sufficient

4	30-49	-			<i>Fairly sufficient</i>
5	0-29	-			<i>Low</i>

From table 4.4 it can be seen that student learning outcomes in the pre-test with a score of 70-89 have a frequency of 6 belonging to the good category, then at a score of 50-69 have a frequency of 13 belonging to the sufficient category and at a score of 30-49 have a frequency of 1 belonging to in the fairly sufficient category. The excellent and low categories have not been found in the students' pre-test scores. In the pre-test value of the control class, it has an average of 62 with a standard deviation of 8.79, so the overall student learning outcomes can be seen with a mean value of 50 which can be categorized as sufficient.

Furthermore, in table 4.5 it can be seen that student learning outcomes in the post-test with a score of 70-89 have a frequency of 17 included in the good category, with a score of 50-69 have a frequency of 3 including the sufficient category, and with a score of 90-100 in the excellent category, scores of 30-49 in the fairly sufficient category and scores of 0-29 in the low category have not been found. In the post-test value of the control class, it has an average of 75.75 with a standard deviation of 7.99, so the overall student learning outcomes seen from the mean in the post-test is 75.75, can be categorized as good.

UNIVERSITAS ISLAM NEGERI
SUMATERA UTARA MEDAN

Table 4.6

Pre-test Category in Experimental Class

<i>No</i>	<i>Pre-test score</i>	<i>Frequency</i>	<i>Means</i>	<i>std. deviation</i>	<i>Category</i>
1	90-100	-			<i>Excellent</i>

2	70-89	8	66	6.99	Good
3	50-69	12			Sufficient
4	30-49	-			Fairly sufficient
5	0-29	-			Low

Table 4.7
Post-test Category in Experimental Class

No	Pre-test score	Frequency	Means	std. deviation	Category
1	90-100	3	81.75	7.30	Excellent
2	70-89	16			Good
3	50-69	1			Sufficient
4	30-49	-			Fairly sufficient
5	0-29	-			Low

From table 4.6 it can be seen that student learning outcomes in the pre-test with scores of 70-89 have a frequency of 8 belonging to the good category, then scores of 50-69 have a frequency of 12 belonging to the sufficient category and at scores of 90-100 in the excellent category, 30-49 in the fairly sufficient category and scores of 0-29 in the low category have not been found in the pre-test scores of the students' experimental class. In the experimental class pre-test score, it has an average of 66 with a standard deviation of 6.99, so the overall student learning outcomes can be seen with a mean value of 66 which can be categorized as sufficient.

Furthermore, in table 4.7 it can be seen that student learning outcomes in the pre-test with a score of 90-100 have a frequency of 3 belonging to the excellent category and with a score of 70-89 have a frequency of 16 belonging to the good category, then on a score of 50-69 having a frequency of 1 belongs to the

sufficient category and at scores of 30-49 in the fairly sufficient category and scores of 0-29 in the low category have not been found in the student's post-test scores. In the post-test value of the experimental class, it has an average of 8.75 with a standard deviation of 7.30, so the overall student learning outcomes seen from the mean in the post-test, which is 8.75, can be categorized as good.

4.2.2 Descriptive Analysis

The data of this research were got by conducting a test before the treatment (pre-test) and after the treatment (post-test). The description of the data is shown above. The researcher tried to analyze the data. Here are the description of control group and experimental group.

Table.4.8

Descriptive Statistic of Control and Experimental Class

	<i>Pretest Kontrol</i>	<i>Posttest Kontrol</i>	<i>Pretest Eksperimen</i>	<i>Posttest Eksperimen</i>
<i>N</i>	20	20	20	20
<i>Min</i>	40	55	55	65
<i>Max</i>	75	85	80	95
<i>Mean</i>	62	75,75	66	81,75
<i>Median</i>	62, 5	77,5	65	82,5
<i>Modus</i>	55	80	65	85
<i>Std. Dev</i>	8,79	7,99	6,99	7,30
<i>Variance</i>	77,36	63,88	48,94	53,35
<i>Range</i>	35	30	25	30

From the table above, it can be seen that the average pre-test score for class VII-1 students (control class) is 62 with a minimum score of 40 and a maximum score of 75. The median value is 62.5 and the mode is 55. The variance is 77.36 and the range is 35 and the standard deviation is 8.79. While the average post-test score for class VII-1 students (control class) is 75.75 with a minimum score of 55 and a maximum score of 85. The median value is 77.5 and the mode is 80. The variance value is 63.88 and the range value is 30 and the standard deviation has a value of 7.99.

Furthermore, in class VII-2 (experiment class) an average pre-test score of 66 students was obtained with a minimum value of 55 and a maximum value of 80. The median value was 65 and the mode was 65. Then the variance value was 48.94 and the range value of 25 and the standard deviation has a value of 6.99. While the average post-test scores for class VII-2 students (experiment class) is 81.75 with a minimum score of 65 and a maximum score of 95. The median value is 82.5 and the mode is 85. Then the variance value is 53.35 and the range value is 30 and the standard deviation has a value of 7.30.

Therefore it can be concluded that student learning outcomes increased at the pre-test and post-test stages. As for the learning outcomes of students in the control class which taught without using spelling bee game from an average score of 62 to 75.75, there was an increase of 20%. While the learning outcomes of students using the spelling bee game from an average score of 66 to 81.75, there was an increase of 23%. So it can be concluded that the average score in the experimental class that uses the spelling bee game is higher than the average score in the control class that does not use the spelling bee game.

4.3 Inferential Analysis

The researcher explained the result of test of validity, test of reliability, test of homogeneity of variance and test of normality. The result of homogeneity of experiment group, the homogeneity of control group the last was result of homogeneity test experiment and control group. While, the test of normality consist of the normality of the experiment group, the normality of control group

and the normality of experiment and control group.

4.3.1 Validity Test

The validity of the cognitive test is calculated using the Moment Product Correlation formula with the following formula:

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

As an example, the validity can be calculated from question No. 1 known:

$$N = 28$$

$$\sum X = 7$$

$$\sum X^2 = 49$$

$$(\sum X)^2 = 2401$$

$$\sum XY = 125$$

$$R_{tabel} = 0,374$$

$$\sum Y = 390$$

$$\sum Y^2 = 6328$$

$$(\sum Y)^2 = 152100$$

$$\alpha = 0,05 \text{ maka,}$$

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

$$28 \cdot 125 - 7 \cdot 390$$

$$r_{xy} = \frac{3500 - 2730}{\sqrt{(28 \cdot 49 - 49)(28 \cdot 6328 - 152100)}}$$

$$r_{xy} = \frac{3500 - 2730}{\sqrt{147}(24484)}$$

$$r_{xy} = \frac{770}{\sqrt{3599148}}$$

$$r_{xy} = \frac{770}{1897,14}$$

$$r_{xy} = 0,4058$$

Validity test is measured by product moment correlation in ms.excel. The

criteria used in this validity test are if $r_{hitung} > r_{tabel}$ then the item is declared valid. For $n = 20$ at a significant level $\alpha = 0.05$ obtained r_{tabel} of 0.374. Based on the calculations, it was obtained that all the questions tested were valid with a total of 20 questions (Appendix 8). This question is used as an instrument for the pretest and posttest because it meets the grid requirements in the form of validity and reliability.

4.3.2 Reability Test

Using the KR-20 formula, the overall reliability of the overall test is calculated as follows:

$$N = 28$$

$$n = 30$$

$$\sum Y = 315$$

$$\sum p.q = 4,258$$

$$S^2 = 27,616$$

In Terms:

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

$$r_{11} = \left(\frac{28}{28-1} \right) \left(\frac{27,616 - 4,258}{27,616} \right)$$

$$r_{11} = (1,037)(0,849)$$

$$r_{11} = 0,880$$

From the calculation above, the price of the reliability index test for student learning outcomes is 0,880. By comparing r_{hitung} (0,864) and r_{tabel} (0,374) with $N = 20$ dan $\alpha = 0,05$, obtained $r_{hitung} > r_{tabel}$ so it can be concluded that the cognitive tests tested were reliable.

4.3.3 Test of Normality

In order to make sure that the data is normal or not, the researcher did normality test. It is used to determine whether a data set is well modeled by a normal distribution or not, or to compute how likely an underlying variable is to e

normally distributed. In testing normality of data, the researcher used SPSS program.

Table 4.9
Test Normality of Posttest of Eksperimen Class
One-Sample Kolmogorov-Smirnov Test

		Student Learning Outcomes	Posttest
N		20	20
Normal Parameters ^{a,b}	Mean	81.75	1.00
	Std. Deviation	7.304	.000 ^d
Most Extreme Differences	Absolute	.172	
	Positive	.128	
	Negative	-.172	
Test Statistic		.172	
Asymp. Sig. (2-tailed)		.124 ^c	
a. Test distribution is Normal.			

After the computation of the data, the significant value gained is 0.124. This result then compared with significant level 0.05 to consider that the data is normal distributed, the result must be higher than 0.05 from the explanation above, it can be concluded that the data is normally distributed.

UNIVERSITAS ISLAM NEGERI
SUMATERA UTARA MEDAN

Table 4.10
Test Normality of Posttest of Control Class
One-Sample Kolmogorov-Smirnov Test

		Hasil Belajar Siswa	Posttest
N		20	20
Normal Parameters ^{a,b}	Mean	75.75	2.00
	Std. Deviation	7.993	.000 ^d

Most Extreme Differences	Absolute	.203	
	Positive	.124	
	Negative	-.203	
Test Statistic		.203	
Asymp. Sig. (2-tailed)		.031 ^c	
a. Test distribution is Normal.			

After the computation of the data, the significant value gained is 0.031. This result then compared with significant level 0.05 to consider that the data is normal distributed, from the explanation above, it can be concluded that the data is normally distributed.

Table 4.11

Test Normality of Posttest of Eksperimen and Control Class

Tests of Normality							
	Kelas	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	Df	Sig.
Hasil Belajar Siswa	Posttest Kelas Eksperimen	.172	20	.124	.954	20	.428
	Posttest Kelas Kontrol	.203	20	.031	.899	20	.040
a. Lilliefors Significance Correction							

From the results of the calculation test above using the Kolmogorov-Smirnov^a test, the probability value obtained in the post-test results of the experimental class is 0.124, while the significance level is 0.05. In order to obtain $0.124 > 0.05$, then the data is normally distributed.

Likewise, the results of the normality test for the control class showed that the data distribution in the post-test results for the control class was 0.031, while the significance level was 0.05. So that $0.031 > 0.05$ is obtained, then the data is normally distributed. So from each control class and learning experiments it

shows that the distribution of student learning outcomes data is normally distributed ($P > 0.05$).

4.3.4 Test of Homogeneity

Homogeneity test was done to know whether the data is homogeneous or not. Before that, the researcher tries to find the variance both experimental group and control group. The following are the variance of both experimental and control group. The researcher find homogeneity test using F the computation is as follows:

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

$$= \frac{77,36}{48,94}$$

$$= 1,57$$



The homogeneity test is used to see whether the data has a homogeneous variance or not. In this study, the data homogeneity test used IBM SPSS statistics 16 for Windows with Levene's Test using the significance level, it was found that the value of $p > 0.05$, the data is homogeneous. Significance value of $p > 0.05$. The results of the pretest and posttest homogeneity test analysis can be seen in the table below:

Table 4.12

Descriptive Analysis of Homogeneity Test

	<i>Levene Statistik</i>	df1	df2	Sig.
Pretest	.834	1	38	.367
Posttest	.000	1	38	.730

Based on the table above, it is known that the significance value of learning outcomes in the pretest and posttest is homogeneous, where the pretest significance value is $0.367 > 0.05$ and the significance value in the posttest is $0.730 > 0.05$, so as the basis for decision making in the homogeneity test above, it

can be concluded that the variance of student learning outcomes data is homogeneous.

Table 4.13
Test of Homogeneity (Pre-test)

Test of Homogeneity of Variances					
		Levene			
		Statistic	df1	df2	Sig.
Hasil Belajar Siswa	Based on Mean	.834	1	38	.367
	Based on Median	1.018	1	38	.319
	Based on Median and with adjusted df	1.018	1	36.826	.320
	Based on trimmed mean	.862	1	38	.359

Based on mean, result of signification test is 0.367. This result then compared with 0.05. The significant level must be higher than 0.05. The result from the first computation above is 1,57. It is compound with the value of F table with df of numerator (20-1=19) and df of denominator (20-1=19). Based on the table on F table, it is known that at F value on the significant level 0.05 is 1.85. It shown that the value of F obtained is lower than the value of F table (1.57<1.86). Therefore, it means that the variance of pre-test is homogenous.

UNIVERSITAS ISLAM NEGERI
Table 4.14
SUMATERA UTARA MEDAN
Test of Homogeneity (Post-test)

Test of Homogeneity of Variances					
		Levene			
		Statistic	df1	df2	Sig.
Hasil Belajar Siswa	Based on Mean	.121	1	38	.730
	Based on Median	.111	1	38	.741

	Based on Median and with adjusted df	.111	1	37.146	.741
	Based on trimmed mean	.120	1	38	.731

Based on mean, result of signification test is 0.730. This result then compared with 0.05. The significant level must be higher than 0.05. The result from the first computation above is 1,57. It is compound with the value of F table with df of numerator (20-1=19) and df of denominator (20-1=19). Based on the table on F table, it is known that at F value on the significant level 0.05 is 1.85. It shown that the value of F obtained is lower than the value of F table (1,57<1.86). Therefore, it means that the variance of pre-test is homogenous.

4.3.5 Test of Hypothesis (T-test)

Once it is known that the data are normally distributed and homogeneous, then a hypothesis test is then carried out to find out whether the alternative hypothesis (H_a) in this study is accepted or rejected. In testing this hypothesis using the T-Test Test on IBM SPSS statistics 16 for Windows with a significance value of 0.05. If the sig. (2 tailed) > 0.05 then H_0 is accepted, meanwhile if the sig. (2-tailed < 0.05 then H_a is accepted. The results of the hypothesis test calculations can be seen in table below:

Independent Samples Test									
t-test for Equality of Means									
	F	Sig	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	.121	.730	2.478	38	.018	6.000	2.421	1.099	10.901

Equal variances not assumed			2.478	37.698	.018	6.000	2.421	1.097	10.903
-----------------------------	--	--	-------	--------	------	-------	-------	-------	--------

In SPSS 16.0 computation t-test gained is 2.478, as the significance level 0.018. After doing both computation using manual and SPSS 16.0 the researcher compared t-test (2.478/1.686) with t-table (1.686 df=38). T-test is higher than t-table. In SPSS computation, the researcher found that significance value is 0.018. It is lower than 0.05. It means that the result is significant.

Based on the hypothesis testing above, it can be concludes that Ho is rejected and Ha is accepted. Therefore, the hypothesis of this study which says the use spelling bee games is effective in improving student' pronunciation at the seventh grade students of SMP IT Nurul 'Ilmi Medan in the academic year of 2022/2023 is accepted.

4.4 Discussion and Result of the Research

In this section, the researcher is going to describe the interpretation of research result about descriptive analysis and inferential analysis. The following are the details.

4.4.1 The Pronunciation Mastery of Experiment Group

The highest score of the students of experimental group at the seventh grade of SMP IT Nurul 'Ilmi Medan is 95 of the category "*Fluency*" and the lowest one is 55 of the category "*Comprehension*". The mean of experimental group is 81.75 and the standard deviation of it is 7.30. The mean is included in the interval of 70-89. It means that the students of experimental group at seventh grade students of SMP IT Nurul 'Ilmi Medan has a good result on their pronunciation mastery.

4.4.2 The Pronunciation Mastery of Control Group

The highest score of the students of control group at the seventh grade

students of SMP IT Nurul 'Ilmi Medan is 85 of the category "*Pronunciation*" and the lowest one is 40 of the category "*Grammar*". The mean of control group is 75.75 and the standard deviation of it is 7.99. The mean is included in the interval of 70-89. It means that the students of control group at seventh grade of SMP IT Nurul 'Ilmi Medan has a good result on their pronunciation mastery.

4.4.3 The Effectiveness of Spelling bee games

In the research, the researcher used Spelling bee games to improve students' pronunciation in experimental group. Based on the mean score of both groups, the mean score experimental group after the researcher gave the treatments by Spelling bee games is 81.75 and the mean score before gave treatment is 66 It is increasing of score 23%. Meanwhile, the mean score of control group after the researcher gave the treatment without using Spelling bee games is 75.75 and the mean score of control group before gave treatment is 62 it is increasing of score is 20%. Therefore, the researcher concludes that the use of Spelling bee games is effective for improving students' pronunciation at the seventh grade of SMP IT Islam Terpadu Medan in the academic year 2022/2023.

From the previous analysis, it shows that with the number of samples ($n_1=20$ and $n_2=20$) and the result of the computation of t-value is 2,478. Based on the value on the table for df and the value of t-table is 0,024. The computation shows that t-values is higher than t-table ($2,478 > 1,686$). It means that using Spelling bee games is effective in improving students' pronunciation at the seventh grade of SMP Islam Terpadu Nurul' Ilmi Medan in the academic year 2022/2023.