

CHAPTER IV

RESULT OF RESEARCH AND DISCUSSION

This chapter presents the result of research and discussion about the data which have been analyzed by using statistical procedure. The contents of this chapter are presentation of data, hypothesis testing and discussion

A. Presentation of Data

The data which have been collected while doing the research at the second semester students in IAIN Madura Pamekasan. Those were analyzed and presented into the result of research. The researcher used test and documentation as the instrument of the research. Test is used to obtain the score of students' pronunciation ability and documentation is used to obtain students' name list, the test form of pre-test and post-test, the compulation of score tests, lesson plans, photos, and recording. These are the presentation of data:

1. Data Presentation of Test.

In doing the test in this research, the researcher used two tests, they are pre-test and post-test. These are the score of pre-test and post test of students' pronunciation which will be analyzed by using statistical procedure namely T-test. The presentation of pre-test and post-test:

a. The Presentation of Pre-Test

The first activity which is done by the researcher is doing a pre-test. The researcher conducted pre-test to know students' score before being given a treatment. The pre-test was conducted on 12nd

Sept 2021 at 13:00 pm. The researcher here give the text that is consist of 4 texts and five questions foe each text.

Table 3.1 The Result of Pre-Test

No	Name of Correspondents	Number of Item				Total
		T.1	T.2	T.3	T.4	
1	Noer Alfiya Ningsih	3	5	4	5	17
2	Maghfiroh	3	5	4	5	17
3	Luluk Atim Maghfiroh	4	5	4	5	18
4	Latifatul Isnaini	5	4	4	3	16
5	Masrurotul Abadiyah	4	5	4	5	18
6	Nur Diana Afania	5	5	4	4	18
7	Ach. Zainur Rofik	3	1	1	1	6
8	Fahmi	3	1	1	1	6
9	Rimadani Kartika	4	5	4	5	18
10	Putri Maghfiroh	5	5	4	5	19
11	Laily Deviyanti	4	5	4	5	18
12	Moh. Kamil	4	5	4	5	18
13	Maratul Faizah	3	5	4	5	17
No		Number of Item				Total

	Name of Correspondents	T.1	T.2	T.3	T.4	
14	Linda Eva Liani	5	5	5	4	19
15	Rizki S.	3	5	4	4	16
16	R.A. Agwina K. N.	5	5	5	4	19
17	Khairatunnisa'	5	5	4	4	18
18	Moh. Rizal Maulana	4	5	4	4	17
19	Moh. Rofiki	1	3	1	2	7
20	Mawaddatir Rofikoh	3	5	4	5	17
21	Krisma Agustya Suryani	5	5	4	4	18
Total of Score						337

From the table above, it can be seen that the number of respondent

(N) were 21 students and total scores of pre-test (before being given a treatment) is 332 . It consists of 80 score for T.1, 94 for T. 2, and S75 for T.3, 83 for T.4 and clarity. The highes score is 20. While the lowest score is 0. To calculate the mean of pre-test on pronunciation mastery the researcher uses the following formula :

$$X = \frac{\sum X}{N}$$

$$\begin{aligned} &= \frac{337}{21} \\ &= 16,04761904761904 \\ &= 16,0476 \end{aligned}$$

b. The Presentation of Treatment

For the next meeting on 19th of september 2021 at 13:00 pm, the researcher gave a treatment implemented U-Shape strategy as a treatment with it's steps. The steps are as follow

- 1) The researcher entered to the class room
- 2) The researcher asks the students what U-Shape strategy is.
- 3) The researcher give the example of U-Shape strategy.
- 4) The researcher ask the students to open their reading book.
- 5) The researcher asks the students to read the book one by one and change by change slowly and correctly.
- 6) The researcher asks the students to answer the question in the book.
- 7) The reasercher ask the student to answer the question loadly to show their answer to their friends .

c. Data Presentation of Post-test

After giving treatment by using U-Shape strategy, in the next meeting, the researcher wanted to know the students' progress on their reading comprehension by giving post-test. The post-test form is tongue twister lyric. The students are asked to do the test as far as they can. The last, the researcher scored the test based on the evaluation

rubric for reading activity (reading comprehension). This is the score of post-test:

Table 3.1 The Result of Post-Test

No	Name of Correspondents	Number of Item				Total
		T.1	T.2	T.3	T.4	
1	Noer Alfiya Ningsih	5	5	5	5	20
2	Maghfiroh	4	5	4	5	20
3	Luluk Atim Maghfiroh	5	5	5	5	20
4	Latifatul Isnaini	5	4	4	4	17
5	Masrurotul Abadiyah	4	5	5	5	20
6	Nur Diana Afania	5	5	5	4	20
7	Ach. Zainur Rofik	5	3	4	2	14
8	Fahmi	4	2	3	4	13
9	Rimadani Kartika	4	5	5	5	20
10	Putri Maghfiroh	5	5	5	5	20
11	Laily Deviyanti	5	5	4	5	20
12	Moh. Kamil	4	5	5	5	19
13	Maratul Faizah	5	5	5	5	20
No	Name of Correspondents	Number of Item				Total
		T.1	T.2	T.3	T.4	

14	Linda Eva Liani	5	5	5	5	20
15	Rizki S.	5	5	4	4	18
16	R.A. Agwina K. N.	5	5	5	5	20
17	Khairatunnisa'	5	5	5	5	20
18	Moh. Rizal Maulana	5	5	4	3	17
19	Moh. Rofiki	5	5	5	5	20
20	Mawaddatir Rofikoh	4	5	4	5	18
21	Krisma Agustya Suryani	5	5	5	5	20
Total Score						392

From the table above, it can be seen that the number of the respondent (N) is 21 students and the total score of post-test (after being given a treatment) is 392

From the score of post-test, the students have gotten 97 for text 1, 99 for text 2, 94 for text 3 and 96 for text 4. In fact, the score of post test (text 1-4) are higher than the score of pre-test (text 1-4). This is the calculation of mean score of post-test.

$$\text{Mean of Text 1} = \frac{\text{Total score of text 1}}{\text{Total students}}$$

$$= \frac{97}{21}$$

$$= 4,6190$$

$$\begin{aligned} \text{Mean of Text 2} &= \frac{\text{Total score of Text 2}}{\text{Total students}} \\ &= \frac{99}{21} \\ &= 4,7142 \end{aligned}$$

$$\begin{aligned} \text{Mean of Text 3} &= \frac{\text{Total score of Text 3}}{\text{total students}} \\ &= \frac{94}{21} \\ &= 4,4761 \end{aligned}$$

$$\begin{aligned} \text{Mean of Text 4} &= \frac{\text{Total score of Text 4}}{\text{total students}} \\ &= \frac{96}{21} \\ &= 4,5714 \end{aligned}$$

$$\begin{aligned} \text{Mean of Post-test} &= \text{Mean of Text 1} + \text{Mean of Text 2} + \text{Mean} \\ &\text{of Text 3} + \text{Mean of Text 4} \\ &= 4,6190 + 4,7142 + 4,4761 + 4,5714 \\ &= 18,3807 \end{aligned}$$

d. Data analysis

The researcher must analyze the data before testing hypothesis.

The data which is analyzed is the result of pre-test and post-test. To know the result, the researcher used t-test formula to calculate it. this is the calculation by using t-test formula:

Table 4.3 The Calculation of Paired Sample Test (Post-Test – Pre-Test

No	Name of Correspondents	Students' Comprehension		D	D ²
		Pre-test	Post-test	X ₂ - X ₁	
1	Noer Alfia Nish	17	20	3	9
2	Maghfiroh	17	20	3	9
3	Luluk Atim Mghfiroh	18	20	2	4
4	Latifatul Isnaini	16	17	1	1
5	Masrurotul Abadiah	18	20	2	4
6	Nur Diana Afania	18	20	2	4
7	Ach. Zainur Rofiq	6	14	8	64
8	Fahmi	6	13	7	49
9	Rimadani Katika	18	20	2	4
No	Name of Correspondents	Students' Comprehension		D	D ²
		Pre-test	Post-test	X ₂ - X ₂	
10	Putri Maghfiroh	19	20	1	1

11	Laili Defiyanti	18	20	2	4
12	Moh. Kamil	18	19	1	1
13	Maratul Faizah	17	20	3	9
14	Linda Evaliani	19	20	1	1
15	Riski.S	16	18	2	4
16	R.A. Aghwina K.N	19	20	1	1
17	Khairotunnisa'	18	20	2	4
18	Moh. Rizal Maulana	17	17	0	0
19	Moh. Rofiqi	7	20	13	169
20	Mawaddatir R.	17	18	1	1
21	Karisma A.S	18	20	2	4
	N = 21	$\sum X_1 =$ 337	$\sum X_2 =$ 394	$\sum D$ = 59	$\sum D^2 =$ 347

Based on the table, it can be known that:

$$N = 21$$

$$\sum X_1 = 337$$

$$\sum X_2 = 394$$

$$\sum d = 59$$

$$\sum D^2 = 347$$

The calculation by using t-test formula:

- a. Looking for the mean from the difference of pre-test and post-test (Md) by using this formula:

$$Md = \frac{\sum d}{N} = \frac{61}{21} = 2,904761904 = 2,904$$

- b. To get the score of $\sum d^2$, every gain of difference (d) quadrate is added until the last. It is different from $(\sum d)^2$, it is the quadrate of d total. After that $(\sum d)^2$ is divided with N. Calculate them to look for the score of $\sum x^2 d$.

$$\begin{aligned} \sum x^2 d &= \sum d^2 - \frac{(\sum d)^2}{N} \\ &= 3^2 + 3^2 + 2^2 + 1^2 + 2^2 + 2^2 + 8^2 + 7^2 + 2^2 + 1^2 + 2^2 + 2^2 + 3^2 \\ &\quad + 2^2 + 2^2 + 1^2 + 2^2 + 0^2 + 13^2 + 1^2 + 2^2 - \frac{61^2}{32} \\ &= 351 - \frac{3.721}{21} \\ &= 173,8095238095238 \\ &= 173,809 \end{aligned}$$

- c. After knowing the score of Md and $\sum x^2 d$, input those score to look for the t score.

$$\begin{aligned} t &= \frac{Md}{\sqrt{\frac{\sum x^2 d}{N(N-1)}}} \\ &= \frac{2,90}{\sqrt{\frac{173,80}{21 \times (21-1)}}} \\ &= \frac{2,90}{\sqrt{\frac{173,80}{420}}} \end{aligned}$$

$$\begin{aligned}
&= \frac{2.90}{\sqrt{0,414830952380952}} \\
&= \frac{2,90}{0,64} \\
&= 4,53
\end{aligned}$$

From the calculation by using t-test formula, the score of $t_0 = 4,53$. It must be tested by using hypothesis testing to know whether the alternative hypothesis rejected or accepted.

B. Hypothesis Testing

Based on the calculation, the score of $t_0 = 4,53$. To know whether alternative hypothesis is rejected or accepted, it must compare with the t_t in level of significance 5%.

If $t_0 > t_t$, null hypothesis (H_0) is rejected and alternative hypothesis (H_a) is accepted.

If $t_0 < t_t$, null hypothesis (H_0) is accepted and alternative hypothesis (H_a) is rejected.

Before comparing with t_t the df (degree of freedom) must be determined by formula $df = N1 - 1$.

$$\begin{aligned}
df &= N - 1 \\
&= 21 - 1 \\
&= 20
\end{aligned}$$

T_t for the level of significance 5% with $df = 20$ is 2.04. Therefore, the researcher states that null hypothesis (H_0) is rejected and the alternative hypothesis (H_a) is accepted because $t_0 > t_t (4,53 > 2.07)$.

From that result, the alternative hypothesis which states there is any significant difference between students' reading achievement before and after being taught by U-Shape Seating at the third semester students of TBI 2021 in IAIN Madura is accepted.

After testing the hypothesis, the researcher must also test the validity and reliability of the instrument. There are two validities which have been used by the researcher in this research, they are construct validity and content validity. The researcher also has to tested the reliability of the istrument. These are the explanations:

1. Validity of The Instrument

When doing the research about reading , the researcher used test as the instrument, either pre-test and post-test. The test was used to asses the students' reading. they were asked to read a two different dialouges. The first dialouge is as pre-test and the second dialouge is as post-test. From that explanation, the researcher states that it is the construct validity because the test matched with the objective of research that investigates the students' reading ability.

2. Reliability of The Instrument

After testing the validity, the next is testing the reliability of the istrument. The researcher used alpha formula for calculating the score because the test was oral test and the score will not be 1 and 0, but it produced a range of score. There are two reliabilities, they are:

a. Reliability Testing of Pre-Test

The first step to calculate the reliability is looking for the total score The second step is looking for their quadrate.

The Reliability Testing of pre-Test

No	Name	T. 1	T. 2	T. 3	T. 4	Total	Quadrat of total score
1	Noer Alfia Ningsih	3	5	4	5	17	289
2	Maghfiroh	3	5	4	5	17	289
3	Luluk Atim Maghfiroh	4	5	4	5	18	324
4	Latifatul Isnaini	5	4	4	3	16	256
5	Masrurotul Abadiyah	4	5	4	5	18	324
6	Nur Diana Afania	5	5	4	4	18	324
7	Ach. Zainur Rofik	3	1	1	1	6	36
8	Fahmi	3	1	1	1	6	36
9	Rimadani Kartika	4	5	4	5	18	324
10	Putri Maghfiroh	5	5	4	5	19	361
11	Laily Deviyanti	4	5	4	5	18	324
12	Moh. Kamil	4	5	4	5	18	324
13	Maratul Faizah	3	5	4	5	17	289
14	Linda Eva Liani	5	5	5	4	19	361

15	Rizki S.	3	5	4	4	16	256
16	R.A. Agwina K. N.	5	5	5	4	19	361
17	Khairatunnisa'	5	5	4	4	18	324
18	Moh. Rizal Maulana	4	5	4	4	17	289
19	Moh. Rofiki	1	3	1	2	7	49
20	Mawaddatir Rofikoh	3	5	4	5	17	289
21	Krisma Agustya Suryani	5	5	4	4	18	324
	Total	81	94	77	85	337	5,753
	Quadrate of Total	6561	828	592	722	1422	
			1	9	5	7	

After knowing those score, calculate them by looking for the score of variances like this calculation:

$$\begin{aligned}
 a^2_{(1)} &= \frac{6561 - \frac{81^2}{21}}{21} \\
 &= \frac{6561 - \frac{6,561}{21}}{21} \\
 &= \frac{6561 - 312,4}{21} \\
 &= \frac{2,4}{21} \\
 &= 0,11428571429
 \end{aligned}$$

$$= 0,12$$

$$a^2_{(2)} = \frac{8281 - \frac{94^2}{21}}{21}$$

$$= \frac{8281 - \frac{8,836}{21}}{21}$$

$$= \frac{8281 - 420,7}{21}$$

$$= \frac{0,7}{21}$$

$$= 0,04$$

$$a^2_{(3)} = \frac{5929 - \frac{77^2}{21}}{21}$$

$$= \frac{5929 - \frac{5,929}{21}}{21}$$

$$= \frac{5929 - 282,3}{21}$$

$$= \frac{2,3}{21}$$

$$= 0,109523$$

$$= 0,11$$

After getting the all score of variances, looking for the sum of variance of the item

scores like this calculation below:

$$\sum a^2_b = 0,12 + 0,04 + 0,11 = 0,21$$

Calculating the total variances:

$$a^2_{\text{t}} = \frac{14227 - \frac{673(2)}{32}}{32}$$

$$\begin{aligned}
&= \frac{14227 - \frac{452929}{32}}{32} \\
&= \frac{14227 - 14154,0312}{32} \\
&= \frac{72,9688}{32} \\
&= 2,280275 \\
&= 2,28
\end{aligned}$$

Then, calculate the alpha formula :

$$\begin{aligned}
r_{11} &= \left(\frac{k}{k-1}\right)1 - \frac{\sum ab^2}{a^2t} \\
&= \left(\frac{3}{3-1}\right)1 - \frac{1,42}{2,28} \\
&= \frac{3}{2} \times \left(1 - \left(\frac{1,42}{2,28}\right)\right) \\
&= 1,5 \times 1 - 0,62280702 \\
&= 1,5 \times 0,37719298 \\
&= 0,83421053 \\
&= 0,834
\end{aligned}$$

b. Reliability Testing of Post-Test

The steps to calculate the reliability testing of post-test is similar to the steps to calculate the reliability testing of pre-test.

The Result of Post-Test

No	Name	T.	T.	T.	T.	Total	Quadrat of total score
		1	2	3	4		

1	Noer Alfiya Ningsih	5	5	5	5	20	400
2	Maghfiroh	4	5	4	5	20	400
3	Luluk Atim Maghfiroh	5	5	5	5	20	400
4	Latifatul Isnaini	5	4	4	4	17	289
5	Masrurotul Abadiyah	5	5	5	5	20	400
6	Nur Diana Afaia	5	5	5	5	20	400
7	Ach. Zainur Rofik	5	3	4	2	14	196
8	Fahmi	4	2	3	4	13	169
9	Rimadani Kartika	4	5	5	5	20	400
10	Putri Maghfiroh	5	5	5	5	20	400
11	Laily De viyanti	5	5	4	5	20	400
12	Moh. Kamil	4	5	4	5	18	324
13	Maratul Faizah	5	5	5	5	20	400
14	Linda Eva Liani	3	5	4	5	17	289
15	Rizki S.	5	5	4	4	18	324
16	R.A. Agwina K. N.	5	5	5	5	20	400
17	Khairatunnisa'	5	5	5	5	20	400
18	Moh. Rizal Maulana	5	5	4	3	17	289

19	Moh. Rofiki	5	5	5	5	20	400
20	Mawaddatir Rofikoh	4	5	4	5	18	324
21	Krisma Agustya Suryani	5	5	5	5	20	400
	Total	97	99	94	96	392	7404
	Total Quadrate	940	9801	8836	9216	16434	

After knowing those score, calculate them by looking for the score of variances like this calculation:

$$a^2_{(1)} = \frac{9409 - \frac{97^2}{21}}{21}$$

$$= \frac{9409 - \frac{9409}{21}}{21}$$

$$= \frac{9409 - 448,0}{21}$$

$$= \frac{8,0}{21}$$

$$= 0,380952$$

$$= 0,4$$

$$a^2_{(2)} = \frac{9801 - \frac{99^2}{21}}{21}$$

$$\begin{aligned}
&= \frac{9801 - \frac{9801}{21}}{21} \\
&= \frac{9801 - 466,7}{21} \\
&= \frac{6,7}{21} \\
&= 0,319047 \\
&= 0,32
\end{aligned}$$

$$\begin{aligned}
a^2_{(3)} &= \frac{8836 - \frac{94,2}{21}}{21} \\
&= \frac{8836 - \frac{8836}{21}}{21} \\
&= \frac{8836 - 420,7}{21} \\
&= \frac{0,7}{21} \\
&= 0,019047 \\
&= 0,11
\end{aligned}$$

$$\begin{aligned}
a^2_{(4)} &= \frac{9216 - \frac{96,2}{21}}{21} \\
&= \frac{9216 - \frac{9216}{21}}{21} \\
&= \frac{9216 - 438,8}{32} \\
&= \frac{8,8}{21} \\
&= 0,419047 \\
&= 0,42
\end{aligned}$$

After getting the all score of variances, looking for the sum of variance of the item scores like this calculation below:

$$\sum a^2 b = 0,4 + 0,32 + 0,11 + 0,42 = 1,25$$

Calculating the total variances:

$$\begin{aligned} \text{a t}^2 &= \frac{16434 - \frac{724(2)}{32}}{32} \\ &= \frac{16434 - \frac{524176}{32}}{32} \\ &= \frac{16434 - 16380,5}{32} \\ &= \frac{53,5}{32} \\ &= 1,671875 \\ &= 1,67 \end{aligned}$$

Then, calculate the alpha formula :

$$\begin{aligned} r_{11} &= \left(\frac{k}{k-1}\right)1 - \frac{\sum ab^2}{a2t} \\ &= \left(\frac{3}{3-1}\right)1 - \frac{2,63}{1,67} \\ &= \frac{3}{2} \times \left(1 - \left(\frac{2,63}{1,67}\right)\right) \\ &= 1,5 \times 1 - 1,5748503 \\ &= 1,5 \times 0,5748503 \\ &= 0,862 \end{aligned}$$

From the data, the researcher has gotten the reliability's score of pre-test is 0,834. and post-test is 0,862. These scores must be consulted with r_t . The total of the sample is 21. It means $N = 21$ and also the degree of freedom ($df = 21$). On the level of

significance 5%, the critical value in r_t is 0.404. The comparison with r_t as follow:

Pre-test

$r_{11} = 0,834$, $r_t = 0.404$. Therefore, $r_{11} > r_t$ (reliable)

Post-test

$r_{11} = 0.862$, $r_t = 0.404$. Therefore, $r_{11} > r_t$ (reliable)

From those calculations, the score of pre-test (0.834) and post-test (0.862) are higher than r_t (0.404). Therefore, the conclusion is the score of pre-test and post-test have been reliable.

C. Discussion

After analyzing the data and know the result of the research, the researcher can answer the problem of study. The researcher has to analyze by using the formula of t-test (pre-test and post-test) and also present the statistical analysis that t-value is higher than t-table either on the level of significance 5% ($4,53 > 2.07$)

Based on the calculation of mean score of pre-test (20,687) and mean score of post-test (22,625), it can be concluded that there is significant achievement of students pronunciation ability after being taught by using tongue twister technique because the score of post-test is higher than the score of pre-test ($22,625 > 20,687$). Beside that, when the researcher tested the hypothesis by using t-test formula, the alternative hypothesis is accepted. The score of t-test is 6,47. The total of the students who were researched by the researcher are 32 students, therefore $N = 21$. The degree of freedom (df) is 21 ($(df = N-1) = 21-1 = 21$) and df for 21 for $N = 2.07$

How significant U-shape seating reading class in increased reading comprehension on third semester of IAIN Madura 2020?

To know how strong the significant, the researcher determined df (Degree of freedom) by formula $df = N - 2$ as the discussed above the number of participants ($N = 21$). So degree of freedom is calculated 19. Based on df score above, in order to consult to t-value on the level of significance 5%. Obviously, in $df = 19$ t-value that can be obtained in t-table in the level significance 5% is 2,09 after $t_0 = 2,052$, then compare with t-value in t-table of 2.052, the researcher stated that asynchronous method has strong significance of the asynchronous method for student's comprehension in U-shape seating on reading class.