CHAPTER IV

RESEARCH FINDING AND DISCUSSION

In this chapter, the researcher describes and discusses the data to find out the answer of the statements of the problem in chapter 1. The researcher gave pretest and posttest to know whether it is effective or not to use flashcard as media in teaching speaking. The researcher wanted to know whether any significant difference between before and after the students are taught by using flashcard as an alternative medium in teaching speaking.

4.1 Try-out Analysis

This analysis was meant to find out the validity and reliability of the instrument before it was used as the pre-test and post-test. This test was conducted on January 06, 2018. Try-out test was conducted for 7G class. There were twenty eight as a respondent. The try-out test is available in Appendix 2.

1. Validity

The speaking test consists of twenty item numbers. From the try out test that was conducted, it was obtained that item numbers were valid. As mentioned in the third chapter, the test is said to be valid if the result r_{xy} are greater thanr_{table}. The data was calculated by using product moment and the result showed that the index validity of item number14 was 0,475. Then the writer consulted the table of r with N=28 and significance level 5% in which thenr_{xy} is 0,463.

The following is the example of counting the validity of item number 14. The value of $r_{xy}$is as follows:

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

$$r_{xy} = \frac{(28.244)-(17.318)}{\sqrt{\{28.17-(17)^2\}\{28.5242-(378)^2\}}}$$

$$r_{xy} = \frac{6832-6426}{\sqrt{\{476-289\}\{146776-142884\}}}$$

$$r_{xy} = \frac{406}{\sqrt{\{187\}\{3892\}}}$$

$r_{xy} = \frac{406}{\sqrt{727804}}$

$r_{xy} = \frac{406}{853,11}$

$= 0.475$

The item number 14 of the try-out test was valid since it is r_{xy}= 0,475 were higher than critical value (0,463). The analysis of the other items was presented in the following table:

Table 4.1

The validity of the try-out test

Criteria	Number of item	The total number
Valid	2, 4, 5, 6, 14, 18, 19, 20	8
Invalid	1, 3, 7, 8, 9, 10, 11, 12, 13,15, 16, 17	12

From the table above it can be seen that the try-out instrument had 8 valid and 12 invalid items. The complete result of try-out analysis can be seen in Appendix 2.

2. Reliability

A good instrument has to be valid and reliable. After validity items of instrument had been done, the next analysis was to test the reliability of instrument. The test is reliable if the result or r_{11} is greater thanr_{table}. In the computation, the writer used Spearman Brown formula and the result showed that the r_{11} was 0,719 for a= 5% N=28, and the $r_{table}$was 0,563.

The following is the computation of reliability of try-out test:

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

$r_{xy} = \frac{(28.1299)-(196.182)}{\sqrt{\{28.1412-(196)^2\}\{28.1232-(192)^2\}}}$

$r_{xy} = \frac{36372-35672}{\sqrt{\{39536-38416\}\{34469-33124\}}}$

$r_{xy} = \frac{700}{\sqrt{\{1120\}\{1372\}}}$

$r_{xy} = \frac{700}{\sqrt{1536640}}$

$r_{xy}= \frac{700}{1239.6}$

= 0.564

So it can be gotten:

$r_{11}= \frac{2.r_{xy}}{1+r_{xy}}$

$= \frac{2.0,564}{1+0,564}$

$= \frac{1,128}{1,564} = 0,719$

From the calculation above, it shows that the coefficient reliability is 0,719, meanwhile r-table for the significant 0,05 (5%)= 0,463. Therefore, the test is reliable because $r_{11} > r_{table}$.

4.2 Description of Data

The writer held field research by teaching learning process. It was done into two classes; they are 7H as controlled class and 7I as experiment class. By doing pretest and post-test the data was gotten by the writer. Pre-test was given before the treatment began and post-test was given after the treatment finished.

The data is described into two tables. The achievements of students in the first class were presented in table 4.1 and the achievements of students in the second class were presented in table 4.2.

1. Experimental class

Table 4.2

The Score of the Individual Students of the Experiment Class

(By Using Flash Card)

NO	Pre-test score	Post-test score	Gained score
1	55	68	13
2	65	68	3
3	52	60	18

4	53	69	16
5	55	70	15
6	62	68	6
7	75	77	2
8	77	77	0
9	45	68	23
10	56	68	12
11	55	75	20
12	75	78	3
13	65	69	4
14	62	67	5
15	63	67	4
16	62	69	7
17	65	70	5
18	63	75	12
19	64	75	11

20	65	69	4
21	66	70	4
22	75	85	10
23	74	88	14
24	65	70	5
25	55	75	20
26	53	68	15
27	60	68	8
28	75	78	3
29	55	75	20
30	62	85	23
Sum	1874	2169	292
Mean	**62,47**	**72,30**	**9,73**

Table 4.2 above described about the lowest score in the re-test and in the pre-test. The result lowest scores of pre-test was 45 and the result lowest scores of post-test was 60. While, the highest score in the pre-test was 77 and the highest score in the post-test was 88. So, the highest score in the post-test was higher than the score in the pre-test.

To know more detail about frequency distribution of experiment class students, the data can be seen on the table of class interval below:

a. Pre-test of Experiment Class

Range pre-test of experiment class

=H-L

=77-45

=32

Class

=1+3.3 log n

=1+3.3 log 30

=5,87

Interval pre-test

=R/C

=32/5,87

=5,45

= 6

Percentage

P=F/N. 100%

Explanation:

H= Highest Score

L= Lowest Score

R= Range of the score

F= Frequency of the score

N= Number of students

Table 4.3

Frequency Distribution of Experiment Class pre-test

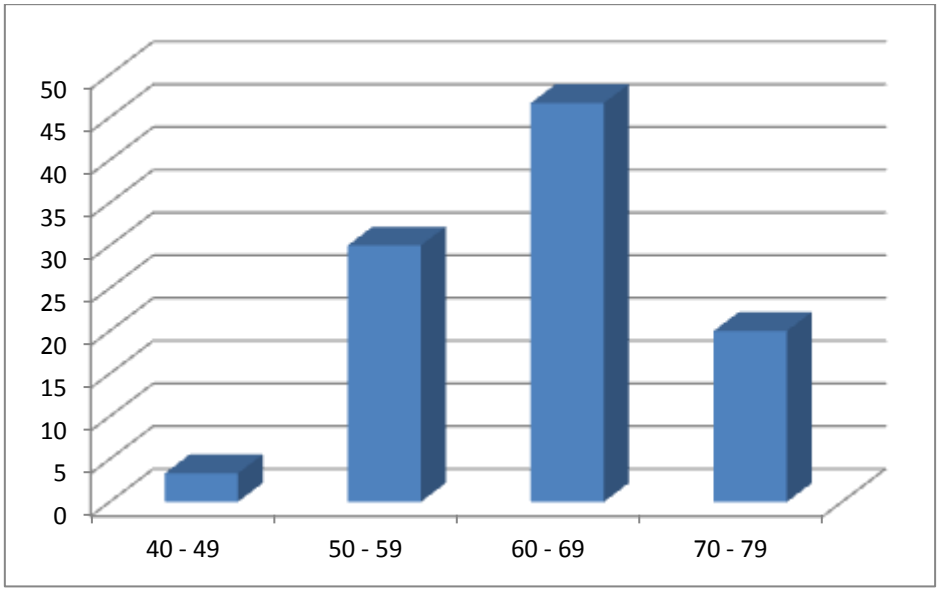
No	Class Interval	Frequency	Percentage
1.	40 – 49	1	3,33
2.	50 – 59	9	30
3.	60 – 69	14	46,66
4.	70 – 79	6	20
	Σf	28	100

From the table above, 46,66% students got score about 60 – 69. 30% students got score about 50 – 59, 20% students got score about 70 – 79. 3,33% students got score about 40 – 49.

Data frequency distribution can be described on the chart below:

Diagram 1

Frequency Distribution of Experiment Class Pre-test



b. Post-test of Experiment Class

Range post-test of experiment class

= H – L

= 88 – 60

= 28

Class

= 1+3,3 log n

= 1+3,3 log 30

= 5,87

Interval post-test

= R/C

= 30/5,87

= 5,11

= 6

Percentage

P= F/N.100%

Explanation:

H: Highest Score

L: Lowest Score

R: Range of the score

F: Frequency of the score

N: Number of student

Table 4.3

Frequency Distribution of Experiment Class Post-test

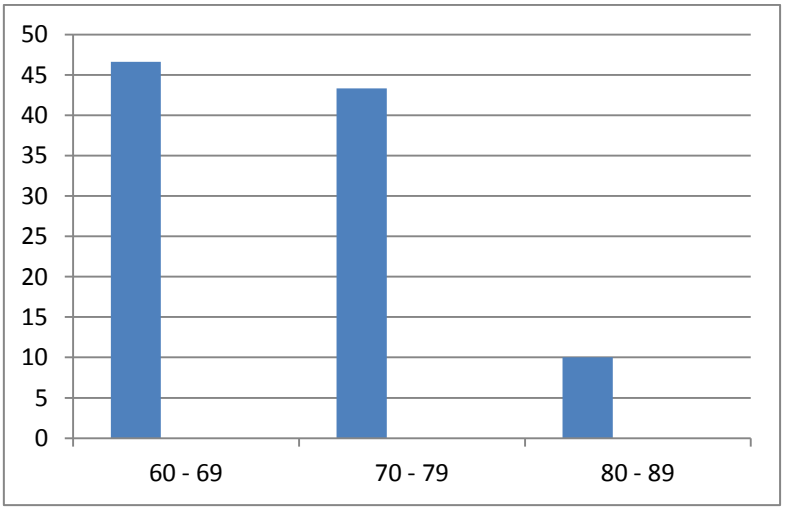
No	Class Interval	Frequency	Percentage
1.	60 -69	14	46,6
2.	70 – 79	13	43,33
3.	80 – 89	3	10
	Σf	30	100

From the table above, 46,6% students got score about 60 – 69. 43,33% students got score about 70 – 79. 10% students got score about 80 – 89.

Data frequency distribution can be described on the chart below:

Diagram 2

Frequency Distribution of Experiment Class Post-test



2. Controlled Class

Table 4.5

The score of the Individual Students of the Controlled Class

Students	Pre-test	Post-test	Gained Score (post-test – Pre-test)
1.	75	75	0
2.	60	62	2
3.	53	51	-2
4.	55	57	2
5.	65	66	1
6.	74	77	3
7.	75	74	-1
8.	66	67	1
9.	65	65	0
10.	64	66	2
11.	63	65	2
12.	65	66	1
13.	62	63	1
14.	63	66	3
15.	62	64	2
16.	65	65	0
17.	75	74	-1
18.	55	58	3
19.	56	56	0
20.	50	52	2
21.	75	76	1
22.	55	56	1

23.	53	55	2
24.	65	67	2
25.	70	70	0
26.	50	52	2
27.	55	55	0
Sum	1691	1720	29
Mean	**62,63**	**63,70**	**1,07**

Table 4.5 above described about the lowest score in the re-test and in the pre-test. The result lowest scores of pre-test were 50 and the result lowest scores of post-test was 51. While, the highest score in the pre-test was 75 and the highest score in the post-test was 77. So, the highest score in the post-test was higher than the score in the pre-test.

To know more detail about frequency distribution of controlled class students, the data can be seen on the table of class interval below:

a. Pre-test of controlled class.

Range pre-test of controlled class

= H – L

= 75 – 50

= 25

Class

= 1+3.3 log n

=1+3,3 log 27

= 5,72

Interval pre-test

= R/C

= 25/5,72

= 4,37

Percentage

P= F/N.100%

Table 4.6

Frequency Distribution of Controlled Class Pre-test

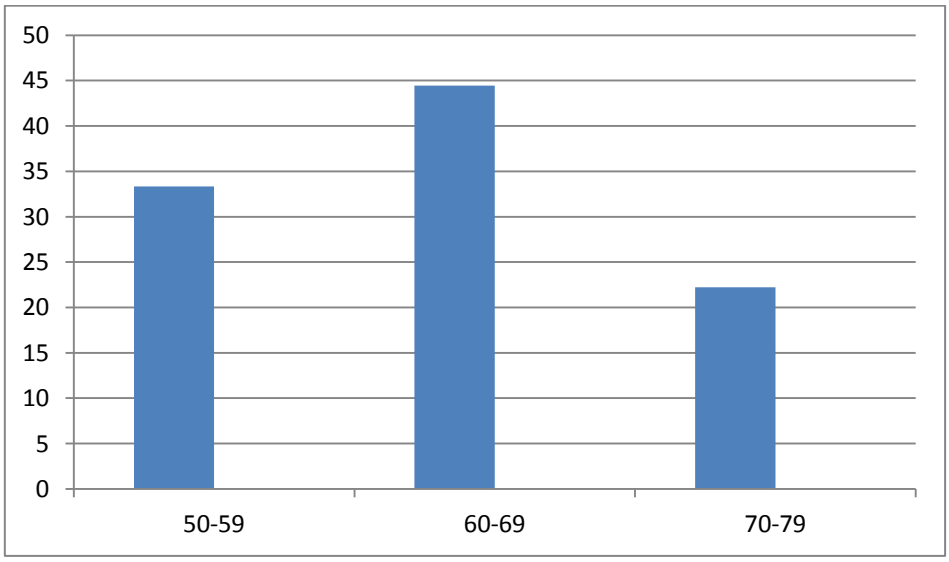
No	Class interval	Frequency	Percentage
1.	50 – 59	9	33,33
2.	60 – 69	12	44,44
3.	70 – 79	6	22,22
	Σf	27	100

From the table above, 33,33% students got score about 50 – 59 with the frequency 9 students. 44,44% students got score about 60 – 69 with the frequency 12 students. 22,22% students got score about 70 – 79with the frequency 6 students.

Data frequency distribution can be described on the chart below:

Diagram 3

Frequency Distribution of Controlled Class Pre-test



b. Post-test of Controlled Class

Range Post-test of controlled class

= H – L

= 76 – 51

= 25

Class

= 1+3,3 log n

= 1+3,3 log 27

= 5,72

Interval post-test

= R/C

= 25/5,72

= 4,37

Percentage

P= F/N.100%

Table 4.7

Frequency Distribution of Controlled Class post-test

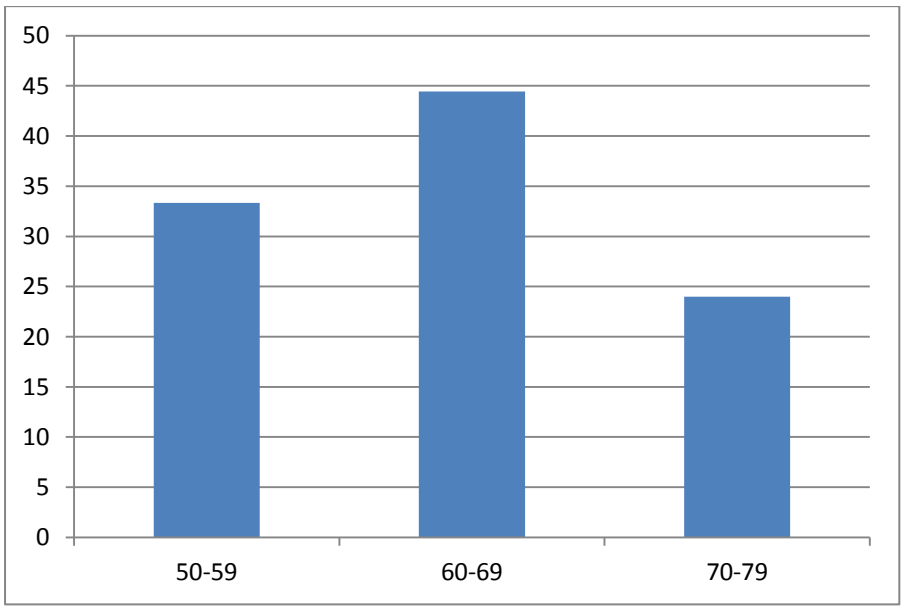
No	Class Interval	Frequency	Percentage
1.	50 – 59	9	33.33
2.	60 – 69	12	44,44
3.	70 – 79	6	22,22
	Σf	25	100

From the table above, 33,33% students got score about 50 – 59 with the frequency 9 students. 44,44% students got score about 60 – 69 with the frequency 12 students. 22,22% students got score about 70 – 79with the frequency 6 students.

Data frequency distribution can be described on the chart below:

Diagram 4

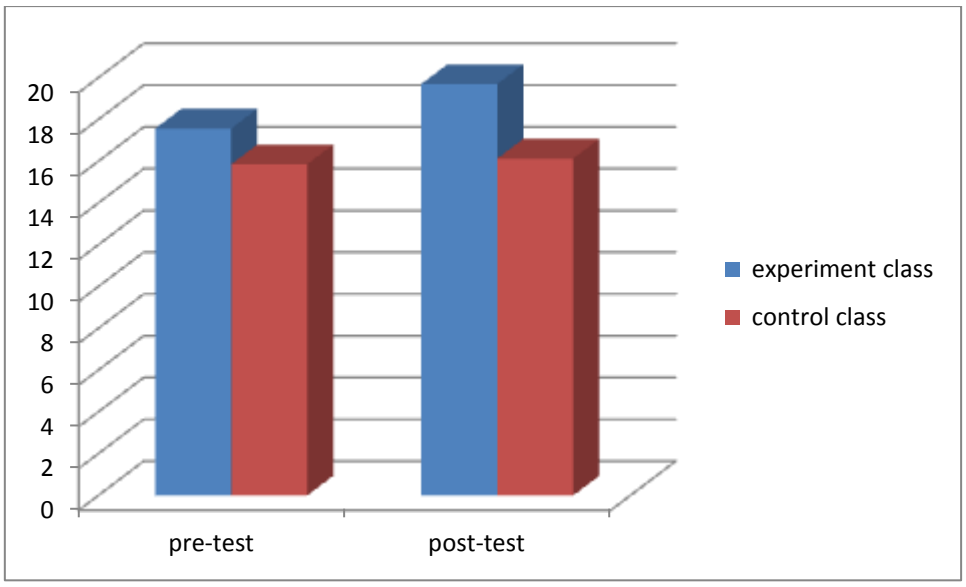
Frequency Distribution Controlled Class Post-test



From the result of the research, the comparison between experiment and controlled class based on the pre-test and post-test score can be described on the char below:

Diagram 5

Pre-test and post-test score in experiment and controlled class



4.3 Analysis of Data

Before the writer analyzed the data, she had calculated the data into the statistic calculation. The writer used t-test formula to find the empirical evidence statistically and to make the testing of hypothesis easier. The Experiment Class was X variable and the Control Class was Y variable.

The t-test formula as follow:

$$to = \frac{Mx - My}{\sqrt{\left(\frac{\sum x^2 + \sum y^2}{N2 + Ny - 2}\right)\left(\frac{1}{N2} + \left(\frac{1}{N2}\right)\right)}}$$

Table 4.8

The comparison of students' scores in pre-test and post-test of Experimental and control group

Student X	Student Y	X	Y	X	Y	x.x	y.y
1	1	13	0	3,27	-1,07	10,69	1,14
2	2	3	2	-6,73	0,93	45,29	0,86
3	3	8	-2	-1,37	-3,07	1,87	9,42
4	4	16	2	6,63	0,93	43,95	0,86
5	5	15	1	5,63	-0,07	31,69	0.004
6	6	6	3	-3,73	1,93	13,91	3,72
7	7	2	-1	-7,73	-2,07	59,75	4,28
8	8	0	1	-9,73	-0,07	94,67	0,004
9	9	23	0	13,27	-1,07	176,09	1,14
10	10	12	2	2,27	0,93	5,15	0,86
11	11	20	2	10,27	0,93	105,47	0,86
12	12	3	1	-6,73	-0,07	45,29	0,004

13	13	4	1	-5,73	-0,07	32,83	0,004
14	14	5	3	-4,73	1,93	22,37	3,72
15	15	4	2	-5,73	0,93	32,83	0,86
16	16	7	0	-2,73	-1,07	7,45	1,14
17	17	5	-1	-4,73	-2,07	22,37	4,28
18	18	12	3	2,27	1,93	5,15	3,72
19	19	11	0	1,27	-1,07	1,61	1,14
20	20	4	2	-5,73	-0,93	32,83	0,86
21	21	4	1	-5,73	-0,07	32,83	0,004
22	22	10	1	0,27	-0,07	0,07	0,004
23	23	14	2	4,27	-0,93	18,23	0,86
24	24	5	2	-4,73	-0,93	22,37	0,86
25	25	20	0	10,27	-1,07	105,47	1,14
26	26	15	2	5,27	-0,93	27,77	0,86
27	27	8	0	-1,73	-1,07	2,99	1,14
28		3		-6,73		45,29	
29		20		10,27		105,47	
30		23		13,27		176,09	
Sum		292	29			1327,84	43,744
Mean		9,73	1,07				
N: 30	N: 27						

1. The writer determined means of score in experiment class

   Mx= $(\frac{\sum x}{Nx})$

   Mx= $(\frac{292}{30})$

   Mx = 9,73

2. The writer determined means of score in controlled class

   My= $(\frac{\sum y}{Ny})$

   My= $(\frac{29}{27})$

   My= 1,07

3. Determining standard deviation of experiment class

   $\sum x^2 = \sum X^2 - \frac{(\sum X)2}{Nx}$

   $\sum x^2 = 1327{,}84 - \frac{(292)2}{30}$

   $\sum x^2 = 1327{,}84 - \frac{584}{30}$

   $\sum x^2 = 1327{,}84 - 19{,}46$

   $\sum x^2 = 1308{,}38$

4. Determining standard deviation of controlled class

   $\sum y^2 = \sum Y^2 - \frac{(\sum y)2}{Ny}$

   $\sum y^2 = 43{,}744 - \frac{(29)2}{27}$

   $\sum y^2 = 43{,}744 - \frac{58}{27}$

   $\sum y^2 = 43{,}744 - 2{,}14$

   $\sum y^2 = 41{,}604$

5. Determining value of hypotheses testing

   to= $\frac{Mx - My}{\sqrt{\left(\frac{\sum x^2 + \sum y^2}{N2 + Ny - 2}\right)\left(\frac{1}{N2} + \left(\frac{1}{N2}\right)\right)}}$

   to= $\frac{9{,}73 - 1{,}07}{\sqrt{\left(\frac{1308{,}38 + 41{,}604}{30 + 27 - 2}\right)\left(\frac{1}{30} + \left(\frac{1}{27}\right)\right)}}$

$$to = \frac{8,66}{\sqrt{\left(\frac{1349,98}{55}\right)(0,03+0,04)}}$$

$$to = \frac{8,66}{\sqrt{(24,54)(0,07)}}$$

$$to = \frac{8,66}{\sqrt{1,71}}$$

$$to = \frac{8,66}{1,30}$$

to= 6,66

6. Determining Degree of Freedom

df= Nx+Ny-2

df= 30+27-2

df= 55

The value of Degree of Freedom is 55 at the degree of significance 5% is 2 and the $t_{observe}$ is 6,66. Clearly, it can be seen that the post-test score of experimental class is higher than the score of controlled class.

Secondly, after analyzing the t-test score in the experimental ana controlled class by using manual calculation, the t-test was also done for post-test score in the experimental and controlled class by using SPSS calculation. The result can be seen as follows:

Table 4.9

The t-test of Gained Scores in the Experimental and Controlled Class

Group Statistics					
	Group	N	Mean	Std. Deviation	Std. Error Mean
Score	Exp	30	9,73	6,899	1,260
	Cont	27	1,07	1,299	,250

Independent Samples Test										
		Levene's Test for Equality of Variances		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
Score	Equal variances assumed	58,962	,000	6,66	55	,000	9,093	1,350	6,388	11,798
	Equal variances not assumed			7,081	31,275	,000	9,093	1,284	6,475	11,711

The above table describes that there is a significant difference of the experimental and controlled class from measurement score. Based on the result of the statistic calculation above, the score of $t_{observe}$ is 6,66. By using degree of freedom 5%, the value of 55 (the degree of significance) as stated in the t-table is 2.

4.4 Hypotheses testing

In the research, the writer proposes null hypotheses (Ho) and alternative hypotheses (Ha).

Ho : The use of Flash Card is not effective in teaching speaking in the seventh grade of SMP N 01 Jepara.

Ha : The use of Flash Card is effective in teaching speaking in the seventh grade of SMP N 01 Jepara.

The assumption of these hypotheses as follows:

If to > t table, the null hypotheses (Ho) is rejected and alternative hypotheses (Ha) is accepted. It means the use of Flash Card is effective in teaching speaking in the seventh grade of SMPN 01 Jepara.

If to $<t_{table}$ the null hypotheses (Ho) is accepted and alternative hypotheses (Ha) is rejected. It means the use of Flash Card is not effective in teaching speaking in the seventh grade of SMPN 01 Jepara.

Based on the description of data calculation, it can be inferred that:

1.The value of to is 6,66.

2.The degree of freedom (df) is 55, so the value of t table in the significance 5% = 2

It shows that to>t_{table}, it means that the null hypotheses (Ho) is rejected and the alternative hypotheses (Ha) is accepted.

4.5 Interpretation of data

Flash Card is a card where the words or pictures are printed or drawn. It can be used to combine vocabulary and picture. It is considered could effective to improve students speaking skill and make teaching learning process fun and enjoyable.

The result of data analysis usingt_{test} showed, the value of to is 6,66 with degree of freedom 55 in the significance degree of 5%, t_{table} is 2. It means that to>t_{table} (to is higher than ttable). Therefore, the null hypothesis (Ho) is rejected. Then, the alternative hypothesis (Ha) is accepted that the use of Flash Card is effective in teaching speaking in the seventh grade of SMPN 01 Jepara. The research result showed that there is different score in both classes. The experiment class got increasing score in the posttest and the controlled class got decreasing score in the posttest. It could be seen from the mean of students pretest and posttest from both classes. The mean of pretest in controlled class is 62,62 and the mean of posttest is 63,7 On the other side, the mean of pretest in experiment class is 62,36 and the mean of posttest is 72,3 From the result of the research, it can be concluded that the use of Flash Card is effective in teaching speaking in the seventh grade of SMPN 01 Jepara.