CHAPTER IV
RESEARCH FINDINGS AND DISCUSSION

A. Description of the Result Research

To find out the effectiveness of Oral Cue Technique, between the students who were taught by Oral Cue Technique and the students who were not taught by Oral Cue Technique especially in SMP Islam Walisongo Kedungwuni Pekalongan the researcher did an analysis of quantitative data. The data was obtained by giving test to experimental class and control class after giving a different learning both classes.

The subjects of this research were divided into two classes. They are experimental class (VIII C) and control class (VIII B) of SMP Islam Walisongo Kedungwuni Pekalongan. Test was given before and after the students followed the learning process that was provided by the researcher.

Before the activities were conducted, the researcher determined the materials and lesson plan of learning. Learning in the experimental class used Oral Cue Technique while the control class without used Oral Cue Technique.

After the data were collected, the researcher analyzed it. The first analysis data is from the beginning of experimental class and control class that is taken from the pre test value. It is the normality test and homogeneity test. It is used to know that two groups are normal and have same variant. Another analysis data is from the ending of control class and experimental class. It is used to prove the truth of hypothesis that has been planned.

B. The Data Analysis and Test of Hypothesis

1. The data Analysis

   a. The data analysis of try out findings

   This discussion covers validity, reliability, level of difficulty and discriminating power.

   1) Validity of Instrument

   As mentioned in chapter III, validity refers to the precise measurement of the test. In this study, item validity is used to know the index validity of the test. To know the validity of instrument, the writer used the Pearson product moment formula to analyze each item.

   The following is the example of item validity computation for item number 1 and for the other items would use the same formula.

$$r_{xy} = \frac{N\Sigma_{xy} - \Sigma_{x} - \Sigma_{y}}{\sqrt{\{N\Sigma x^2 - (\Sigma x)^2\}\{N\Sigma y^2 - (\Sigma y)^2\}}}$$

Notice:

R_{xy}: question correlation coefficient

N : number of students

X : number of each item score

Y : number of total score

Calculation result of r_{xy} is compared with r table of product moment by 5% degree of significance. If r_{xy} is higher than r table, the item of question is valid.

Table 1

No.	(X)	(Y)	X^2	Y^2	XY
1	1	25	1	625	25
2	1	25	1	625	25
3	1	25	1	625	25
4	1	24	1	576	24
5	1	24	1	576	24
6	1	23	1	529	23
7	1	22	1	484	22
8	0	22	0	484	0
9	1	21	1	441	21
10	1	21	1	441	21
11	1	21	1	441	21
12	1	20	1	400	20
13	1	20	1	400	20
14	1	20	1	400	20
15	1	19	1	361	19
16	1	19	1	361	19
17	1	19	1	361	19
18	0	19	0	361	0
19	0	18	0	324	0
20	1	17	1	289	17
21	1	17	1	289	17
22	1	16	1	256	16
23	0	15	0	225	0
24	1	12	1	144	12
25	1	11	1	121	11
26	0	11	0	121	0
27	0	11	0	121	0

28	0	11	0	121	0
29	1	11	1	121	11
30	0	10	0	100	0
31	1	9	1	81	9
32	0	9	0	81	0
33	0	6	0	36	0
34	1	5	1	25	5
35	0	5	0	25	0
S	24	583	24	10971	446

$$r_{xy} = \frac{[35 \times 446] - [24 \times 583]}{\sqrt{\{[35 \times 24] - [24]^2\}\{[35 \times 10971] - [583]^2\}}}$$

$$r_{xy} = 0{,}4742$$

From the computation above, the result of computing validity of the item number 1 is 0.4742. After that, the writer consulted the result to the table of r Product Moment with the number of subject (N) = 35 and significance level 5% it is 0.334. Since the result of the computation is higher than r in table, the index of validity of the item number 1 is considered to be valid.

2) Reliability of Instrument

A good test must be valid and reliable. Besides the index of validity, the writer calculated the reliability of the test using Alpha formula.

$$r_{11} = \frac{k}{k-1} . \frac{S - \sum pq}{S}$$

Where:

R_{11} : the reliability coefficient of items

K : the number of item in the test

P : the proportion of students who give the right answer

Q : the proportion of students who give the wrong answer

S_2 : the standard of deviation of the test

Criteria:

If $r_{11} > r_{table}$ is reliable.

$$\Sigma pq = pq_1 + pq_2 + pq_3 + \ldots + pq_{25}$$
$$= 0,2155 + 0,2155 + 0,1763 + \ldots + 0,2253$$
$$= 4,6531$$

$$S^2 = \frac{10971 - \frac{(583)^2}{35}}{35} = 35,9967$$

$$r_{11} = \left(\frac{25}{25 - 1}\right)\left(\frac{35,997 - 4,6531}{35,9967}\right)$$
$$= 0,907$$

From the computation above, it is found out that r_{11} (the total of reliability test) is 0.907, whereas the number of subjects is 35 and the critical value for r-table with significance level 5% is 0.334. Thus, the value resulted from the computation is higher than its critical value. It could be concluded that the instrument used in this research is reliable.

3) Degree of the Test Difficulty

The following computation of the level difficulty for the item number 1 and for the other items would use the same formula.

$$P = \frac{B}{JS}$$

Notice:

P : difficulty's index

B : number of students who answer the items correctly

JS : number of students

Criteria :

Table 2

Bigness of DD	**Criteria**
0.0 - 0.10	Very difficult
0.11 – 0.30	Difficult
0.31 – 0.70	Medium
0.71 – 0.90	Easy
P > 0.90	Very Easy

Table 3

Upper Group			Low Group		
No	Code	Score	No	Code	Score
1	UC-5	1	1	UC-6	0
2	UC-13	1	2	UC-9	1
3	UC-19	1	3	UC-11	1
4	UC-31	1	4	UC-29	1
5	UC-30	1	5	UC-26	0
6	UC-8	1	6	UC-3	1
7	UC-18	1	7	UC-7	1
8	UC-4	0	8	UC-16	0
9	UC-1	1	9	UC-17	0
10	UC-12	1	10	UC-22	0
11	UC-27	1	11	UC-20	1
12	UC-23	1	12	UC-35	0
13	UC-24	1	13	UC-33	1
14	UC-14	1	14	UC-15	0
15	UC-2	1	15	UC-34	0
16	UC-10	1	16	UC-25	1
17	UC-21	1	17	UC-28	0
18	UC-32	0			
Sum		16	Sum		8

$$IK = \frac{24}{35}$$

$$= 0.69$$

From the computation above, the question number 1 can be said as the medium category, because the calculation result of the item number 1 is in the interval 0.69 < D ≤ 1

4) Discriminating Power

The formula that used in discriminating power computation as follow:

$$D = \frac{BA}{JA} - \frac{BB}{JB}$$

Where:

D = discrimination index

JA = member of student in upper group

JB = member of student in lower group

BA = member of student in upper group who answers the items correctly

BB = member of student in lower group who answers the items correctly

The criteria are

$D < 0.2$ is poor

$0.2 < D \leq 0.4$ is fair

$0.4 < D \leq 0.7$ is good

$0.7 < D \leq 1.5$ very good

Table 4

Upper Group			Low Group		
No	Code	Score	No	Code	Score
1	UC-5	1	1	UC-6	0
2	UC-13	1	2	UC-9	1
3	UC-19	1	3	UC-11	1
4	UC-31	1	4	UC-29	1
5	UC-30	1	5	UC-26	0
6	UC-8	1	6	UC-3	1

7	UC-18	1	7	UC-7	1
8	UC-4	0	8	UC-16	0
9	UC-1	1	9	UC-17	0
10	UC-12	1	10	UC-22	0
11	UC-27	1	11	UC-20	1
12	UC-23	1	12	UC-35	0
13	UC-24	1	13	UC-33	1
14	UC-14	1	14	UC-15	0
15	UC-2	1	15	UC-34	0
16	UC-10	1	16	UC-25	1
17	UC-32	1	17	UC-28	0
Sum		16	Sum		8

$$D = \frac{16}{17} - \frac{8}{17}$$

$= 0.471$

So, the discriminating power for item number 1 is good.

b. The Data Analysis of Pre-Test Value of the Experimental Class and Control Class.

Table 5

THE LIST OF PRE-TEST SCORE BETWEEN THE EXPERIMENTAL CLASS AND CONTROL CLASS

Experimental			Control		
No	Code	Score	No	Code	Score
1	E-01	52.50	1	C-01	72.50
2	E-02	65.00	2	C-02	70.00
3	E-03	72.50	3	C-03	80.00
4	E-04	85.00	4	C-04	87.50
5	E-05	77.50	5	C-05	55.00
6	E-06	85.00	6	C-06	62.50
7	E-07	85.00	7	C-07	55.00

8	E-08	70.00	8	C-08	90.00
9	E-09	65.00	9	C-09	52.50
10	E-10	67.50	10	C-10	72.50
11	E-11	70.00	11	C-11	85.00
12	E-12	77.50	12	C-12	70.00
13	E-13	62.50	13	C-13	85.00
14	E-14	65.00	14	C-14	65.00
15	E-15	75.00	15	C-15	60.00
16	E-16	85.00	16	C-16	60.00
17	E-17	77.50	17	C-17	65.00
18	E-18	80.00	18	C-18	75.00
19	E-19	57.50	19	C-19	87.50
20	E-20	70.00	20	C-20	80.00
21	E-21	75.00	21	C-21	60.00
22	E-22	65.00	22	C-22	80.00
23	E-23	70.00	23	C-23	87.50
24	E-24	62.50	24	C-24	80.00
25	E-25	85.00	25	C-25	72.50
26	E-26	55.00	26	C-26	50.00
27	E-27	72.50	27	C-27	67.50
28	E-28	80.00	28	C-28	70.00
29	E-29	70.00	29	C-29	65.00
30	E-30	75.00	30	C-30	65.00
31	E-31	75.00	31	C-31	62.50
32	E-32	80.00	32	C-32	62.50
33	E-33	85.00	33	C-33	77.50
34	E-34	70.00	34	C-34	75.00
35	E-35	67.50	35	C-35	60.00
$\sum$	=	2533	$\sum$	=	2465
n_1	=	35	n_2	=	35
$\bar{x}_1$	=	72.36	$\bar{x}_2$	=	70.43
s_1^2	=	77.9202	s_2^2	=	121.1345
s_1	=	8.827	s_2	=	11.006

Based on the table above were analyzed as follow:

1) The Normality Pre-Test of the Experimental Class.

The normality test is used to know whether the data obtained is normally distributed or not.

Data normality of the Experimental Class:

<u>Hypothesis</u>

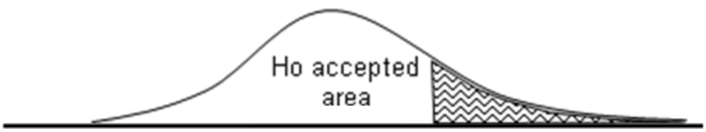
Ho	:	The data distributed normality
Ha	:	The data not distributed normality

<u>The Calculation</u>

Formula :

$$\chi^2 = \sum_{i=1}^{k} \frac{(O_i - E_i)^2}{E_i}$$

Ho is accepted if □$X^2 < X_{tabel}$



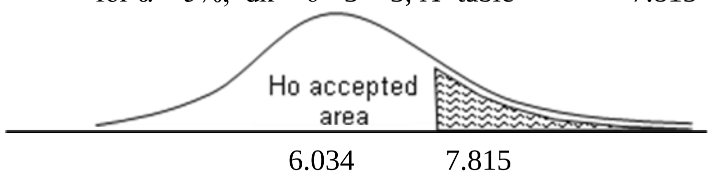
Maximum score	=	85.00	Class length	=	5.4
Minimum Score	=	52.50	Mean ($\overline{X}$)	=	72.4
Range	=	32.50	S	=	8.8
Class with	=	6.0	N	=	35

Table 6

Observation Frequency Value of Pre-Test of the Experimental Class

Class Interval			X	Pz	P	Z	Ei	Oi	$\frac{(Oi-Ei)^2}{Ei}$
52.50	-	57.50	52.00	-2.31	0.4894	0.0414	1.448	3	1.663
58.50	-	63.50	58.00	-1.63	0.4481	0.1200	4.199	2	1.151
64.50	□	69.50	64.00	-0.95	0.3281	0.2228	7.799	6	0.415
70.50	-	75.50	70.00	-0.27	0.1053	0.2654	9.288	12	0.792
76.50	-	81.50	76.00	0.41	0.1601	0.2026	7.091	6	0.168
82.50	-	87.50	82.00	1.09	0.3627	0.0991	3.470	6	1.845
			88.00	1.77	0.4618			35	
							X^2	=	6.034

for α = 5%, dk = 6 - 3 = 3, X^2 table = 7.815



2) The Normality Pre-Test of the Control Class.

<u>Hypothesis</u>

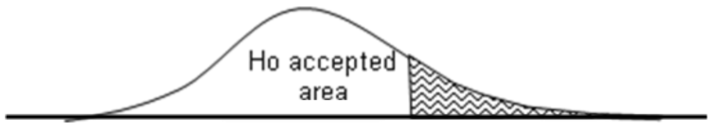
Ho : The data distributed normality

Ha : The data not distributed normality

<u>The Calculation</u>

Formula :

$$\chi^2 = \sum_{i=1}^{k} \frac{(O_i - E_i)^2}{E_i}$$



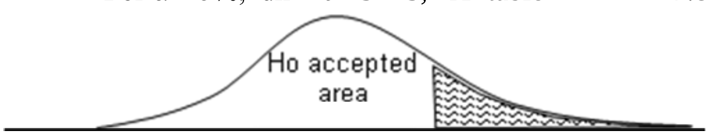
Maximum score	=	90.00	Class length	=	6.7
Minimum Score	=	50.00	Mean ($\overline{X}$)	=	70.4
Range	=	40.00	S	=	11.0
Class with	=	6.0	N	=	35

Table 7

Observation Frequency Value of Pre-Test of the Control Class

Class Interval	X	Pz	P	Z	Ei	Oi	$\frac{(Oi-Ei)^2}{Ei}$
50.00 - 56.00	49.50	-1.90	0.4714	0.0742	2.598	4	0.757
57.00 - 63.00	56.50	-1.27	0.3972	0.1617	5.658	7	0.318
64.00 - 70.00	63.50	-0.63	0.2355	0.2381	8.333	8	0.013
71.00 - 77.00	70.50	0.01	0.0026	0.2371	8.300	5	1.312
78.00 - 84.00	77.50	0.64	0.2397	0.1597	5.591	5	0.062
85.00 - 91.00	84.50	1.28	0.3995	0.0728	2.547	6	4.683
	91.50	1.91	0.4722			35	
						X^2 =	7.146

For α = 5%, dk = 6 - 3 = 3, X^2 table = 7.815



Because X^2 < 7,81 then the post test is said to be normally distributed.

3) The Homogeneity of Pre-Test of the Experimental Class and the Control Class

Hipothesis

Ho : $s_1^2 = s_2^2$
Ha : $s_1^2 \neq s_2^2$

The Calculation

Formula :

$$F = \frac{Vb}{VK}$$

Ho is accepted if $F \leq F_{1/2a\ (nb-1):(nk-1)}$

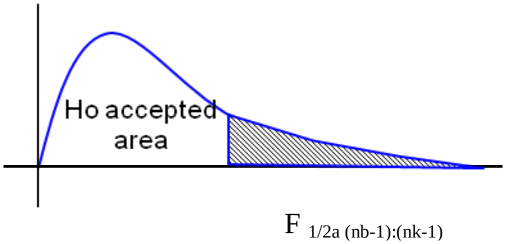


Table 8

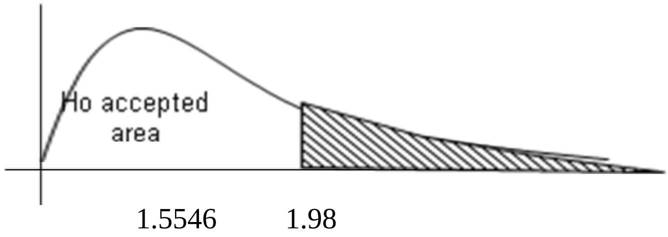
	Experimental	Control
Sum	2533	2465
N	35	35
$\bar{x}$	72.36	70.43
Variance (s^2)	77.9202	121.1345
deviation Standard (s)	8.83	11.01

$$F = \frac{121.13}{77.92} = 1.5546$$

For $\alpha = 5\%$ with:

df1	=	n1	-	1	=	35	-	1	=	34
df2	=	n2	-	1	=	35	-	1	=	34

$F_{(0.025)(34:34)} = 1.98$



Since F value < F table, the experimental and control group have the sama variance

4) The Average of Similarity of Pre-Test of the Experimental Class and the Control Class.

Hypothesis

Ho : $\mu_1 \leq \mu_2$

Ha : $\mu_1 > \mu_2$

The Calculation

Formula :

$$t = \frac{\bar{x}_1 - \bar{x}_2}{s\sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

Which,

$$s = \sqrt{\frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{n_1 + n_2 - 2}}$$

Ho is accepted if $t > t_{(1-\alpha)(n1+n2-2)}$

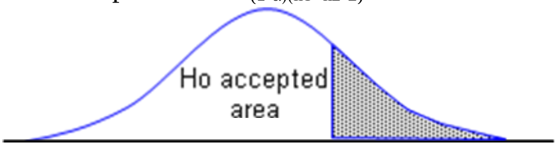


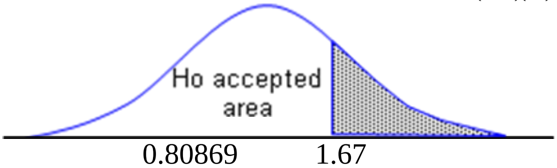
Table 9

	Experimental	Control
Sum	2532.5	2465
N	35	35
$\bar{x}$	72.36	70.43
Variance (s^2)	77.9202	121.1345
deviation Standard (s)	8.83	11.01

$$s = \sqrt{\frac{(35-1)77{,}92 + (35-1)121{,}13}{35+35-2}} = 9{,}97634$$

$$t = \frac{72{,}36 - 70{,}43}{9{,}97634\sqrt{\frac{1}{35}+\frac{1}{35}}} = 0.809$$

For $\alpha = 5\%$ and dk = 35 + 35 - 2 = 68 , $t_{(0.95)(68)} = 1.67$



c. The Data Analysis of Post-Test Value of the Experimental Class and Control Class.

Table 10

THE LIST OF POST-TEST SCORE BETWEEN THE EXPERIMENTAL CLASS AND CONTROL CLASS

Experimental			Control		
No	Code	Score	No	Code	Score
1	E-01	72.50	1	C-01	87.50
2	E-02	85.00	2	C-02	80.00
3	E-03	72.50	3	C-03	85.00
4	E-04	95.00	4	C-04	87.50
5	E-05	95.00	5	C-05	65.00
6	E-06	90.00	6	C-06	77.50
7	E-07	97.50	7	C-07	75.00
8	E-08	97.50	8	C-08	82.50
9	E-09	85.00	9	C-09	77.50
10	E-10	97.50	10	C-10	75.00
11	E-11	82.50	11	C-11	90.00
12	E-12	87.50	12	C-12	85.00
13	E-13	80.00	13	C-13	92.50
14	E-14	87.50	14	C-14	62.50
15	E-15	85.00	15	C-15	70.00
16	E-16	92.50	16	C-16	75.00
17	E-17	87.50	17	C-17	80.00
18	E-18	97.50	18	C-18	97.50
19	E-19	75.00	19	C-19	92.50
20	E-20	85.00	20	C-20	67.50
21	E-21	92.50	21	C-21	77.50
22	E-22	75.00	22	C-22	67.50
23	E-23	80.00	23	C-23	80.00
24	E-24	72.50	24	C-24	87.50
25	E-25	92.50	25	C-25	85.00
26	E-26	70.00	26	C-26	70.00
27	E-27	80.00	27	C-27	77.50

28	E-28	97.50	28	C-28	80.00
29	E-29	90.00	29	C-29	95.00
30	E-30	82.50	30	C-30	75.00
31	E-31	85.00	31	C-31	75.00
32	E-32	87.50	32	C-32	82.50
33	E-33	92.50	33	C-33	80.00
34	E-34	90.00	34	C-34	85.00
35	E-35	75.00	34	C-34	92.50
$\sum$	=	3010.00	$\sum$	=	2815.00
n_1	=	35	n_2	=	35
$\bar{x}_1$	=	86.00	$\bar{x}_2$	=	80.43
s_1^2	=	69.1912	s_2^2	=	75.5462
s_1	=	8.318	s_2	=	8.692

1) The Normality Post-Test of the Experimental Class.

<u>Hypothesis</u>

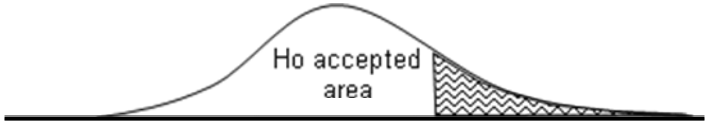
Ho : The data distributed normality

Ha : The data not distributed normality

<u>The Calculation</u>

Formula :

$$\chi^2 = \sum_{i=1}^{k} \frac{(O_i - E_i)^2}{E_i}$$



Maximum score	= 97.50		Class length	=	4.58
Minimum Score	= 70.00		Mean ($\overline{X}$)	=	86.0
Range	= 27.50		S	=	8.3
Class with	= 6.0		N	=	35

Table 11

The Normality Post-Test of the Experimental Class

Class Interval	X	pz	P	z	Ei	Oi
70.00 - 74.00	69.50	-1.98	0.4764	0.0598	2.091	4
75.00 - 79.00	74.50	-1.38	0.4166	0.1339	4.685	3
80.00 - 84.00	79.50	-0.78	0.2827	0.2112	7.391	5
85.00 - 89.00	84.50	-0.18	0.0716	0.2346	8.211	9
90.00 - 94.00	89.50	0.42	0.1630	0.1835	6.424	7
95.00 - 100.00	94.50	1.02	0.3466	0.1128	3.947	7
	100.50	1.74	0.4593			35
						X^2 =

for α = 5%, dk = 6 - 3 = 3, Xx^2 table = 7.815

5.61 7.815

Because $X^2 < 7{,}81$ then the post test is said to be normally distributed.

2) The Normality Post-Test of the Control Class.

Hypothesis

Ho : The data distributed normality

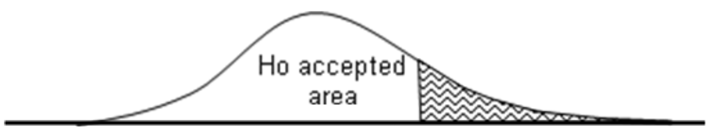
Ha : The data not distributed normality

The Calculation

Formula :

$$\chi^2 = \sum_{i=1}^{k} \frac{(O_i - E_i)^2}{E_i}$$

Ho is accepted if □$X^2 < X_{tabel}$



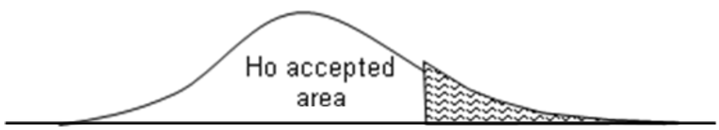
Maximum score	=	97.50	Class length	=	5.8
Minimum Score	=	62.50	Mean ($\overline{X}$)	=	80.4
Range	=	35.00	S	=	8.7
Class with	=	6.0	N	=	35

Table 12

The Normality Post-Test of the Control Class

Class Interval			X	pz	P	Z	Ei	Oi	$\frac{(Oi-Ei)^2}{Ei}$
62.50	-	67.50	62.00	-2.12	0.4830	0.0594	2.078	4	1.777
68.50	-	73.50	68.00	-1.43	0.4236	0.1534	5.369	2	2.114
74.50	-	79.50	74.00	-0.74	0.2702	0.2506	8.770	9	0.006
80.50	-	85.50	80.00	-0.05	0.0197	0.2589	9.062	11	0.415
86.50	-	91.50	86.00	0.64	0.2392	0.1692	5.923	4	0.624
92.50	-	97.50	92.00	1.33	0.4085	0.0699	2.448	5	2.661
			98.00	2.02	0.4784			35	
								X^2 =	7.597

for □α = 5%, dk = 6 - 3 = 3, X^2 table = 7.815



7.5973 7.81

Because $X^2 < 7{,}81$ then the post test is said to be normallly distributed.

3) The Homogeneity of Post-Test of the Experimental Class and the Control Class

<u>Hipothesis</u>

Ho : $\sigma_1^2 = \sigma_2^2$

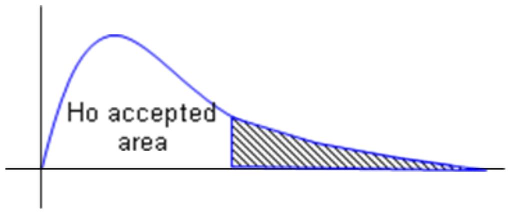
Ha : $\sigma_1^2 \neq \sigma_2^2$

<u>The Calculation</u>

Formula :

$$F = \frac{Vb}{VK}$$

Ho is accepted if $F \leq F_{1/2\alpha\ (nb-1):(nk-1)}$



$F_{1/2\alpha\ (nb-1):(nk-1)}$

Table 13

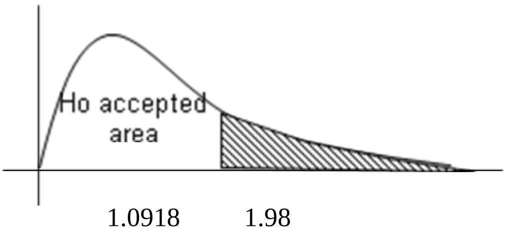
	Experimental	Control
Sum	3010	2815
N	35	35
$\bar{x}$	86.00	80.43
Variance (s^2)	69.1912	75.5462
Standard deviation (s)	8.32	8.69

$$F = \frac{75.55}{69.19} = 1.0918$$

For $\alpha = 5\%$ with:

df1	=	n1	-	1	=	35	-	1	=	34
df2	=	n2	-	1	=	35	-	1	=	34

$F_{(0.025)(34:34)} = 1.98$



Since F value < F table, the experimental and control group have the same variance

4) The Average of Similarity of Post-Test of the Experimental Class and the Control Class.

Hypothesis

Ho : $\mu_1 \leq \mu_2$

Ha : $\mu_1 > \mu_2$

The Calculation

Formula :

$$t = \frac{\bar{x}_1 - \bar{x}_2}{s\sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

Which,

$$s = \sqrt{\frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{n_1 + n_2 - 2}}$$

Ho is accepted if $t > t_{(1-\alpha)(n1+n2-2)}$

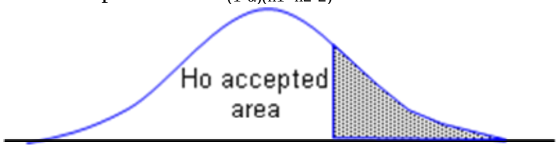


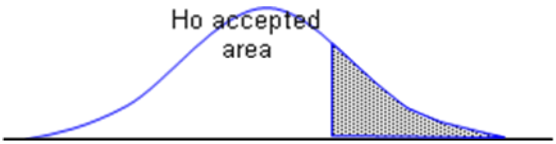
Table 14

	Experimental	Control
Sum	3010	2815
N	35	35
$\bar{x}$	86.00	80.43
Variance (s^2)	69.1912	75.5462
Standard deviation (s)	8.32	8.69

$$s = \sqrt{\frac{(35-1)69{,}19 + (35-1)75{,}55}{35+35-2}} = 8{,}50698$$

$$t = \frac{86{,}00 - 80{,}43}{8{,}50698\sqrt{\frac{1}{35} + \frac{1}{35}}} = 2{,}740$$

For $\alpha = 5\%$ and $dk = 35 + 35 - 2 = 68$, $t_{(0.95)(68)} = 1.67$



C. Discussion of the Research Findings

The result of the research shows that the experimental class (the students who are taught by Oral Cue Technique) has mean value pre-test was 72.36 and post-test was 86.00 while the control class (the students who are taught without Oral Cue Technique) has mean value pre-test was 70.43 and post-test was 80.43

On the other hand, the test of hypothesis using t-test formula shows the value of the t-test is higher than the critical value. The value of the t-test value is 2.740,while the critical value on $t_{s\ 0.05}$ is 1.67 It means that using Oral Cue Technique more effective than without using Oral Cue Technique in teaching simple past tense.

D. Limitation of the Research

The writer realizes that this research had not been done optimally. There were constraint and obstacles during research process. Some limitations of this research are:

1. The research is limited at SMP Islam Walisongo Kedungwuni Pekalongan. So that, when the same research will be gone in other schools, it is still possible to get different result.
2. The implementation of the research process was less perfect, this was more due to lack of experiences and knowledge of the researcher.

Considering all those limitation there is a need to do more research about teaching simple past tense using Oral Cue Technique. So that, more optimal of the result will be gained.