

## **CHAPTER IV**

### **RESEARCH FINDING AND ANALYSIS**

#### **A. Description of Research Findings**

To find out the difference between the students who were taught using songs as a media and the students who were not taught using songs in teaching English articles in MIN Purwokerto, the writer did an analysis of quantitative data. The data was obtained by giving test to the experimental class and control class after giving a different treatment of learning process in both classes.

The subjects of this research were divided into two classes. They are experimental class (III Utsman bin Affan), control class (III Umar bin Khotob). Before items were given to the students, the writer gave try out test to analyze validity, reliability, difficulty level and also the discrimination power of each item. The writer prepared 15 items as the instrument of the test. Test was given before and after the students follow the learning process that was provided by the writer.

Before the activities were conducted, the writer determined the materials and lesson plan of learning. Learning in the experiment class used songs, while the control class without used songs.

After the data were collected, the writer analyzed it. The first analysis data is from the beginning of control class and experimental 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. Data Analysis And Hypothesis Test

### 1. The Data Analysis

#### a. Try Out Test Analysis

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

##### 1) Validity of Instrument

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.

It is obtained that from 20 test items; there are 15 test items which are valid and 5 test items which are invalid. They are on number 7,8,15,16,19. They are invalid with the reason computation result of their  $r_{xy}$  value (the correlation of score each item) is lower than their  $r_{table}$  value.

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

$$\begin{aligned}
 N &= 24 & \sum Y &= 355 \\
 \sum XY &= 321 & \sum X^2 &= 21 \\
 \sum X &= 21 & \sum Y^2 &= 5457 \\
 r_{xy} &= \frac{N \sum XY - \sum(X) \sum(Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}} \\
 r_{xy} &= \frac{24(321) - 21(355)}{\sqrt{\{24(21) - (21)^2\} \{24(5457) - (355)^2\}}} \\
 r_{xy} &= \frac{7704 - 7455}{\sqrt{(504 - 441)(130968 - 126025)}} \\
 r_{xy} &= \frac{249}{\sqrt{(63)(4943)}}
 \end{aligned}$$

$$r_{xy} = \frac{249}{\sqrt{311409}}$$

$$r_{xy} = \frac{249}{558.040}$$

$$r_{xy} = 0.446$$

From the computation above, the result of computing validity of the item number 1 is 0.446. After that, the writer consulted the result to the table of r Product Moment with the number of subject (N) = 24 and significance level 5% it is 0.404. 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 Kuder-Richarson Formula 20(K-R 20).

Before computing the reliability, the writer had to compute varian ( $S^2$ ) with the formula below:

$$k = 20 \qquad \sum Y = 355$$

$$\sum Y^2 = 5457 \qquad \sum pq = 1.6493$$

$$S^2 = \frac{\sum y^2 - \frac{(\sum y)^2}{k}}{k}$$

$$S^2 = \frac{5457 - \frac{(355)^2}{20}}{20}$$

$$S^2 = \frac{5457 - 6301.25}{20}$$

$$S^2 = \frac{-844.25}{20}$$

$$S^2 = -42.213$$

The computation of the variant ( $S^2$ ) is -42.213. After finding the variant ( $S^2$ ) the writer computed the reliability of the test as follows:

$$r_{11} = \left( \frac{k}{k-1} \right) \left( \frac{S^2 - \sum pq}{S^2} \right)$$

$$r_{11} = \left( \frac{20}{20-1} \right) \left( \frac{-42.213 - 1.6493}{-42.213} \right)$$

$$r_{11} = 1.053 \left( \frac{-43.8623}{-42.213} \right)$$

$$r_{11} = 1.094$$

From the computation above, it is found out that  $r_{11}$  (the total of reliability test) is 1.094, whereas the number of subjects is 24 and the critical value for r-table with significance level 5% is 0.444. 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.

$$B = 12 + 9 = 21 \quad P = \frac{B}{JS}$$

$$JS = 24 \quad P = \frac{21}{24}$$

$$P = 0.88$$

From the computation above, the question number 1 can be said as the easy category, because the calculation result of the item number 1 is in the interval  $0.70 < P < 1.00$

#### 4) Discriminating Power

The following is the computation of the discriminating power for item number 1, and for other items would use the same formula.

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

Before computed using the formula, the data divided into 2 (group). They were upper group and low group.

**Table 3**  
**The Table of the Gathered Score of Item Number 1**

Upper Group			Lower Group		
No	Code	Score	No	Code	Score
1	C-2	1	1	C-4	1
2	C-7	1	2	C-6	1
3	C-9	1	3	C-10	1
4	C-11	1	4	C-3	1
5	C-14	1	5	C-16	1
6	C-15	1	6	C-17	0
7	C-18	1	7	C-1	0
8	C-13	1	8	C-8	0
9	C-21	1	9	C-12	1
10	C-22	1	10	C-19	1
11	C-24	1	11	C-23	1
12	C-5	1	12	C-20	1
Total Score		12	Total Score		9

From the table above known as below

$$BA = 12 \qquad BB = 12$$

$$JA = 12 \qquad JB = 9$$

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

$$D = \frac{12}{12} - \frac{9}{12}$$

$$D = \frac{3}{12}$$

$$D = 0.25$$

From the computation above, the question number 1 can be said as the fair category, because the calculation result of the item number 1 is in the interval  $0.20 < DP \leq 0.40$ .

Based on the analysis of validity, reliability, difficulty level and discriminating power, finally 15 items are accepted. They are number 1, 2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 17, 18, and 20.

**b. The Data Analysis of Pre Test Scores of the Experimental Class and the Control Class**

**Table 4**

**The list of Pre-test Scores of the Experimental and Control Class**

No	Experiment Class				Control Class			
	Code of the Students	$x_i$	$(x_i - \bar{x})$	$(x_i - \bar{x})^2$	Code of the Students	$x_i$	$(x_i - \bar{x})$	$(x_i - \bar{x})^2$
1	D-1	66	1,625	2,640	E-1	53	-9,416	88,661
2	D-2	53	-11,375	129,390	E-2	46	-16,416	269,485
3	D-3	66	1,625	2,640	E-3	66	3,583	12,837
4	D-4	73	8,625	74,390	E-4	73	10,583	111,999
5	D-5	66	1,625	2,640	E-5	66	3,583	12,837
6	D-6	66	1,625	2,640	E-6	66	3,583	12,837
7	D-7	80	15,625	244,140	E-7	53	-9,416	88,661
8	D-8	73	8,625	74,390	E-8	66	3,583	12,837
9	D-9	60	-4,375	19,140	E-9	60	-2,416	5,837

10	D-10	53	-11,375	129,390	E-10	80	17,583	309,161
11	D-11	46	-18,375	337,640	E-11	60	-2,416	5,837
12	D-12	60	-4,375	19,140	E-12	53	-9,416	88,661
13	D-13	73	8,625	74,390	E-13	66	3,583	12,837
14	D-14	66	1,625	2,640	E-14	60	-2,416	5,837
15	D-15	53	-11,375	129,390	E-15	66	3,583	12,837
16	D-16	60	-4,375	19,140	E-16	60	-2,416	5,837
17	D-17	60	-4,375	19,140	E-17	53	-9,416	88,661
18	D-18	66	1,625	2,640	E-18	60	-2,416	5,837
19	D-19	66	1,625	2,640	E-19	66	3,583	12,837
20	D-20	60	-4,375	19,140	E-20	66	3,583	12,837
21	D-21	73	8,625	74,390	E-21	60	-2,416	5,837
22	D-22	66	1,625	2,640	E-22	73	10,583	111,999
23	D-23	60	-4,375	19,140	E-23	66	3,583	12,837
24	D-24	80	15,625	244,140	E-24	60	-2,416	5,837
	$\sum \bar{x}$	1545 64,375		1647,61	$\sum \bar{x}$	1498 62,416		1313,68

### 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. Based on the table above, the normality test:

#### **Hypothesis:**

Ha: The distribution list is normal.

Ho: The distribution list is not normal

#### **Test of hypothesis:**

The formula is used:

$$\chi^2 = \sum \frac{(f_o - f_h)^2}{f_h}$$

The computation of normality test:

N = 24

Length of the class = 5

Maximum score = 80

$\sum x$  = 1545

Minimum score = 46

$\bar{x}$  = 64.375

K / Number of class = 6

Range = 34

**Table 5**  
**Frequency Distribution**

Class Interval	xi	fi	$(x_i - \bar{x})$	$(x_i - \bar{x})^2$	$f(x_i - \bar{x})^2$
46-51	48.5	1	-15.875	252.0156	252.0156
52-57	54.5	3	-9.875	97.51563	292.5469
58-63	60.5	6	-3.875	15.01563	90.09375
64-69	66.5	8	2.125	4.515625	36.125
70-75	72.5	4	8.125	66.01563	264.0625
76-80	78.5	2	14.125	199.5156	399.0313
		24			1333.875

$$S = \sqrt{\frac{\sum f_i(x_i - \bar{x})^2}{n-1}} = \sqrt{\frac{1333.875}{24-1}} = 7.615$$

**Table 6**  
**Normality Pre test of the Experimental Class**

Class interval	Limit class	Z for the limit class	Opportunities Z	Size classes for Z	fh	fo	$\frac{fo - fh^2}{fh}$
46-51	45.5	-2.47866	0.494	0.038	0.912	1	0.008491
52-57	51.5	-1.69074	0.456	0.138	3.312	3	0.029391
58-63	57.5	-0.90282	0.318	0.275	6.6	6	0.054545
64-69	63.5	-0.1149	0.043	0.208	4.992	8	1.812513
70-75	69.5	0.673014	0.251	0.178	4.272	4	0.017318
76-80	75.5	1.460932	0.429	0.054	1.296	2	0.38242
	80.5	2.117531	0.483				
The result of computation Chi-Square							2.304



With  $\alpha = 5\%$  and  $dk = 6-3=3$ , from the chi-square distribution table, obtained  $\chi^2_{table} = 7.815$ . Because  $\chi^2_{count}$  is lower than  $\chi^2_{table}$  ( $2.304 < 7.815$ ). So, the distribution list is normal.

## 2) The Normality Pre-test of the Control Class

### Test of hypothesis:

The formula is used:

$$\chi^2 = \sum \frac{(f_o - f_h)^2}{f_h}$$

The computation of normality test:

N = 24		Length of the class = 5
Maximum score = 80	$\sum x$	= 1545
Minimum score = 46	$\bar{x}$	= 64.375
K / Number of class = 6	Range	= 34

**Table 7**  
**Frequency Distribution**

Class Interval	xi	fi	$(x_2 - \bar{x})$	$(x_2 - \bar{x})^2$	$f(x_2 - \bar{x})^2$
46-51	48,5	1	-13,91667	193,67362	193,67362
52-57	54,5	4	-7,916667	62,673616	250,69447
58-63	60,5	7	-1,916667	3,6736124	25,715287
64-69	66,5	9	4,083333	16,673608	150,06248
70-75	72,5	2	10,083333	101,6736	203,34721
76-80	78,5	1	16,083333	258,6736	258,6736
		24			1082,1667

$$S = \sqrt{\frac{\sum f_i (x_i - \bar{x})^2}{n-1}} = \sqrt{\frac{1082.167}{24-1}} = 6.862$$

**Table 8**  
**Normality Pre test of the Control Class**

Class interval	Limit class	Z for the limit class	Opportunities Z	Size classes for Z	$fh$	$fo$	$\frac{fo - fh^2}{fh}$
46-51	45.5	-2,46527	0,493	0,049	1,176	1	0.02634
52-57	51.5	-1,59089	0,444	0,183	4,392	4	0,034987
58-63	57.5	-0,71651	0,261	0,202	4,848	7	0,955261
64-69	63.5	0,157874	0,059	0,289	6,936	9	0,614201
70-75	69.5	1,032254	0,348	0,123	2,952	2	0,307014
	80.5	1,906635	0,471	0,024	0,576	1	0,312111
The result of computation Chi-Square							2.249

With  $\alpha = 5\%$  and  $dk = 6-3=3$ , from the chi-square distribution table, obtained  $\chi^2_{table} = 7.815$ . Because  $\chi^2_{count}$  is lower than  $\chi^2_{table}$  ( $2.249 < 7.815$ ). So, the distribution list is normal.

### 3) The Homogeneity Pre-Test of the Experimental Class

#### **Hypothesis :**

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

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

#### **Test of hypothesis:**

The formula is used:

$$F = \frac{\text{Biggest variant}}{\text{smallest variant}}$$

#### **The Data of the research:**

$$\sum (x_i - \bar{x})_1^2 = 1647.61$$

$$n_1 = 24$$

$$\sum (x_i - \bar{x})^2 = 1313.83 \quad n_2 = 24$$

$$\sigma_1^2 = S_1^2 = \frac{\sum (x - \bar{x})^2}{n_1 - 1} = \frac{1647.61}{23} = 71.635$$

$$\sigma_2^2 = S_2^2 = \frac{\sum (x - \bar{x})^2}{n_2 - 1} = \frac{1313.68}{23} = 57.116$$

Biggest variant (Bv) = 71.635

Smallest variant (Sv) = 57.116

Based on the formula, it is obtained:

$$F = \frac{71.635}{57.116} = 1.254$$

With  $\alpha = 5\%$  and dk = (24-1 = 23): (24-1 = 23), obtained  $F_{table} = 2.00$ . Because  $F_{count}$  is lower than  $F_{table}$  (1.254 < 2.00). So,  $H_0$  is accepted and the two groups have same variant / **homogeneous**.

- 4) The average similarity Test of Pre-Test of Experimental and Control Classes

**Hypothesis:**

Ho:  $\mu_1 = \mu_2$

Ha:  $\mu_1 \neq \mu_2$

**Test of hypothesis:**

Based on the computation of the homogeneity test, the experimental class and control class have same variant. So, the t-test formula:

$$t = \frac{\bar{x}_1 - \bar{x}_2}{S \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}} \quad S = \sqrt{\frac{(n_1 - 1)S_1^2 + (n_2 - 1)S_2^2}{n_1 + n_2 - 2}}$$

**The data of the research:**

$$\bar{x}_1 = 64.375 \qquad \bar{x}_2 = 62.416$$

$$S_1^2 = 71.635 \qquad S_2^2 = 57.116$$

$$n_1 = 24 \qquad n_2 = 24$$

$$S = \sqrt{\frac{(n_1 - 1)S_1^2 + (n_2 - 1)S_2^2}{n_1 + n_2 - 2}}$$

$$S = \sqrt{\frac{(24 - 1)71.635 + (24 - 1)57.116}{24 + 24 - 2}} = \sqrt{\frac{2961.274}{46}} = 8.023$$

So, the computation t-test:

$$t = \frac{\bar{x}_1 - \bar{x}_2}{S \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}} = \frac{64.375 - 62.416}{8.023 \sqrt{\frac{1}{24} + \frac{1}{24}}} = \frac{1.959}{2.316} = 0.845$$

With  $\alpha = 5\%$  and  $dk = 24 + 24 - 2 = 46$ , obtained  $t_{table} = 2,00$ . Because  $t_{count}$  is lower than  $t_{table}$  ( $0.845 < 2.00$ ). So,  $H_0$  is accepted and there is no difference of the pre test average value from both groups.

**c. The Data Analysis of Post-test Scores in Experimental Class and Control Class.**

**Table 9**

**The List of Post Test Scores of the Experimental and Control Class**

No	Experiment Class				Control Class			
	Code of the Students	$x_i$	$(x_i - \bar{x})$	$(x_i - \bar{x})^2$	Code of the Students	$x_i$	$(x_i - \bar{x})$	$(x_i - \bar{x})^2$
1	D-1	73	4,416	19,501	E-1	66	-4,5	20,25
2	D-2	73	4,416	19,501	E-2	53	-17,5	306,25
3	D-3	73	4,416	19,501	E-3	80	9,5	90,25
4	D-4	86	8,583	73,667	E-4	80	9,5	90,25
5	D-5	73	4,416	19,501	E-5	73	2,5	6,25

6	D-6	86	8,583	73,667	E-6	80	9,5	90,25
7	D-7	93	15,583	242,829	E-7	60	-10,5	110,25
8	D-8	86	8,583	73,667	E-8	73	2,5	6,25
9	D-9	73	4,416	19,501	E-9	80	9,5	90,25
10	D-10	66	11,416	130,325	E-10	86	15,5	240,25
11	D-11	60	17,416	303,331	E-11	66	-4,5	20,25
12	D-12	80	2,583	6,671	E-12	60	-10,5	110,25
13	D-13	86	8,583	73,667	E-13	73	2,5	6,25
14	D-14	80	2,583	6,671	E-14	60	-10,5	110,25
15	D-15	66	11,416	130,325	E-15	73	2,5	6,25
16	D-16	80	2,583	6,671	E-16	66	-4,5	20,25
17	D-17	73	4,416	19,501	E-17	60	-10,5	110,25
18	D-18	80	2,583	6,671	E-18	73	2,5	6,25
19	D-19	80	2,583	6,671	E-19	66	-4,5	20,25
20	D-20	66	11,416	130,325	E-20	73	2,5	6,25
21	D-21	86	8,583	73,667	E-21	66	-4,5	20,25
22	D-22	80	2,583	6,671	E-22	86	15,5	240,25
23	D-23	66	11,416	130,325	E-23	73	2,5	6,25
24	D-24	93	15,583	242,829	E-24	66	-4,5	20,25
	$\sum$ $\bar{x}$	1858 77,416		1835,656	$\sum$ $\bar{x}$	1692 70,5		1754

1) The Normality Post-Test of the Experimental Class

Based on the table above, the normality test:

**Hypothesis :**

Ho : The distribution list is normal.

Ha : The distribution list is not normal.

**Test of hypothesis:**

The formula is used:

The formula is used:

$$\chi^2 = \sum \frac{(f_o - f_h)^2}{f_h}$$

The computation of normality test:

N = 24

Length of the class = 5

Maximum score = 93

$\sum x$  = 1858

$$\begin{aligned} \text{Minimum score} &= 60 & \bar{x} &= 77.416 \\ \text{K / Number of class} &= 6 & \text{Range} &= 33 \end{aligned}$$

**Table 10**  
**Frequency Distribution**

Class Interval	Xi	fi	$(x_i - \bar{x})$	$(x_i - \bar{x})^2$	$f(x_i - \bar{x})^2$
60-65	62.5	1	-14.916	222.4871	222.4871
66-71	68.5	4	-8.916	79.49506	317.9802
72-77	74.5	6	-2.916	8.503056	51.01834
78-83	80.5	6	3.084	9.511056	57.06634
84-89	86.5	5	9.084	82.51906	412.5953
90-95	92.5	2	15.084	227.5271	455.0541
		24			1516.201

$$S = \sqrt{\frac{\sum f_i (x_i - \bar{x})^2}{n-1}} = \sqrt{\frac{1516.201}{24-1}} = 8.124$$

**Table 11**  
**Normality Post Test of the Experimental Class**

Class interval	Limit class	Z for the limit class	Opportunities Z	Size classes for Z	fh	fo	$\frac{fo - fh^2}{fh}$
60-65	59.5	-2.20532	0.486	0.059	1.416	1	0.008491
66-71	65.5	-1.46677	0.427	0.163	3.912	4	0.122215
72-77	71.5	-0.72821	0.264	0.26	6.24	6	0.00198
78-83	77.5	0.01034	0.004	0.266	6.384	6	0.009231
84-89	83.5	0.748892	0.27	0.16	3.84	5	0.023098
90-95	89.5	1.487445	0.43	0.056	1.344	2	0.350417
	95.5	2.225997	0.486				0.32019
The result of computation Chi-Square						0.82713	

With  $\alpha = 5\%$  and  $dk = 6-3 = 3$ , from the Chi-Square distribution table, obtained  $\chi^2_{table} = 7.815$ . Because  $d \chi^2_{count}$  is lower than  $\chi^2_{table}$  ( $0.827 < 7.815$ ). So, the distribution list is normal.

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

### Test of hypothesis:

The formula is used:

$$\chi^2 = \sum \frac{(f_o - f_h)^2}{f_h}$$

The computation of normality test:

$$N = 24$$

$$\text{Length of the class} = 5$$

$$\text{Maximum score} = 86$$

$$\sum x = 1692$$

$$\text{Minimum score} = 53$$

$$\bar{x} = 70.5$$

$$K / \text{Number of class} = 6$$

$$\text{Range} = 27$$

**Table 12**  
**Frequency Distribution**

Class Interval	Xi	fi	$(x_1 - \bar{x})$	$(x_1 - \bar{x})^2$	$f(x_1 - \bar{x})^2$
53 – 58	55.5	1	-15.083	227.4969	227.4969
59 – 64	61.5	4	-9.083	82.50089	330.0036
65 – 70	67.5	6	-3.083	9.504889	57.02933
71 – 76	73.5	7	2.917	8.508889	59.56222
77 – 82	79.5	4	8.917	79.51289	318.0516
83 – 88	85.5	2	14.917	222.5169	445.0338
		24			1437.177

$$S = \sqrt{\frac{\sum f_i(x_i - \bar{x})^2}{n-1}} = \sqrt{\frac{1437.177}{24-1}} = 7.905$$

**Table 13**  
**Normality Post test of the Control Class**

Class interval	Limit class	Z for the limit class	Opportuni -ties Z	Size classes for Z	<i>fh</i>	<i>fo</i>	$\frac{fo - fh^2}{fh}$
53-58	52.5	-2.28754	0.488	0.053	1.272	1	0.058164
59-64	58.5	-1.52853	0.435	0.159	3.816	4	0.008872
65-70	64.5	-0.76951	0.276	0.272	6.528	6	0.042706
71-76	70.5	-0.0105	0.004	0.266	6.384	7	0.059439
77-82	76.5	0.748514	0.27	0.163	3.912	4	0.00198
83-88	82.5	1.507527	0.433	0.055	1.32	2	0.350303
	88.5	2.26654	0.488				0.058164
The result of computation Chi-Square							0.521463

With  $\alpha = 5\%$  and  $dk = 6-3 = 3$ , from the chi-square distribution table, obtained  $\chi^2_{table} = 7.815$ . Because  $\chi^2_{count}$  is lower than  $\chi^2_{table}$  ( $0.5214 < 7.815$ ). So, the distribution list is normal.

### 3) The Homogeneity Post-Test of the Control Class

#### **Hypothesis :**

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

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

#### **Test of hypothesis:**

The formula is used:

$$F = \frac{\text{Biggest var iant}}{\text{smallest var iant}}$$



**The Data of the research:**

$$\sum (x_i - \bar{x})_1^2 = 1835,656 \quad n_1 = 24$$

$$\sum (x_i - \bar{x})_2^2 = 1754 \quad n_2 = 24$$

$$\sigma_1^2 = S_1^2 = \frac{\sum (x - \bar{x})^2}{n_1 - 1} = \frac{1835.656}{23} = 79.811$$

$$\sigma_2^2 = S_2^2 = \frac{\sum (x - \bar{x})^2}{n_2 - 1} = \frac{1754}{23} = 76.267$$

Biggest variant (Bv) = 79.811

Smallest variant (Sv) = 76.267

Based on the formula, it is obtained:

$$F = \frac{79.811}{76.267} = 1.046$$

With  $\alpha = 5\%$  and dk = (24-1 = 23): (24-1 = 23), obtained  $F_{table} = 2.00$ . Because  $F_{count}$  is lower than  $F_{table}$  (1.046 < 2.00). So,  $H_0$  is accepted and the two groups have same variant / **homogeneous.**

- 5) The average similarity Test of Post-Test of Experimental and Control Classes

**Hypothesis:**

$$H_0: \mu_1 = \mu_2$$

$$H_a: \mu_1 \neq \mu_2$$

**Test of hypothesis:**

Based on the computation of the homogeneity test, the experimental class and control class have same variant. So, the t-test formula:

$$t = \frac{\bar{x}_1 - \bar{x}_2}{S \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}} \quad S = \sqrt{\frac{(n_1 - 1)S_1^2 + (n_2 - 1)S_2^2}{n_1 + n_2 - 2}}$$

**The data of the research:**

$$\begin{array}{ll} \bar{x}_1 & = 77.416 & \bar{x}_2 & = 70.5 \\ S_1^2 & = 79.811 & S_2^2 & = 76.267 \\ n_1 & = 24 & n_2 & = 24 \end{array}$$

$$S = \sqrt{\frac{(n_1 - 1)S_1^2 + (n_2 - 1)S_2^2}{n_1 + n_2 - 2}}$$

$$S = \sqrt{\frac{(24 - 1)79.811 + (24 - 1)76.267}{24 + 24 - 2}} = \sqrt{\frac{3589.794}{46}} = 8.833$$

So, the computation t-test:

$$t = \frac{\bar{x}_1 - \bar{x}_2}{S \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}} = \frac{77.416 - 70.5}{8.833 \sqrt{\frac{1}{24} + \frac{1}{24}}} = \frac{6.916}{2.550} = 2.712$$

From the computation above, the t-table is 2.00 by 5% alpha level of significance and dk = 24+24-2=46. T-value was 2.712. So, the t-value was higher than the critical value on the table (2.712 > 2.00).

From the result, it can be concluded that there is a significant difference in English Articles achievement score between students were taught using songs and those were taught without using songs. So, it can be said that Songs is effective to teach English Articles, and so the action hypothesis is accepted.

### C. Discussion of The Research Findings

Before giving the treatment, writer checked the balance of the students' initial ability of both classes. The data used to test the balance was the score of pre-test. Analysis of initial data was conducted through normality test that aimed at showing whether the data is normally

distributed or not. This can be seen from the normality test with chi-square, where  $X^2_{count} < X^2_{table}$ ,  $\alpha = 5\%$ ,  $dk = 3$ .

On the normality test of pre-test of the experimental class, it can be seen  $X^2_{count} (2.304) < X^2_{table} (7.815)$  and the control class  $X^2_{count} (2.249) < X^2_{table} (7.815)$ . Since homogeneity test shows  $F_{count}$  is  $< F_{table} (1.254 < 2.00)$ , it can be concluded that the two classes is homogeneous. Based on the analysis of t-test at the pre-test, it is obtained  $t_{count} = 0.845$  with  $t_{table} = 2.00$  which proves that there is no difference of the average of pre-test between both classes.

The normality test of post-test of experimental class results  $X^2_{count} (0.827) < X^2_{table} (7.815)$  and control class results  $X^2_{count} (0.521) < X^2_{table} (7.815)$ . The post-test demonstrate that the hypothesis of those classes is normal on the distribution. It is proved with  $F_{count} (1.046) < F_{table} (2.00)$  from the homogeneity test that had the same variant.

From the last phase of the t-test, it is obtained  $t_{count} = 2.712$  with  $t_{table} = 2.00$  with the standard of significant 5%. Because of  $t_{count} > t_{table} = (2.712 > 2.00)$  so the hypothesis is accepted. It means that using Songs in teaching English Articles is effective.

Song has some positive influences for the students in improving English Articles achievement. There were some reasons why the students can improve their English Articles by using Songs. They were as follows:

1. By using songs make students easy to memorize the material.
2. Using songs, the students can learn English Articles relaxes and enjoy. In the process of learning, teacher should be resourceful in determining the classroom setting in order to make students focus on the lesson.
3. The use of songs in Senior Elementary School can give opportunities for students to study grammar indirectly. It offers similar rich of opportunities for learning English Articles from context indirectly. So, students not only understand the meaning of English Articles, but also they can use it in daily life context.

The result of the research shows that the experimental class (the students who are taught using Songs) has the mean value 77.416. Meanwhile, the control class (the students who are taught without using Songs) has the mean value 70.5. It can be said that the English Articles achievement of experiment class is higher than the control class.

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,  $t_{count} > t_{table}$  ( $t_{count}$  higher than  $t_{table}$ ). The value of t-test is 2.712, while the critical value on  $t_{s,0,05}$  is 2.00. It means that there is a significant difference the English Articles achievement between students taught using Songs and those taught without Songs. In this case, the use of songs is necessary needed in teaching English Articles.

#### **D. Limitation of The Research**

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

1. Relative short time of research makes this research could not be done maximum.
2. The research is limited at MIN Purwokerto. So that when the same research will be gone in other schools, it is still possible to get different result.
3. The implementation of the research process was less smooth; this was more due to lack of experience and knowledge of the writer.

Considering all those limitations, there is a need to do more research about teaching English Articles using songs. So that, the more optimal result will be gained.