CHAPTER IV
RESEARCH FINDINGS AND DISCUSSION

In this chapter the writer explains about the result of the study and discussion

A. The Presentation of Data

In this section, it would be described the obtained data of improvement the students' vocabulary after and before taught by using Comic Strip media. The presented data consisted of distribution of pre-test score of experiment group.

1. Distribution of Pre-test Score of Experiment Group

The pre-test of the experiment group were presented in the following table

Table 4.1

The Description of Pre-Test Scores of the Data Achieved by the students in Experiment Group

No.	Name	Score
1	E01	62.8
2	E02	72.8
3	E03	62.1
4	E04	61.4
5	E05	61.4
6	E06	60.7
7	E07	62.8
8	E08	60.7
9	E09	63.5
10	E10	60.7
11	E11	62.8
12	E12	63.5

13	E13	71.4
14	E14	61.4
15	E15	62.8

Table above was describing the score of each student and show the student who passed and failed the test. It shows, there were 2 students who passed the test or about 13.33 % in percentage and there were 13 students who failed the test or about 86.67 % in percentage.

Based on the data above, it can be seen that the student's highest score was 72.8 and the student's lowest score was 60.7. However, based on the evaluation Standard of English Subject, there were 13 students who failed since they Got fewer than 70.

Table 4.2

The Frequency Distribution of Pre-Test score of the Experiment group

No	Score (X)	Frequency (f)	fX
1.	72.8	1	72.8
2.	71.4	1	71.4
3.	63.5	3	190.5
4.	62.8	4	251.2
5.	62.1	1	62.1
6.	61.4	3	184.2
7.	60.7	2	121.4
TOTAL		$\sum$f= 15	$\sum$fx= 953.6

The distribution of students' pretest score can also be seen in the following figure.

Figure 4.1.

Histogram of Frequency Distribution of Pretest Score for Experiment Group
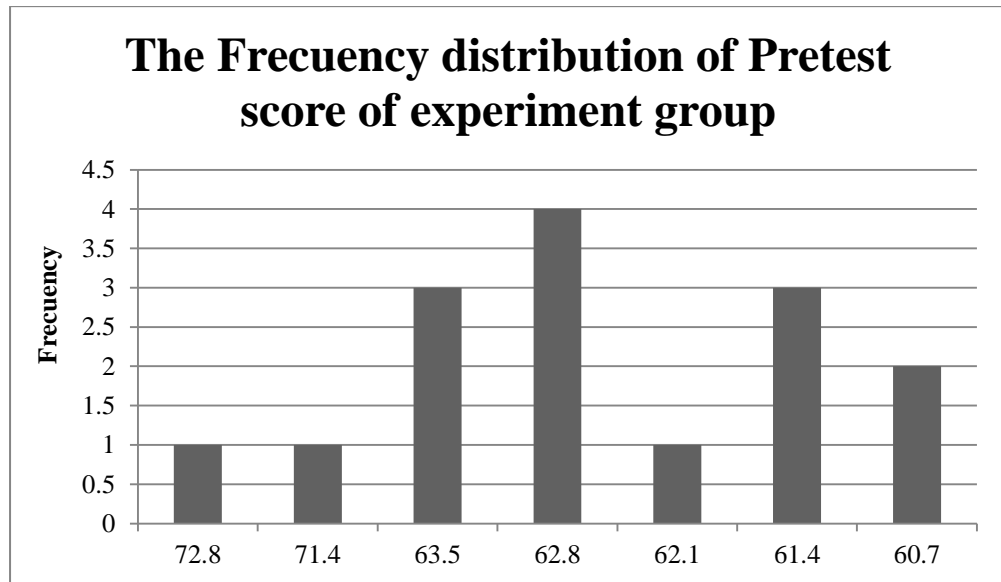
The table and figure above showed the students' pre-test score of the experiment group. It could be seen that there were 2 students who got score 60.7. There were 3 students who got score 61.4. There was 1 student who got score 62.1. There were 4 students who got score 62.8. There were 3 students who got score 63.5. There was 1 student who got score 71.4. And There was 1 student who got score 72.8. In this case, many students got score under 70.

The next step, the writer tabulated the score into the table for the calculation mean as follows:

Table 4.3

The Calculation of Mean of Pre-test score for Experiment

group

No	Score (X)	Frequency (f)	fX	fkb	fka
1.	72.8	1	72.8	15	1
2.	71.4	1	71.4	14	2
3.	63.5	3	190.5	13	5
4.	62.8	4	251.2	10	9
5.	62.1	1	62.1	6	10
6.	61.4	3	184.2	5	13
7.	60.7	2	121.4	2	15
TOTAL		**∑f= 15**	**∑fX= 953.6**		

From the table above, the data could be inserted in the formula of mean. In simple explanation, **X** is score of students, **f** is total students who got the score, **fX** is multiplication both **X** and **f**, fkb is the comulative students calculated from under to the top, in other side fka is the comulative students calculated from the top to under. The process of calculation used formula below:

a. Mean

$$M = \frac{\sum fX}{N}$$

$$M = \frac{953.6}{15}$$

M= 63.5733333

M= 63.57

The calculation above showed of mean value was 63.57

The last step, the writer tabulated the scores of pre-test of experimental group into the table for the calculation of standard deviation and the standard error as follows:

Table 4.4

The Calculation of the Standard Deviation and Standard Error of the Pre-test Score of Experiment group

Score (X)	Frequency (f)	fX	x	x^2	fx^2
72.8	1	72.8	9.23	85.19	85.19
71.4	1	71.4	7.83	61.31	61.31
63.5	3	190.5	0.23	0.05	0.15
62.8	4	251.2	-0.77	0.59	2.36
62.1	1	62.1	-1.47	2.16	2.16
61.4	3	184.2	-2.17	4.71	14.13
60.7	2	121.4	-2.87	8.24	16.48
TOTAL	**∑f= 15**	**∑fx= 953.6**			**∑fx²=181.78**

The table above used for calculate standard deviation and standard error by calculate standard deviation first. The process of calculation used formula below:

a. **Standard Deviation**

$$SD = \sqrt{\frac{\sum fx^2}{N}}$$

$$SD = \sqrt{\frac{187.78}{15}}$$

$$SD = \sqrt{12.51866666666667}$$

$$SD = 3.53817278643464$$

b. **Standard Error**

$$SEM_D = \frac{SD_D}{\sqrt{N-1}}$$

$$SEM_D = \frac{3.53817278643464}{\sqrt{15-1}}$$

$$SEM_D = \frac{3.53817278643464}{\sqrt{14}}$$

$$SEM_D = \frac{3.53817278643464}{3.741657386773941}$$

$$SEM_D = 0.9456164530032651$$

$$SEM_D = 0.946$$

The result of calculation showed the standard deviation of pre-test score of experimental group was 3.538 and the standard error of pre-test score of experimental group was 0.946.

The writer also calculated the data calculation of pre-test scores of experiment group using SPSS 16.0 program. The result statistic table as follows:

Table 4.5

The Frequency Distribution of Pre-test Scores of Experimental Group

Using SPSS 16.0 Program

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	60.7	3	20.0	20.0	20.0
	61.4	3	20.0	20.0	40.0
	62.1	1	6.7	6.7	46.7
	62.8	4	26.7	26.7	73.3
	63.5	2	13.3	13.3	86.7
	71.4	1	6.7	6.7	93.3
	72.8	1	6.7	6.7	100.0
	Total	15	100.0	100.0	

The table above showed the result of pre-test scores achieved by the experiment group using SPSS 16.0 program. It could be seen there were 3 students who got score 60.7 (20.0%). There were 3 students who got score 61.4 (20.0%). There was 1 student who got score 62.1 (6.7%). There were 4 students who got score 62.8 (26.7%). There were 2 students who got score 63.5 (13.3%). There was 1 student who got score 71.4 (6.7%). And there was 1 student who got score 72.8 (6.7%).

The next step, the writer calculated the scores of mean, median, standard deviation, and standard error of mean of pre-test in experiment group using SPSS as follows:

Table 4.6

The Table of Calculation of Mean, Median, Standard Deviation, and Standard Error of Mean of Pre-test Scores of Experiment Group Using SPSS 16.0 Program

N	Valid	15
	Missing	0
Mean		63.3867
Std. Error of Mean		.94963
Median		62.8000
Std. Deviation		3.67790
Variance		13.527
Range		12.10
Minimum		60.70
Maximum		72.80
Sum		950.80

The table showed the result of mean calculation was 63.3867. The result of standard deviation was 3.67790 and the result of standard error of mean calculation was 0.94963

2. Distribution of Pre-test scores of Control Group

The pre-test scores of the control group were presented in the following table.

Table 4.7

The Description of Pre-Test Scores of Data Achieved by the Students

in Control Group

No.	Code	Score
1	C1	62.8
2	C2	71.4
3	C3	61.4
4	C4	60.7
5	C5	60.7
6	C6	62.1
7	C7	72.8
8	C8	61.4
9	C9	69.2
10	C10	60.7
11	C11	61.4
12	C12	62.8
13	C13	61.4
14	C14	62.8
15	C15	61.4
16	C16	63.5
17	C17	62.8

Table above was describing the score of each student and show the student who passed and failed the test. It shows, there were one student who passed the test or about 11.76 % in percentage and there were sixteen students who failed the test or about 88.24 % in percentage.

Based on the data above, it can be seen that the student's highest score was 72.8 and the student's lowest score was 60.7. However, based on the evaluation Standard of English Subject, there were 15 students who failed since they Got fewer than 70.

Table 4.8

The Frequency Distribution of Pre-test score of the Control group

No	Score (X)	Frequency (f)	fX
1.	72.8	1	72.8
2.	71.4	1	71.4
3.	69.2	1	69.2
4.	63.5	1	63.5
5.	62.8	4	251.2
6.	62.1	1	62.1
7.	61.4	5	307
8.	60.7	3	182.1
TOTAL		$\sum f= 17$	$\sum fX= 1079.3$

The distribution of students' pre-test score can also be seen in the following figure.

Figure 4.2

Histogram of Frequency Distribution of Pre-test Score of the Control Group
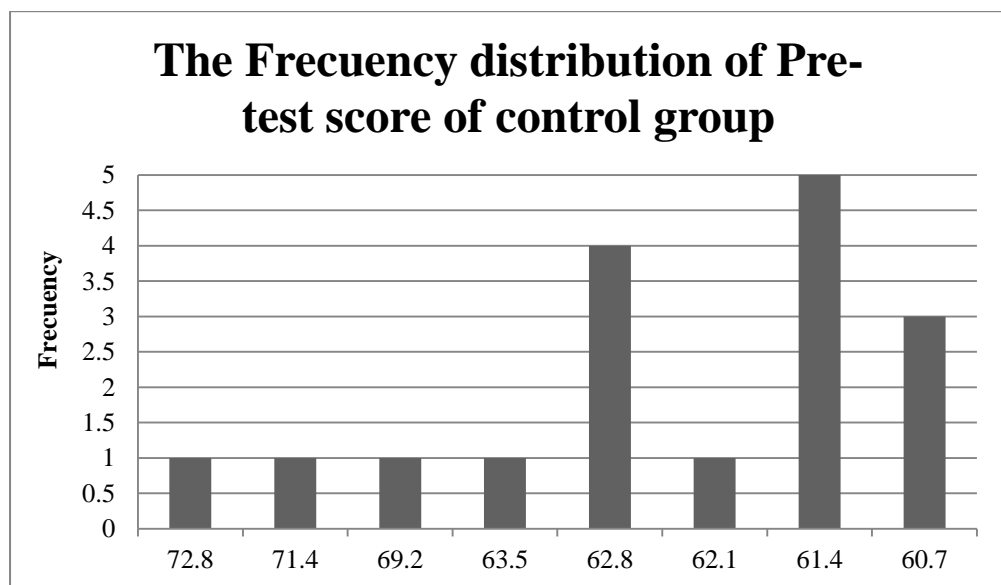
The table and figure above showed the students' pre-test score of the control group. It could be seen that there were 3 students who got score 60.7. There were 5 students who got score 61.4. There was 1 student who got score 62.1. There were 4 students who got score 62.8. There was 1 student who got score 63.5. There was 1 student who got score 69.2. There was 1 student who got score 71.4. and there was 1 student who got score 72.8.. In this case, many students got score under 70.

The next step, the writer tabulated the score into the table for the calculation mean as follows:

Table 4.9

The Calculation of Mean of Pre-test score for control group

No	Score (X)	Frequency (f)	fX	fkb	fka
1.	72.8	1	72.8	17	1
2.	71.4	1	71.4	16	2
3.	69.2	1	69.2	15	3
4.	63.5	1	63.5	14	4
5.	62.8	4	251.2	13	8
6.	62.1	1	62.1	9	9
7.	61.4	5	307	8	14
8.	60.7	3	182.1	3	17
TOTAL		∑f= 17	∑fX= 1079.3		

From the table above, the data could be inserted in the formula of mean. In simple explanation, **X** is score of students, **f** is total students who got the score, **fX** is multiplication both **X** and **f**, fkb is the comulative

students calculated from under to the top, in other side fka is the comulative students calculated from the top to under. The process of calculation used formula below:

a. Mean

$$M = \frac{\sum fX}{N}$$

$$M = \frac{1079.3}{17}$$

M= 63.4882353

M= 63.49

The calculation above showed of mean value was 63.49

The last step, the writer tabulated the scores of pre-test of control group into the table for the calculation of standard deviation and the standard error as follows:

Table 4.10

The Calculation of the Standard Deviation and Standard Error of the Pre-test Score of control group

Score (X)	Frequency (f)	fX	X	x^2	fx^2
72.8	1	72.8	9.3	86.49	86.49
71.4	1	71.4	7.9	62.41	62.41
69.2	1	69.2	5.7	32.49	32.49
63.5	1	63.5	0	0	0
62.8	4	251.2	-0.7	0.49	9
62.1	1	62.1	-1.4	1.96	1.96
61.4	5	307	-2.1	4.41	22.05
60.7	3	182.1	-2.8	7.84	23.52

TOTAL	∑f= 17	∑fX= 1079.3			∑fx²=237.92

The table above used for calculate standard deviation and standard error by calculate standard deviation first. The process of calculation used formula below:

a. **Standard Deviation**

$$SD = \sqrt{\frac{\sum fx^2}{N}}$$

$$SD = \sqrt{\frac{237.92}{17}}$$

$$SD = \sqrt{13.99529411764706}$$

$$SD = 3.741028483939551$$

b. **Standard Error**

$$SEM_D = \frac{SD_D}{\sqrt{N-1}}$$

$$SEM_D = \frac{3.741028483939551}{\sqrt{17-1}}$$

$$SEM_D = \frac{3.741028483939551}{\sqrt{16}}$$

$$SEM_D = \frac{3.741028483939551}{4}$$

$SEM_D = 0.9352571209848879$

$SEM_D = 0.935$

The result of calculation showed the standard deviation of pre-test score of control group was 3.741 and the standard error of pre-test score of control group was 0.935.

The writer also calculated the data calculation of pre-test scores of control group using SPSS 16.0 program. The result statistic table as follows:

Table 4.11

The Frequency Distribution of Pre-test Scores of Control Group Using SPSS 16.0 Program

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	60.7	3	17.6	17.6	17.6
	61.4	5	29.4	29.4	47.1
	62.1	1	5.9	5.9	52.9
	62.8	4	23.5	23.5	76.5
	63.5	1	5.9	5.9	82.4
	69.2	1	5.9	5.9	88.2
	71.4	1	5.9	5.9	94.1
	72.8	1	5.9	5.9	100.0
	Total	17	100.0	100.0	

The table above showed the result of pre-test scores achieved by the control group using SPSS 16.0 program. It could be seen there were 3 students who got score 60.7 (17.6%). There were 5 students who got score 61.4 (29.4%). There was 1 student who got score 62.1 (5.9%). There were 4 students who got score 62.8 (23.5%). There was 1 student who got score 63.5 (5.9%). There was 1 student who got score 69.2 (5.9%). There was 1 student who got score 71.4 (5.9%). And there was 1 student who got 72.8 (5.9%).

The next step, the writer calculated the scores of mean, median, standard deviation, and standard error of mean of pre-test in control group using SPSS as follows:

Table 4.12

The Table of Calculation of Mean, Median, Standard Deviation, and Standard Error of Mean of Pre-test Scores of Control Group Using SPSS 16.0 Program

N	Valid	17
	Missing	0
Mean		63.4882
Std. Error of Mean		.92131
Median		62.1000
Std. Deviation		3.79866
Variance		14.430
Range		12.10
Minimum		60.70
Maximum		72.80
Sum		1079.30

The table showed the result of mean calculation was 63.4882. The result of standard deviation was 3.79866 and the result of standard error of mean calculation was 0.92131.

3. Distribution of Post-test Score of experiment group

The post-test of the experiment group were presented in the following table:

Table 4.13

The Description of Post-test Scores of the Data Achieved by the students in Experiment Group

No.	Name	Score
1	E01	71.5
2	E02	79
3	E03	65
4	E04	72
5	E05	65
6	E06	70
7	E07	70
8	E08	72.5
9	E09	71
10	E10	70
11	E11	80
12	E12	70.5
13	E13	75
14	E14	70.5
15	E15	70

Table above was describing the score of each student and show the student who passed and failed the test. It shows, there were 13 students

who passed the test or about 86.67 % in percentage and there were 2 students who failed the test or about 13.33 % in percentage.

Based on the data above, it can be seen that the student's highest score was 80 and the student's lowest score was 65. However, based on the evaluation Standard of English Subject, there were 2 students who failed since they Got fewer than 70.

Table 4.14

The Frequency Distribution of the Post-test Score of the Experimental Group

No	Score (X)	Frequency (f)	fX
1.	80	1	80
2.	79	1	79
3.	75	1	75
4.	72.5	1	72.5
5.	72	1	72
6.	71.5	1	71.5
7.	71	1	71
8.	70.5	2	141
9.	70	4	280
10.	65	2	130
TOTAL		**∑f= 15**	**∑fX= 1072**

The distribution of students' post-test score can also be seen in the following figure.

Figure 4.3

Histogram of Frequency Distribution of Post-test Score for
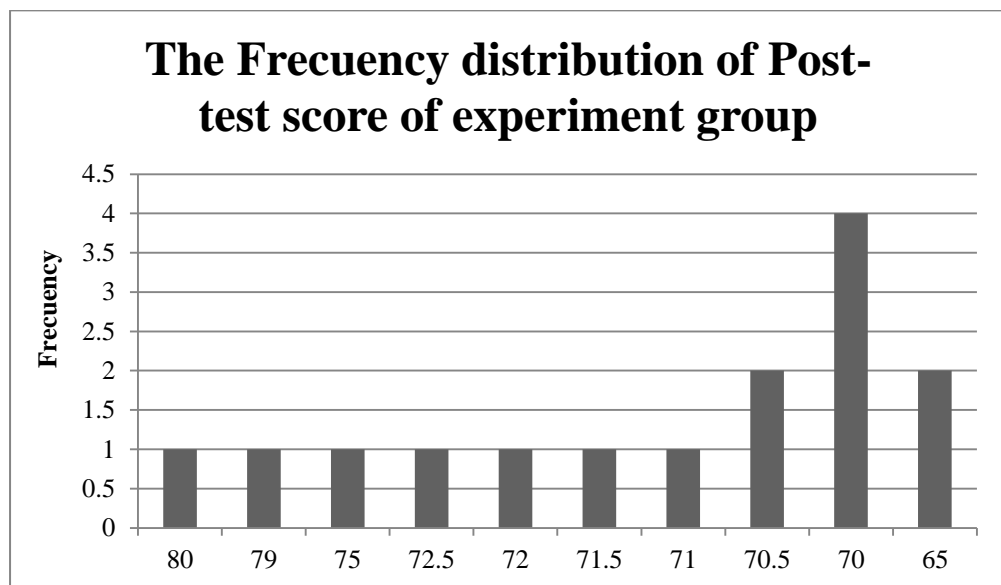
Experiment Group

The Frecuency distribution of Post-test score of experiment group

The table and figure above showed the students' post-test score of the experiment group. It could be seen that there were 2 students who got score 65. There were 4 students who got score 70. There were 2 students who got score 70.5. There was 1 student who got score 71. There was 1 student who got score 71.5. There was 1 student who got score 72. There was 1 student who got score 72.5. There was 1 students who got score 75. there was 1 students who got score 79. and there was 1 student who got score 80.

The next step, the writer tabulated the score into the table for the calculation mean as follows:

Table 4.15

The Calculation of Mean of Post-test score for Experiment group

No	Score (X)	Frequency (f)	fX	fkb	fka
1.	80	1	80	14	1
2.	79	1	79	14	2
3.	75	1	75	13	3
4.	72.5	1	72.5	12	4
5.	72	1	72	11	5
6.	71.5	1	71.5	10	6
7.	71	1	71	9	7
8.	70.5	2	141	8	9
9.	70	4	280	6	13
10.	65	2	130	2	15
TOTAL		**∑f= 17**	**∑fX= 1072**		

From the table above, the data could be inserted in the formula of mean. In simple explanation, **X** is score of students, **f** is total students who got the score, **fX** is multiplication both **X** and **f**, fkb is the comulative students calculated from under to the top, in other side fka is the comulative students calculated from the top to under. The process of calculation used formula below:

a. Mean

$$M = \frac{\sum fX}{N}$$

$$M = \frac{1072}{15}$$

M= 71.4666667

M= 71.47

The calculation above showed of mean value was 71.47

The last step, the writer tabulated the scores of post-test of experimental group into the table for the calculation of standard deviation and the standard error as follows:

Table 4.16

The Calculation of the Standard Deviation and Standard Error of the Post-test Score of Experiment group

Score (X)	Frequency (f)	fX	x	x^2	fx^2
80	1	80	8.53	72.76	72.76
79	1	79	7.53	56.70	56.70
75	1	75	3.53	12.46	12.46
72.5	1	72.5	1.03	1.06	1.06
72	1	72	0.53	0.28	0.28
71.5	1	71.5	0.03	0.0009	0.0009
71	1	71	-0.47	0.22	0.22
70.5	2	141	-0.97	0.94	1.88
70	4	280	-1.47	2.16	8.64
65	2	130	-6.47	41.86	83.72
TOTAL	**∑f= 17**	**∑fX= 1072**			**∑fx²=237.72**

The table above used for calculate standard deviation and standard error by calculate standard deviation first. The process of calculation used formula below:

a. **Standard Deviation**

$$SD = \sqrt{\frac{\sum fx^2}{N}}$$

$$SD = \sqrt{\frac{237.72}{15}}$$

$$SD = \sqrt{15.848}$$

$$SD = 3.98095465937506$$

b. **Standard Error**

$$SEM_D = \frac{SD_D}{\sqrt{N-1}}$$

$$SEM_D = \frac{3.98095465937506}{\sqrt{15-1}}$$

$$SEM_D = \frac{3.98095465937506}{\sqrt{14}}$$

$$SEM_D = \frac{3.98095465937506}{3.741657386773941}$$

$$SEM_D = 1.063954886261631$$

$$SEM_D = 1.064$$

The result of calculation showed the standard deviation of post-test score of experiment group was 3.981 and the standard error of post-test score of experiment group was 1.064.

The writer also calculated the data calculation of post-test scores of experiment group using SPSS 16.0 program. The result statistic table as follows:

Table 4.17

The Frequency Distribution of Post-test Scores of Experiment Group Using SPSS 16.0 Program

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	65	2	13.3	13.3	13.3
	70	4	26.7	26.7	40.0
	70.5	2	13.3	13.3	53.3
	71	1	6.7	6.7	60.0
	71.5	1	6.7	6.7	66.7
	72	1	6.7	6.7	73.3
	72.5	1	6.7	6.7	80.0
	75	1	6.7	6.7	86.7
	79	1	6.7	6.7	93.3
	80	1	6.7	6.7	100.0
	Total	15	100.0	100.0	

The table above showed the result of post-test scores achieved by the experiment group using SPSS 16.0 program. It could be seen there were 2 students who got score 65 (13.3%). There were 4 students who got score 70 (26.7%). There were 2 students who got score 70.5 (13.3%). There was 1 student who got score 71 (6.7%). There was 1 student who got score 71.5 (6.7%). There was 1 student who got score 72 (6.7%).

There was 1 student who got score 72.5 (6.7%). There was 1 student who got score 75 (6.7%). There was 1 student who got score 79 (6.7%). And there was 1 student who got 80 (6.7%).

The next step, the writer calculated the scores of mean, median, standard deviation, and standard error of mean of post-test in experiment group using SPSS as follows:

Table 4.18

The Table of Calculation of Mean, Median, Standard Deviation, and Standard Error of Mean of Post-test Scores of experiment Group Using SPSS 16.0 Program

N	Valid	15
	Missing	0
Mean		71.4667
Std. Error of Mean		1.06398
Median		70.5000
Std. Deviation		4.12080
Variance		16.981
Range		15.00
Minimum		65.00
Maximum		80.00
Sum		1072.00

The table showed the result of mean calculation was 71.4667. The result of standard deviation was 4.12080 and the result of standard error of mean calculation was 1.06398.

4. **Distribution of Post-test Score of control group**

The post-test of the control group were presented in the following table:

Table 4.19

The Description of Post-test Scores of the Data Achieved by the students in Control Group

No.	Code	Score
1	C01	69.2
2	C02	75
3	C03	69.2
4	C04	69.2
5	C05	69.2
6	C06	70
7	C07	75
8	C08	60.7
9	C09	70
10	C10	69.2
11	C11	60.7
12	C12	67.8
13	C13	70
14	C14	67.8
15	C15	60.7
16	C16	70.7
17	C17	67.8

Table above was describing the score of each student and show the student who passed and failed the test. It shows, there were 6 students who passed the test or about 35.29 % in percentage and there were 11 students who failed the test or about 64.71 % in percentage.

Based on the data above, it can be seen that the student's highest score was 75, and the student's lowest score was 60.7. However, based on the evaluation Standard of English Subject, there were 11 students who failed since they Got fewer than 70.

Table 4.20

The Frequency Distribution of the Post-test Score of the Control Group

No	Score (X)	Frequency (f)	fX
1.	75	2	150
3.	70.7	1	70.7
4.	70	3	210
5.	69.2	5	346
6.	67.8	3	203.4
	60.7	3	182.1
TOTAL		$\sum$f= 17	$\sum$fX= 1162.2

The distribution of students' post-test score can also be seen in the following figure.

Figure 4.4

Histogram of Frequency Distribution of Post-test Score for Control Group
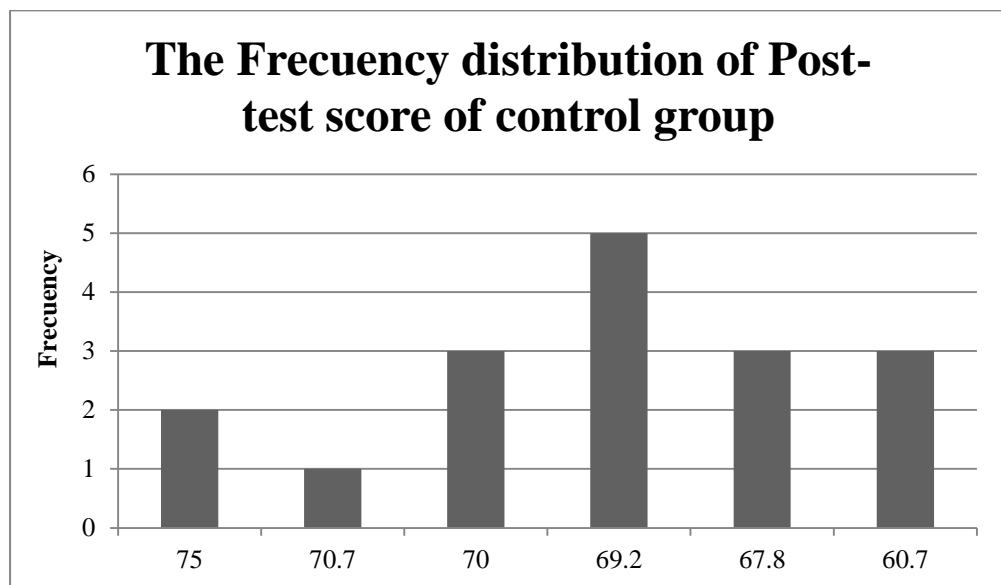
The table and figure above showed the students' post-test score of the control group. It could be seen that there were 3students who got score 60.7. There were 3 students who got score 67.8.There were 5 students who got score 69.2. There were 3students who got score 70. There was student who got score 70.7. And there were 2 students who got score 75.

The next step, the writer tabulated the score into the table for the calculation mean as follows:

Table 4.21

The Calculation of Mean of Post-test score for control group

No	Score (X)	Frequency (f)	fX	Fkb	fka
1.	75	2	150	17	2

2.	70.7	1	70.7	15	3
3.	70	3	210	14	6
4.	69.2	5	346	11	11
5.	67.8	3	203.4	6	14
6.	60.7	3	182.1	3	17
TOTAL		$\sum$**f= 17**	$\sum$**fX= 1162.2**		

From the table above, the data could be inserted in the formula of mean. In simple explanation, **X** is score of students, **f** is total students who got the score, **fX** is multiplication both **X** and **f**, fkb is the comulative students calculated from under to the top, in other side fka is the comulative students calculated from the top to under. The process of calculation used formula below:

a. Mean

$$M = \frac{\sum fX}{N}$$

$$M = \frac{1162.2}{17}$$

M= 68.3647059

M= 68.36

The calculation above showed of mean value was 68.36

The last step, the writer tabulated the scores of post-test of experimental group into the table for the calculation of standard deviation and the standard error as follows:

Table 4.22

The Calculation of the Standard Deviation and Standard Error of the

Post-test Score of Control group

Score (X)	Frequency (f)	fX	X	x^2	fx^2
75	2	150	6.64	44.08	88.16
70.7	1	70.7	2.34	5.47	5.47
70	3	210	1.64	2.69	8.07
69.2	5	346	0.84	0.71	3.55
67.8	3	203.4	-0.56	0.31	0.93
60.7	3	182.1	-7.66	58.67	176.01
TOTAL	**∑f= 17**	**∑fX= 1162.2**			**∑fx²=282.19**

The table above used for calculate standard deviation and standard error by calculate standard deviation first. The process of calculation used formula below:

a. **Standard Deviation**

$$SD = \sqrt{\frac{\sum fx^2}{N}}$$

$$SD = \sqrt{\frac{282.19}{17}}$$

$$SD = \sqrt{16.5994118}$$

$$SD = 4.074237572847219$$

b. **Standard Error**

$$SEM_D = \frac{SD_D}{\sqrt{N-1}}$$

$$SEM_D = \frac{4.074237572847219}{\sqrt{17-1}}$$

$$SEM_D = \frac{4.074237572847219}{\sqrt{16}}$$

$$SEM_D = \frac{4.074237572847219}{4}$$

$$SEM_D = 1.018559393211805$$

$$SEM_D = 1.018$$

The result of calculation showed the standard deviation of post-test score of control group was 4,074 and the standard error of post-test score of control group was 1.018.

The writer also calculated the data calculation of post-test scores of control group using SPSS 16.0 program. The result statistic table as follows:

Table 4.23

The Frequency Distribution of Post-test Scores of Control Group

Using SPSS 16.0 Program

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	60.7	3	17.6	17.6	17.6
	67.8	3	17.6	17.6	35.3
	69.2	5	29.4	29.4	64.7
	70	3	17.6	17.6	82.4
	70.7	1	5.9	5.9	88.2
	75	2	11.8	11.8	100.0
	Total	17	100.0	100.0	

The table above showed the result of post-test scores achieved by the control group using SPSS 16.0 program. It could be seen there were 3students who got score 60.7 (17.6%). There were 3 students who got score 67.8 (17.6%). There were 5 students who got score 69.2 (29.4%). There were 3 students who got score 70 (17.6%). There was 1 student who got score 70.7 (5.9%). And there were 2 students who got score 75 (11.8%).

The next step, the writer calculated the scores of mean, median, standard deviation, and standard error of mean of post-test in control group using SPSS as follows:

Table 4.24

The Table of Calculation of Mean, Median, Standard Deviation, and Standard Error of Mean of Post-test Scores of control Group Using SPSS 16.0 Program

N	Valid	17
	Missing	0
Mean		68.3647
Std. Error of Mean		1.01861
Median		69.2000
Std. Deviation		4.19984
Variance		17.639
Range		14.30
Minimum		60.70
Maximum		75.00
Sum		1162.20

The table showed the result of mean calculation was 68.3647. The result of standard deviation was 4.19984 and the result of standard error of mean calculation was 1.01861.

B. Testing Normality and Homogeneity

The definition of Homogeneity of Variance is when all the variables in statistic data have the same finite or limited variance. When, homogeneity of variance is equal for a statistical model. A simple computation approach to analysing the data can be used due to a low level of uncertainty in the data.

This equality is homogeneity or homoscedasticity.[62] Because of that, the writer used SPSS 16.0 to measure the normality of the data.

1. **Testing Normality**

One-Sample Kolmogorov-Smirnov Test

		Pre Test	Post test
N		15	15
Normal Parameters[a]	Mean	63.3867	71.4667
	Std. Deviation	3.67790	4.12080
Most Extreme Differences	Absolute	.354	.228
	Positive	.354	.201
	Negative	-.233	-.228
Kolmogorov-Smirnov Z		1.372	.882
Asymp. Sig. (2-tailed)		.046	.419

a. Test distribution is Normal.

The criteria of the normality test pre-test and post-test is if the value of (probability value/critical value) was higher than or equal to the level of significance alpha defined (r = a), it means that, the distribution was normal. Based on the calculation using SPSS 16.0 above, the value of r (probably value/critical value) from pre-test and post-test of the experiment group in Kolmogorov-Smirnov table was higher than level of significance alpha used or r = 0.046> 0.05 (Pre-test) and r = 0.419 > 0.05 (Post-test) so that the distributions are normal. It meant that the students' score of in pre-test and post-test had a normal distribution.

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[62] Agus Irianto, *Statistik: Konsep Dasar dan Aplikasinya*, Jakarta: Prenada Media, 2004, p.62.

2. Testing Homogeneity

Test of Homogeneity of Variances

Vocabulary Size

Levene Statistic	df1	df2	Sig.
.210	1	28	.651

ANOVA

Vocabulary Size

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	489.648	1	489.648	32.100	.000
Within Groups	427.111	28	15.254		
Total	916.759	29			

The criteria of the homogeneity test pre-test and post-test was if the value of (probability value/critical value) was higher than or equal to the level of significance alpha defined (r = a), it means that, the distribution was homogeneity. Based on the calculation using SPSS 16.0 above, the value of (probably value/critical value) from pre-test and post-test of the experiment group on Homogeneity of Variances in sig column is known that p-value was 0,651. The data in this study fulfilled homogeneity since the p value is higher $0,651 > 0.05$.

C. Testing Hypothesis using T $_{test}$

The writer chose the significance level on 5%, it means the significance level of refusal of null hypothesis on 5%. The writer decided the significance level at 5% due to the hypothesis type stated on non-directional (two-tailed test). It means that the hypothesis can't direct the prediction of alternative Hypothesis. Alternative Hypothesis symbolized by "1". This symbol could direct the answer of hypothesis, "1" can be ($>$) or ($<$). The answer of hypothesis could not be predicted whether on more than or less than.

To test the hypothesis of the study, the writer used t-test statistical calculation. Firstly, the writer calculated the standard deviation and the error of X_1 and X_2 at the previous data presentation. In could be seen on this following table:

Table 4.25

The Standard Deviation and Standard Error of X_1 and X_2

Variable	The Standard Deviation	The Standard Error
X_1	3.981	1.064
X_2	4.074	0.018

X_1 = Experimental Group

X_2 = Control Group

The table showed the result of the standard deviation calculation of X_1 was 3.981 and the result of the standard error mean calculation was 1.064. The result of the standard deviation calculation of X_2 was 1.320 and the result of the standard error mean calculation was 0.330.

The next step, the writer calculated the standard error of the differences mean between X_1 and X_2 as follows:

Standard error of mean of score difference between Variable I and Variable II

$$SE_{M1} - SE_{M2} \quad = SE_{M1}{}^2 + SE_{M2}{}^2$$

$$SE_{M1} - SE_{M2} \quad = \sqrt{(1.064) + (0.018)^2}$$

$$SE_{M1} - SE_{M2} \quad = \sqrt{1.132096 + 0.000324}$$

$$SE_{M1} - SE_{M2} \quad = \sqrt{1.13242}$$

$$SE_{M1} - SE_{M2} \quad = 1.064152244746963$$

$$SE_{M1} - SE_{M2} \quad = 1.064$$

The calculation above showed the standard error of the differences mean between X_1 and X_2 was 1.064. Then, it was inserted to the t_o formula to get the value of t observed as follows:

$$t_o = \frac{M1 - M2}{SEm1 - SEm2}$$

$$t_o = \frac{71.47 - 68.36}{1.064}$$

$$t_o = \frac{3.11}{1.064}$$

$$t_o = 2.9229323$$

$$t_o = 2.922$$

Which the criteria:

If t-test (t-observed) $\geq$ t-table, Ha is accepted and Ho is rejected

If t-test (t-observed) $<$ t-table, Ha is rejected and Ho is accepted

Then, the writer interpreted the result of t-test; previously, the writer accounted the degree of freedom (df) with the formula:

Df $= (N_1 + N_2) - 2$

$= 15 + 17 - 2$

$= 30$

5%	t_o	1%
2.04	$< 2.922 >$	2.75

The writer chose the significant levels at 5%, it means the significant level of refusal of null hypothesis at 5%. The writer decided the significance level at 5% due to the hypothesis typed stated on non-directional (two-tailed test). It meant that the hypothesis can't direct the prediction of alternative hypothesis. Alternative hypothesis symbolized by "1". This symbol could

direct the answer of hypothesis, "1" can be (>) or (<). The answer of hypothesis could not be predicted whether on more than or less than.

The calculation above showed the result of t-test calculation as in the table follows:

Variable	T observed	T table		Df/db
		5%	1%	
X_1-X_2	2.922	2.04	2.75	30

Where:

X_1 = Experimental Group

X_2 = Control Group

T observe = the calculated Value

T table = the distribution of t value

Df/db = Degree of freedom

Based on the result of hypothesis test calculation, it was found that the value of $t_{observed}$ was greater than the value of t_{able} at 1% and 5% significance level or 2.04 < 2.922>2.75. It means H_a was accepted and H_o was rejected.

It could be interpreted based on the result of calculation that H_a stating that the students taught vocabulary by comic strips media have better

vocabulary size was accepted and H_o stating that the students taught vocabulary by comic strips media do not have better vocabulary size was rejected. It means that the students taught by comic strips media have better vocabulary size than those taught by non-comic strips media at the eleventh-year students of SMAN 1 Hanau.

D. Testing Hypothesis Using SPSS Program

The writer also applied SPSS 16.0 program to calculate t test in testing hypothesis of the study. The result of the t test using SPSS 16.0 was used to support the manual calculation of the t test. The result of the test using SPSS 16.0 program could be seen as follows:

Table 4.26

The Standard Deviation and the Standard Error of X_1 and X_2 using SPSS 16.0

Group Statistics

	Class	N	Mean	Std. Deviation	Std. Error Mean
Scores	Experiment	15	71.47	4.121	1.064
	Control	17	68.36	4.200	1.019

The table showed the result of the standard deviation calculation of X_1 was 4.121 and the result of the standard error mean calculation was 1.064. The result of the standard deviation calculation of X_2 was 4.200 and the standard error mean calculation was 1.019

Table 4.27

The Calculation of T-test Using SPSS 16.0

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
Scores	Equal variances assumed	.006	.941	2.103	30	.044	3.102	1.475	.090	6.114
	Equal variances not assumed			2.106	29.638	.044	3.102	1.473	.092	6.112

The table showed the result of t-test calculation using SPSS 16.0 program. Since the result of post-test between experiment and control group had difference score of variance, it meant the t-test calculation used at the equal variances not assumed. It found that the result of $t_{observed}$ was 2.103, the result of mean difference between experimental and control group was 3.102 and the standard error difference between experimental and control group was 1.475.

E. Interpretation

To examine the truth or the false of null hypothesis stating that the students taught vocabulary by comic strips media do not have better

vocabulary size, the result of t-test was interpreted on the result of degree of freedom to get the t_{able}. The result of degree of freedom (df) was 30, it found from total number of the students in both group minus 2. The following table was the result of $t_{observed}$ and t_{able} from 30 df at 5% and 1% significance level.

Table 4.28

The Result of T-test Using SPSS 16.0

Variable	T observed	T table		Df/db
		5%	1%	
X_1-X_2	2.922	2.04	2.75	30

The interpretation of the result of t-test using SPSS 16.0 program, it was found the t observe was greater than the t table at 1% and 5% significance level or 2.04< 2.922 >2.75. It means that H_a was accepted and H_o was rejected.

It could be interpreted based on the result of calculation that H_a stating that the students taught vocabulary by comic strips media have better vocabulary size was accepted and H_o stating that the students taught vocabulary by comic strips media do not have better vocabulary size was rejected. It means that the students taught by comic strips media have better vocabulary size than those taught by non-comic strips media at the eleventh-year students of SMAN 1 Hanau.

F. Discussion

The result of data analysis showed that the students taught by comic strips media have better vocabulary size than those taught by non-comic strips media at the eleventh-year students of SMAN 1 Hanau. It can be seen first from the means score between Pre-test and Post-test. The mean score of Post-test reached higher score than the mean score of Pre-test (X= 63.57< Y=71.47). It indicated that the students' score increased after conducting treatment. In other words, the students taught by comic strips media have better vocabulary size than those taught by non-comic strips media at the eleventh-year students of SMAN 1 Hanau.

Meanwhile, after the data was calculated using the t_{test} formula using manual calculation showed that the $t_{observed}$ was 2.922. By comparing the $t_{observed}$ with the t_{table}, it was found that the $t_{observed}$ was higher than the value of t_{able} at 1% and 5% significance level or 2.04 < 2.922 >2.75.

In teaching learning process, taught vocabulary by using comic strip media was a tool used by the writer to teach the students. Comic strip media could make a good interaction between teacher and students. From the result of analysis, it could be seen from the score of students how the used of media gave positive effects for students vocabulary size. It meant media has important role in teaching learning process. It was answered the Problem of the study which "Do the students taught by comic strips media have better vocabulary size than those taught by non-comic strips media at the eleventh-year students of SMAN 1 Hanau ?".

The results supported by theory (Chapter II Kemp and Dayton) about the reasons why teaching media could increase students' learning process.

The first reason was about the advantage of media in learning process, such as: teaching process will be more interesting; the materials clearly in meaning; the teaching method will be more variety, not only verbal communication by the teacher; students will do more learning activity, because not only listen the teacher's explanation but also other activity like observe, make something, demonstration, etc. From the data above, it can be known that taught by comic strips media have better vocabulary size. The students more interested to receive vocabulary using comic strip media. So, the writer taught vocabulary size by using comic strip media was balanced with the theory in chapter II. The theory was support the use of comic strip media in learning process and suitable with the condition of the eleventh-year students.

The second reason was in teaching learning process, media was tool to help the teacher and the students to increase their learning activities. By using media, the teacher could make a good situation in learning process and very helpful to motivate the students in their learning activity and it also effective in teaching.

Next, the result was supported by theory (Chapter II Gene Yang) stated that pictures tell any story more effectively than words. In line with pictures, comic strip that used by writer gave more effective the study. Comic strip not only gave the vocabulary from ballon word but also the picture can convey vocabulary. Because of comic strip, the students enjoy the subject and they are

really antusiasm. The students more easy to understand what the materials'
mean with comic strip. Comic strip has strength as a media, such as:

1. Motivating

    The most opinion about comics as an educational tool is its ability
    to motivate students. Through comic as a media, the teacher can motivate
    the students to learn English in more enjoyable and interesting ways.

2. Visual

    Comics which are being composed of pictorial and set images are
    fundamentally a visual media. The interest of students in comics' picture
    emphasizes the potential of visual media.

3. Intermediary

    Comics can serve as an intermediate step to difficult disciplines
    and concepts. Many language arts educators have used comics in this
    manner with tremendous success.

4. Popular

    Comic is a popular reading for children. If we ask the students,
    whether they have read comic or not, most of them would say, "yes." It is
    very popular because comic has interesting story and full of colours.

    Then, the result was supported by theory (Chapter II McCloud) stated
that comics are juxtaposed pictorial and other images in deliberate sequence,
intended to convey information and/or to produce an aesthetic response in the
viewer. The main role of comic strip in this study is its strength in gaining the
students' interest. It is better to combine the used of comic with a particular

method of teaching. So, the used of comic strip as a media of teaching was more effective. The writer helped the students to find a good and enjoyable comic strip which is appropriate to the way the students think and the students' age. Also, the writer helped them got broader information and knowledge from the comic.

The result also was supported by theory (Chapter II Noemi Csabay) The used of comic strip in this research gave effect for the students' vocabulary size. Comic strip is a media that has something different with other media. Because the pictures in the comic strip in good order so as to form a story and use word balloons to clarify the story in it. In addition, the use of colour is also affected and can attract the interest and attention of the students. Consequently, the student have been eager to know what will happen, what will be the end of the story (as his/her curiosity has been aroused), and will remember the words, expressions, and grammatical forms easily. Vocabulary has important role in language learning. Without a proper size of vocabulary, the students are difficult to develop their English learning. They even do not know what to say something in English if they do not have enough vocabulary.

Also supported by theory (Chapter II David A. Wilkins) stated that while without grammar very little can be conveyed, without vocabulary nothing can be conveyed. this study shown that the students' vocabulary size can increase because of comic strip media.

Problem of the writer when conducting the study in implementation the method by using comic strip media is about the students which they have not

known yet about comic strip. So, the writer should introduce the comic strip

first to them. Then, they are really enthusiasm with the media.