CHAPTER IV

RESEARCH FINDING

A. Description of Data

To know the implementation of visual aids in teching english vocabulary, the writer gave pre test before teaching as post-test that would be used as data in the research. Both of the test, pre-test and post-test the writer gave them include vocabulary test. Having finished the field research, the writer got the score as follow.

a. The calculation of control class from pre-test and post-test score as Y variable

Table 4.1

Score of pre-tes and post-test from control class as Y variable

NO	INITIAL NAME	SCORE	
		PRE-TEST	POST-TEST
1	AR	80	85
2	AMM	80	80
3	BMF	70	75
4	FAH	75	75
5	GS M	80	80
6	H Z	70	80
7	M R R	50	65
8	M A	60	70
9	MF R	65	65

10	N S A	50	60
11	RN	65	65
12	RFM	80	80
13	TB. IID	55	60
14	VA	50	50
15	WRR	50	50

a) The calculation of control class from pre-test

1. Determine interval class

   Determine Range

R= H – L+ 1 = 80 – 50 + 1 = 31	K = 1 + 3,3 log n = 1 + 3,3 log 15 = 1 + 3,3 x 1,17 = 1 + 3,86 = 4,86 It rounded off become 5	I = $\frac{R}{K} = \frac{31}{5}$ = 6,2 It round off become 6

R = Range K = Many classes

H = Higher score I = Interval

L = Lower score

2. Make frequency of distribution score

Table 4.2

The frequency of distribution score from pre- test of control class

interval	f	x	x2	fx	fx2
50-55	5	77,5	6006,25	387,5	30031,25
56-61	1	86,5	7482,25	86,5	7482,25
62-67	2	95,5	9120,25	191	18240,5
68-73	2	104,5	10920,25	209	21840,5
74-80	7	114	12996	798	90972
	15	478	46525	1672	168566,5

3. Determine mean

   MYI = $\frac{\sum fx}{N} = \frac{1672}{15}$ = 111,46

4. Determine deviation standard

   Sdy1 = $\sqrt{\frac{\sum fx2}{N}} = \sqrt{\frac{168566,5}{15}}$ =√11237,76 = 106,00

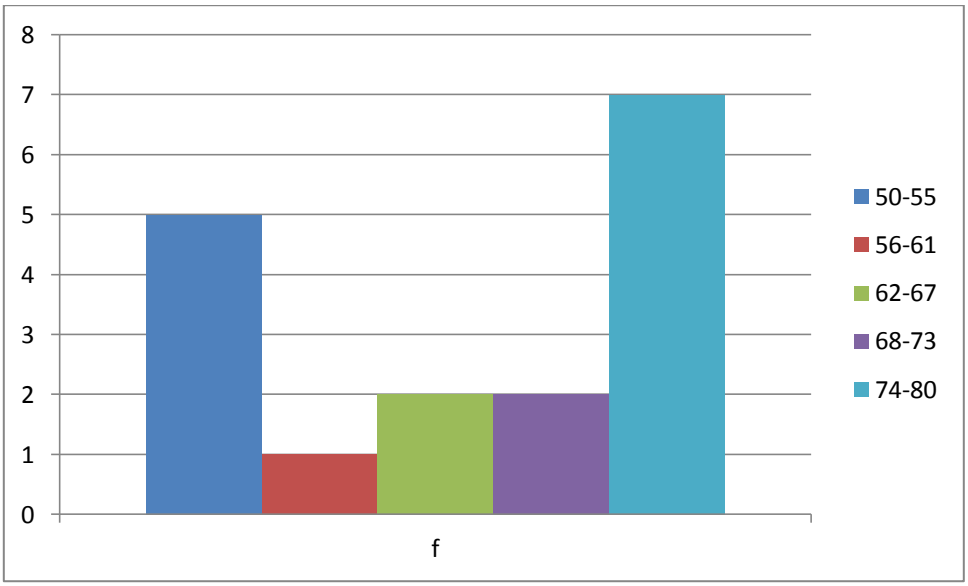
5. Determine error standard

   $SE_{y1} = \frac{SDx2}{\sqrt{N}-1} = \frac{106,00}{\sqrt{15}-1}$ = 28,32

6. Make the polygon graphic

Graphic 4.1

The polygon graphic of pre-test control class (2C)



Based on polygon graphich above, it can be described as follow:

1. The first label on the x is (mid – point) was 53. This represents an interval extending from 50 to 55, this interval has frequency of 5.
2. The point labeled 58 represents the interval from 56 to 61. This interval has frequency of 1.
3. The point 64 represents the interval from 62 to 67. This interval has frequency of 2.
4. The point 70 represents the interval from 68 to 73. This interval has frequency of 2.
5. The point 74 represents the interval from 74 to 80. This interval has frequency of 7

7. The calculation of control class from post-test score

   1. `Determine interval class

      `Determine range:

R = H – L + 1 = 85 – 50 + 1 = 36	K = 1 + 3,3 log n = 1 + 3,3 log 15 = 1 + 3,3 x 1,17 = 1 + 3,86= 4,86 It rounded off become 5	I = $\frac{R}{K} = \frac{36}{5}$ = 7,2 It round off become 7

R = Range K = Many classes

H = Higher score I = Interval

L = Lower score

   2. Make Frequency of Distribusi Score

Table 4.3

The frequency of distribution score fro post-test control class

interval	f	x	x2	fx	fx2
50-56	2	78	6084	156	12168
57-63	2	88,5	7832,25	177	15664,5
64-70	4	99	9801	396	39204
71-77	2	109,5	11990,25	219	23980,5
78-85	7	120,5	14520,25	843,5	101641,8
	15	495,5	50227,75	1791,5	192658,8

3. Determine Mean

$$MY2 = \frac{\sum fx}{N} = \frac{1791,5}{15} = 119,43$$

4. Determine Deviation Standard

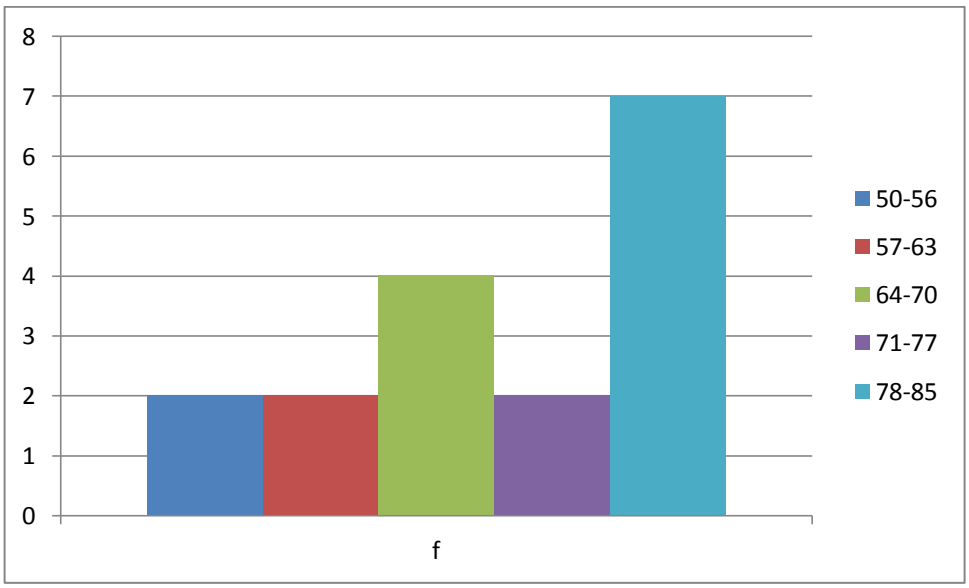
$$SDx2 = \sqrt{\frac{\sum fy2}{N}} = \sqrt{\frac{192658,8}{15}} = \sqrt{12843.92} = 113,33$$

5. Determine Error Standard

$$SE_{x2} = \frac{SDx2}{\sqrt{N}-1} = \frac{113,33}{\sqrt{15}-1} = 30,28$$

The polygon graphic of post-test from control class (2C)

Graphich 4.2



Based on the polygon graphic above, it can be described as follow:

1. The first label on the x – axis (mid-point) was 53. This represents an interval extending from 50 to 56. This interval has frequency of 2.
2. The point labeled 55 represents the interval from 57 to 63. This interval has frequency of 2.
3. The point labeled 67 represents the interval from 64 to 70. This interval has frequency of 4.
4. The point labeled 74 represents the interval from 71 to 77. This interval has frequency of 2.
5. The point labeled 81 represents the interval from 78 to 85. This interval has frequency of 7.

Table 4.4

Score of pre-tes and post-test from experiment class as X variable

NO	Respondents	SCORE	
		Pre-test	Post-test
1	AIB	70	80
2	AYI	75	80
3	AD	65	70
4	AA	75	80
5	DSH	80	85

6	DEG	65	75
7	KAR	70	80
8	KLW	65	80
9	MHF	60	70
10	MAA	70	80
11	MNL	75	90
12	MNNA	75	85
13	MB	75	90
14	MER	60	80
15	NPN	85	90
16	NA	55	75
17	SHA	80	90
18	SFM	75	85
19	TRS	75	80
20	TSK	75	90
21	VRA	75	80
22	WVR	70	85

b. Calculation of experimental class from pre-test and post-test score as X variable

Score of pre test and post-test from experimental class as X variable

a) The calculation of experimental class from pre-test score

1. Determine interval class

Determine range:

R = H – L + 1 = 85 – 55 + 1 = 31	K = 1 + 3,3 log n = 1 + 3,3 log 22 = 1 + 3,3 x 1,34 = 1 + 4,42 = 5,42 It rounded off become 5	I = $\frac{R}{K} = \frac{31}{5}$ = 6,2 It round off become 6

R = Range K = Many classes

H = Higher score I = Interval

L = Lower score

2. Make frequency of distribution score

Table 4.5

The frequency of distribution score of pre-test from experimental class

interval	f	x	x2	fx	fx2
55-60	3	85	7225	255	21675
61-66	3	94	8836	282	26508
67-72	4	103	10609	412	42436
73-78	9	112	12544	1008	112896
79-85	3	121,5	14762,25	364,5	44286,75
	22	515,5	53976,25	2321,5	247801,8

3. Determine mean

$$MX1 = \frac{\sum fx}{N} = \frac{2321,5}{22} = 105,52$$

4. Determine Deviation Standard

$$SDx2 = \sqrt{\frac{\sum fx2}{N}} = \sqrt{\frac{247801,8}{22}} = \sqrt{11263,72} = 106,13$$

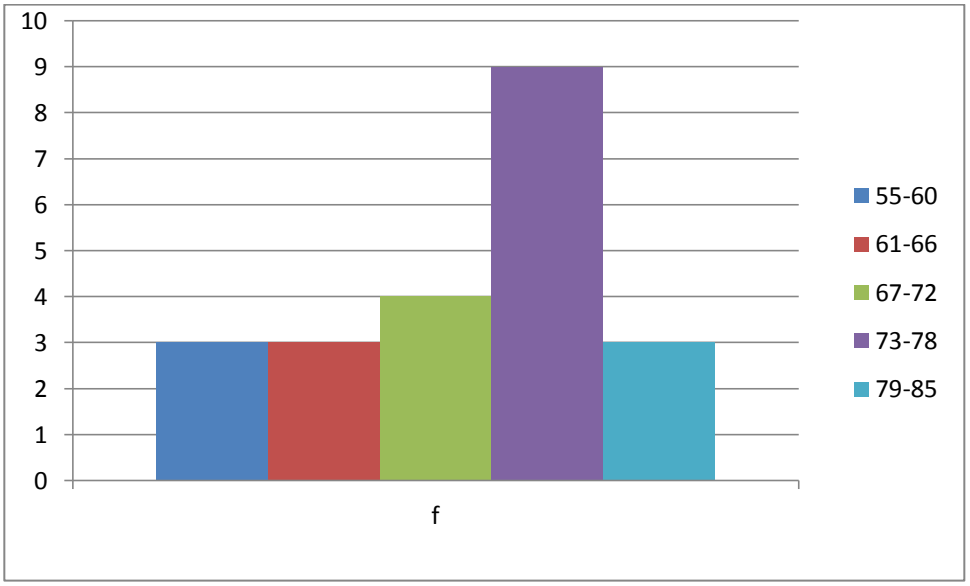
5. Determine Error Standard

$$SE_{x2} = \frac{SDx2}{\sqrt{N-1}} = \frac{106,13}{\sqrt{22-1}} = 23,17$$

6. Make the polygon graphic

The polygon graphic of pre-test from experimental class

Graphic 4.3



Based on polygon graphic above, it can be described has follow:

1. The first label on the x – axis (mid-point) was 57. This represents an interval extending from 55 to 60. This interval has frequency of 3
2. The point labeled 63 represent the interval from 61 to 66. This interval has frequency 3.
3. The point labeled 69 represent the interval from 67 to 72. This interval has frequency 4.
4. The point labeled 75 represent the interval from 73 to 78. This interval has frequency 9.

5. The point labeled 82 represent the interval from 79 to 85. This interval has frequency 3.

b) The calculation of experimental class from post-test score

1. Determine interval class

Determine range:

R = H – L + 1 = 90 – 70 + 1 = 21	K = 1 + 3,3 log n = 1 + 3,3 log 22 = 1 + 3,3 x 1,34 = 1 + 4,42 = 5,42 It rounded off become 5	I = $\frac{R}{K} = \frac{21}{5}$ = 4,2 It round off become 4

R = Range K = Many classes

H = Higher score I = Interval

L = Lower score

2. Make frequency of distrubution score

Table 4.6

The frequency of distribution score of post-test from experimental class

interval	f	x	x2	fx	fx2
70-73	2	106,5	11342,25	213	22684,5
74-77	2	112,5	12656,25	225	25312,5
78-81	9	118,5	14042,25	1066,5	126380,3
82-85	4	124,5	15500,25	498	62001
86-90	5	131	17161	655	85805
	22	593	70702	2657,5	322183,3

3. Determine mean

$$MX2 = \frac{\sum fx}{N} = \frac{2657,5}{22} = 120,79$$

4. Determine Deviation Standard

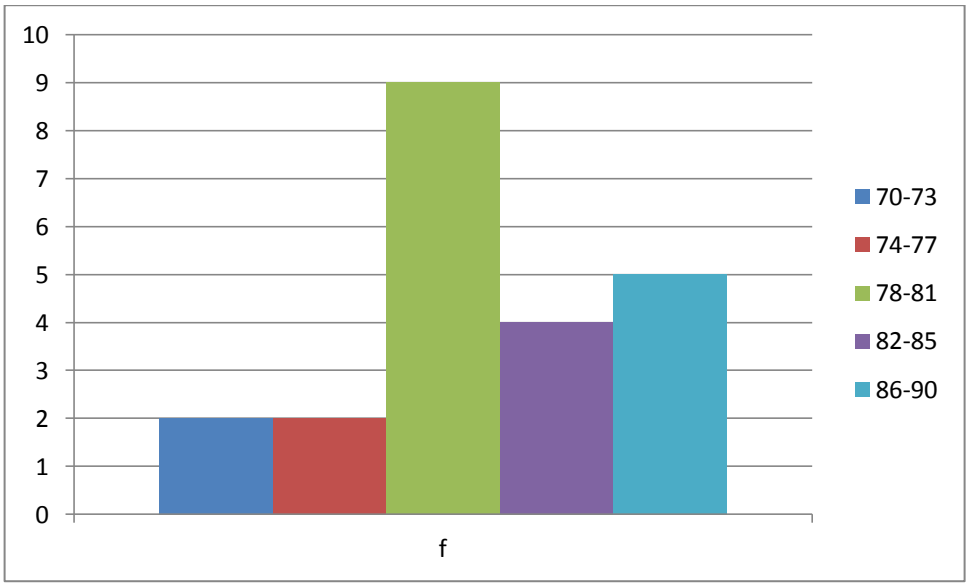
$$SDx2 = \sqrt{\frac{\sum fx2}{N}} = \sqrt{\frac{322183,3}{22}} = \sqrt{14644,69} = 121,01$$

5. Determine Error Standard

$$SE_{x2} = \frac{SDx2}{\sqrt{N-1}} = \frac{121,01}{\sqrt{22-1}} = 26,42$$

The polygon grphic of post-test from experimental class

Graphic 4.4



Based on polygon graphic above, it can be described has follow:

1. The first label on the x – axis (mid-point) was 71. This represents an interval extending from 70 to 73. This interval has frequency of 2
2. The point labeled 75 represent the interval from 74 to 77. This interval has frequency 2.
3. The point labeled 79 represent the interval from 78 to 81. This interval has frequency 9.
4. The point labeled 83 represent the interval from 82 to 85. This interval has frequency 4.
5. The point labeled 88 represent the interval from 86 to 90. This interval has frequency 5.

Determine average score for control class and experimental class

For control class is

MY = My2 – My1 = 119,43 – 111,46 = 7,97

For experimental class

Mx = Mx2 – Mx1 = 120,79 – 105,52= 15,27

6. Determine percentage both X variable and Y variable

After making the polygon, then, the writer determines how big percentage from Y variable by formula :

% = $\frac{MY}{MY+MX}$ x 100 % = $\frac{7,97}{7,97+15,27}$ x 100 % = 34 %

Based on the result of the calculation, it can be seen that the percentage from control got increasing into 34 %

Furthermore, the writer determines how big percentage of the average score increase from X variable by formula :

% = $\frac{MY}{MY+MX}$ x 100 % = $\frac{15,27}{7,97+15,27}$ x 100 % = 65 %

So, the percentage from experimental class got increasing 65 %. It got higher percentage than control class.

7. Determine difference of error standard from X variable and Y varible.

$SE_{mx} – SE_{my} = \sqrt{SE^2_x + SE^e_y} = \sqrt{(28,32)^2 + (30,28)^2} =$ 36,43

8. Determine t_0 (t observation)

To = $\frac{Mx-My}{\text{SEmx} - \text{SEmy}} = \frac{15,27-7,97}{36,43} = 3,23$

Giving interpretation to "t_0"

Df = (N1 + N2) = 15 + 22 = 37 (consult to "t" table score).

Based on t table that there is not df containing 37. So the writer uses the nearest df 37. With df as number 37 is got t table as follow :

At significanse level 5 % : t_t = 2, 00

At significanse level 1 % : t_t = 2,65

With te formula t_t 5 % < t_0 > t_t 1 %

2,00 < 3,23 > 2,65

Because "t_0" that the writer got from the calculation is higher than t table both at significance level 5 % and 1 %, so the hypothesis alternative (H_0) is accepted. It means that both X variable and Y variable has significant diffrence.

B. Hypotesis Testing

To prove the writer's hypotesis which is submitted before, the data obtained from experimental and control class are formulated by assumption as follow:

If t_o> t_t : the alternative hypotesis is accepted. It means there is the effectiveness of visual aids in teaching

english vocabulary in 2A (siti zainab) as an experiment class and 2C (siti sofiah) as control class.

If $t_o < t_t$: the alternative hypotesis is rejected. It means there is not the effectiveness of visual aids in teaching english vocabulary in 2A (siti zainab) as an experiment class and 2C (siti sofiah) as control class.

From the result of the calculation above, the writer got the value of the t_0 is 3,23 and Df is 37. According to t table at significant level of 5% and 1% with df = 37 is 2,00

And 2,65. Since the writer got t_o higher than t_t = 2,00 < 3,06 > 2,65, it means that H_a (alternative hypothesis) of research is accepted and H_o (null hypothesis) is rejected. It means visual aids has significant on students vocabulary mastery.

C. Interpretation of data

From the calculation of data, the writer got the result as follow:

From control class: (1) mean score of pre-test (My1) 111,46 and post-test score (My2) 119,43. It means that average score of control class that increase 7,97. Whereas mean score from experimental class from pre-test (Mx1) 105,52 and post-test score (Mx2) 120,79. It means that average score from experimental class that increas 15,27 and it got higher increas than from control

class. (2) the percentage from control class is 34% and experimental class is 65%, so both average and percentage score both of control class and experimental class got increas but control class got relatively little increase than experimental class. (3) “t”observation is 3,23 and df 37.

Based on the data obtained from control class and experimental class among the average score, percentage, and t observation, the writer summarize that visual aids has significant effect on students’ vocabulary mastery.