

## CHAPTER IV

### THE RESULT OF THE RESEARCH

#### A. Description of the data

As explained in chapter III, the writer conducts an experimental study in experimental research the writer got the data from the result of teaching in experimental and control classes and the score obtained from the students' writing test at "SMA Al-Khairiyah Kelapian".

The research involved 47 students as research respondent which taken from two classes to describe second year students at "SMA Al-Khairiyah Kelapian". The material is the using problem-based learning (PBL) approach on writing ability.

To know the result of the test, the writer makes the table of the students' score for each variable as follow:

**Table 4.1**

**Data from pre and post-test of experimental class**

No	Respondents	Score	
		Pre-test	Post-test
1	AS	20	54
2	AH	31	64
3	AZ	54	73
4	D	21	64
5	F	58	80
6	FA	20	61

7	IF	44	75
8	IS	61	90
9	K	54	75
10	L	21	53
11	MIB	26	48
12	M	23	73
13	MM	33	50
14	NI	61	70
15	OS	40	63
16	RF	26	60
17	S	28	64
18	SD	70	90
19	S	55	63
20	SA	40	49
21	SW	61	70
22	U	26	40
23	U	33	57
24	WN	32	75
25	YL	34	69
$\Sigma$		970	1630
X		38,8	65,2

The table above shows the students' writing ability at the grade eleven of SMA Al-Khairiyah Kelapian in experimental class (XI MIA) before treatment the score is less. It can be known

from the result of pre-test, the highest score is 70 the lowers score is 20 the score draws that highest score of students' writing ability is good and the lowers score is bad and the result of post-test after treatment show that students' score, the highest score is 90 and the lowers score is 40 there is improvement on criteria of students' score that the highest score is very good and the lower score that the lower score is enough.

To find mean score, the writer follows the formula:

$$\begin{aligned} M1 &= \frac{\Sigma X2}{N2} \\ &= \frac{1630}{25} \\ &= 65,2 \end{aligned}$$

$$\begin{aligned} M2 &= \frac{\Sigma X1}{N1} \\ &= \frac{970}{25} \\ &= 38,8 \end{aligned}$$

Note: M1 = Mean

X1 = Students' score (Post-test)

X2 = Students' score (Pre-test)

N = Number of students

Based on the calculation on the table 1 of pre-test and post-test assessment at experiment class, it shows that the cumulative value of pre-test is 970. The average of the pre-test is 38,8. Meanwhile, the cumulative value of post-test is 1630. The average of post-test result is 65,2.

Determine mean by formula:

$$\begin{aligned} M &= M1 - M2 \\ &= 65,2 - 38,8 \\ &= 26,4 \end{aligned}$$

Note: M = Mean  
M1 = Mean of post-test  
M2 = Mean of pre-test

From the calculation of determine mean above, as have known that the average score of pre-test and post-test (at experiment class) increase in amount of 26,4.

**Table 4.2**  
**Data from pre and post-test of control class**

No	Respondents	Score	
		Pre-test	Post-test
1	AH	20	40
2	AH	16	44
3	E	30	47
4	ERP	45	70
5	FT	17	30
6	F	26	50
7	F	41	60
8	IH	35	70
9	I	35	65
10	I	15	32
11	LS	35	40

12	L	32	43
13	M	33	51
14	N	36	42
15	N	16	44
16	NA	19	31
17	RJ	26	33
18	RK	31	47
19	R	19	31
20	R	47	50
21	S	41	52
22	T	35	40
Σ		650	1012
X		29,54	46

The table above shows the students' writing at the grade eleven of SMA Al-Khairiyah Kelapian in control class (XI IIS) before treatment the score is less. It can be known from the result of pre-test the highest score of students' writing ability is enough and lowers score is bad and the result of post-test after treatment show that students' score the highest score is 70 and the lowers score is 30. There is not the good improvement on the criteria of students' score in control class that the highest score is good and the lower score is still bed.

The fine the mean score, the writer follows the formula:

$$M1 = \frac{\sum X2}{N2}$$

$$\begin{aligned}
 &= \frac{1012}{22} \\
 &= 46 \\
 \text{M2} &= \frac{\Sigma X_1}{N_1} \\
 &= \frac{650}{22} \\
 &= 29,54
 \end{aligned}$$

Based on the calculation on the table 2 of pre-test and post-test assessment at comparison class, it shows that the cumulative value of pre-test is 650. The average of the pre-test is 29,54. Meanwhile, the cumulative value of post-test is 1012. The average of post-test result is 46.

Determine mean by formula:

$$\begin{aligned}
 \text{M} &= \text{M1} - \text{M2} \\
 &= 46 - 29,54 \\
 &= 16,46
 \end{aligned}$$

Note: M = Mean

M1 = Mean of post-test

M2 = Mean of pre-test

From the calculation of determine above, we have known that the average score of pre-test and post-test (at control class) increase amount of 16,46.

Assessing writing is one of the best known and most widely uses analytic scales in ESL was created by Jacobs (1981).

In Jacobs scale, scripts are related on five aspect writing: content, organization, vocabulary, language use, and mechanics.<sup>1</sup>

**Table 4.3**

**Analysis of pre-test in experiment class**

**Subject: English**

**Mean score: 38,8**

**Teacher: SF**

**Respondent: 25**

No	Name	Description					
		Score	Content	Organization	Vocabulary	Grammar	Mechanics
1	AS	20	5	5	3	5	2
2	AH	31	10	8	6	5	2
3	AZ	54	15	10	10	15	4
4	D	21	5	5	4	5	2
5	F	58	15	10	14	15	4
6	FA	20	5	5	3	5	2
7	IF	44	13	8	11	9	3
8	IS	61	15	15	9	17	5
9	K	54	15	10	10	15	4
10	L	21	7	4	4	4	2
11	MIB	26	7	5	7	5	2
12	M	23	7	5	4	5	2
13	MM	33	10	8	8	5	2
14	NI	61	15	15	9	17	5

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<sup>1</sup> Sarah Cushing Weigle, *Assessing Writing*, (Cambridge: Cambridge University Press, 2002), p.116

15	OS	40	13	8	7	9	3
16	RF	26	7	5	7	5	2
17	S	28	7	5	9	5	2
18	SD	70	20	12	20	13	5
19	S	55	15	11	12	13	4
20	SA	40	13	8	7	9	3
21	SW	61	15	15	9	17	5
22	U	26	7	5	7	5	2
23	U	33	10	8	8	5	2
24	WN	32	10	8	7	5	2
25	YL	34	13	7	7	5	2

Table 4.4

**Analysis of post-test in experiment class**

**Subject: English**

**Mean score: 65,2**

**Teacher: SF**

**Respondent: 25**

No	Name	Description					
		Score	Content	Organization	Vocabulary	Grammar	Mechanics
1	AS	54	13	13	8	17	3
2	AH	64	15	12	19	13	5
3	AZ	73	20	12	25	13	3
4	D	64	15	12	19	13	5
5	F	80	23	16	20	18	3
6	FA	61	15	15	9	17	5
7	IF	75	20	15	25	13	2

8	IS	90	23	20	20	22	5
9	K	75	20	15	25	13	2
10	L	53	13	13	7	17	3
11	MIB	48	13	11	8	14	2
12	M	73	20	12	25	13	3
13	MM	50	13	11	8	16	2
14	NI	70	20	12	20	13	5
15	OS	63	15	12	18	13	5
16	RF	60	15	15	8	17	5
17	S	64	15	12	19	13	5
18	SD	90	23	20	20	22	5
19	S	63	15	12	18	13	5
20	SA	49	13	11	8	15	2
21	SW	70	20	12	20	13	5
22	U	40	13	8	7	9	3
23	U	57	15	15	8	15	4
24	WN	75	20	15	25	13	2
25	YL	69	20	12	19	13	5

After writing the comparison between the score of pre-test and post-test, the writer calculates deviation and squared deviation and the result of calculation by using the formula-test can be seen at the analysis of data as follow:

## B. Analysis the Data

After getting the data score of two classes from pre-test and post-test. Then the writer analyzed it by using t-test formula with the degree of significant 5%, the writer used step as follows:

**Table 4.4**  
**The score of distribution frequency**

No	x1	x2	X1	X2	X1 <sup>2</sup>	X2 <sup>2</sup>
1	54	40	-11,2	-6	22,4	12
2	64	44	-1,2	-2	2,4	4
3	73	47	7,8	1	15,6	2
4	64	70	-1,2	24	2,4	48
5	80	30	14,8	-16	29,8	32
6	61	50	-4,2	4	8,4	8
7	75	60	9,8	14	19,6	28
8	90	70	24,8	24	49,6	48
9	75	65	9,8	19	19,6	38
10	53	32	-12,2	-14	24,4	28
11	48	40	-17,2	-6	34,4	12
12	73	43	7,8	-3	15,6	6
13	50	51	-15,2	5	30,4	10
14	70	42	4,8	-4	9,6	8
15	63	44	-2,2	-2	4,4	4
16	60	31	-5,2	-15	10,4	30
17	64	33	-1,2	-13	2,4	26
18	90	47	24,8	1	49,8	2

19	63	31	-2,2	-15	4,4	30
20	49	50	-16,2	4	32,4	8
21	70	52	4,8	6	9,6	12
22	40	40	-25,2	-6	50,4	12
23	57		-8,2		16,4	
24	75		9,8		19,6	
25	69		3,8		7,6	
<b>Σ</b>	<b>1630</b>	<b>1012</b>	<b>245,6</b>	<b>204</b>	<b>619,2</b>	<b>408</b>

**Note:**

x1 = Score post-test (Experiment class)

x2 = Score post-test (Control class)

X1<sup>2</sup> = The squared value of X1

X2<sup>2</sup> = The squared value of X2

X1 = x1 - M1

X2 = x2 - M1

Df = N1 + N2 - 2

$$= 25 + 22 - 2$$

$$= 45$$

$$t = \frac{M1 - M2}{\sqrt{\frac{(\sum X1^2 + X2^2)(N1 + N2)}{(N1 + N2 - 2)N1.N2}}}$$

$$= \frac{65,2 - 46}{\sqrt{\frac{(619,2 + 408)(25 + 22)}{(25 + 22 - 2)25.22}}}$$

$$= \frac{19,2}{\sqrt{\left(\frac{1027,2}{45}\right)\left(\frac{47}{550}\right)}}$$

$$\begin{aligned}
&= \frac{19,2}{\sqrt{(22,82)(0,08)}} \\
&= \frac{19,2}{\sqrt{1,825}} \\
&= \frac{19,2}{1,35} \\
&= 14,22
\end{aligned}$$

In general, score of post-test in experiment class was better than post-test in control class. It can be seen from the total amount of the score of post-test in experiment class was 1630 and pre-test was 970. While, the total amount of the score post-test in control class was 1012 and pre-test was 953.

Based on the result statistic calculation, it is obtained that the score of  $t_0$  is = 14,22 degree of freedom is (5%). The value of 45 is mentioned in the table about 1,67 (as degree of significant). In degree of freedom 1% is 2,68.

To prove the hypothesis, the data obtained from the experimental class calculated by using t-test formula with assumption as follow:

If  $t_0 > t_t$  the alternative hypothesis accepted, it means there was significant different between learning using experimental learning strategy and students' writing ability. But If  $t_0 < t_t$  the alternative hypothesis rejected, it means there was no significant different between learning using experimental learning strategy and students' writing ability.

### C. Interpretation of the data

The analysis is aimed to know the influence of experimental learning strategy on students' writing hortatory exposition text, and we have known that the mean score of experiment class is 38.8 in pre-test and 65,2 in post-test. But the mean score of control class is 29,54 in pre-test and 46 in post-test. From the calculation above, the experimental class get increase on 26,4 points, it is better than the control class that only get increase on 16,45 point.

Before deciding the result of hypothesis, the writer proposes interpretation toward with procedure follow:

- a.  $H_a = t_o > t_t$  it means there was significant effectiveness between students' writing ability in hortatory exposition text and using experimental learning strategy.
- b.  $H_o = t_o < t_t$  it means there was no significant effectiveness between students' writing ability in hortatory exposition text and using experimental learning strategy.

According to the data, the value of  $t_o$  was bigger than  $t_t$ .

$$t_o = 14,22 > t_t = 1,67 (5\%) \text{ or}$$

$t_o = 14,22 > t_t = 2,68 (1\%)$ , than  $H_o$  rejected and  $H_a$  accepted.

From the result above, the writer gave conclusion that there was influence of problem-based learning approach on

students' writing ability in hortatory exposition text. This is evidenced by the increasing students writing ability after being given this approach.

This approach challenged the students to learn through engagement in a real problem.<sup>2</sup> It is a format that simultaneously develops both problem solving strategies and disciplinary knowledge bases and skills by placing students in the active role of problem-solvers confronted with an ill-structured situation that simulates the kind of problems they are likely to face as future managers in complex organizations.

Problem-based learning is an innovative, student-driven learning strategy that challenges students to think critically. Within this framework, students develop skills in self-directed learning, critical thinking, self-evaluation, interpersonal communication, and the ability to retrieve, access, and use information. A small group of students participates in an interactive process directed at understanding a staged but realistic sequence of a clinical case scenario.

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<sup>2</sup>Szopa, Anna, ed. *Academic Entrepreneurship and Technological Innovation: A Business Management Perspective: A Business Management Perspective*. IGI Global, 2012.p.118