

CHAPTER IV

RESEARCH FINDING

This chapter explained the data gained from a research field were analyzed to get the clear conclusion. The steps were taken can be classified as follow: 1) Data description; 2) Data analysis using arithmetic calculating; 3) Data analysis using SPSS; 4) Hypothesis testing; and 5) Data Interpretation.

4.1. Data Description

Before doing the calculation by using t-test, the data of students' pre-test and post test scores of experimental and controlled class had been collected and described in the tables as follows:

Table 4.1
Students' Scores of Experimental Class

No	Nama	Pre-Test	Post-Test	Gained Score
1	Ahmad Abudi Syaifi	45	68	23
2	Ahmad Fuad Muadib	51	77	26
3	Ahmad Rahol	53	65	12
4	Ainun Zahrotul Zannah	43	73	30
5	Ananda Bunga Ayu Berliana	52	74	22
6	Anang Mustofa	49	65	16
7	Aprilia Mawar Rosalia	50	85	35
8	Aril Alfian Syifa	43	65	22
9	Atika Resti Pratiwi	52	76	24
10	Ayatullah Anastasya Maria Y.	43	77	34
11	Ayuk Magfiroh	57	81	24
12	Dedi Krisnanto	50	69	19

13	Devia Rosalina	41	70	29
14	Edi Saputro	49	71	22
15	Eko Zuliyanto	53	77	24
16	Elsa Novita Sari	48	68	20
17	Eva Nor Cahyani	51	79	28
18	Farid Nur Hidayat	43	65	22
19	Harmunis	47	63	16
20	Krisna Saputra	51	77	26
21	Mahya Muhajir Ikhsan	41	79	38
22	Muhammad Ahlis Arori	47	63	16
23	Muhammad Andi Purnomo	48	78	30
24	Muhammad Rif'an	47	58	11
25	Muhammad Subeki Ubad	49	73	24
26	Nanda Aris Saputra	45	74	29
27	Nihayatus Sa'adah	53	67	14
28	Niken Afitriani	43	63	20
29	Nur Muhammad Syafi'i	51	85	34
30	Putri Amanda	63	61	-2
31	Radea Sabita	47	72	25
32	Riska Dwik Agustina	43	60	17
33	Rizqi Ayu Fitriana	53	59	6
34	Sifa Citra Anetta	48	76	28
35	Sigit Cahyo Saputro	54	79	25
36	Silvana Oktaviani	61	65	4
37	Sofi Muhimatul Fidah	47	79	32
38	Sukma Agung Al Firdaus	48	75	27
39	Ulul Dita Viana	43	72	29
Total		1902	2783	881
Mean		48.77	71.36	22.59

The description of the table above was the score of pre-test and post-test in experimental class. The score was gained after the treatment of comic strip was done. The mean of students' score in the pre-test was 48,77 with lowest score 41, and the higher score 63. Meanwhile the mean score of post-test was 71,36 with the lowest score 58, and the higher score 85.

Table 4.2
Students' Scores of Controlled Class

No	Nama	Pre-Test	Post-Test	Gained Score
1	Abdul Wahid Hasyim	51	80	29
2	Ahmad Khoirun Nizar	53	61	8
3	Ainun Na'im	49	69	20
4	Ananda Laily Ayu Istiani	50	78	28
5	Anisa Fitri	56	81	25
6	Arif Susanto	52	69	17
7	Bagos Satrio Utomo	43	60	17
8	Dinda Damayanti	50	60	10
9	Ebian Anggi Maulana	41	76	35
10	Elia Dwi Rahmawati	47	66	19
11	Ella Nor Wahidhatus Safitri	53	75	22
12	Eneng Risma	51	55	4
13	Erika Zaliyanti	45	79	34
14	Fadhila Safinatun Naja	51	49	-2
15	Fakhi Khoeroni	47	63	16
16	Farid Safrodi	45	65	20
17	Fariq Zahrotul Milla	43	71	28
18	Handoko	60	72	12
19	Linda Dwi Cahyani	53	70	17
20	Miftahul Huda	49	73	24

21	Muhammad Irvan Maulana	51	72	21
22	Muhammad Sugeng	47	45	-2
23	Muhammad Zuhail Layla Nova	58	84	26
24	Nandita Anatasya	52	66	14
25	Nila Julia Sari	43	73	30
26	Noor Hidayah	49	65	16
27	Nor Fatimah	51	71	20
28	Novian Hendika Dwi Cahyo	60	65	5
29	Nur Ilham Yahya	53	80	27
30	Otoviani	49	66	17
31	Rico Dwi Kurniawan	43	67	24
32	Rifita Lisdiyani	51	60	9
33	Sinta Velentya	45	61	16
34	Tutik Desi Kumala	53	80	27
35	Vita Larassati	48	69	21
36	Wulan Widiana	43	50	7
37	Yoga Indra Setiawan	47	67	20
Total		1832	2513	681
Mean		49.51	67.92	18.41

The description of the table above was the score of pre-test and post-test in controlled class. The score was gained after teaching and learning process without comic strip was done. The mean of students' score in the pre-test was 49,51 with lowest score 41, and the higher score 60. Meanwhile the mean score of post-test was 67,92 with the lowest score 45, and the higher score 85.

Based on data in the table above, it showed that the student's gained score in writing recount text by using comic strip in experimental class was

higher than the students in controlled class who were taught without using comic strip. It was also described by the figure of chart below:

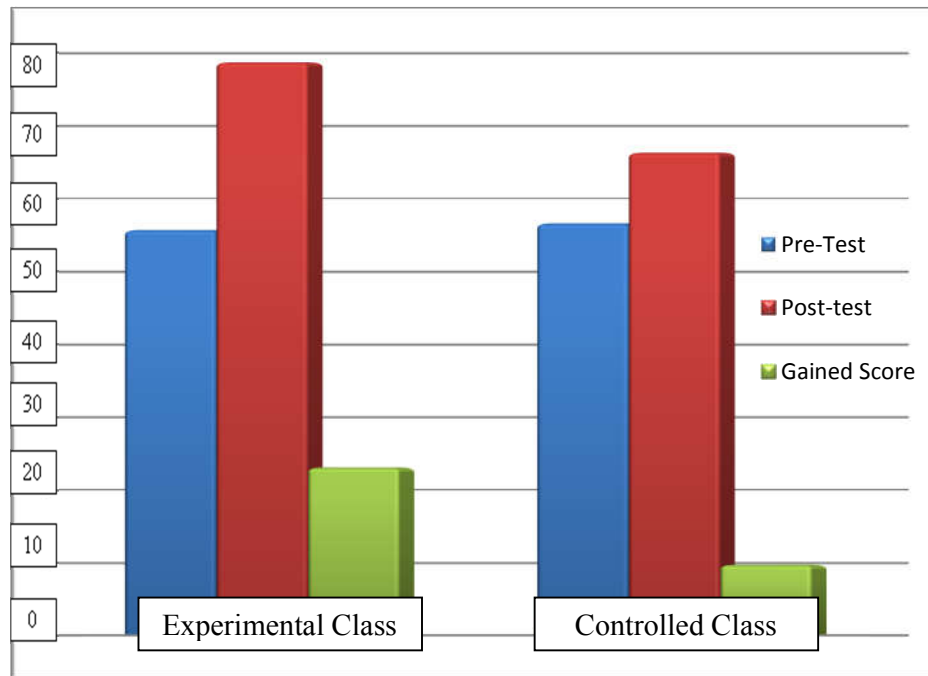


Figure 4.1

Mean Score of Pre-Test, Post-Test, and Gained Score of Experimental Class and Controlled Class

4.2. Data Analysis Using Arithmetic Calculating

The data of students' score was analyzed by using t-test to prove whether there was any significant different between student's ability in writing recount text in experimental class as the X variable and controlled class as Y variable. Before using the formula of t-test, the students' score in the experimental and controlled class were tabulated to calculate the gained score of each class. It could be described in table 4.3 as follow:

Table 4.3
Statistical Calculating of Gained Score Both the Experimental and
Controlled Class

No.	Gained Score		x (X- Mx)	y (Y- My)	x ²	y ²
	Experimental (X)	Controlled (Y)				
1	23	29	0	10	0	100
2	26	8	3	-11	9	121
3	12	20	-11	1	121	1
4	30	28	7	9	49	81
5	22	25	-1	6	1	36
6	16	17	-7	-2	49	4
7	35	17	12	-2	144	4
8	22	10	-1	-9	1	81
9	24	35	1	16	1	256
10	34	19	11	0	121	0
11	24	22	1	3	1	9
12	19	4	-4	-15	16	225
13	29	34	6	15	36	225
14	22	-2	-1	-21	1	441
15	24	16	1	-3	1	9
16	20	20	-3	1	9	1
17	28	28	5	9	25	81
18	22	12	-1	-7	1	49
19	16	17	-7	-2	49	4
20	26	24	3	5	9	25
21	38	21	15	2	225	4
22	16	-2	-7	-21	49	441
23	30	26	7	7	49	49
24	11	14	-12	-5	144	25
25	24	30	1	11	1	121

26	29	16	6	-3	36	9
27	14	20	-9	1	81	1
28	20	5	-3	-14	9	196
29	34	27	11	8	121	64
30	-2	17	-25	-2	625	4
31	25	24	2	5	4	25
32	17	9	-6	-10	36	100
33	6	16	-17	-3	289	9
34	28	27	5	8	25	64
35	25	21	2	2	4	4
36	4	7	-19	-12	361	144
37	32	20	9	1	81	1
38	27	-	4	-	16	-
39	29	-	6	-	36	-
Total	881	681	-16	-22	2836	3014
Mean	22.59	18.41			72.7179	81.4594

According to the two table above, the result of students' pre-test and post-test further in each class was calculating by using t-test in some steps as follows:

1. Determining mean variable X, with formula as follows:

$$\begin{aligned}
 M_x &= \frac{\sum X}{N_1} \\
 &= \frac{881}{39} \\
 &= 22,59
 \end{aligned}$$

2. Determining mean variable Y, with formula as follows:

$$\begin{aligned}
 M_y &= \frac{\sum Y}{N_2} \\
 &= \frac{681}{37}
 \end{aligned}$$

$$= 18,41$$

3. Determining standard deviation score of variable X, with formula as follows:

$$\begin{aligned} SD_x &= \sqrt{\frac{\sum x^2}{N_1}} \\ &= \sqrt{\frac{2836}{39}} \\ &= \sqrt{72.717} \\ &= 8,53 \end{aligned}$$

4. Determining standard deviation score of variable Y, with formula as follows:

$$\begin{aligned} SD_y &= \sqrt{\frac{\sum y^2}{N_2}} \\ &= \sqrt{\frac{3014}{37}} \\ &= \sqrt{81.46} \\ &= 9,03 \end{aligned}$$

5. Determining standard error mean of variable X, with formula as follows:

$$\begin{aligned} SE_{M_x} &= \frac{SD_x}{\sqrt{N_1-1}} \\ &= \frac{8,53}{\sqrt{39-1}} \\ &= \frac{8,53}{\sqrt{38}} \\ &= \frac{8.53}{6.16} \\ &= 1,385 \end{aligned}$$

6. Determining standard error mean of variable Y, with formula as follows:

$$\begin{aligned}
 SE_{M_y} &= \frac{SD_y}{\sqrt{N_2-1}} \\
 &= \frac{9,03}{\sqrt{37-1}} \\
 &= \frac{9,03}{\sqrt{36}} \\
 &= \frac{9,03}{6} \\
 &= 1,505
 \end{aligned}$$

SE_{M_y} : Standard error of controlled class

7. Determining standard error of different mean between variable X and variable Y, with formula as follows:

$$\begin{aligned}
 SE_{M_x-M_y} &= \sqrt{SE_{M_x}^2 + SE_{M_y}^2} \\
 &= \sqrt{(1,385)^2 + (1,505)^2} \\
 &= \sqrt{1,918 + 2,265} \\
 &= \sqrt{4,183} \\
 &= 2,045
 \end{aligned}$$

8. Determining t_o , with formula as follows:

$$\begin{aligned}
 t_o &= \frac{M_x - M_y}{SE_{M_x-M_y}} \\
 &= \frac{22,59 - 18,41}{2,045} \\
 &= \frac{4,09}{2,045} \\
 &= 2,000
 \end{aligned}$$

9. Determining t_{table} with degree of freedom (df) in significance level of 5%, with formula as follows:

$$Df = (N_1 + N_2) - 2 = (39 + 37) - 2 = 74$$

From the calculating above, it was showed that the result of t-test from experimental and controlled class was 2,000 the degree of freedom (df) was 74. After the researcher got the result of t-test and degree of freedom, she looked at t table and found out the critical value of df 74 which was taken the closest that was df 80 by using significant 5% = 1,990. The result of comparison between t_o and t_{table} was $2,000 > 1,990$ (5%) it means significant because t_o higher than t_{table}

4.3. Data Analysis Using SPSS

The following was the result of independent sample T-test of gained score both experimental class and controlled class using IBM statistics 20. which presented in this two table :

Table 4.4

The Result of Group Statistic

Group Statistics					
	class	N	Mean	Std. Deviation	Std. Error Mean
gained	experimental	39	22.59	8.629	1.382
	controlled	37	18.41	9.130	1.501

From the analysis SPSS above, it was showed that mean of gained score of experimental class (22.59) was higher than mean of gained score of controlled class (18.41) with standard deviation of experimental class (8.629) was lower than standard deviation of controlled class (9,130).

Table 4.5
The Result of Independent Sample 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
gained	Equal variances assumed	.232	.632	2.054	74	.043	4.184	2.037	.125	8.243
	Equal variances not assumed			2.051	73.121	.044	4.184	2.040	.118	8.250

From the analysis SPSS above, it was showed that the result of t-test from experimental and controlled class was 2,054 with the degree of freedom (df) was 74. The result of comparison between t_o and t_{table} was $2,054 > 1,990$ (5%) it means significant because t_o higher than t_{table} .

4.4. Hypothesis Testing

After obtaining the data by using t-test formula, it is used to prove the result of hypothesis as follows. Based on the description of data arithmetic calculation and Analysis SPSS, it shows that:

1. The value of t- observation (t_o) of arithmetic calculation was 2,000
2. The value of t- observation (t_o) of analysis SPSS was 2,054

3. The degree of freedom (df) was 74, so the value of t-table (t_t) in the significant level of 5% = 1,990

Because the value of $t_o > t_t$ in significant level 5% it prove that the null hypothesis (H_o) is rejected and the alternative hypothesis (H_a) is accepted which states that there was significant difference between the students' score in writing recount text by using comic strip and the students' score in writing recount text without using comic strip at the eighth grade students of MTs al Muttaqin ($\mu_1 \neq \mu_2$)

4.5. Data Interpretation

Based on the analysis of t- test, it was known that the result of t-observation (t_o) by using arithmetic calculating was 2,000, the result of t-observation (t_o) by using SPSS was 2,054 and the degree of freedom (df) was 74, which was taken the closest was df 80 by using significant 5% = 1,990. By comparing the value of t-observation (t_o) and t table (t_t) bpth of arithmetic calculating and SPSS, it can be known that the result of calculating of t-observation (t_o) was higher than t-table ($t_o > t_t$), so the null hypothesis (H_o) is rejected and the alternative hypothesis (H_a) is accepted. It means, there is significant difference between the students' score in writing recount text by using comic strip and the students' score in writing recount text without using comic strip at the eighth grade students of MTs al Muttaqin ($\mu_1 \neq \mu_2$). It means that the used of comic strip in teaching writing recount text to the eighth students of MTs Al Muttaqin were effective.