CHAPTER IV
FINDING

A. Description of the Research Result

To find out the difference between the students who were taught using story maze as a medium and the students who were not taught using story maze to tell a story in speaking on students in class VIII B and VIII A of SMP Muhammadiyah 8 Semarang, 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 implementation of this research was divided into two classes. They were experimental class (VIII B) and control class (VIII A). Before the activities were conducted, the writer determined the materials and lesson plan of learning. Learning in the experimental class was conducted using story maze as a medium, while the control class using conventional method (without using story maze as a medium).

Test was given before and after the students followed the learning process provided by the writer. After the data was collected, the writer analyzed it. The first data analysis is from the beginning of learning process in both control class and experimental class that is taken from the pre test score. It is the normality test and homogeneity test. It is used to know that two groups are normal and have same variant. Another data analysis is from the ending of learning process in both control class and experimental class. It is used to prove the truth of hypothesis that has been formulated.

Before the analysis was done, the writer scored the results of the test that had been given to the students. The assignment given to the students was told a story based on the key of words.

B. Hypothetical Analysis

Hypothetical analysis intended to process the data collected from pre-test and post-test. The goal of this analysis is to prove the hypothesis whether it is accepted or rejected.

Steps adopted in analyzing hypothetical test are:

1. Search for the normality of initial data in the control class and the experimental class.

   The normality test is used to know whether the data obtained is normally distributed or not. Test data of this research uses the formula of chi-square.

Table 4.1

The List of Pre-test Score of Control Class and Experimental Class

Control Class			Experimental Class		
No	**Code**	**Total Score**	**No**	**Code**	**Total Score**
1	C-1	56	1	E-1	48
2	C-2	44	2	E-2	52
3	C-3	56	3	E-3	52
4	C-4	52	4	E-4	56
5	C-5	40	5	E-5	48
6	C-6	40	6	E-6	40
7	C-7	40	7	E-7	48
8	C-8	52	8	E-8	40
9	C-9	48	9	E-9	52
10	C-10	48	10	E-10	52
11	C-11	44	11	E-11	48
12	C-12	52	12	E-12	40
13	C-13	44	13	E-13	40
14	C-14	52	14	E-14	52
15	C-15	56	15	E-15	52
16	C-16	44	16	E-16	40
17	C-17	60	17	E-17	40
18	C-18	48	18	E-18	44
19	C-19	52	19	E-19	56
20	C-20	52	20	E-20	48
21	C-21	52	21	E-21	56
22	C-22	44	22	E-22	44
23	C-23	48	23	E-23	40
24	C-24	44	24	E-24	56
25	C-25	40	25	E-25	44

26	C-26	48	26	E-26	52
27	C-27	48	27	E-27	60
28	C-28	40	28	E-28	56
		1344			1356

Table 4.2

Normality Test of Pre-test of Control Class

Class Interval	Bk (Limit Class)	Z_i (for limit class)	$P(Z_i)$ (opportunities for Z)	Size of Classes	Oi	Ei	$\frac{(O_i - E_i)^2}{E_i}$
	39.5	-1.50	0.4332				
40 – 43				0.1451	5	3.9	0.2990
	43.5	-0.80	0.2881				
44 – 47				0.2522	6	6.8	0.0962
	47.5	-0.09	0.0359				
48 – 51				0.2683	6	7.2	0.2137
	51.5	0.62	0.2324				
52 – 55				0.1758	7	4.7	1.0698
	55.5	1.33	0.4082				
56 – 59				0.0706	3	1.9	0.6276
	59.5	2.03	0.4788				
60 – 63				0.0181	1	0.5	0.5349
	63.5	2.74	0.4969				
∑					28	X^2 =	2.8412

With α = 5% and df = 6-1=5, from the chi-square distribution table, obtained X^2_{table} = 11,0705 Because X^2_{count} is lower than X^2_{table} (2,8412<11,0705). So, the distribution list is normal.

Table 4.3

Normality Test of Pre-test of Experimental Class

Class Interval	Bk (Limit Class)	Z_i (for limit class)	$P(Z_i)$ (opportunities for Z)	Size of Classes	Oi	Ei	$\frac{(O_i - E_i)^2}{E_i}$
	39.5	-1.42	0.4207				
40 – 43				0.1268	7	3.3	4.1597
	43.5	-0.78	0.2939				

44 – 47				0.1991	3	5.2	0.9152
	47.5	-0.15	0.0948				
48 – 51				0.2316	5	6.0	0.1733
	51.5	0.49	0.1368				
52 – 55				0.1896	7	4.9	0.8696
	55.5	1.12	0.3264				
56 – 59				0.1106	5	2.9	1.5694
	59.5	1.76	0.4370				
60 – 63				0.0456	1	1.2	0.0291
	63.5	2.40	0.4826				
∑					28	X^2 =	7.7163

With α = 5% and dk = 6-1=5, from the chi-square distribution table, obtained X^2_{table} = 7,7163. Because X^2_{count} is lower than X^2_{table} (7,7163<11,0705). So, the distribution list is normal.

2. Search for the homogeneity of initial data in the control class and the experimental class.

Homogeneity test is used to find out whether the group is homogenous or not. The writer used formula as follows:[1]

$$F = \frac{Biggest\ Variance}{Smallest\ Variance}$$

Hypothesis:

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

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

H_o received if $X^2_{count} < X^2_{(1-\alpha)(k-1)}$

[1] Sugiyono, *Statistika Untuk Penelitian*, (Bandung: Alfabeta, 2007), p. 140.

Table 4.4

Homogeneity Test of Pre-Test of Experimental Class and Control Class

Variant Sources	Experimental	Control
Sum	1356	1344
N	28	28
$\overline{X}$	48,4286	48,0000
Variance (s^2)	39,5132	32,0000
Standard deviation (s)	6,2860	5,6569

$$F = \frac{Biggest\ Variance}{Smallest\ Variance}$$

$$= \frac{39,5132}{32,0000}$$

$$= 1.2348$$

With α 5% with df numerator (nb - 1) = 28 – 1 = 27 and df denominator (nk – 1) = 28 – 1 = 27, it was found F_{table} = 2,16. Because of $F_{score} \leq F_{table}$, so it could be concluded that both experimental and control group had no differences. The result showed both groups had similar variants (homogenous).

3. Searching for the average similarity of the initial data between the control and the experimental classes.

   To test the average similarity, data is analyzed using t-test.

   H_o: $\mu_1 = \mu_2$

   H_a: $\mu_1 \neq \mu_2$

   Description:

   μ_1: average of experimental class

   μ_2: average of control class

   Ho accepted if $-t_{(1-1/2a)} \leq t \leq t_{(1-1/2a)(n1+n2-2)}$

$$t = \frac{\bar{x}_1 - \bar{x}_2}{s\sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

Where:

$$s = \sqrt{\frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{n_1 + n_2 - 2}}$$

$$S = \sqrt{\frac{(28-1)39{,}5132 + (28-1)32{,}0000}{28 + 28 - 2}}$$

$$= 5{,}9797$$

After S was found, the next step was to measure t-test:

$$t = \frac{48{,}43 - 48{,}00}{5{,}9797\sqrt{\frac{1}{28} + \frac{1}{28}}}$$

$$= 0{,}2682$$

With α = 5% and dk = 28 + 28 - 2 = 54 obtained $t_{(0.564)(54)}$ = 2.0049

After getting t-test result, then it would be consulted to the critical score of t_{table} to check whether the difference is significant or not. For a = 5% with df 28 + 28 – 2 = 54, it was found $t_{table(0.564)(54)}$ = 2,0049. Because of $t_{score} < t_{table}$, so it could be concluded that there was no significance of difference between the experimental and control classes. It meant that both experimental and control classes had same condition before getting treatments.

4. Searching for normality data of post-test of the control and the experimental classes.

Table 4.5

The List of Post-test Score of Control Class and Experimental Class

Control Class			Experimental Class		
No	**Code**	**Total Score**	**No**	**Code**	**Total Score**
1	C-1	64	1	E-1	68
2	C-2	60	2	E-2	72
3	C-3	76	3	E-3	72
4	C-4	64	4	E-4	68
5	C-5	48	5	E-5	68
6	C-6	56	6	E-6	60
7	C-7	52	7	E-7	64
8	C-8	68	8	E-8	64
9	C-9	52	9	E-9	76
10	C-10	76	10	E-10	76
11	C-11	56	11	E-11	64
12	C-12	60	12	E-12	64
13	C-13	56	13	E-13	64
14	C-14	64	14	E-14	72
15	C-15	68	15	E-15	76
16	C-16	60	16	E-16	60
17	C-17	68	17	E-17	56
18	C-18	52	18	E-18	64
19	C-19	72	19	E-19	68
20	C-20	68	20	E-20	64
21	C-21	64	21	E-21	76
22	C-22	52	22	E-22	68
23	C-23	60	23	E-23	60
24	C-24	56	24	E-24	64
25	C-25	52	25	E-25	60
26	C-26	60	26	C-26	68
27	C-27	56	27	C-27	76
28	C-28	52	28	C-28	60
		1692			1872

Table 4.6

The Normality Test of Post-Test of Control Class

Class Interval	Bk (Limit Class)	$Z_{i\ (for\ limit\ class)}$	$P(Z_i)$ (opportunities for Z)	Size of Classes	Oi	Ei	$\frac{(O_i - E_i)^2}{E_i}$
	47.5	-1.69	0.4545				
48 – 52				0.1037	7	2.8	6.3005
	52.5	-1.04	0.3508				
53 – 57				0.2028	5	5.5	0.0413
	57.5	-0.38	0.1480				
58 – 62				0.2544	5	6.9	0.5084
	62.5	0.27	0.1064				
63 – 67				0.2148	4	5.8	0.5584
	67.5	0.92	0.3212				
68 – 72				0.1217	5	3.3	0.8942
	72.5	1.58	0.4429				
73 – 77				0.0442	2	1.2	0.5452
	77.5	2.23	0.4871				
∑					28	**X^2 =**	**8.8480**

With α = 5% and dk = 6-1=5, from the chi-square distribution table, obtained X^2_{table} = 11,0705. Because X^2_{count} is lower than X^2_{table} (8,8480<11,0705). So, the distribution list is normal.

Table 4.7

The Normality Test of Post-test of Experimental Class

Class Interval	Bk (Limit Class)	$Z_{i\ (for\ limit\ class)}$	$P(Z_i)$ (opportunities for Z)	Size of Classes	Oi	Ei	$\frac{(O_i - E_i)^2}{E_i}$
	55.5	-1.94	0.4738				
56 _ 59				0.0776	1	3.0	1.3568

	59.5	-1.26	0.3962				
60 _ 63				0.1805	5	7.0	0.5909
	63.5	-0.57	0.2157				
64 _ 67				0.2595	8	10.1	0.4443
	67.5	0.11	0.0438				
68 _ 71				0.2414	6	9.4	1.2384
	71.5	0.79	0.2852				
72 _ 75				0.1467	3	5.7	1.2944
	75.5	1.48	0.4319				
76 _ 79				0.0527	5	2.1	4.2190
	79.5	2.16	0.4846				
∑					28	**X² =**	**9.1438**

With α = 5% and dk = 6-1=5, from the chi-square distribution table, obtained X^2_{table} = 11,0705. Because X^2_{count} is lower than X^2_{table} (9,1438<11,0705). So, the distribution list is normal.

5. Searching for homogeneity of the experimental class and the control class

Homogeneity test is used to find out whether the group is homogenous or not. The writer used formula as follows:

$$F = \frac{Biggest\ Variance}{Smallest\ Variance}$$

Hypothesis:

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

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

H_o received if $X^2_{count} < X^2_{(1-\alpha)(k-1)}$

Table 4.8

Homogeneity of Post-test of Control and Experimental Classes

Variant Sources	Experimental	Control
Sum	1872	1692
N	28	28
$\overline{X}$	66,8571	60,4286
Variance (s^2)	34,2011	58,4762
Standard deviation (s)	5,8482	7,6470

$$F = \frac{Biggest\ Variance}{Smallest\ Variance}$$

$$= \frac{58,4762}{34,2011}$$

$$= 1.7098$$

With α 5% with df numerator (nb - 1) = 28 – 1 = 27 and df denominator (nk – 1) = 28 – 1 = 27, it was found $F_{table\,(0.05)(27:27)}$ = 1,9048. Because of $F_{score} \leq F_{table}$, so it could be concluded that both experimental and control group had no differences. The result showed both groups had similar variants (homogenous).

6. Testing of difference between experimental class and control class.
   To test the difference of two variants, data is analyzed using t-test.

$$t = \frac{\bar{x}_1 - \bar{x}_2}{s\sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

Where:

$$s = \sqrt{\frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{n_1 + n_2 - 2}}$$

$$S = \sqrt{\frac{(28-1)34{,}2011 + (28-1)58{,}4762}{28 + 28 - 2}}$$

$$= 6{,}8072$$

After S was found, the next step was to measure t-test:

$$t = \frac{66{,}8571 - 60{,}4286}{6{,}8072\sqrt{\frac{1}{28} + \frac{1}{28}}}$$

$$= 3{,}5335$$

After getting t-test result, then it would be consulted to the critical score of t_{table} to check whether the difference is significant or not. For a = 5% with dk 28 + 28 – 2 = 54, it was found $t_{table(0.95)(54)}$ = 1,6736. Because of $t_{score} > t_{table}$, so it could be concluded that there was significance of difference between the experimental and control classes. It meant that experimental class was better that control class after getting treatments

C. Discussion of Research Finding

The result of the research shows that the experimental class (the students who are taught using story maze as a medium) has the mean mark 66,8571. Meanwhile, the control class (the students who are taught using conventional method) has the mean mark 60,4248. It can be said that teaching speaking using story maze as a medium to tell a story is more effective than conventional teaching.

Before giving the treatment, researcher checked the balance of the initial ability of the students 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 $X^2_{count} < X^2_{table}$, α = 5 % and df = 6. On the normality test of pre-test of the control class, it can be seen X^2_{count} (2,8412)< X^2_{table} (11,0705) and the experimental class X^2_{count} (7,7163)< X^2_{table} (11,0705). Since homogeneity test shows F_{count} (1,23)< F_{table} (2,16), it can be concluded that the population is homogeneous. Based on the analysis of t-test at the pre-test, it is obtained t_{count} = 0,2682 lower than t_{table} = 2,0049 which proves that there is no difference of the average of pre-test between both classes. The normality test of post-test of control class results X^2_{count} (8,8480)< X^2_{table} (11,0705) and experimental class results X^2_{count} (9,1438)< X^2_{table} (11,0705). The post-test demonstrate that the hypotheses of those two classes are normal on the distribution. It is proved with F_{count} (1,7098)< F_{table} (1,9048) from the homogeneity test that have the same variant.

From the last phase of the t-test, it is obtained t_{count} = 3,5335 with t_{table} = 1,6736 with the standard of significant 5%. Because of $t_{count} > t_{table}$, so the zero hypothesis (H_o) is rejected and alternative hypothesis (H_a) is accepted. It means that there are significant differences between the students' speaking who had been taught using story maze as a medium and the students' speaking who had not given the same treatment. This difference can be said as the effectiveness of story maze as a medium in teaching speaking.

There were many factors that influenced the result of study. One of the factors was media used in teaching. If a teacher employs an appropriate media that is suitable with the method, the students will enjoy the lesson. Based on the result of tests that had been done, it can be explained that using story maze as a medium in the process of learning English at VIII B students of SMP Muhammadiyah 8 Semarang could facilitate students' skill of how to tell a story in speaking. In addition, learning using story maze also

provide new variation, so that, students can enrich their vocabulary and speaking skill.

In the process of learning, teacher should be resourceful in determining the classroom setting in order to make students focus in lesson. For example, by the setting of the class tailored to the learning activities of students of experimental class, the students were more focus and the atmosphere of the class was not too rowdy. By using appropriate media, students find it easier to understand the material delivered by the teacher. A fun learning can stimulate the spirit of the students to be active. Connecting material with the experience or incident that occurred in surrounding environment and utilization of teaching storytelling can increase students' skill of speaking. Students can clearly understand the process or steps in tell a story based on the pictures.

Meanwhile, teaching learning process in the control class was implemented through lecturing using. In this process, the teacher explained the material using text. At the beginning of the process, the students were given a pre-test to know the initial ability of the students. Then, the students sat and paid attention to the teacher's explanation. However, students felt saturated with the material presented by the teacher because there were no interesting teaching aids or media used.