CHAPTER IV

FINDING AND DISCUSSION

This chapter deals with the analysis of data collection from research finding and discussion. This research the effect of applying Neurological Impress Method on the students‟ ability at reading comprehension in SMP Negeri 1 Bambel.

A. Data Description

The data were collected by giving the students ability in reading comprehension test, interview and observation sheet. Reading comprehension is the process of making meaning from text. The goal, therefore is to gain and overall understanding of what is described in the text rather that to obtain meaning from isolated words or sentences. The school made 75 as *kriteria kelulusan minimum* (Minimum Passing Grade) in English lesson. The number of students who took the test was 32, from the result writing test score in pre-test was 2.010 and the mean score 62.81. It can be seen from the mean score of the students was 2.010 and the percentage score of the pre-test was 7 students who passed and got score up to 75 and it was only 21.88 %. While, 25 students failed or didn‟t get score up to 75 and it was 78.12%. based on the result, the effect of Applying Neurological Impress Method on the students‟ ability at Reading Comprehension is still low. This means that most students have not achieved the minimum passing grade 75.

Table 4.1
The score of Pre-test and Post-test Experimental Group

No	Students' Initial	Pre-test (X1)	Post-test (X2)
1	AA	75	80
2	AH	55	60
3	AM	75	80
4	AZL	65	70
5	APN	80	80
6	AD	65	70
7	APPS	50	65
8	CM	55	65
9	DPM	65	75
10	FA	60	75
11	FDM	45	60
12	FSN	60	70
13	H	50	55
14	IW	50	65
15	IN	60	65
16	JRS	50	65
17	MAPS	50	65
18	MF	70	80
19	NSS	50	60
20	NBF	65	75
21	NAH	70	80
22	PN	55	60
23	RH	65	75
24	RP	75	75
25	SM	85	85
26	SA	50	65
27	SN	85	85
28	SED	65	80
29	ST	60	65
30	SR	80	85
31	ZN	75	85
32	ZZ	55	65
	Total ∑ □	**2.010**	**2.285**
	The Mean	**62.81**	**71.40**

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The data in table 4.1 showed the result of the pre-test and post-test in experimental group. Based on the table above, it could be seen that there was the differences between pre-test and post-test score in experimental group. In the experimental group the students 45 or the lowest score, and there was students who got 85 or the highest score of the pre-test. The students could not use the words correctly in constructing the sentence: there were only seven correct answer, because the unknown vocabulary words represent blanks for them and the most appropriate words from the list given. Therefor, after giving treatment by Neurological Impress Method, there was student got 55 or the lowest score and there were 4 student who got 85 or the highest score in post-test. The students had weakness in understanding the step of Neurological Impress Method. Only some of the students answered correctly that was 13 questions out of 20 questions. The differences of scoring of the test caused every student had different skills, process of learning, and their conscious of learning. After calculating the data for the experimental group above, the score of pre-test was 2.010, and the score of post-test was 2.285, it meant the score of post-test was higher than pre-test.

Table 4.2
The score of Pre-test and Post-test Control Group

No	Students' Initial	Pre-test	Post-test II
1	AA	75	85
2	AH	55	75
3	AM	75	90
4	AZL	65	90
5	APN	80	80
6	AD	65	80
7	APPS	50	80

8	CM	55	75
9	DPM	65	80
10	FA	60	80
11	FDM	45	70
12	FSN	60	80
13	H	50	70
14	IW	50	75
15	IN	60	75
16	JRS	50	75
17	MAPS	50	70
18	MF	70	90
19	NSS	50	75
20	NBF	65	85
21	NAH	70	80
22	PN	55	80
23	RH	65	80
24	RP	75	90
25	SM	85	90
26	SA	50	75
27	SN	85	90
28	SED	65	80
29	ST	60	80
30	SR	80	90
31	ZN	75	90
32	ZZ	55	75
	Total ∑ □	**2.010**	**2.580**
	The Mean	**62.81**	**80.62**

The data table 4.2 showed the result post-test II, based on the table above it could be seen that there was the differences between pre-test and post-test II in experimental group. The highest score of the pre-test in control group was 80 and the lowest was 45, some students had only eight correct answer, because the unknown vocabulary words. While the highest score of post-test II after the treatment given were 90 and the lowest were 75. After calculating the data for the control 2 table group above, the score of the pre-

test was 2.010, and the score of post-test II was 2.580, it meant the score of post-test II was higher than pre-test.

B. **Data Analysis**

The result of the test in the table 4.1 and 4.2, the data was collected to find out whether the effect of Neurological Impress Method to the reading comprehension. The collected data were analysis by using t-test independent sample formula. From the result of the test in experimental group the highest score of the post-test was 95. And for test in control group the highest score of the post-test was 80. By firstly finding out the standard deviation of the post-test between experimental and control group by using the following formula :

$$S^1 = \sqrt{\frac{(\sum \square 1)^2 - (\sum \square 2)^2}{n1\ (n1-1)}}$$ (for experimental group)

$$S^1 = \frac{(\sum \square^2) - (\sum \square)^2}{n2\ (n2-1)}$$ (for control group)

In calculating standard deviation, the table of the score should be changed into the table of calculation of standard deviation.

Table 4.3
The Score Difference of Pre-test and Post-test in Experimental Group

No	Initial Name	Pre-test	T1	Post-test	T2	X=(T2-T1)
1	AA	75	5625	80	6400	5
2	AH	55	3025	60	3600	5
3	AM	75	5625	80	6400	5
4	AZL	65	4225	70	4900	5
5	APN	80	6400	80	6400	-

6	AD	65	4225	70	4900	5
7	APP	50	2500	65	4225	5
8	CM	55	3025	65	4225	5
9	DPM	65	4225	75	5625	10
10	FA	60	3600	75	5625	15
11	FDM	45	2025	60	3600	15
12	FSN	60	3600	70	4900	10
13	H	50	2500	55	3025	5
14	IW	50	2500	65	4225	15
15	IN	60	3600	65	4225	15
16	JRS	50	2500	65	4225	15
17	MAPS	50	2500	65	4225	15
18	MF	70	4900	80	6400	10
19	NSS	50	2500	60	3600	10
20	NBF	65	4225	75	5625	10
21	NAH	70	4900	80	6400	10
22	PN	55	3025	60	3600	5
23	RH	65	4225	75	5625	10
24	RP	75	5625	75	5625	-
25	SM	85	7225	85	7225	-
26	SA	50	2500	65	4225	15
27	SN	85	7225	85	7225	-
28	SFD	65	4225	80	6400	15
29	ST	60	3600	65	4225	5
30	SR	80	6400	85	7225	5
31	ZN	75	5625	85	7225	10
32	ZZ	55	3025	65	4225	10
Total		**2.010**	**130.925**	**2.285**	**165.575**	**265**

The data in the table 4.3 showed the score differences between pre-test and post-test in experimental group. From the result of the test previously the data was calculated to found out whether the applying Neurological Impress Method had significant effect to the students‟ ability in reading comprehension. The collected data were analyzed by using t-test formula. In experimental group, pre-test was 2.010 and post-test 2.285. the differences of pre-test and post-test were ∑(T2-T1) = 275. There were 45 for the lowest

score in pre-test and 55 in post-test. The high percentage of students who had low and very low category of mastery level in this initial test was caused of students‟ difficulty to select the most appropriate words from the list givin. The difference od scoring of the test was caused students‟ different skill process of learning, and their conscious of learning.

1. **The Calculation Table of Standard Deviation**

Based on the table 4.3 previously, the calculation of standard deviation was as below:

For experimental group :

$$\sum \square = 2.285$$

$$\square = \frac{\sum \square}{\square} = \frac{2285}{32} = 71{,}4$$

$$\square = \sqrt{\frac{(\sum \square^2) - (\sum \square)^2}{\square\,(\square - 1)}}$$

$$= \sqrt{\frac{32(\sum \square^2) - (\sum 2285)^2}{32\,(32-1)}}$$

$$= \sqrt{\frac{32(165575) - (\sum 2285)^2}{32\,(32-1)}}$$

$$= \sqrt{\frac{5298400 - 5221225}{32\,(31)}}$$

$$= \sqrt{\frac{77175}{992}}$$

$$= \sqrt{77,\,7}$$

$$= 8{,}81$$

Based on the table above or table 4.3 showed that the mean of pre-test in experimental was 62,8 and the mean of post test was 71,4.

Table 4.4
The Score Difference of Pre-test and Post-test in Control Group

No	Initial Name	Pre-test	T1	Post-test	T2	X=(T2-T1)
1	AA	75	5625	85	7225	10
2	AH	55	3025	75	5625	20
3	AM	75	5625	90	8100	15
4	AZL	65	4225	90	8100	25
5	APN	80	6400	80	6400	-
6	AD	65	4225	80	6400	15
7	APP	50	2500	80	6400	30
8	CM	55	3025	75	5625	20
9	DPM	65	4225	80	6400	15
10	FA	60	3600	80	6400	20
11	FDM	45	2025	70	4900	25
12	FSN	60	3600	80	6400	20
13	H	50	2500	70	4900	20
14	IW	50	2500	75	5625	25
15	IN	60	3600	75	5625	15
16	JRS	50	2500	75	5625	25
17	MAPS	50	2500	70	4900	20
18	MF	70	4900	90	8100	20
19	NSS	50	2500	75	5625	25
20	NBF	65	4225	85	7225	20
21	NAH	70	4900	80	6400	10
22	PN	55	3025	80	6400	25
23	RH	65	4225	80	6400	15
24	RP	75	5625	90	8100	15
25	SM	85	7225	90	8100	5
26	SA	50	2500	75	5625	25
27	SN	85	7225	90	8100	5
28	SFD	65	4225	80	6400	15
29	ST	60	3600	80	6400	20
30	SR	80	6400	90	8100	10
31	ZN	75	5625	90	8100	15
32	ZZ	55	3025	75	5625	20
Total		**2.010**	**130.925**	**2.580**	**209.350**	**565**

The data in table 4.4 showed the score differences between pre-test and post-test in control group. The table above showed that the score of post-test higher than pre-test. The total scores of pre-test was 2.010 and post-test was 2.580. the differences of pre-test and post-test were ∑(T2-T1) = 570. The result of pre-test and post-test in experimental group were 275 and control group was 570. In pre-test, the students were still difficult to select the most appropriate words from the list given and answer the question. It could be seen that 45 was the lowest score. Both the table showed that experimental group taught by applying Neurological Impress Method had better score than control group by using Grammatical Translation Method.

2. **The Calculation Table of Standard Deviation**

Based on the table 4.4 previously, the calculation of standard deviation was as below :

Control Group :

$$\sum \square = 2.580$$

$$\square = \frac{\sum \square}{\square} = \frac{2285}{32} = 80{,}6$$

$$\square = \sqrt{\frac{(\sum \square^2) - (\sum \square)^2}{\square\,(\square - 1)}}$$

$$= \sqrt{\frac{32(\sum \square^2) - (\sum 2580)^2}{32\,(32 - 1)}}$$

$$= \sqrt{\frac{32(209.350) - (\sum 2580)^2}{32\,(32 - 1)}}$$

$$= \sqrt{\frac{6699200 - 6656400}{32\,(31)}}$$

$$= \sqrt{\frac{42800}{992}}$$

$$= \sqrt{43,1} = \mathbf{6,5}$$

Based on the table 4.4 it showed that the mean of pre-test in control group was 62,8 and the mean of post-test was 80,6.

After seeing both tables (4.3 and 4.4), the mean score of post-test in experimental group was 80 and the mean score of control group which was treated by applying Neurological Impress Method was higher than the mean score in control group by using Grammatical Translation Method.

2.1 **Normality of The Test**

Normality test was used to determine whether data set well or not which was modeled by a normal distribution and to compete how likely it was for random variable underlying the data to be normally distribution.

2.1.1 **Normality Test of X Variable**

The normality test of variable x used Lilliefors test :

1. Listing the students‟ score from the lowest to the highest.
2. The score made to Z1, Z2, Z3, ...Zn by using formula :

$$\square\square = \frac{x - x\sim}{s}$$

3. The table of Zi could be seen from the table of normal curve

$$F(Zi) = \frac{FK}{n} = \frac{1}{25} = 0.04$$

Table 4.5
Normality Test of X Variable

No	Xi	Zi	F(ZI)	S(ZI)	F(ZI)-S(ZI)	Lo Hitung	Lo Table
1	65	-1.9	0.0288	0.04	-0.0112	-0.0112	0.319
2	70	-1.26	0.1027	0.2	-0.0973		
3	75	-0.63	0.2634	0.36	-0.0966		
4	80	0	0.5	0.64	-0.14		
5	85	0.63	0.7366	0.84	-0.1034		
6	90	1.26	0.8972	0.92	-0.0228		

Based on the data in table 4.5, L_{hitung} was -0.0112 and the Lilifors test in significant a was = 0.05 with n = 32, L_{table} was 0.319. So the $L_{hitung} < L_{table}$ was -0.0112 < 0.319, so it could be concluded that was normally distributed.

2.1.2 **Normality Test of Y Variable**

The normality test of variable Y used Lilliefors test :

$$\square\square = \frac{x - x\sim}{s}$$

2.1.2.1 The table of Zi could be seen from the table of normal curve

$$F(Zi) = \frac{FK}{n} = \frac{5}{32} = 0.2$$

Table 4.6
Normality Test of Y Variable

No	Xi	Zi	F(ZI)	S(ZI)	F(ZI)-S(ZI)	Lo Hitung	Lo Table
1	60	-1.31	0.0955	0.2	-0.1045	-0.025	0.337

2	65	-0.5	0.3119	0.52	-0.2081		
3	70	-0.33	0.628	0.76	-0.132		
4	75	1.14	0.8736	0.92	-0.0464		
5	80	1.96	0.975	1	-0.025		

Based on the data in table 4.5, L_{hitung} was -0.025 and the Lilifors test in significant a was = 0.05 with n = 32, L_{table} was 0.337. So the $L_{hitung} < L_{table}$ was -0.025 < 0.337, so it could be concluded that was normally distributed.

2.1.3 **Homogeneity of the Test**

Homogeneity test was performed to determine whether the variances of data were equal from two distribution groups.

The data of variable X and variable Y :

a. Variable X

$\bar{\square} = 71.4$

$S_1^2 = 77.7$

$N = 32$

b. **Variable Y**

$\bar{\square} = 80.6$

$S_1^2 = 43.1$

$N = 32$

$$\square = \frac{\text{THE HIGHEST VARIANCE}}{\text{THE LOWEST VARIANCE}}$$

$$\square = \frac{77.7}{43.1}$$

$$\square = 1.80$$

The value of F_{table} with the significance a was = 0.05 with n = 32 was 3.33, those score were got in the constant table in F_{table} and F_{hitung} was 1.80. So the $F_{hitung} < F_{table}$ was 1.80 < 3.33 So it could be concluded that the data were homogeny.

C. **Hypothesis Testing**

After calculating the data, the result was showed the rules of statistics normality and homogeneity were fulfilled so the next was testing hypothesis.

The Table 4.7
The Calculation Table

No	X	Y	Xi(x-x)	Yi(y-y)	Xi2	Yi2	Xi Yi
1	80	85	2.42	8.820	1.13	6.568	21.34
2	60	75	1.82	8.823	1.00	15.650	16.05
3	80	90	2.42	15.443	1.20	15.900	37.37
4	70	90	2.12	15.574	1.20	16.014	33.01
5	80	80	2.42	15.848	1.07	16.124	33.35
6	70	80	2.12	15.989	1.07	16.411	33.89
7	65	80	1.97	16.291	1.07	16.714	32.09
8	65	75	1.97	16.599	1	17.034	32.70
9	75	80	2.27	16.926	1.07	17.381	38.42
10	75	80	2.27	17.237	1.07	17.743	39.12
11	60	70	1.82	17.564	0.93	18.129	31.96
12	70	80	2.12	17.888	1.07	18.494	37.92
13	55	70	1.67	18.326	0.93	18.939	30.60
14	65	75	1.97	18.539	1	19.363	36.52
15	65	75	1.97	19.022	1	19.886	37.47

16	65	75	1.97	19.545	1	20.454	38.50
17	65	70	1.97	20.115	0.93	21.074	39.62
18	80	90	2.42	20.736	1.2	21.670	50.18
19	60	75	1.82	21.286	1	22.190	38.74
20	75	85	2.27	21.926	1.13	23.018	49.77
21	80	80	2.42	22.773	1.07	23.852	55.11
22	60	80	1.82	23.561	1.07	24.894	42.88
23	75	80	2.27	24.541	1.07	26.086	55.70
24	75	90	2.27	25.798	1.2	27.467	58.56
25	85	90	2.58	27.272	1.2	28.662	70.36
26	65	75	1.97	28.379	1	30.000	55.90
27	85	90	2.58	30.648	1.2	32.385	79.07
28	80	80	2.42	32.352	1.07	34.412	78.29
29	65	80	1.97	35.000	1.07	38.013	68.95
30	85	90	2.58	40.285	1.2	43.084	103.93
31	85	90	2.58	44.441	1.2	48.218	114.65
32	65	75	1.97	45.962	1	53.033	90.54
Total	**2.285**	**2.580**	**69.24**	**723.511**	**34.40**	**768.861**	**1582.56**

The table 4.7 above was calculation table that explained the formula of post-test in experimental and post-test in control group which was implemented to find t-critical value of both groups as the basic to the hypothesis of the research.

The following formula t-test was implementing to find out the t- observed value of both groups as the basic to test hypothesis of this research:

1. **Coefficient r**

$$Rxy = \frac{n\sum \square_i Y_i}{\sqrt{\{(\square \sum \square^1\text{-}(Xi)^2\}\{n\sum \square^1\}\text{-}(Yi)^2\}}}$$

$$Rxy = \frac{32\,(1582.56) - (69.24)(723.511)}{\sqrt{\{32(34.40) - (69.24)^2\}\{32(768.861)\}-(723.511)^2\}}}$$

$$Rxy = \frac{(50.641) - (50.103)}{\sqrt{\{(1.100) - (4.794)\}\{(24.603)\}-(523.468)\}}}$$

$$Rxy = \frac{(0.538)}{\sqrt{(-3.694)\ (498.865)}}$$

$$Rxy = \frac{(0.538)}{\sqrt{\ (1.842.807)}}$$

$$Rxy = \frac{0.538}{1.357.500}$$

$$Rxy = 0.039$$

The percentage of using this method was 99%.

It was proved :

Significant $= r^2 \times 100\%$

$= (0.039)^2 \times 100\%$

$= (0.001) \times 100\%$

$= 100 - 1$

$= 99\%$

2. **Examining the Statistical Hypothesis**

H_a There is significant effect of applying Neurological Impress Method on the students‟ ability in reading comprehension.

H_o There is not a significant effect of applying Neurological Impress Method on the students‟ ability in reading comprehension.

$$t = \frac{X_1 - X_2}{\sqrt{\frac{\square^2}{\square_1} + \frac{\square^2}{\square_2} - 2R\left(\frac{\square_1}{\sqrt{\square_1}}\right)\left(\frac{\square_2}{\sqrt{\square_2}}\right)}}$$

$$\square = \frac{71.4 - 80.6}{\sqrt{\frac{77.4}{32} + \frac{43.1}{32} - 2(0.039)\left(\frac{8.81}{\sqrt{32}}\right)\left(\frac{6.5}{\sqrt{32}}\right)}}$$

$$t = \frac{9.2}{\sqrt{2.4 + 1.3 - (0.078)(1.57)(1.16)}}$$

$$t = \frac{9.2}{\sqrt{9.09}}$$

$$t = \frac{9.2}{3.01}$$

$$t = 3.05$$

After measuring the data by using t-test formula above it showed to observed value was 3.05 after counting the table of the distribution of t-observed as the basis of accounting in certain degree of freedom (df). The calculation show that:

$Df = N_1 + N_2 - 2$

$= 32 + 32 - 2$

$= 62$

In the line of 62, showed that t_{table} was 2.04, $t_0 > t_{table}$ which was 3.05>2.04, the fact was that H_a was accepted and H_o was rejected.

D. Research Finding

Based on the calculation, the result of the t-test showed that the $t_{observed}$ was higher than t_{table} (3.05>2.04). in the hypothesis testing, it showed the alternative hypothesis was accepted. It means that the Neurological Impress Method gave a significant effect in reading comprehension. It was proved

from the data shown that the students who were taught by applying Neurological Impress Method got higher score than those who was taught by Grammar Translation Method could bring higher result on the students‟ ability in reading comprehension. It means that the alternative hypothesis was accepted and the null hypothesis was rejected. The last of Normality found that $L_{hitung} < L_{table}$ was -0.025 < 0.337, the data is normal. The test of Homogeneity found that $F_{hitung} < F_{table}$ was 1.80 < 3.33, the data was homogeny. So, there was significant effect of applying Neurological Impress Method on the students‟ ability in reading comprehension.

The percentage of the effect of X variable to word Y variable or the effect of applying Neurological Impress Method on the students‟ ability in reading comprehension was 99% and 1% was influenced by other factors.

Observation result showed that the students gave good responses and good attitude during the teaching learning process. Even though they got problem at the first time but they could handle their difficulties and enjoyed their lesson by the process of time. They become more active and interested in reading. The application of neurological impress method had helped them in reading comprehension text. These all qualitative data support the research finding which is based on the quantitative data. Based on the result of quantitative data, if found that the application of neurological impress method had successfully improved students‟ ability in reading comprehension text.

E. Discussion

Using Neurological Impress Method can influence the result of learning. When a teacher is teaching in front of class, the teacher should choose the suitable method and creative media that can make their students understand the lesson and enjoy their study. Neurological Impress Method is suitable method in teaching reading comprehension text. The method is simple and easy to be applied. It can be used and understood quickly by the students. By the method, the students were more active and confidence to read the reading text especially Reading Comprehension Text. The students enjoy the study because they can do reading with reading aloud.

The fact said that the students more interested in learning Reading Comprehension Text by using Neurological Impress Method. They were fun and still serious in learning Reading Comprehension Text. Based on the research in SMP Negeri 1 Bambel, the researcher found that Neurological Impress Method is suitable in teaching reading comprehension text. By this method made the students enjoy, fun and easy to comprehend the text as material in the class. The students also more braveness and had self confident. Based on the result, there was an effect on students‟ ability in reading comprehension text by using Neurological Impress Method.

This research was analysis from other reference of related study by Yemima Alberti (2014. UINSU) by the title Improving students‟ reading comprehension on narrative text by using story grammar strategy at grade VIII of SMP N 1 Pondok Kelapa, I found that in this research, the researcher used quantitative and qualitative data, the instrument of this research were reading comprehension test. It means that story grammar strategy improves

students reading comprehension that was influenced by students‟ factors (attention, interest, and participant) and teacher factors (choosing the material and classroom management). So that, from research above have some similarity for my result of my research, Observation showed that the result of the students gave good responses and good attitude during the teaching learning process. Even though they got problem at the first time but they could handle their difficulties and enjoyed their lesson by the process of time. They become more active and interested in reading. The application of neurological impress method had helped them in reading comprehension text.