CHAPTER IV

RESEARCH FINDING AND DISCUSSION

A. Research Finding

This chapter discusses about finding and discussion. Finding clarifies the result of students' speaking skill by using PMI strategy at class X of Senior High School 1 VII Koto Sungai Sarik. The analysis of the collected data was carried out to answer the research question is to find out whether using PMI strategy gave the significant effect toward students's speaking ability at class X of Senior High School 1 VII Koto Sungai Sarik. It had been done in class X MIPA^2 and X MIPA^4. The study was started on November,31th 2017 and ended Desember 1st 2017. The research was started by giving treatment for experimental class by using PMI strategy for class X MIPA^2 and without treatment for control class X MIPA^4 but they got the same material. The, post test was given at the end of process.

1. Description of Data

Based on the research that had been done in class sample, it got result of learning writing. The data of this research was the score of students' post-test for both control and experiment class. The speaking scor were evaluated by Huges criteria (2003: 132-132)considering five component pronunciation, grammar, vocabulary, fluency and comprehension. The researcher conducted a post-test to see whether the treatment process had any effect toward students' speaking ability especially to the experimental class. While the control class did not have any treatment by the researcher, they were taught as they had usually been taught by their English teacher. Post test

was given for both of this group experimental group and control group. The post test data of experimental and control classes were shown as follow ;

All of the data were analyze to find out the maximum and minimum scores, mean score (X) and standard Deviation (SD) of post test of experimental class and control class.

Table 4.1   The Post-Test Score of Experimental Class

Number of students		SpeakingComponent (Experimental Class)					Speaking Score
		P	G	V	F	C	
1.	AZP	2	30	20	6	19	77
2.	AF	2	30	16	12	23	83
3.	BA	2	24	16	6	19	67
4.	DPA	2	30	20	6	19	77
5.	ISR	1	24	12	8	19	64
6.	LZ	2	30	20	6	19	77
7.	LW	2	30	20	6	19	55
8.	MAF		30	20		19	80
9.	MAS		24	16		19	67
10.	MR	1		10	10	15	66
11.	MF	2			8	19	79
12.	MJ	1	24	12	8	15	60
13.	MN	2	24	8	6	15	55
14.	NT	3	30	16	12	23	84
15.	NA	1	24	20	8	19	72
16.	RS	1	24	12	8	15	60
17.	RWY	3	30	20	8	19	80
18.	TF	2	24	16	6	19	67
19.	TVA	2	24	20	6	19	71
20.	TF	2	24	16	6	19	67
21.	UK	3	30	20	10	19	82
22.	UU	2	18	8	8	8	44
23.	YS	2	30	20	10	19	81
24.	ZF	2	24	20	10	19	75
SUM		47	636	404	188	437	1690
MEAN		1.95	26.5	16.83	7.83	18.20	70.42
Minimum Score		1	18	8	6	8	44
Maximum		3	30	20	12	23	83

Score							
Standar Deviation							10.49

Table 4.2   The Post-Test Score of Control Class

| Number of students		SpeakingComponent (Control Class)					Speaking Score
		G	**V**	**P**	**F**	**C**	
1.	AWP	2	18	8	8	8	44
2.	AP	1	24	12	8	15	60
3.	BS	2	30	20	10	19	81
4.	BR	2	12	8	6	12	40
5.	DW	2	24	20	6	12	64
6.	FR	2	24	16	6	8	56
7.	MDK	1	24	12	8	15	60
8.	M	2	24	8	6	12	52
9.	MSW	2	24	20	10	19	75
10.	MF	1	12	8	6	12	39
11.	MZ	2	24	8	8	12	54
12.	PA	2	30	20	10	19	81
13.	RAP	2	24	20	10	19	75
14.	RA		12	8	8	8	38
15.	RS		24	20		19	73
16.	RAA			20		19	80
17.	RAH	2			6	12	60
18.	RPY	2			8	4	46
19.	SF	2	12	8	6	8	36
20.	SW	2	24	12	8	4	50
21.	SYA	3	30	20	8	19	80
22.	SP	2	24	8			54
23.	WSR		24	20	8	19	72
24.	YPK	1	24	12	8	15	60
SUM		45	546	332	186	321	1430
MEAN		1.87	22.75	13.83	7.75	13.37	59.58
Minimum Score		1	12	8	6	4	36
Maximum Score		3	30	20	10	19	81
Standar Deviation							14.83

From the table above, we know that the post-test score of experimental

class was higher than control class. The experimental class had different within

39 points from 44 for minimum score and 83 for maximum score. The score of control class had different within 45 points from 36 for minimum score and 81 for maximum score. The average score of the experimental class was higher than control class. The average score for experimental class was 70, and the average score for the control class was 60. The standard deviation for both classes was also distinguishable. The standard deviation of the experimental class was 10.19, and the standard deviation of the control class was 13.87.

The researcher got the data by giving the post test to both of classes, experimental class and control class. Both of classes got the same post test and same material. Speaking result was also evaluated by considering five component of speaking; Pronunciation, Grammar, Vocabulary, Fluency and Comprehension.

Table 4.3 The Description of Comparison Means of Post-Test of Experiment and Control

N o	Aspects/ Components	Experiment Class $\dfrac{\sum^{n\times i}}{N}$	Control Class $\dfrac{\sum^{n\times i}}{N}$	Difference
1	Pronunciation	47/24 = 1.95	45/24 = 1.87	0.08
2	Grammar	636/24 = 26.5	546/24 = 22.75	3.75
3	Vocabulary	404/24 = 16.83	332/24 = 13.83	3.0
4	Fluency	188/24 = 7.83	186/24 = 7.75	0.08
5	Comprehension	437/24 = 18.20	321/24 = 13.37	4.83
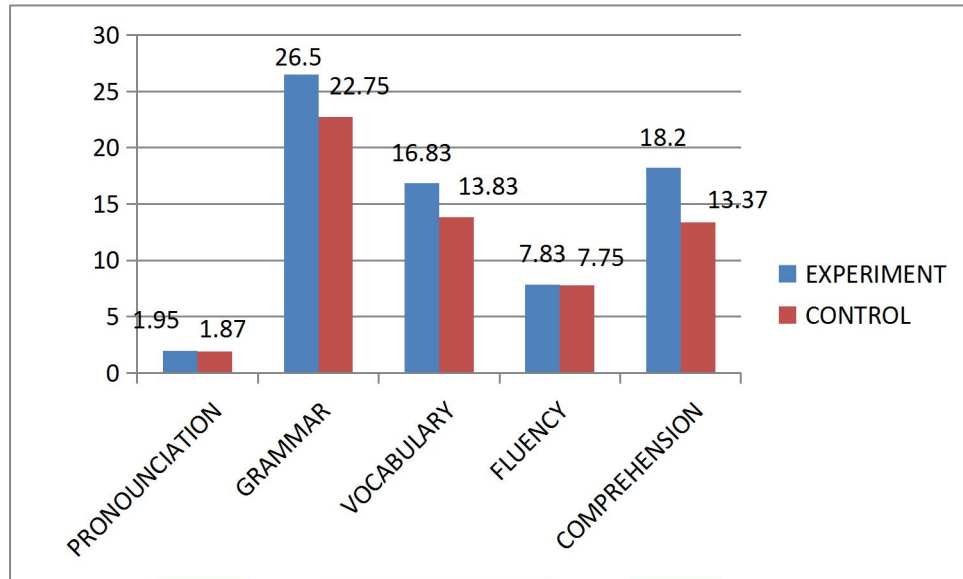
From the table above can be explained that:

1. **Pronunciation**

   In experiment class, the mean post-test score of the students' pronunciation was gotten 1.95 while in control class got 1.87 with difference 0.08. It is concluded that experimental had increase than control class.

2. **Grammar**

   In experiment class, the mean post-test score of the students' grammar was gotten 26.5 while in control class got 22.75 with difference 3.75. It is concluded that experimental class had increased than control class.

3. **Vocabulary**

   In experiment class, the mean post test score of the students' vocabulary was gotten 16.83 while in control class gotten 13.83 with difference 4.0. It is concluded that experimental class had increased than control class.

4. **Fluency**

In experiment class, the mean post-test score of the students' fluency was gotten 7.83 while in control class got 7.75 with difference 0.08. It is concluded that experimental class had increased than control class.

5. **Comprehension**

In experiment class, the mean score of the students' comprehension was gotten 18.20 while in control class got 13.37 with difference 4.83. It is concluded that experimental class had increased than control class.

Based on the explanation above showed the students' speaking skill in aspect grammar, vocabulary, fluency, and comprehension has really improve by using PMI Strategy.

All of the data were calculated to find out the minimal and maximal score, mean score (X), standard deviation (SD) for speaking score that got from post test experimental class and control class.

2. **Descriptive Data Analysis**

The data will be analyzed by using t-test formula. The calculation of t-test between mean score of post test of experimental class and control class is as follow; beside that, the students' interval score in experiment class can be seen from the table below.

a. **Tabulating**

Based on data which was gathered from 48 students specified by as sample, data of students' achievement on speaking skill will be tabulated as follow. Before going to the tabulating, we had to find those interval.

1. **Experimental class**

X_{max}: 83   n: 24   R:X_{max}-X_{min}

  X_{min}: 44   P: R/K   K: 1+3.3 Log

                                                              n

Note:

P: Interval

R: Range

K: Number of classes

R: X_{max}- X_{min}

  : 83 - 44= 39

K: 1+3.3 log n

  : 1+3.3 ... 4

  : 1+3. ... 6)

  : 1+4.8

  : 5.8

P: R/K

  : 39/5.8

  : 6.7

  : 7

So, the interval of students speaking score is 7. Then, the students score of test in experimental class can be seen in the table below:
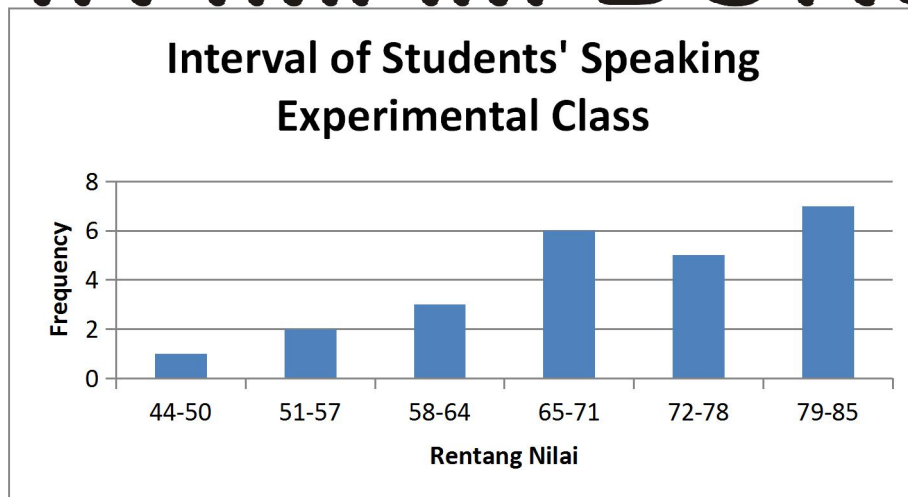
Table 4.4   The Interval Data Post Test Score of Experimental Class

NO	INTERVAL (Students' Speaking Score)	Freq	Percentage
1	44-50	1	4%
2	51-57	2	8%
3	58-64	3	13%
4	65-71	6	25%
5	72-78	5	21%
6	79-85	7	29%
		24	100%

From the table above, it was found that the interval data the students' speaking score of post-test in the experimental class was about 44-50, there was one student who got score at that interval or 4 %, while the interval 51-57 there were two students who got the score at that interval 8% and there were three students who got the score 58-64 and there were six students who got the score 67-71 and there was five student who got the score 72-78, and there were seven students who got the score at that interval.

The data of post-test score in experimental class could be drawn as below:

Interval of Students' Speaking Experimental Class

2. **Control class**

X_{max}: 81   n: 24   R: X_{max}- X_{min}

X_{min}: 36   P: R/K   K: 1+3.3 log n

Note:

P: Interval

R: Range

K: Number of Classes

R: X_{max}- X_{min}

  : 81-36 = 45

K: 1+3.3 log n

  : 1+3.3 log 24

  : 1+3.   46)

  : 1+4

  : 5.8

P: R/K

  : 45/5.8

  : 7.7

  : 8

Table 4.5 The Interval Data Post Test Score of Control Class

NO	INTERVAL (Students' Speaking Score)	Freq	Percentage
1	36-43	4	17%
2	44-51	3	12%
3	52-59	4	17%
4	60-67	5	20%
5	68-75	4	17%
6	76-83	4	17%
	Total	24	100%

From the table above, it was found that the interval data students' speaking score of post-test in the control class was about 36-43, there were four students who got score or 17%, while the interval 44-51 there were three students who got the score or 12% then there were four students or 17% who got the score at the interval 52-59, beside that there were five student or 20% who got the score at the interval 60-67, and there were four students or 17% who got the score at the interval 68-75, and there were four students or 17% who got the score at the interval 76-83.

The data of post-test score in control class could be drawn as below:

Interval of Students' Speaking Control Class
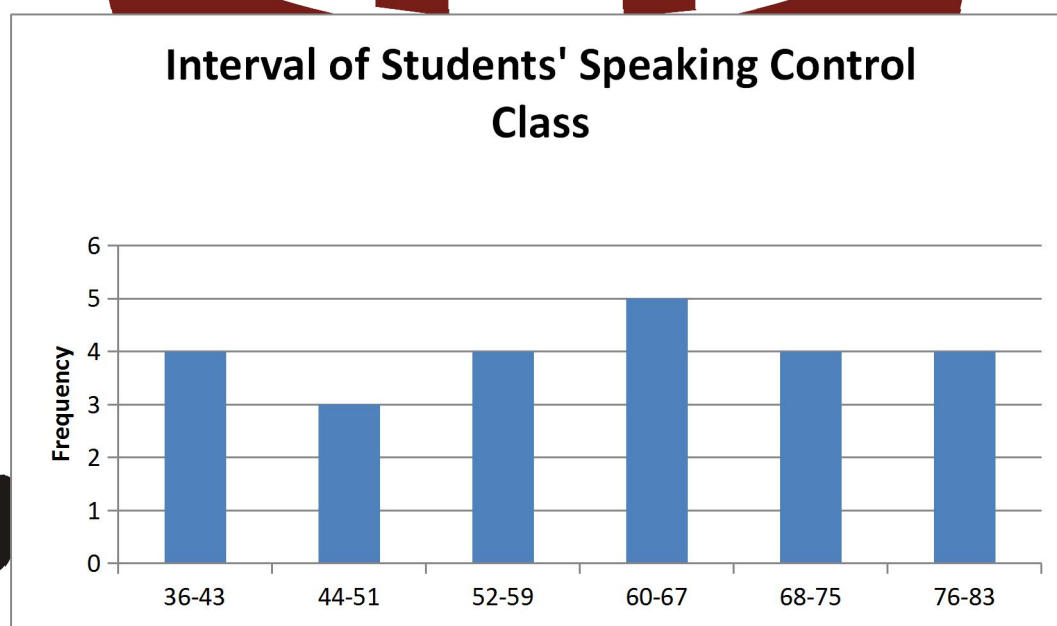
b. Means score and Standard Deviation

1. Experiment class

The mean score and standard deviation of post test in Experimental class can be seen in the table 4.6 below:

Table 4.6   The Mean Score and Standard Deviation of Post Test in Experimental Class

No	X_1	F_1	X_1^2	$F_1 X_1$	$F_1 X_1^2$
1	84	1	7056	84	7056
2	83	1	6889	83	6889
3	82	1	6724	82	6724
4	81	1	6561	81	6561
5	80	2	6400	160	12800
6	79	1	6241	79	6241
7	77	3	5929	231	17787
8	75	1	5625	75	5625
9	72	1	5184	72	5184
10	71	1	5041	71	5041
11	67	1	4489	67	4489
12	66	4	4359	264	17436
13	64	1	4096	64	4096
14	60	2	3600	120	7200
15	55	2	3025		6050
16	44	1	1936		1936
Total		**24**	**83155**		**121115**
		$\sum F_1=$	$\sum X_1^2=$	$\sum F_1 X_1=$	$\sum F_1 X_1^2$
Sum			35	1687	121115

$$\bar{x} = \frac{\sum F_1 X_1}{\sum F_1} = \frac{1687}{24} = 30.29$$

$$(\sum F_1 X_1)^2 = (1687)^2 = 2845969$$

$$S^2 = \frac{n_1 \sum F_1 X_1^2 - (\sum F_1 X_1)^2}{n_1 (n_1 - 1)}$$

$$S^2 = \frac{24(121115) - (1687)^2}{24(24 - 1)}$$

$$S^2 = \frac{2906760 - 2845969}{24(23)}$$

$$S^2 = \frac{60791}{552}$$

$$S^2 = 110.1286$$

$$S = \sqrt{110.13} = 10.494$$

2. **Control Class**

The mean score and standard deviation of post test in Control class can be seen in the table 4.8 below:

Table 4.7   The Mean Score and Standard Deviation of Post Test in Control Class

No	X_2	F_2	$X_2{}^2$	F_2	$F_2 X_2{}^2$
1	81	2	6561		13122
2		2	6400		12800
3	75	2	56	150	11250
4	73		5329	73	5329
5	72		5184	72	5184
6	64	1	4096	64	4096
7	60	4	3600	240	14400
8	56		3136	56	3136
9	54	2	2916	108	5832
10	52	1	2704	52	2704
11	50	1	2500	50	2500
12	46	1	2116	46	2116
13	44	1	1936	44	1936
14	40	1	1600	40	1600
15	39	1	1521	39	1521
16	38	1	1444	38	1444
17	36	1	1296	36	1296
Total		24	57964	1430	90266

SUM	$\sum F_1=$	$\sum X_1{}^2=$	$\sum F_1X_1=$	$\sum F_1X_1{}^2$
	24	57946	1430	90266

$$\bar{x} = \frac{\sum F1X1}{\sum F1} = \frac{1430}{24} = 59.58$$

$$(\sum F1X1)^2 = (1430)^2 = 2044900$$

$$S^2 = \frac{n_1 \sum F_1 X_1^2 - (\sum F_1 X_1)^2}{n_2(n_2 - 1)}$$

$$S^2 = \frac{24(90266) - (1430)^2}{24(24 - 1)}$$

$$S^2 = \frac{2166384 - 2044900}{24(23)}$$

$$S^2 = \frac{121484}{552}$$

$$S^2 = 220.079$$

$$S = \sqrt{220.079} = 14.835$$

3. Inferential Data Analysis

1. Prerequisite Hypothesis Testing

The prerequisite is necessary to determine whether the analysis of data for hypothesis testing can be continued or not. Some data analysis techniques demanding test prerequisite analysis. Analysis of variance requisite that data come from a population with normal distribution and group compared to homogeneous of data.
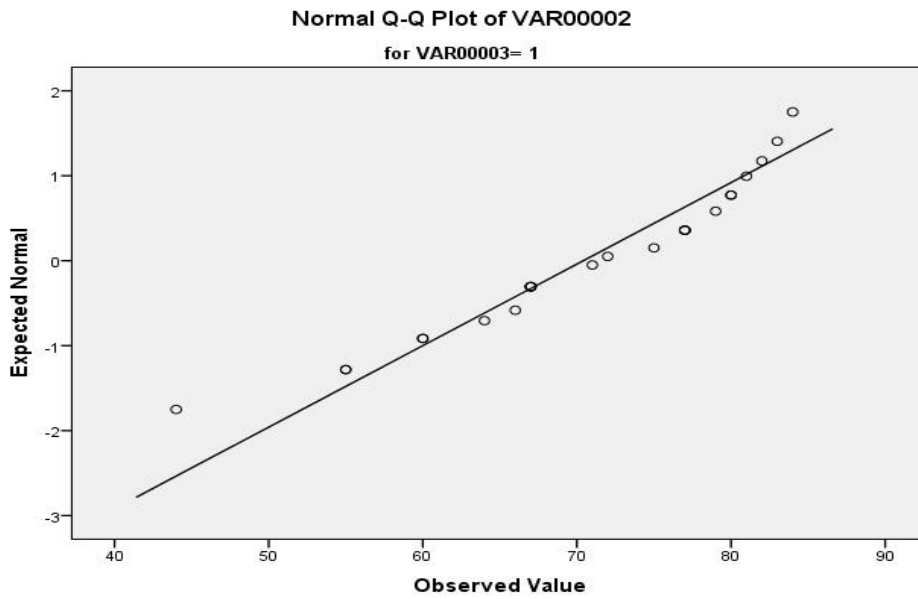
A variety of prerequisite testing analysis, such as a normality test and homogeneity test. The prerequisite analysis of data will be mentioned on the next point.

The prerequisite is necessary to determine whether the analysis of data for hypothesis testing can be continued or not. Some data analysis technique demanding test prerequisite analysis. Analysis of variance requisite that data come from a population with normal distribution and group compared to homogeneity of data.

a. The normality of distribution test

Normality test had an objective to know the population normal or not. In this research, to do the normality test the researcher used Kolmogrov Smirnov and Shapiro Wilk. Test was performed in SPSS test. Testing criterion and distributed normal if the data was more than 0.05. The class was normal. The data of post-test score experimental class could be drawn as follows:

Normal Q-Q Plot of VAR00002 for VAR00003= 1

The data of post-test score in control class could be drawn as follows:

Normal Q-Q Plot of VAR00002 for VAR00003= 2
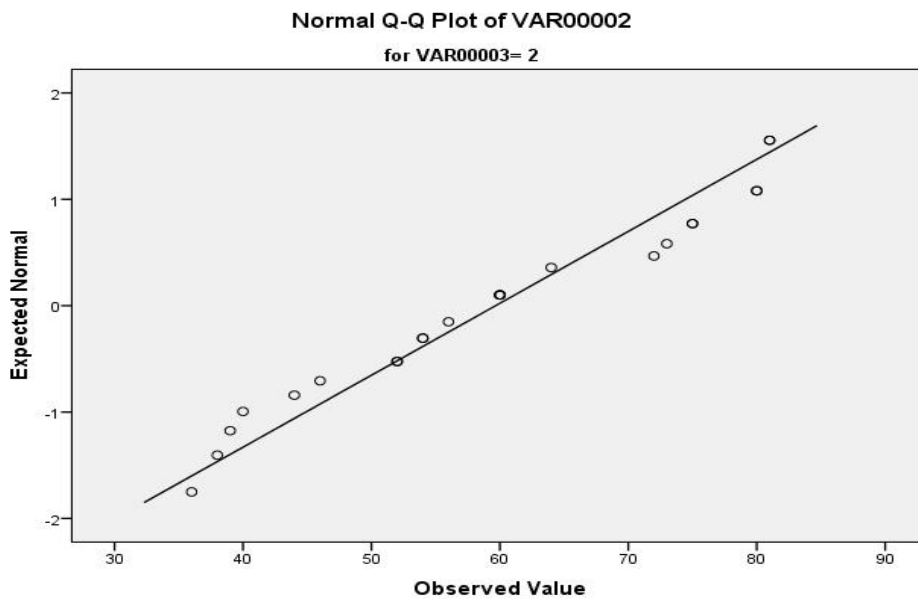
Table 4.8 Tests of Normality post-test

Tests of Normality

	VAR00003	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	Df	Sig.
VAR00002	1	,155	24	,143	,934	24	,122
	2	,131	24	,200[*]	,932	24	,105

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

It was revealed that the distribution was normal. The number in bracket is the degrees of freedom (*df*) from the table. The table of the normal distribution test result can be seen clearly at the appendix. If the data around and near with the curve line, it means the data was normal.

b. The homogeneity of variance test

To check the homogeneity of variance of the data, Levene's test was conducted. The result of calculating using Levene test is as follows:

Table 4. 9 Test of Homogeneity of Variance

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
VAR00002	Based on Mean	2,977	1	46	,091
	Based on Median	2,928	1	46	,094
	Based on Median and with adjusted df	2,928	1	41,697	,095
	Based on trimmed mean	3,001	1	46	,090

Table 4.10 The Post Test Score of Class X SMAN 1 VII Koto Sungai Sarik Kabupaten Padang Pariaman

Class	N	The Highest Score	The Lowest Score	Mean ($\overline{X}$)	Standard Deviation
Experiment	24	83	44	70.49	10.494

Based on the table above, the total number of the students at class X MIPA^2 was 24, the highest score was 83, the lowest score was 44, the mean score was 70.49 and the standard deviation was 10.494.

Table 4.11 The Post Test Score of Class X at SMAN 1 VII Koto Sungai Sarik Kabupaten Padang Pariaman

Class	N	The Highest Score	The Lowest Score	Mean $(\overline{X})$	Standard Deviation
Control	24	81	36	59.58	14.835

Based on the table above the post test score in control class, the total number of the students at class X MIPA[4] was 24, the highest score was 81, the lowest score was 36, the mean score was 59.58 and the standard deviation was 14.835.

The distributions of students' post test score both of two classes can be seen on the table 4.10 below:

Table 4.12 Description of Post Test Score of Class at SMAN 1 VII Sungai Sarik Kabupaten Padang Pariaman

	Post Test Class X MIPA	Post Test Class X MIPA[4]
Total Students	24	24
Sum of Score		1430
Mean Score	70.42	59.58
Highest Score	83	81
Lowest Score	54	36

From the table above, it can be seen the post test score in class X MIPA[2] (70.42) was higher than class X MIPA[4] (59.58).

1. **Hypothesis testing**

In order to see whether the hypothesis accepted or rejected, the researcher analyzed by using T-test. The calculation processes can be seen as follow:

$$t = \frac{\overline{X}_1 - \overline{X}_2}{s\sqrt{\frac{1}{n_1} + \frac{1}{n_2}}} \qquad S = \sqrt{\frac{(n_1 - 1)S_1^2 + (n_2 - 1)S_2^2}{n_1 + n_2 - 2}}$$

t   :   the value of t calculated

$\overline{X}_1$:   Mean score of experimental class

$\overline{X}_2$:   Mean score of control class

n_1 :   Total the subject of experimental class

n_2 :   Total the subject of control class

S_1^2 :   Standard deviation of experimental class

S_2^2 :   Standard deviation of control class

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

$$s^2 = \frac{(24 - 1)(110.1286) + (24 - 1)(220.07)}{24 + 24 - 2}$$

$$s^2 = \frac{(13)110.1286 + \ldots 220.07}{46}$$

$$s^2 = \frac{1431.6718 + 5061.817}{46}$$

$$s^2 = \frac{6493.4888}{46} = 141.1628$$

$$s = \sqrt{141.1628}$$

$$s = 11.88$$

Now, we look for the t formula:

$$\frac{\overline{X_1} - \overline{X_2}}{s\sqrt{\dfrac{1}{n1} + \dfrac{1}{n2}}}$$

$$\frac{70.42 - 59.58}{11.88\sqrt{\dfrac{1}{24} + \dfrac{1}{24}}}$$

$$\frac{10.84}{11.88\ \sqrt{\dfrac{2}{24}}}$$

$$\frac{10.84}{11.88\sqrt{0.08}}$$

$$\frac{10.84}{11.88 \times 0.282}$$

$$\frac{10.84}{3.350} = 3.236$$

$\alpha = 0.05$

df = $(n_1 + n_2 - 2)$

= $(24 + 24 - 2)$

= 46

T -table = t $(1 - \alpha)$ df

= t $(1 - 0.05)$ df

= t (0.95) 46

= 1.683

t- Calculate   = 3.235

t- Table   = 1.683

t- Calculate   >   t- table

3.235   >   1.683

After the scores of test in experimental and control classes had been analyzed, the value of t-observed was obtained. The value t-calculate then was compared. If the t-calculate was less or equal than t-table **(0.05)**, automatically there was no differences of students' achievement those taught with Plus Minus and Interesting strategy and those taught with conventional technique. It means that the hypothesis was rejected.

While if t-calculate was higher than t-table at the level of significant 0.05, it automatically that students' achievement those taught with Plus Minus and Interesting strategy higher than those taught with conventional technique. So the hypothesis was accepted.

As the result above, it can be seen that t-calculate in this research was higher than the value of t-table (3.235>1.683). Therefore the hypothesis in this research stated that the implementation of Plus Minus and Interesting strategy in teaching and learning process gave significant difference on students' speaking skill that referred Pronunciation, Grammar, Vocabulary, Fluency, and Comprehension for students at Class X of SMAN 1 VII Koto Sungai Sarik Kabupaten Padang Pariaman.

B. Discussion

Based on the data analyzed in the previous chapter, it can be concluded that PMI Strategy gave significant difference toward students' speaking skill. Through PMI Strategy , the students are able to speak better than the students whom were taught without PMI Strategy. The success of this research can be proved by the result of students' score on speaking testing of both classes. It

showed from the mean score of experimental class is better than control class. 70.42 for experimental is higher than 59.58 for control class. The effect was happened because of the experimental class was thought by using PMI Strategy. Then, it was found that t $_{calculate}$ > t $_{table}$ (3.235>1.683). It means that the learning result of teaching speaking by using PMI Strategy gave significant difference rather than teaching and learning process without using that Strategy.

According to Dawn Wee (2010: 45) states that PMI is a simple strategy to look at the problem from all sides. PMI is an effective strategy used by teacher to generate ideas about a question or problem and help them to see and value of both possibilities of solution for the problem. This strategy can make students think better and more confident to speak about their comprehension. In this activity, the students are stimulated to develop their thinking and imagination in descriptive text. descriptive text is kind of text that has function to describe something such as person, thing, place,etc. PMI strategy is one of strategy in making speaking more easier for students. Because they are work together to make a good descriptive text and tell it in front of the class.

Related to the purpose of the research, *first*: to determine whether there is significant difference on students' speaking skill by using PMI strategy, the researcher can say that there is significant difference on students' speaking skill between those who taught by using PMI strategy and those who taught without PMI strategy that could be seen on findings. It is shown by the post-test result for both classes after giving the treatment by applying PMI strategy.

Second: to know the components of speaking can be improve by using PMI strategy. In this research, there were five component of speaking that

should be measured in conducting the speaking activity, namely: pronunciation, grammar, vocabulary, fluency, and comprehension. In this case, the researcher wanted to see all of component.

After being taught by using strategy ling in several meetings, the students got some improvements of speaking component that was shown by their speaking score. The experimental class improved dramatically after receiving treatment. While the control class shown no significant improvement after receiving no treatment. The research proves that PMI strategy technique have a dramatic influence on students' speaking skill. Statistically calculated, the result of this research, the mean scores of experimental class is 70.42 that taught PMI strategy and it supports the research hypothesis that there is significant different on students' speaking skill between the students' who are taught by PMI strategy and those who are taught with out PMI strategy

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