CHAPTER IV

DATA PRESENTATION, DATA ANALYSIS AND DISCUSSION

4.1. Description of the Data

The data of this research were the scores of students test and observation of both experiment group 1 and experiment group 2. The main purpose of the research was to investigate the comparison between the effect of Using PLAN and SMART strategies toward students reading comprehension on descriptive text. Test and observation scores from the students reading comprehension results were analyzed by using quantitative data analysis for the results finding. Both descriptive and inferential statistical analyses were included. Frequency counts, percentages, mean scores and standard deviation of the variables were presented in the descriptive statistical analyses. The hypotheses developed for this study were tested using an independent sample t-test and a paired-sample t-test.

4.2. Data Observation in Teaching PLAN Strategy and SMART Strategy

Reading comprehension observations were instrumental to know the reality what happens in the classroom, and how recommendations made for instruction can be implemented. In this study, the researcher was observed and then completed a checklist which consisted of series of indicators concerning the PLAN and SMART strategies. In this study, the researcher answered these indicators for each meeting. Then, the researcher calculated

the percentage of the indicators that the teacher allocated to the various activities within each classroom. The implementation of PLAN strategy as experimental group 1 (X1) can be seen in the table below:

Table IV.1
The Recapitulation of the Observation List Experimental Group 1 by using PLAN Strategy. Meeting 1 to 4 (August, 7th,2017 – August, 21th 2017)

No.	Indicators	Meeting				Total			
		1	2	3	4	Yes	%	No	%
1.	The teacher introduced PLAN Strategy.	√	√	√	√	4	100	0	0
2.	The teacher distributed descriptive text to the students.	√	√	√	√	4	100	0	0
3.	The teacher asked the students to scan the text (Predict).	√	√	√	√	4	100	0	0
4	The teacher prepared a map to draw the main point of the text.	√	√	√	√	4	100	0	0
5	The teacher connect the ideas using lines or arrows, and remember to designate main ideas and smaller ideas.	√	√	√	√	4	100	0	0
6	The teacher asked the students to determine text which information that they have already known, and which they have to find when they read the textbook more thoroughly (Locate).	√	√	√	√	4	100	0	0
7.	The teacher asked the students to draw predictive map.	√	√	√	√	4	100	0	0
8.	The teacher asked students to close all materials given by the teacher.	√	√	√	√	4	100	0	0
9.	The teacher asked the students to include as much information as possible for each topic, but also try to determine which ideas were the most prominent or important while reading (Add).	√	√	√	√	4	100	0	0
10.	The teacher asked students to develop and prepare the information (Note).	√	√	√	√	4	100	0	0
11.	The teacher determined to prepare multiple choice tests to measure the students' reading comprehension.	√	√	√	√	4	100	0	0
12.	Finally, teacher guided the students to take a conclusion of the lessons that they have learned.	√	√	√	√	4	100	0	0
		12	12	12	12	40	100	0	0

Based on Table IV.1, it is clear that PLAN strategy is conducted four meeting treatments by applying twelve indicators strategy for each meeting. It was obvious all the indicators were implemented up to 100%. The calculation showed the implementation of PLAN strategy in the experimental class 1 reach 100%. In conclusion, the teacher performed PLAN strategy very well.

On the other hand, the teacher applied SMART strategy for experimental group 2. The description of how the implementation of SMART strategy done by the teacher in the experimental class 2, it can be seen from the following tables:

Table IV.2

The Recapitulation of the Observation List Experimental Group 2 by using SMART Strategy. Meeting 1 to 4 (August, 23th,2017 – August, 31th 2017)

No.	Indicators	Meeting				Total			
		1	2	3	4	Yes	%	No	%
1.	Teacher introduced SMART Strategy	√	√	√	√	4	100	0	0
2.	The teacher distributed descriptive text to the students.	√	√	√	√	4	100	0	0
3.	The teacher asked the students to read the text silently.	√	√	√	√	4	100	0	0
4	The teacher asked the students to place a check mark individually	√	√	√	√	4	100	0	0
5	The teacher asked the students to create a mark (√) next to each sentence that they understand.	√	√	√	√	4	100	0	0
6	The teacher asked the students to create a mark (?) next to each sentence that they understand.	√	√	√	√	4	100	0	0
7.	The teacher asked the students to reread the text.	√	√	√	√	4	100	0	0
8.	Students go back and reread the text with question mark.	√	√	√	√	4	100	0	0
9.	The teacher asked students' understanding about the text.	√	√	√	√	4	100	0	0
10.	The teacher asked students to identify what was the problem in the word or sentence.	√	√	√	√	4	100	0	0
11.	The teacher asked students to evaluate information that they already got.	√	√	√	√	4	100	0	0
12.	The teacher asked students to remark the question mark (?) to a checkmark (√) if the confusion was overcome.	√	√	√	√	4	100	0	0
13	Teacher monitored the students and gave them assistance.	√	√	√	√	4	100	0	0
14	Finally, teacher guided the students to made conclusion of the lessons that they have learned.	√	√	√	√	4	100	0	0
		14	14	14	14	40	100	0	0

According to table IV.2, it can be seen that SMART strategy was conducted four meeting. It was obvious all indicators were implemented 100%. The calculation of the implementation of SMART strategy in the experimental

group 2 is complete up to 100%. In conclusion, the teacher performed SMART strategy very well.

4.3. Data Presentation

This research had three variables. The first was PLAN strategy as independent variable (X1), the second was SMART strategy as independent variable (X2), and the third was reading comprehension as dependent variable (Y). The data were collected through the following procedures:

a. The students of experimental group 1 and 2 got the pre-test.

b. The students of the experimental group 1 got the treatment by using PLAN Strategy and expreimental group 2 also got the treatment by using SMART strategy.

c. The observation of reading strategies.

d. The students of the experimental group 1 and 2 got the post-test.

e. The students answer sheets of two classes were collected in order to get the data about their reading comprehension on descriptive text.

4.3.1. The Data Presentation of students reading comprehension before giving the treatment by PLAN strategy for Experimental Group 1 and SMART strategy for Experimental Group 2.

The data of the students reading comprehension in descriptive text before giving the treatment of PLAN strategy for the experimental group 1, SMART strategy for the Experimental Group 2, and the Control Group were obtained from students' pre-test scores of two classes consist of 25 items of

reading comprehension in descriptive text test. The descriptions of the data can be seen in the following table:

Table IV.11
The Results of Students Reading Comprehension Pre-Test Scores

No	Students	Pre-test Scores	
		Experimental Class 1	Experimental Class 2
1	Student 1	76	88
2	Student 2	72	80
3	Student 3	76	72
4	Student 4	72	72
5	Student 5	76	44
6	Student 6	80	76
7	Student 7	64	80
8	Student 8	56	48
9	Student 9	72	52
10	Student 10	64	48
11	Student 11	60	52
12	Student 12	64	48
13	Student 13	76	68
14	Student 14	28	44
15	Student 15	76	60
16	Student 16	80	68
17	Student 17	72	68
18	Student 18	68	68
19	Student 19	64	60
20	Student 20	68	48
21	Student 21	60	88
22	Student 22	76	72

No	Students	Pre-test Scores	
		Experimental Class 1	Experimental Class 2
23	Student 23	60	68
24	Student 24	52	68
25	Student 25	68	76
26	Student 26	60	40
27	Student 27	68	96
28	Student 28	64	96
29	Student 29	64	84
30	Student 30	84	76
31	Student 31	80	72
	Total	Σ=2100	Σ=2128
	Mean	Σ=67.74	Σ=68.64

From the table above, it is obvious that each experimental group got 31 participants. The calculation of total pre-test score of experimental group 1 was 2100, the calculation of total pre-test score of experimental group 2 was 2128. The mean of pre-test score of experimental group 1 was 67.74 and the mean of pre-test score of experimental group 2 was 68.64. From the pre-test scores of the experimental class, based on the mean scores of experiment, they had similar capability before doing the treatment. The Histogram and description of frequency distribution of pre-test score in experimental group 1 and 2 were obtained by using SPSS 20 as follows:

Chart IV.1
The Comparison of Frequency of the Pre-test X1 and X2

Futher information about the pre-test scores of the experimental group 1, the researcher described in the following table which was obtained from the output of SPSS 20:

Table IV.12
The classification of students' reading comprehension pre-test score (X1)

No	Categories	Score	Frequency	Percentage %)
1	Very Good	81-100	1	3.2
2	Good	61-80	23	74.1
3	Fair	41-60	6	19.3
4	Poor	21-40	1	3.2
5	Very Poor	0-20	0	0
	Total		31	100

(Harris, 1986)

Table IV.12 indicates that 5 categories for students reading comprehension pre-test score of the experimental class. The frequency of Very Good category is 1 student (3.2%), the frequency of Good category are 23 students (74.1%), the frequency of Fair category are 6 students (19.3%), the frequency of Poor category is 1 student (3.2%), and none of student categorized into Very Poor (0%). The table showed that the highest percentage of student classification of students reading comprehension pre-test score of the experimental group 1 was 74.1%. Thus, the majority of the students in the experimental group 1 before being taught by using PLAN were classified into **Good category**.

Further, the pre-test score of the experimental group 2 consists of 31 participants. The researcher described it in the following table which was obtained from the output of SPSS 20:

Table IV.14

The classification of students reading comprehension pre-test score (X2)

No	Categories	Score	Frequency	Percentage (%)
1	Very Good	81-100	5	16.1
2	Good	61-80	17	54.8
3	Fair	41-60	8	25.8
4	Poor	21-40	1	3.2
5	Very Poor	0-20	0	0
	Total		31	100

(Harris, 1986)

Table IV.14 indicates that 5 categories for students reading comprehension pre-test score of the experimental class. The frequency of Very Good category are 5 students (16.1%), the frequency of Good category are 17 students (54.8%), the frequency of Fair category are 8 students (25.8%), the frequency of Poor category is 1 student (3.2%), and none of student categorized into Very Poor (0%). The table showed that the highest percentage of student classification of students reading comprehension pre-test score of the experimental group 2 was 54.8%. Thus, the majority of the students in the experimental group 2 before being taught by using SMART were classified into **Good category**.

4.3.2 The Data Presentation after Giving the Treatment of PLAN and SMART Strategies for X2

The data of the students reading comprehension in descriptive text after giving the treatment of PLAN strategy for the experimental group 1 and SMART strategy for the experimental group 2 were obtained from students' post-test scores of both classes consisting of 25 items of reading comprehension in descriptive text test. The descriptions of the data can be seen in the following table:

Table IV.15
The Results of Students Reading Comprehension Post-Test Scores

No	Students	Post-test Scores	
		Experimental Class 1	Experimental Class 2
1	Student 1	68	92
2	Student 2	76	92
3	Student 3	88	80
4	Student 4	80	68
5	Student 5	84	84
6	Student 6	88	88
7	Student 7	80	96
8	Student 8	92	96
9	Student 9	80	92
10	Student 10	84	88
11	Student 11	80	92
12	Student 12	88	60
13	Student 13	88	88

No	Students	Post-test Scores	
		Experimental Class 1	Experimental Class 2
14	Student 14	80	80
15	Student 15	84	92
16	Student 16	80	76
17	Student 17	92	52
18	Student 18	80	80
19	Student 19	84	92
20	Student 20	84	92
21	Student 21	76	96
22	Student 22	80	76
23	Student 23	84	88
24	Student 24	88	72
25	Student 25	80	64
26	Student 26	84	92
27	Student 27	88	88
28	Student 28	88	92
29	Student 29	52	92
30	Student 30	92	96
31	Student 31	88	92
	Total	Σ=2560	Σ=2644
	Mean	Σ=82.58	Σ=85.29

From the table above, each experimental group got 31 participants. The calculation of total post-test score of experimental group 1 is 2560, the calculation of total post-test score of experimental group 2 is 2644. The

mean of post-test score of experimental group 1 is 82.58 and the mean of post-test score of experimental group 2 is 85.29. From the post-test score of the experimental class, based on the mean scores of experiment, they got significant improvement capability after doing the treatment. The comparison of histogram of frequency distribution of post-test score in experimental group 1 and 2 were obtained by using SPSS 20 as follows:
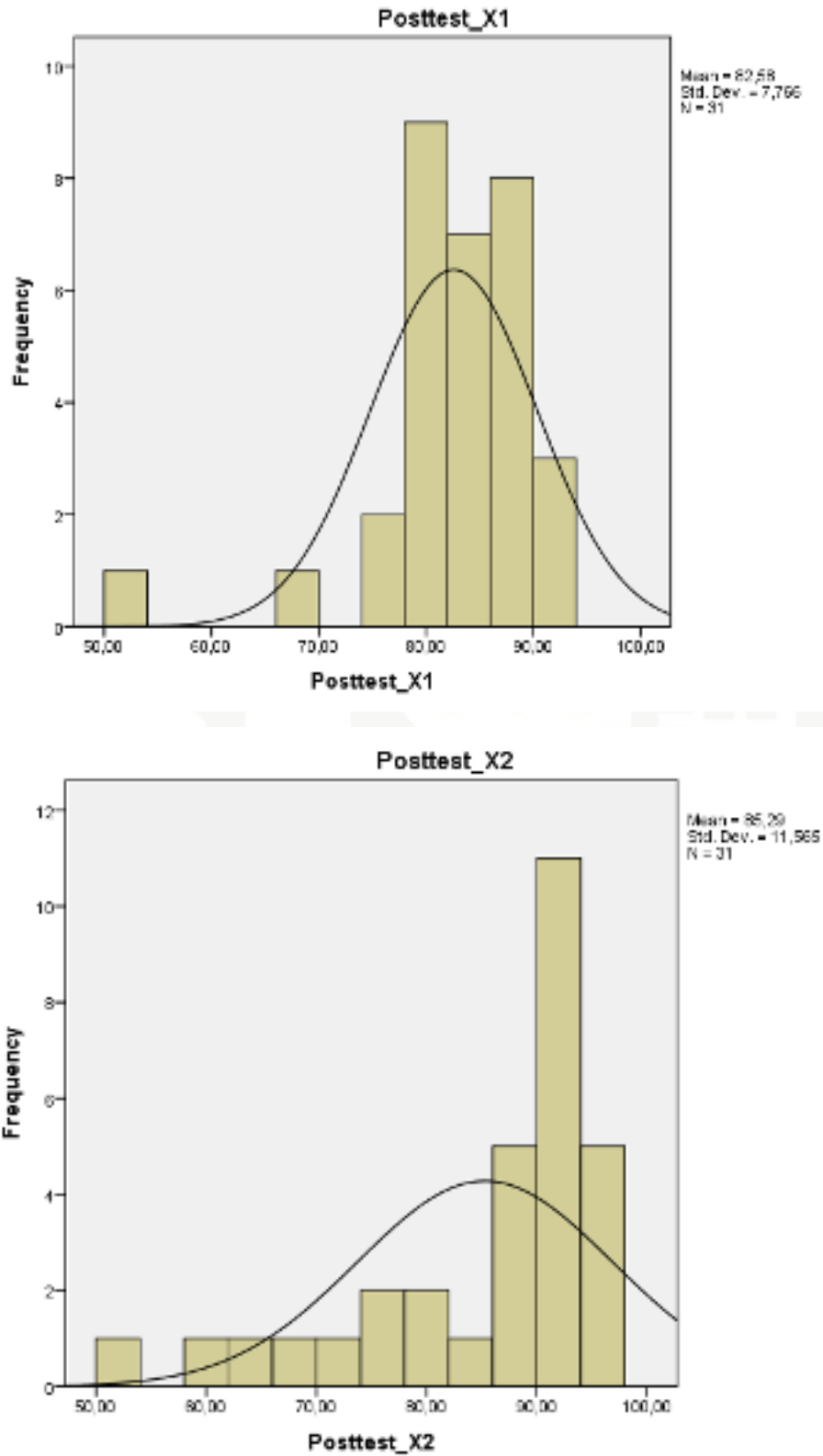
Chart IV.2
The Comparison of Frequency of the Post-test X1 and X2

Posttest_X1

Mean = 82,58
Std. Dev. = 7,796
N = 31

Posttest_X2

Mean = 85,29
Std. Dev. = 11,565
N = 31

To more determine about the post-test scores of the experimental group 1 consisting of 31 participants at SMAN 11 Pekanbaru. The researcher described it in the following table which was obtained from the output of SPSS 20:

Table IV.16
The classification of students reading comprehension post-test score (X1)

No	Categories	Score	Frequency	Percentage (%)
1	Very Good	81-100	18	58.0
2	Good	61-80	12	38.7
3	Fair	41-60	1	3.2
4	Poor	21-40	0	0
5	Very Poor	0-20	0	0
	Total		31	100

(Harris, 1986)

Based on the table IV.16, it is obvious that there are 5 categories for students reading comprehension post-test score of the experimental class. The frequency of Very Good category are 18 students (58.0 %), the frequency of Good category are 12 students (38.7%), the frequency of Fair category is 1 student (3.2%), the frequency of Poor category is 0 student (0%), and none of student categorized into Fail (0%). The table shows that the highest percentage of student classification of students reading comprehension post-test score of the experimental group 1 was 58.0%. Thus, the majority of the students in the experimental class after being taught by using PLAN strategy were classified into **Very Good category**.

Further, to more determine about the post-test score of the experimental group 2 consisting of 31 participants at SMAN 11 Pekanbaru. The researcher described it in the following table which was obtained from the output of SPSS 20:

Table IV.17
The classification of students reading comprehension post-test score (X2)

No	Categories	Score	Frequency	Percentage (%)
1	Very Good	81-100	22	70.9
2	Good	61-80	7	22.5
3	Fair	41-60	2	6.45
4	Poor	21-40	0	0
5	Very Poor	0-20	0	0
	Total		31	100

(Harris, 1986)

Based on the table IV.17, it is obvious that there are 5 categories for students reading comprehension post-test score of the experimental class. The frequency of Very Good category are 22 students (70.9 %), the frequency of Good category are 7 students (22.5%), the frequency of Fair category are 2 students (6.45%), the frequency of poor category is 0 students (0%), and none of student categorized into Fail (0%). The table shows that the highest percentage of student classification of students reading comprehension post-test score of the experimental group 1 was 70.9%. Thus, the majority of the students in the experimental class 2 after being taught by using SMART strategy were classified into **Very Good category**. In conclusion, The percentage of experimental group 1 is 58.0%

and experimental group 2 is 70.9%. Both of experimental group had significant improvement after the treatment as long as 4 meetings.

Table IV.18 The Students' Reading Comprehension score

No	Students	Experimental Class 1		Gain	Experimental Class Class 2		Gain
		Pre-test	Post-test		Pre-test	Post-test	
1	STUDENT 1	76	68	8	88	92	4
2	STUDENT 2	72	76	4	80	92	12
3	STUDENT 3	76	88	12	72	80	8
4	STUDENT 4	72	80	8	72	68	4
5	STUDENT 5	76	84	8	44	84	40
6	STUDENT 6	80	88	8	76	88	12
7	STUDENT 7	64	80	16	80	96	16
8	STUDENT 8	56	92	36	48	96	48
9	STUDENT 9	72	80	8	52	92	40
10	STUDENT 10	64	84	20	48	88	40
11	STUDENT 11	60	80	20	68	92	24
12	STUDENT 12	64	88	24	44	60	16
13	STUDENT 13	76	88	12	60	88	28
14	STUDENT 14	28	80	52	68	92	24
15	STUDENT 15	76	84	8	68	76	8
16	STUDENT 16	80	80	0	68	52	16
17	STUDENT 17	72	92	20	60	80	20
18	STUDENT 18	68	80	12	48	92	44
19	STUDENT 19	64	84	20	88	92	4
20	STUDENT 20	68	84	16	72	96	24
21	STUDENT 21	60	76	16	68	76	8
22	STUDENT 22	76	80	4	68	88	20
23	STUDENT 23	60	84	24	76	72	4
24	STUDENT 24	52	88	36	40	64	24
25	STUDENT 25	68	80	12	96	92	4
26	STUDENT 26	60	84	24	96	88	8
27	STUDENT 27	68	88	20	84	92	8
28	STUDENT 28	64	88	24	76	92	16
29	STUDENT 29	64	52	12	72	96	24
30	STUDENT 30	84	92	8	76	92	12
31	STUDENT 31	80	88	8	72	96	24
	Total	Σ= 2100	Σ=2560	500	Σ=2128	Σ=2644	584
	Mean	Σ= 67.74	Σ=82.58	16.12	Σ=68.64	Σ=86.00	18.83

From the table above, it shows that students' mean score of experimental group 1 in the pre-test is 67.74, and students' mean score of experimental group 1 in post-test is 82.58 and it can be concluded that the improvement of mean score in experimental group 1 is 16.12. Students' mean score of experimental group 2 in the pre-test is 68.64, and students' mean score of experimental group 2 in post-test is 86.00 and it can be concluded that the improvement of mean score in experimental group 2 is 18.83.

From the calculation above, the improvement of students' reading comprehension in experimental group 2 is higher than the improvement of students' reading comprehension in experimental group 1 (18.83 > 16.12).

Table IV.19
Result of Reading Comprehension Pre-Test and Post-Test Score

Group	Pre-test	Post-test	Gain
Experimental 1	67,7419	82,5806	16.12
Experimental 2	68,6452	85,2903	18.83

Based on the table IV.19, it can be determined that the number of participants at SMAN 11 Pekanbaru is 62 participants, with pre-test standard deviation of experimental group 1 is 10.77, pre-test standar deviation of experimental group 2 is 15.00, with pre-test mean score of experimental group 1 is 67.74, and pre-test mean score of experimental group 2 is 68.64. Furthermore, post-test standard deviation of experimental group 1 is 7.76 while post-test standard deviation of experimental group 2 is

11.56. The post-test mean score of experimental group 1 is 82.58, and the post-test mean score of experimental group 2 is 85.29. The gain of pre-test and post-test of experimental group 1 is 16.12 while the gain of pre-test and post-test of experimental group 2 is 18.83. In conclusion, experimental group 1 and 2 had different capability after giving the treatment on reading comprehension of descriptive text.

4.4. DATA ANALYSIS

Data analysis is a step in a research to answer the questions of the research. The data were analyzed by using some formulas, they were: homogeneity test, normality test, paired sample t-test and independent sample t-test.

4.4.1. Homogeneity

Pallant (2001) states that if the significant value is bigger than 0.05, this indicates that there is no violation of the assumption of equality of variance and that equal variances are assumed for the variable concerned and if the significance value is bigger than 0.05 this indicates that there is no violation of the assumption of equality of variance. The homogeneity of the test of students reading comprehension was obtained by using SPSS 20 as follows:

Table IV.20 Test of Homogeneity of Variances

Test of Homogeneity of Variances

pretes

Levene Statistic	df1	df2	Sig.
2,935	1	60	,092

From table IV.20, it is obtained that the significant variance of homogeneity test (sig.) is 0.92 or bigger than significance level α (0.05). It means that there is no difference of variance between the pre-test score and post-test score. So, it can be concluded that the data are homogenous.

4.4.2. Normality

When taking parametric approach to inferential statistics, the values that are assumed to be normally distributed are the means across samples. In brief, the assumption that underlies parametric statistics does not emphasize that the observations within a given sample are normally distributed, nor does it emphasize that the values within the population are normal. This core element of the assumption of normality emphasizes that the distribution of sample means (across independent samples). In technical terms, this assumption of normality emphasizes that the sampling distribution of the mean is normal.

Table IV.21 One-Sample Kolmogorov-Smirnov Test

One-Sample Kolmogorov-Smirnov Test

		Pretest	Posttest
N		62	62
Normal Parameters[a,b]	Mean	68,1935	83,9355
	Std. Deviation	12,96507	9,86444
Most Extreme Differences	Absolute	,139	,176
	Positive	,096	,126
	Negative	-,139	-,176
Kolmogorov-Smirnov Z		1,096	1,386
Asymp. Sig. (2-tailed)		,181	,043

Based on the table above, it is clear that significance level on both of normality test is higher than 0.050. In kolmogorov-Smirnov test, in pre-test group score of the experimental group 1 experimental group 2, it is obtained that the significance score is, 0.18. It can be inferred that the data is normal. While, in post-test group score of the experimental group 1 experimental group 2, it is obtained that the significance score is, 0.43. It can be inferred that the data is normal.

4.4.3. Hypothesis 1

The procedure of inferential statistics began with the statistical test on the following null hypothesis:

Ho1: There is no significant difference of students' reading comprehension pretest mean score between experimental group 1 and experimental group 2 at SMAN 11 Pekanbaru.

Pallant (2001) states that if the significance value is greater than 0.05, this indicates that there is no violation of the assumption of equality of variance and that equal variances are assumed for the variable concerned. An independent t-test was conducted to determine any significant difference between pre-test reading comprehension means of experimental group 1 and experimental group 2.

The result of the pre-test reading comprehension test for experimental group 1 and experimental group 2 without considering students group or school category was analyzed by using Independent Sample T-test, and presented at the following Table IV.22

TABLE IV.22
The Analysis of Independent Sample T-test of the Pre-test score X1 & X2

GROUP	N	Mean	SD	Df	T	P
PLAN	31	67,74	10.77	60	-2.72	0.786
SMART	31	68.64	68.64			

Table IV.22 indicates that there is no significant difference is found at the pre-test reading comprehension between experimental group 1 and experimental group 2. T-test result is -2,72 its df is 60, mean score of PLAN is 67.74, mean score of SMART is 68.64, and significance is 0.786. So, in

the conclusion p = 0.786, the 2-tailed value is more than 0.05 (p>0.05). The result shows that the mean scores do not differ much between both groups. It could be determined that the subjects in both groups are equivalent before giving the treatment at the twelfth students at SMAN 11 Pekanbaru. Based on the analysis of Table IV.22, of the first hypothesis Ha1 is rejected and Ho1 is accepted. So, it can be concluded that "There is no significant difference of students' reading comprehension on descriptive text before being taught by using PLAN strategy for experimental group 1 and SMART strategy for experimental group 2 at the twelfth grade of SMAN 11 Pekanbaru".

4.4.4. Hypothesis 2

The procedure of inferential statistics is the statistical test on the following alternative hypothesis:

Ha$_2$: There is a significant difference of students' reading comprehension between the pre-test and the post-test mean score by using PLAN Strategy of the experimental score at SMAN 11 Pekanbaru.

The result of the effect on implementing the treatment of PLAN on students reading comprehension of descriptive text for experimental group 1 of the composite comparing score for both the pre-test and the post-test was analyzed by using Paired Sample T-test, and presented at the following Table IV.23:

TABLE IV.23
The Analysis of Paired Sample T-test between Pre and Post-Test X1

GROUP	N	Mean	SD	df	t	P
Pre test	31	67.74	10.77	60	-6.52	0.00
Post test	31	82.58	7.76			

From the table IV.24 above, the output of paired sample test shows that the t-test result is -6.52, its dfis 60, mean score of the pre-test is 67.74, mean score of post-test 82.58, and significance is 0.00. By comparing number of significance, If probability > 0.05, null hypothesis (H_0) is rejected. If probability < 0.05 alternative hypothesis (H_a) is accepted. Because the significance was 0.003< 0.05, thus, H_a is accepted while H_0 is rejected. In addition, to know how effective PLAN Strategy on the students' reading comprehension, the following formula was used:

$$\text{Eta squared} = \frac{t^2}{t^2 + (N-1)}$$

Cohen (1988)

$$\tilde{\omega}^2 = \frac{t^2}{t^2 + n - 1}$$

$$\tilde{\omega}^2 = \frac{(-6.52)^2}{(-6.52)^2 + 31 - 1}$$

$$\tilde{\omega}^2 = \frac{42.51}{42.51 + 30}$$

$$\tilde{\omega}^2 = 0.58$$

Effect Size Classification:

0,2 < = d < 0,5 = small effect

0,5 < = d < 0,8 = medium effect

0,8 < = d < = 2,0 = large effect

The result of the calculation of "Cohen's d" shows that the effectiveness value obtain is 0.58. Based on the criteria of the effect size, it can be said that the effect size of PLAN Strategy is categorized into medium effect on the students' reading comprehension of the twelfth grade students at SMAN 11 Pekanbaru. Therefore, the **Ho2** hypothesis is rejected and **Ha2** is accepted that there is significant difference of using PLAN strategy toward students' reading comprehension on descriptive text for experimental group 1.

4.4.5 Hypothesis 3

The procedure of inferential statistics is the statistical test on the following alternative hypothesis:

Ha3: There is a significant difference of students' reading comprehension between the pre-test and the post-test mean score by using SMART Strategy at SMAN 11 Pekanbaru.

The result of the effect on implementing the treatment of SMART strategy on students reading comprehension of descriptive text for experimental group 2 of the composite comparing score for both the pre-test and the post-test was analyzed by using Paired Sample T-test, and presented at the following Table IV.25:

TABLE IV.25
The Analysis of Paired Sample T-test between Pre and Post-Test X2

GROUP	N	Mean	SD	Df	T	P
Pre-test	31	68.64	15.00	60	-5.87	0.00
Post-test	31	85.29	11.56			

From the table IV.25 above, the output of paired sample test shows that the t-test result is -5.87 its dfis 60, mean score of the pre-test is 68.64, mean score of the post-test is 85.29 and significance is 0.000. By comparing number of significance, If probability >0.05, null hypothesis (H_0) is rejected. If probability <0.05 alternative hypothesis (H_a) is accepted. Because the significance is 0.000 < 0.05, thus, H_a is accepted while H_0 is rejected. In addition, to know how effective SMART Strategy on the students' reading comprehension, the following formula was used:

$$t^2$$

Eta squared = $\dfrac{}{t^2 + (N-1)}$

<div align="center">Cohen (1988)</div>

$$\tilde{\omega}^2 = \frac{t^2}{t^2+n-1}$$

$$\tilde{\omega}^2 = \frac{(-5.87)^2}{(-5.87)^2+31-1}$$

$$\tilde{\omega}^2 = \frac{34.45}{34.45+30}$$

$$\tilde{\omega}^2 = 0.53$$

Effect Size Classification

$0,2 <= d < 0,5$ = small effect

$0,5 <= d < 0,8$ = medium effect

$0,8 <= d <= 2,0$ = large effect

The result of the calculation of "Cohen's d" shows that the effectiveness value obtain is 0.53. Based on the criteria of the effect size, it can be said that the effect size of SMART Strategy is categorized into medium effect on the students' reading comprehension of the twelfth grade students at SMAN 11 Pekanbaru. Therefore, the **Ho3** hypothesis is rejected and **Ha3** is accepted that there is significant Difference of using SMART Strategy on students' reading comprehension of descriptive text for experimental group 2.

4.4.6. Hypothesis 4

The procedure of inferential statistics began with the statistical test on the following alternative hypothesis:

Ha4: There is a significant difference of students' reading comprehension the post-test mean score between an experimental group 1 and an experimental group 2 at SMAN 11 Pekanbaru.

The result of the post-test reading comprehension test for experimental group 1 and experimental group 2 without considering students group or school category was analyzed by using Independent Sample T-test, and presented at the following Table IV.26.

Table IV.26
The Analysis of Independent Sample T-test of the Post-test score X1 & X2

GROUP	N	Mean	SD	Df	T	P
Post-test X1(PLAN)	31	82.58	7.76	60	-1.083	.283
Post-test X2(SMART)	31	85.29	11.56			

Based on Independent T-test analysis for the post-test reading comprehension of experimental groups on Table IV.26 above, it shows that there is no significant difference was found at the post-test of reading comprehension between the experimental group 1 and the experimental group 2. T-test result is -1.083, its dfis 60, significance is .283, mean score

of PLAN Strategy is 82.58, and the mean score of SMART Strategy is 85.29. So, in the conclusion p = .283, the 2-tailed value is higher than 0.050. The result shows that there is no significant difference betwen the post-test of both groups. It could be determined that the subjects in both groups are not equivalent after giving the treatment at the twelfth grade at SMAN 11 Pekanbaru. Based on the analysis of Table IV.26, of the fourth hypotheses Ha4 is rejected and Ho4 is accepted.

finally, it can be inferred that there is a significant difference of students' reading comprehension between the students who were taught by using PLAN strategy and those who were taught by using SMART strategy".

4.4.7. Hypothesis 5

The procedure of inferential statistics begins with the statistical test on the following hypothesis:

H_a5 : There is a significant difference of the improvement of the students' reading comprehension pre-test and post-test mean score by using PLAN Strategy and SMART Strategy

The result of the improvement of the pre-test and post-test score of reading comprehension mean score both the experimental group 1 and the experimental group 2 is analyzed using independent sample t-test which is presented in the following table:

Table IV.26
The Analysis of Gain Score of Students' Reading Comprehension

GROUP	GAIN SCORE	N	SD	Df	T	P
PLAN	16,12	31	10,90	60	-,896	0,374
SMART	18,83	31	18,82			

Based on table IV.26, it is clear that there is no significant difference of the improvement of students' reading comprehension pre-test and post-test mean score by using PLAN Strategy and SMART Strategy. In Conclusion there is no difference of Post-test mean score between PLAN Strategy and SMART Strategy. The comparison of the gain score between X1 (16,12) and X2 (18.83). It means that null hypothesis is accepted. Both of them are improved. However, from the value of the gain score, it is clear that the the use of SMART Strategy is better than PLAN Strategy.

4.5. DISCUSSION

Referring to the objectives of this research, there are some points that need to be discussed in this chapter. They are:

1. Which strategy is more effective in teaching reading comprehension in SMAN 11 Pekanbaru?

Referring to the research finding, it showed that SMART strategy was more effective than PLAN strategy. It can be proved based on the gain score, the group who taught by using SMART strategy got 18.83 and the group who taught by using PLAN strategy is 16.12. In conclusion, both of them are improved, but SMART strategy is more effective than PLAN strategy.

furthermore, refers to the observation list in teaching learning process, SMART strategy was done effectively than PLAN Strategy. Based the result of list observation was taken during 4 meetings, the teacher carried SMART strategy out as strategy applied in the experimental group 2 at class XII IPA 5. The teacher was interacted the students very well during teaching and learning process. The students were enjoyed following the teaching learning process by using SMART strategy.

This strategy offer self thinking strategy that focused on the way students understanding of text. the students must place a question mark for several sentences that they do not understand yet and place a check mark for sentences that they have understood. When the students already understand the question mark sentences, they must replace question mark with check

mark. The teacher only monitor them to make sure all students do not confused about the step of strategy.

2. Is there any significant difference of students' reading comprehension score after taught by using PLAN strategy and SMART strategy?

Based on observation, during 4 meetings the teacher carried out the PLAN strategy as directed in the experimental class 1 in XII IPA 5. The teacher interacted with the students very well during teaching and learning process. The students were joyful during completing their PLAN mind maps. They were busy to find out and fill the mind map from the text given. In addition, the students were also active in discussion with their own group. They were challenged to develop their idea by using PLAN strategy.

The PLAN strategy gave the students four great challenges. Firstly, they had to predict the main idea. Afterward, they had to locate which to these topics they knew something about and which topics they knew little about. To do it, the students need a great concentration to mark those topics familiar and unfamiliar. Besides, located those topics, every group added information to their chart as they read. Finally, they had to note what they learned by restating and reflecting the information in their own words. Furthermore, they really enjoyed the situation because they should not only complete the task, buy they also competed each other to finish it sooner. Finally, the students write the result of mind map on the white board and each group were presented in the classroom.

Moreover, the students got the pre-test aimed at findings out the students' reading comprehension after treatment by using PLAN strategy. The data analysis of inferential statistics demonstrated that there was a significant improvement to the students' reading comprehension after being taught by using PLAN strategy with pre-test mean score 67.74 and post-test mean score 82.58. In Summary, PLAN strategy is an alternative way that can be implemented by teachers to improve their students' reading comprehension.

On the other hand, The second treatment in XII IPA 4 as experimental group 2, the teacher succeeded to demonstrate the SMART strategy in her classroom. Besides, the teacher was able to engage the students during teaching and learning process. During the treatment, the students were enthusiast to follow the instructions so they could comprehend the text well. SMART Strategy is based on the premise that successful reading begins with recognizing what is understood and not understood in a passage (Buehl, 2001). Furthermore, the students were also active to discuss their problem about the difficulties that they had found while reading the passage with their friends.

SMART Strategy can solve the students' problem in reading comprehension. It gave them more experience on different learning style. The data analysis of inferential statistics indicated that there was a significant improvement to the students' reading comprehension after being

taught by using SMART strategy with pre-test mean score 68.64 and post-test mean score 85.29. It showed that SMART strategy gave improvement to the students' reading comprehension. In Summary, SMART strategy is also a good way that can be implemented by teachers to improve their students' reading comprehension.

After conducting the treatment for the Experimental group 1 and the Experimental group 2. Both of groups got the post-test in order to find the significant effect of using PLAN and SMART strategies on students' reading comprehension at SMAN 11 Pekanbaru. In line with this statement, multiple choices were used by the researcher and it was designed by using four choices and the student chooses one of correct answers. The test consisted of five passages where each of the passage consists of five questions related to the passages of reading comprehension test. Each reading text had been considered the time and the procedures of PLAN strategy and SMART strategy on reading text. The duration of time was 100 minutes. The tests were taken from the students' textbook and internet media.

Moreover, If $p = 0.005$, the 2-tailed value is smaller than 0.050 ($p<0.050$), there is significant difference between X1 and X2. The significance is 0.020 <0.050. It shows that the mean scores do differ much between both groups. It means that there is a significant difference was found at the post-test reading comprehension between the experimental

group 1 and the experimental group 2. It could be determined that the subjects in both groups are not equivalent after being given a treatment at the twelfth grade at SMAN 11 Pekanbaru. Furthermore, both groups got post-test in order to find the significant improvement of using PLAN and SMART strategies toward students' reading comprehension at SMAN 11 Pekanbaru. Based on statistics showed the improvement of students' reading comprehension pre-test and post-test score by using PLAN Strategy and SMART Strategy. The gained score of experimental group 1 (M=16,12 and SD=10,90) and experimental group 2 (M=18,83 and SD=18,82), DF = 60 with p = 0,374, which was bigger than 0.05.

It means null hypothesis was accepted. Thus, there was no significant difference of the improvement of students' pre-test and post-test on the students reading comprehension mean score by using PLAN Strategy and SMART Strategy at SMAN 11 Pekanbaru. Both of them are improved. In short, PLAN and SMART strategies helped the experimental groups pay more attention to the target of learning, invest a higher level of ability and mental effort, and engage in a deeper cognitive processing. Then, as the reflection of these both strategies, teachers noticed that comprehension improve quickly when students focused on finding answers to comprehend level questions instead of just reading aloud.