## CHAPTER IV

## RESULT AND DISCUSSION

## A. Research Findings

1. Analysis Data of Equal-test
a. Data Description of Equal Test

To break down result of equal-test score of each classes, (see the table below) for the excerpt, and see (table 4.1 in appendix) for the further descriptions.

| No | Student | 8D | Student | $\mathbf{8 E}$ | Student | $\mathbf{8 F}$ | Student | 8G |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | AT | 70 | AB | 80 | AK | 80 | AS | 80 |
| 2 | AZ | 80 | AA | 80 | AM | 80 | AD | 80 |
| 3 | AS | 60 | AP | 70 | AI | 80 | AG | 80 |
| 4 | AD | 70 | AD | 70 | AN | 80 | AM | 80 |
| 5 | AN | 70 | AL | 70 | AS | 90 | AK | 80 |

Researcher also outlined with frequency distribution of equal-test score in each classes.

Tabel 4.1.1 Frequency Distribution of D Class Equal-test Score

| No | Score | F | Percentage |
| :---: | :---: | :---: | :---: |
| 1 | 30 | 1 | $2 \%$ |
| 2 | 40 | 2 | $5 \%$ |
| 3 | 50 | 5 | $12 \%$ |
| 4 | 60 | 13 | $32 \%$ |
| 5 | 70 | 15 | $37 \%$ |
| 6 | 80 | 4 | $10 \%$ |
| 7 | 90 | 1 | $2 \%$ |
| Total |  | 41 | $100 \%$ |


| Min $: 30,00$ |
| :--- |
| Max $: 90,00$ |
| Mean $: 60,34$ |

Tabel 4.1.2 Frequency Distribution of E Class Equal-test Score

| No | Score | F | Percentage |
| :---: | :---: | :---: | :---: |
| 1 | 60 | 1 | $2 \%$ |
| 2 | 70 | 16 | $39 \%$ |
| 3 | 80 | 15 | $37 \%$ |
| 4 | 90 | 9 | $22 \%$ |
| Min :60,00 | 41 | $100 \%$ |  |
| Max :90,00 |  |  |  |
| Mean :70,78 |  |  |  |

Tabel 4.1.3 Frequency Distribution of F Class Equal-test Score

| No | Score | F | Percentage |
| :---: | :---: | :---: | :---: |
| 1 | 60 | 1 | $2 \%$ |
| 2 | 70 | 7 | $17 \%$ |
| 3 | 80 | 24 | $59 \%$ |
| 4 | 90 | 7 | $17 \%$ |
| 5 | 100 | 2 | $5 \%$ |
| Total |  | 41 | $100 \%$ |


| Min $: 60,00$ |
| :--- |
| Max : 100,00 |
| Mean : 80,04 |

Tabel 4.1.4 Frequency Distribution of G Class Equal-test Score

| No | Score | F | Percentage |
| :---: | :---: | :---: | :---: |
| 1 | 70 | 11 | $27 \%$ |
| 2 | 80 | 28 | $68 \%$ |
| 3 | 90 | 2 | $5 \%$ |
| Total | 41 | $100 \%$ |  |
| Min :70,00 |  |  |  |
| Max :90,00 |  |  |  |
| Mean :70,78 |  |  |  |

To determine classes that chosen in the research, researcher did statistics test.

1) Test Difference of Learning Score Result 8D, 8E, 8F and 8G

Tebel 4.1.5 Distribution Average Score of 8D, 8E, 8F and 8G

Report

| Class | Learning Score <br> Result |
| :---: | :---: |
| 8D | 63,4146 |
| 8E | 77,8049 |
| 8F | 78,5122 |


| 8G | 77,8049 |
| :--- | :--- |
| Total | 74,3841 |

Based on tabel, average sore above can be assumed that average score of 8D is 63,4 , average score of 8 E is 77,8 , average score of 8 F is 78,5 and average score of 8 G is 77,8 . Therefore, researcher can state that 8 E and 8 G has the same average score result.

To know whether among average score of 8D, 8E, 8F and 8G has significant difference, researcher do the test of Anova statistics with some assumptions that must be qualified, those are normality and homogeneity. When those assumptions are not qualified, the test of statistics is replaced by Kruskall Wallis and continued with test Mann whitney $U$ to know which class is same or different.
a) Tests of Normality

Tabel 4.1.6 Tests of Normality Equal-test

Tests of Normality

|  | Class | Kolmogorov-Smirnov ${ }^{\text {a }}$ |  |  | Shapiro-Wilk |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Statistic | df | Sig. | Statistic | Df | Sig. |
|  | 8D | ,197 | 41 | ,000 | ,923 | 41 | ,008 |
| Learning Score | 8E | ,243 | 41 | ,000 | ,841 | 41 | ,000 |
| Result | 8F | ,324 | 41 | ,000 | ,637 | 41 | ,000 |
|  | 8G | ,394 | 41 | ,000 | ,695 | 41 | ,000 |

a. Lilliefors Significance Correction

Based on test of normality result with Kolmogorov-Smirnov, it can be found that significance value on all classes is $0,000<0,05$ it means that data is not normal distribution.
b) Tests of Homogeneity

Tabel 4.1.7 Tests of Homogeneity Equal-test

Test of Homogeneity of Variance

|  |  | Levene Statistic | df1 | df2 | Sig. |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Learning Score <br> Result | Based on Mean | 3,437 | 3 | 160 | ,018 |
|  | Based on Median | 3,865 | 3 | 160 | ,011 |
|  | Based on Median and with adjusted df | 3,865 | 3 | 102,009 | ,012 |
|  | Based on trimmed mean | 3,153 | 3 | 160 | ,027 |

Based on tests of SPSS result, it can be found that significance value on Based of Mean is $0,018<0,05$ it means that data variance is not homogeneous.

Because normality assumption and homogeneity is not qualified, the test with
Anova can not be continued, but it is replaced by test of Kruskal Wallis.
c) Test of Kruskal Wallis

Tabel 4.1.8 Test of Kruskal Wallis Equal-test

| Test Statistics ${ }^{\text {a,b }}$ |  |
| :--- | ---: |
|  | Learning Score <br> Result |
| Chi-Square <br> Df | 53,219 |

Asymp. Sig.
a. Kruskal Wallis Test
b. Grouping Variable: Kelas

Based on test result of Kruskal Wallis to know there is difference of average score or not among class $8 \mathrm{D}, 8 \mathrm{E}, 8 \mathrm{~F}$, and 8 G , it is found the result that significance value $0,000<0,05$, so it can be concluded that there is difference of average score among class 8D, 8E, 8F, and 8G. to know which class has same average score or different, it continues by test of Mann Whitney U
d) Test of Mann Whitney U

Tabel 4.1.9 Test of Mann Whitney U Equal-test

| CLASS | SIGNIFICANCE VALUE | CONCLUSION |
| :---: | :---: | :---: |
| 8D and 8E | 0,000 | Different |
| 8D and 8F | 0,000 | Different |
| 8D and 8G | 0,000 | Different |
| 8E and 8F | 0,264 | Same |
| 8E and 8G | 0,858 | Same |
| 8F and 8G | 0,194 | Same |

Based on test result of Mann Whitney U, it can be found there are some classes have different average score and there are some classes have same average score. To determine classes chosen in the research, it was chosen,
the classes have same average score and the significance value is the highest one is class 8 E and 8 G .

Based on consideration above, researcher takes E and G class to be control and experimental group. At random, researcher decides E class as an experimental group and G class as a control group.
2. Analisis Data of Pre and Post of Experimental and Control Group

After conducting pre-test and post-test, researcher shows the result of data pre-test and post-test in experimental and control group as mentioned below:

1) Data Description of Pre and Post of Experimental and Control Group
2) Data Pre-test of Experimental Group

To break down result of pre-test score of experimental group, (see the table below) for the excerpt, and see (table 4.2 in appendix) for the further descriptions.

| No | Student | Score |
| :---: | :---: | :---: |
| 1 | Akbar Bagus .S | 75 |
| 2 | Alfaricha Ardiana | 60 |
| 3 | Alifian Putra | 65 |

Researcher also outlined with frequency distribution of pre-test score.
Tabel 4.2.1 Frequency Distribution Experimental Group Pre-test Score

| No | Score | F | Percentage |
| :---: | :---: | :---: | :---: |
| 1 | 15 | 1 | $2 \%$ |
| 2 | 40 | 1 | $2 \%$ |
| 3 | 45 | 2 | $5 \%$ |
| 4 | 50 | 6 | $15 \%$ |
| 5 | 55 | 6 | $15 \%$ |


| 6 | 60 | 6 | $15 \%$ |
| :---: | :---: | :---: | :---: |
| 7 | 65 | 6 | $15 \%$ |
| 8 | 70 | 8 | $19 \%$ |
| 9 | 75 | 4 | $10 \%$ |
| 10 | 80 | 1 | $2 \%$ |
| Total |  |  | 41 |
| Min $: 15,00$ |  |  |  |
| Max $: 80,00$ |  |  |  |
| Mean $: 60,12$ |  |  |  |

## 2) Data Pre-test of Control Group

To break down result of pre-test score of control group, (see the table below) for the excerpt, and see (table 4.3 in appendix) for the further descriptions.

| No | Student | Score |
| :---: | :---: | :---: |
| 1 | Adam Syah Bagus | 55 |
| 2 | Ade Nisah Rahmawati | 65 |
| 3 | Agung Eko Wisnu | 55 |

Tabel 4.3.1 Frequency Distribution Control Group Pre-test Score

| No | Score | F | Percentage |
| :---: | :---: | :---: | :---: |
| 1 | 45 | 1 | $2 \%$ |
| 2 | 50 | 4 | $10 \%$ |
| 3 | 55 | 9 | $22 \%$ |
| 4 | 60 | 6 | $15 \%$ |
| 5 | 65 | 8 | $19 \%$ |
| 6 | 70 | 7 | $17 \%$ |


| 7 | 75 | 4 | $10 \%$ |
| :---: | :---: | :---: | :---: |
| 8 | 80 | 2 | $5 \%$ |
| Total | 41 | $100 \%$ |  |
| Min $: 45,00$ |  |  |  |
| Max $: 80,00$ |  |  |  |
| Mean $: 62,68$ |  |  |  |

## 3) Data Post-test of Experimental Group

To break down result of post-test score of experimental group, (see the table below) for the excerpt, and see (table 4.4 in appendix) for the further descriptions.

| No | Student | Score |
| :---: | :---: | :---: |
| 1 | Akbar Bagus .S | 80 |
| 2 | Alfaricha Ardiana | 80 |
| 3 | Alifian Putra | 90 |

Tabel 4.4.1 Frequency Distribution Experimental Group Post-test Score

| No | Score | F | Percentage |
| :---: | :---: | :---: | :---: |
| 1 | 65 | 1 | $2 \%$ |
| 2 | 70 | 7 | $17 \%$ |
| 3 | 75 | 6 | $15 \%$ |
| 4 | 80 | 14 | $34 \%$ |
| 5 | 85 | 6 | $15 \%$ |
| 6 | 90 | 4 | $10 \%$ |
| 7 | 95 | 2 | $5 \%$ |


| 8 | 100 | 1 | $2 \%$ |
| :---: | :---: | :---: | :---: |
| Total | 41 | $100 \%$ |  |
| Min $: 65,00$ |  |  |  |
| Max $: 100,00$ |  |  |  |
| Mean $: 80,12$ |  |  |  |

## 4) Data Post-test of Control Group

To break down result of post-test score of control group, (see the table below) for the excerpt, and see (table 4.5 in appendix) for the further descriptions.

| No | Student | Score |
| :---: | :---: | :---: |
| 1 | Adam Syah Bagus | 50 |
| 2 | Ade Nisah Rahmawati | 65 |
| 3 | Agung Eko Wisnu | 70 |

Tabel 4.5.1 Frequency Distribution Control Group Post-test Score

| No | Score | F | Percentage |
| :---: | :---: | :---: | :---: |
| 1 | 45 | 1 | $2 \%$ |
| 2 | 50 | 12 | $30 \%$ |
| 3 | 55 | 6 | $15 \%$ |
| 4 | 60 | 7 | $17 \%$ |
| 5 | 65 | 5 | $12 \%$ |
| 6 | 70 | 8 | $19 \%$ |
| 7 | 75 | 2 | $5 \%$ |
| Total |  |  | 41 |
| Min $: 45,00$ | $100 \%$ |  |  |
| Max $: 75,00$ |  |  |  |
| Mean $: 59,26$ |  |  |  |

5) Data Difference of Pre-test and Post-test Score Result of Experimental and

## Control Group

Following tabel was presented to facilitate in comparing the full marks, minimal score and mean of pre-test and post-test of experimental and control group.

Tabel 4.6 Frequency Distribution Pre-test Post-test Experimental and Control
Group

| Data | $\mathbf{N}$ | Min | Max | Mean |
| :---: | :---: | :---: | :---: | :---: |
| Pre-test Experimental | 41 | 15,00 | 80,00 | 60,12 |
| Pre-test Control | 41 | 45,00 | 80,00 | 62,68 |
| Post-test Experimental | 41 | 65,00 | 100,00 | 80,12 |
| Post-test Control | 41 | 45,00 | 75,00 | 59,26 |

The minimal score got by control group in pre-test is 45 , whereas the maximal score is 80 , dan the minimal score of control group in post-tset is 45 , the maximal score is 75 .

Based on tabel above, the pre-test score of experimental group provides 15 for minimal score and 80 for maximal score. Besides, the post-test score of experimental group provides 65 for minimal score and 100 for maximal score.

Mean result of pre-test and post-test in control group based on tabel above does not through a significant increasing even tended to decreasing, it seems
from the mean of pre-test is 62,68 , and the mean of post-test is 59,26 . Then, mean result of pre-test and post-test in experimental group tended to increasing, it seems on tabel above where the mean of pre-test is 60,12 and the mean of post-test is 80,12 .
2) Test Difference of Learning Score Result 8E (Experiment) and 8G (Control)
a) Test Difference of Pre-Test
(1)Distribution Average Score Pretest of Experimental and Control Group

Tabel 4.7 Distribution Average Pretest Score

| Class | Mean | N |
| :--- | :--- | :--- |
| Eksperimen (8E) | 60,1220 | 41 |
| Kontrol (8G) | 62,6829 | 41 |
| Total | 61,4024 | 82 |

Based on average tabel above, it can be stated that average score of experimental group is 60,1 whereas average score of control group is 62,7, there is a little difference of average score in pretest between experimental group and control group, where the average score of control group is little higher than experimental group.

To know whether the difference is significant or not, it was conducted a test of independent sample $t$ test with assumptions must be qualified, those are normality and homogeneity, when the assumptions are not qualified, test
of independent sample $t$ test can not be continued and replaced by test of Mann Whitney U.
(2) Test of Normality

Tabel 4.7.1 Test of Normality Pre-test

|  | Class | Kolmogorov-Smirnov ${ }^{\text {a }}$ |  |  | Shapiro-Wilk |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Statistic | Df | Sig. | Statistic | Df | Sig. |
| Result of Pre-test Score | Experiment <br> (8E) | ,120 | 41 | ,146 | ,908 | 41 | ,003 |
|  | Control (8G) | ,148 | 41 | ,024 | ,957 | 41 | ,122 |

a. Lilliefors Significance Correction

Based on test of normality result with kolmogorov smirnov, it can be found that significance value of experimental group is $0,146>0,05$ wherseas significance value of control group is $<0,024$, because all classes do not have significance value $>0,05$ so the data is not normal distribution.
(3)Test of Homogeneity

Tabel 4.7.2 Test of Homogeneity Pre-test
Test of Homogeneity of Variance

|  | Levene <br> Statistic | df1 | df2 | Sig. |
| :--- | ---: | ---: | ---: | ---: |
| Result of Pre-test $\quad$ Based on Mean | 1,373 | 1 | 80 | , 245 |


| Score | Based on Median | 1,346 | 1 | 80 | , 249 |
| :--- | :--- | ---: | ---: | ---: | ---: |
|  | Based on Median and with | 1,346 | 1 | 70,042 | , 250 |
|  | adjusted df |  |  |  |  |
|  | Based on trimmed mean | 1,479 | 1 | 80 | , 228 |

Based on SPSS test result, it can be found that significance value on Based of Mean is $0,245>0,05$ so variance data is homogen. Because normality assumptions are not qualified though homogeneity is satiable, the independen sample $t$ test can not be continued, but it was replaced by test of Mann Whitney U.
(4)Test of Mann Whitney U

Tabel 4.7.3 Test of Mann Whitney U Pre-test

Test Statistics ${ }^{\text {a }}$

|  | Result of Pre-test <br> Score |
| :--- | ---: |
| Mann-Whitney U | 762,000 |
| Wilcoxon W | 1623,000 |
| Z | ,- 737 |
| Asymp. Sig. (2-tailed) | , 461 |

a. Grouping Variable: Kelas

Based on test result of Mann Whitney $U$ to know there is the difference of pre-test average score or not between experimental and control group, that the result of significance value is $0,461>0,05$, therefore researcher concludes that there is no difference of pre-test average score between experimental and control group.
b) Test Difference of Post-Test
(1) Distribution Average Score Posttest of Experimental and Control Group

Tabel 4.8. Distribution Average Posttest Score

| Class | Mean | N |
| :--- | :--- | :--- |
| Experiment (8E) | 80,1220 | 41 |
| Control (8G) | 59,2683 | 41 |
| Total | 69,6951 | 82 |

Based on table above, average score can be assumed that average score of experimental group is 80,1 whereas average score of control group is 59,3, there is a great degree of difference in posttest average score between experimental and control group, which average score of experimental group is higher than control group.

To know whether the difference is significant or not, it did the test by independent sample $t$ test with assumptions must be qualified, those are normality and homogeneity, when the assumptions are not qualified, the independent sample $t$ test can not be continued and replaced by test of Mann Whitney U.
(2) Test of Normality

Tabel 4.8.1 Test of Normality Post-test

|  | Class | Kolmogorov-Smirnov ${ }^{\text {a }}$ |  |  | Shapiro-Wilk |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Statistic | df | Sig. | Statistic | Df | Sig. |
| Result of Post- | Experiment <br> (8E) | ,189 | 41 | ,001 | ,946 | 41 | ,049 |
|  | Control (8G) | ,178 | 41 | ,002 | ,902 | 41 | ,002 |

a. Lilliefors Significance Correction

Based on test of normality result with kolmogorov smirnov, it can be found that significance value of all classes is $0,000<0,05$ so the data is not normal distribution.
(3) Test of Homogeneity

Tabel 4.8.2 Test of Homogeneity Post-test

Test of Homogeneity of Variance

|  |  | Levene <br> Statistic | df1 | df2 | Sig. |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Result of Posttest Score | Based on Mean | 2,307 | 1 | 80 | ,133 |
|  | Based on Median | 2,189 | 1 | 80 | ,143 |
|  | Based on Median and with adjusted df | 2,189 | 1 | 76,977 | ,143 |
|  | Based on trimmed mean | 2,358 | 1 | 80 | ,129 |

Based on SPSS test result, it can be found that significance value on Based of Mean is $0,133>0,05$ so variance data is homogeny. Because
normality assumptions are not qualified though homogeneity is satiable therefore, independen sample $t$ test can not be continued, but replaced by test of Mann Whitney U.

## (4) Test of Mann Whitney U

Tabel 4.8.3 Test of Mann Whitney U Post-test

a. Grouping Variable: Kelas

Based on test result of Mann Whitney $U$ to know whether there is the difference of post-test average score or not between experimental and control group, the result of significance value is $0,000<0,05$, means there is significant difference in posttest average score between experimental and control group.

## B. Result of Test Hypothesis

Test of hyphothesis in this research used test of Mann Whitney U by SPSS application 20 to test the difference of descriptive text with implementation of GIST Strategy and descriptive text in conventional learning without implementation of GIST Strategy.

In pre-test result based on test of Mann Whitney U , researcher found that the result of significance value is $0,461>0,05$, therefore researcher concluded that there was no difference of pre-test average score between experimental and control group.

In post-test result based on test of Mann Whitney $U$, researcher found that the result of significance value is $0,000<0,05$, means there was significant difference in post-test average score between experimental and control group. Besides, the average score of experimental group was higher than control group. Based on SPSS result interpretation, researcher stated learning with implementation of GIST Strategy is effective to improve student reading comprehension in exploring descriptive text.

As descriptions above, it can be concluded the result of test hypothesis is:

1. $\mathrm{H}_{0}$ : The implementation of GIST Strategy is not effective to improve student reading comprehension in exploring descriptive text, rejected.
2. $\mathrm{H}_{\mathrm{a}}$ : The implementation of GIST Strategy is effective to improve student reading comprehension in exploring descriptive text, accepted.

## C. Discussion

## 1. Discussion of Research Result

This study is conducted in SMPN 4 Surabaya. This study is intent on testing the effectiveness of GIST Strategy implementation to increase student reading comprehension in exploring descriptive text. The way is by determining the difference of test score result of experimental and control group. Research result is drawn conclusion through two test to answer the research question:
a. In equal-test, using test of Kruskal Wallis and Mann Whitney U. Other than to determine classes that chosen in the research, equal-test was also held to get the average score of all population of this research in order to know student reading comprehension in exploring descriptive text in second grade of SMPN 4 Surabaya.

Based on test result of Kruskal Wallis, it was found the result that significance value $0,000<0,05$, so it can be concluded that there was difference of average score among class $8 \mathrm{D}, 8 \mathrm{E}, 8 \mathrm{~F}$, and 8 G and on test result of Mann Whitney $U$, it can be found there were some classes have same average score, those are: 8 D and $8 \mathrm{E}, 8 \mathrm{D}$ and $8 \mathrm{~F}, 8 \mathrm{D}$ and 8 G all of them have significance value $>0,000$. Then there were some classes have different average score, those are 8 E and 8 F with significance value is $<0,264,8 \mathrm{E}$ and 8 G with significance value is $<$ $0,858,8 \mathrm{~F}$ and 8 G with significance value was $<0,194$. Then 8 E and 8 G was
chosen as the experimental and control group because the significance value is the highest one.

To know student reading comprehension in exploring descriptive text, researcher showed the average score of each classes and average score of all classes. The average score of each classes was 8 D with average score $63,41,8 \mathrm{E}$ with 77,80 , 8 F with 78,51 , and 8 G with 77,80 . And the average of all classes was $65,54$.
b. In pre-test and post-test, using test of Mann Whitney U to test the difference of descriptive text with implementation of GIST Strategy and descriptive text in conventional learning without implementation of GIST Strategy.

In pre-test result based on test of Mann Whitney $U$, the result of significance value is $0,461>0,05$, therefore it was concluded that there was no difference of pre-test average score between experimental and control group.

In post-test result based on test of Mann Whitney $U$, the result of significance value was $0,000<0,05$, meant there was significant difference in post-test average score between experimental and control group. Besides, the average score of experimental group was higher than control group. Based on SPSS result interpretations, so researcher states learning with implementation of GIST Strategy is effective to improve student reading comprehension in exploring descriptive text.

## 2. Research Constraint

The research constraint is including permission and restrictiveness of research period. On occasion of permission, the school was preparing to held "Last Semester Exam" therefore the permission impeded a bit to conduct this research, but that sort of thing can be solved. The restrictiveness of research period was also other obstruction. Learning text by implementing GIST strategy needed a quite long period when students did not understand yet the steps. However, by researcher's clear and specific explanation and student's great attention in process of teaching and learning, students can understand well the GIST instructions. In addition, the lesson session only has four hours a week therefore researcher maximized the available time, but the restrictiveness of research period did not become a hard obstacle in this research.

