## CHAPTER IV

## THE RESULTS OF THE STUDY

## A. The Description of Data

To know how the the effectiveness of teaching speaking by using group investigation technique, the writer conducted field research.

The research was held in MTs Syekh Bajang Tanara on October $16^{\text {th }} 2014$, and it was done at third grade, that is IX B as experimental class and IX A as control class. Both of the tests, the writer asked students to investigate the topic which is given by writer in pre test and investigate other topic in post test. After doing the research, the writer got the result that would be described in following table:

## Table 1

| No | Name | Pre test | Post test |
| :---: | :---: | :---: | :---: |
| 1. | Nurjanah | 62 | 68 |
| 2. | Makrobi | 59 | 60 |
| 3. | Lita Novita | 60 | 65 |
| 4. | Roihatul Mawadah | 48 | 70 |
| 5. | Sri Rahayu | 51 | 68 |
| 6. | Sumuslim Ali | 50 | 73 |
| 7. | Mukhriji | 45 | 60 |
| 8. | Lidia Silvia | 41 | 58 |
| 9. | Nining Anjarwati | 54 | 60 |
| 10. | Sujadi | 32 | 59 |
| 11. | Wiwin S. Dewi | 37 | 55 |
| 12. | Sumirah | 47 | 62 |
| 13. | Saiban | 51 | 55 |
| 14. | Marwati | 47 | 59 |
| 15. | Sunayah | 45 | 55 |
| 16. | Suryati | 46 | 60 |
| 17. | Makiyatun | 58 | 52 |
| 18. | Rohman | 49 | 60 |


| 19. | Yanto Maryanto | 55 | 57 |
| ---: | :--- | :--- | :---: |
| 20. | Meisya Oktaviani | 53 | 59 |
| 21. | Muafah Fitriyani | 48 | 55 |
| 22. | Saepudin | 49 | 59 |
| 23. | Nur Haoliyah | 56 | 60 |
| 24. | Puput Futihat | 52 | 60 |
| 25. | Suhaeri | 48 | 60 |
| 26. | Omah Ambarwati | 50 | 60 |
| 27. | Lulu Maknun | 48 | 62 |
| 28. | Nur Elisah | 49 | 60 |
| 29. | Munawir Gozali | 61 | 65 |
| 30. | Tedi | 1552 | 1878 |
| 31. | Muti'ah | 50.1 | 60 |
|  |  |  | 60 |
|  |  |  |  |

$$
\begin{array}{rlr}
\mathrm{M}_{1}=\frac{\sum}{} & \mathrm{M}_{2} & =\underline{\sum} \\
& =- & \\
& =60.5 & \\
& =50.1
\end{array}
$$

Note: M1 = mean

$$
\begin{aligned}
& \text { X1 }=\text { Students' score (pre test) } \\
& \text { X2 }=\text { Students' score (post test) } \\
& \text { N }=\text { Member of student. }
\end{aligned}
$$

Based on the calculation on the table 1 of pre test and post test assessment at experimental class, it shows that the cumulative value of assessment result before applying group investigation technique is 1552. The average of the pre test is 50.1. Meanwhile, the cumulative of assessment result after applying group investigation technique is 1887 . The average of the post test is 60.5 .

Determine mean by formula:
$\mathrm{M}=\mathrm{M} 1-\mathrm{M} 2$

$$
\begin{aligned}
& =60.5-50.1 \\
& =10.4
\end{aligned}
$$

Note: $\mathrm{M}=$ Mean
M1 = mean of post test

$$
\mathrm{M} 2=\text { mean of pre test }
$$

From the calculation of determine mean above, we have know that the average score of pre test and post test ( at exp) increase in amoiunt of 10.4.

Table 2
The Score of Pre test and Post - Test in control class

| No | Name | Pre test | Post test |
| ---: | :--- | :--- | :--- |
| 1. | Agung Kurniawan | 32 | 39 |
| 2. | Ahmad Trisno | 40 | 45 |
| 3. | Alfinda | 37 | 40 |
| 4. | Alfira Rosmawati | 41 | 45 |
| 5. | Aliyah | 39 | 39 |
| 6. | Amriyah | 41 |  |


| 7. | Andriyana | 42 | 40 |
| :---: | :---: | :---: | :---: |
| 8. | Anis Dwi Yanti | 45 | 45 |
| 9. | Aris Saputra | 48 | 50 |
| 10. | Arjuli | 38 | 39 |
| 11. | Aslahudin | 48 | 52 |
| 12. | Asmunah | 35 | 40 |
| 13. | Ayip Ahmad | 41 | 45 |
| 14. | Badriyah | 42 | 45 |
| 15. | Daeni | 46 | 49 |
| 16. | Dina Safitri | 35 | 36 |
| 17. | Dwi Adetia Rasu | 39 | 42 |
| 18. | Epi | 32 | 39 |
| 19. | Faiz Sukroni | 41 | 45 |
| 20. | Hamdun Muhadi | 47 | 50 |
| 21. | Heri Irawan | 42 | 50 |
| 22. | Hesti | 39 | 52 |
| 23. | Huswatun Hasanah | 45 | 50 |
| 24. | Indriyani | 42 | 53 |
| 25. | Jukha | 36 | 48 |


| 26. | Kevin Yusro | 40 | 49 |
| ---: | :--- | :--- | :--- |
| 27. | Khalifah | 39 | 45 |
| 28. | Kurniawan | 36 | 40 |
| 29. | Lilis M | 44 | 53 |
| 30. | M. Kuniawan | 41 | 46 |
| 31. | Puput Mawadah | 1246 | 1376 |
|  |  | 31.8 | 47 |
|  | $X$ | 42 |  |

$$
\begin{array}{rlr}
\mathrm{M}_{1}=\frac{\sum}{} & =\frac{\sum}{\mathrm{M}_{2}} & = \\
& =44.3 & \\
& =- \\
& & =40.1
\end{array}
$$

Based on the calculation on the table 2 of pre test and post test assessment at comparison class, it shows that the cumulative value of pre test is 1246 . The average of the pre test is 40.1 . Meanwhile, the cumulative value of post test is 1376 . The average of the post test result is 44.3.

Determine mean by formula:

$$
\begin{aligned}
\mathrm{M} & =\mathrm{M} 1-\mathrm{M} 2 \\
& =44.3-40.1 \\
& =4.2
\end{aligned}
$$

Note : M = Mean
$\mathrm{M} 1=$ mean of post test
$\mathrm{M} 2=$ mean of pre test

From the calculation of determine mean above, we have know that the average score of pre test and post test (at control class) increase in amoiunt of 4.2.

Graphic. 2

The Test of Pre-Test in Control And Experiment Class

The Test of Pre-Test in Experiment Class


Based on the graphic above show the frequency score that students who got less than 50 point are 15 students from 31 students in experiment class.

The Test of Pre-Test in Control Class


Based on the graphic above show the frequency score that students who got less than 40 point are 14 students from 31 students in control class.

Graphic. 2

The Test of Post Test In Control And Experiment Class

The Test of Post Test In Experiment Class


Based on the graphic above show the evidence of students' score after giving treatment. There are increase score for students' experiment class which showed by frequency score that students who got less than 55 become 1 students from 31 students in experiment class.


Based the graphic above show the evidence of students' score before and after giving test without treatment. There are increase score for students' controlled class which showed by frequency score that student who got score less than 40 point from 12 students become 5 students. And for students' experiment class which showed by frequency that the student who got less than 55 point from 24 students become 1 student. From those evidence are concluded that the use of group investigation in teaching speaking at experimental class is better than controlled class that only usual teaching as Three Phase Technique (PPP)

## Table 3

Analysis of Pre-Test in Experiment Class

Subject: English
Teacher: Rofahiyah

Meanscore: 50.1
Respondent: 31

| No | Name | Speaking presentation |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | $\stackrel{\sim}{0}$ |  | T1 $\stackrel{0}{0}$ 0 4 |  | O |  |
| 1. | Nurjanah | 62 | 16 | 11 | 14 | 11 | 10 |
| 2. | Sri Rahayu | 51 | 15 | 8 | 12 | 7 | 9 |
| 3. | Lita Novita | 59 | 13 | 11 | 13 | 12 | 10 |
| 4. | Makrobi | 48 | 11 | 8 | 13 | 10 | 6 |
| 5. | Sumuslim Ali | 50 | 13 | 8 | 13 | 9 | 7 |
| 6. | Roihatul Mawadah | 60 | 14 | 11 | 14 | 12 | 9 |
| 7. | Mukhriji | 45 | 12 | 7 | 10 | 8 | 8 |
| 8. | Wiwin S. Dewi | 37 | 8 | 6 | 10 | 7 | 6 |
| 9. | Sujadi | 32 | 8 | 5 | 9 | 5 | 5 |
| 10. | Sumirah | 47 | 11 | 8 | 12 | 10 | 6 |
| 11. | Lidia Silvia | 41 | 10 | 7 | 10 | 8 | 6 |


| 12. | Nining Anjarwati | 54 | 12 | 10 | 13 | 11 | 8 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 13. | Saiban | 51 | 13 | 8 | 14 | 10 | 6 |
| 14. | Rohman | 49 | 13 | 8 | 13 | 9 | 6 |
| 15. | Sunayah | 45 | 12 | 7 | 11 | 8 | 7 |
| 16. | Marwati | 47 | 13 | 6 | 12 | 10 | 6 |
| 17. | Suryati | 46 | 12 | 5 | 13 | 9 | 7 |
| 18. | Makiyatun | 58 | 14 | 10 | 13 | 12 | 9 |
| 19. | Yanto Maryanto | 55 | 13 | 10 | 13 | 11 | 8 |
| 20. | Puput Futihat | 50 | 15 | 9 | 12 | 8 | 6 |
| 21. | Muafah Fitriani | 48 | 12 | 7 | 13 | 9 | 7 |
| 22. | Meisya Oktaviani | 53 | 14 | 7 | 14 | 10 | 8 |
| 23. | Saepudin | 49 | 13 | 8 | 11 | 9 | 8 |
| 24. | Nurhaoliyah | 56 | 15 | 9 | 13 | 11 | 8 |
| 25. | Suhaeri | 52 | 14 | 8 | 11 | 11 | 8 |
| 26. | Munawir Gozali | 48 | 13 | 6 | 13 | 9 | 7 |
| 27. | Omah Ambarwati | 48 | 14 | 6 | 14 | 8 | 6 |
| 28. | Lulu Maknun | 51 | 12 | 8 | 14 | 10 | 7 |
| 29. | Tedi | 49 | 12 | 7 | 13 | 9 | 8 |
| 30 | Nur Elisah | 50 | 13 | 7 | 13 | 10 | 7 |


| 31 | Muti'ah | 61 | 16 | 10 | 14 | 11 | 10 |
| ---: | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | TOTAL $=$ |  | 396 | 246 | 387 | 294 | 229 |

Table 4
Analysis of Post-Test in Experiment class

Subject: English
Teacher: Rofahiyah

MeanScore: 60.5
Respondent: 31

| No | Name | Speaking presentation |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | $\begin{aligned} & \check{\AA} \\ & \stackrel{\delta}{\theta} \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \\ & 0 \\ & 0 \\ & 0 \\ & 0.0 \\ & 0.0 \end{aligned}$ |  |  | 围 | d तod $\stackrel{\text { d}}{\sim}$ |
| 1. | Nurjanah | 68 | 17 | 10 | 15 | 15 | 11 |
| 2. | Makrobi | 60 | 15 | 9 | 14 | 13 | 9 |
| 3. | Lita Novita | 65 | 17 | 8 | 17 | 14 | 9 |
| 4. | Roihatul Mawadah | 70 | 18 | 10 | 18 | 15 | 9 |
| 5. | Sri Rahayu | 68 | 16 | 10 | 16 | 16 | 10 |
| 6. | Sumuslim Ali | 73 | 18 | 10 | 18 | 18 | 9 |
| 7. | Mukhriji | 60 | 15 | 10 | 14 | 12 | 9 |
| 8. | Lidia Silvia | 58 | 14 | 9 | 15 | 12 | 8 |


| 9. | Nining Anjarwati | 60 | 16 | 8 | 16 | 13 | 7 |
| ---: | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 10. | Sujadi | 59 | 16 | 8 | 16 | 10 | 9 |
| 11. | Wiwin S. Dewi | 55 | 15 | 7 | 15 | 11 | 7 |
| 12. | Sumirah | 62 | 17 | 9 | 15 | 12 | 9 |
| 13. | Saiban | 55 | 16 | 7 | 15 | 10 | 7 |
| 14. | Marwati | 59 | 17 | 7 | 16 | 10 | 9 |
| 15. | Sunayah | 55 | 18 | 6 | 15 | 9 | 7 |
| 16. | Suryati | 60 | 17 | 8 | 15 | 13 | 7 |
| 17. | Makiyatun | 52 | 14 | 7 | 12 | 11 | 8 |
| 18. | Rohman | 60 | 16 | 8 | 14 | 14 | 8 |
| 19. | Yanto Maryanto | 57 | 13 | 9 | 13 | 13 | 9 |
| 20. | Meisya Oktaviani | 59 | 15 | 9 | 14 | 13 | 8 |
| 21. | Muafah Fitriani | 55 | 17 | 7 | 15 | 9 | 7 |
| 22. | Saepudin | 59 | 16 | 9 | 13 | 12 | 9 |
| 23. | Nurhaoliyah | 60 | 15 | 9 | 14 | 14 | 8 |
| 24. | Puput Futihat | 60 | 17 | 7 | 15 | 14 | 7 |
| 25. | Suhaeri | 60 | 16 | 8 | 14 | 14 | 8 |
| 26. | Omah Ambarwati | 63 | 17 | 8 | 16 | 14 | 8 |
| 27. | Lulu Maknun | 60 | 16 | 7 | 15 | 15 | 7 |


| 28. | Nur Elisah | 62 | 17 | 8 | 14 | 14 | 9 |
| :---: | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 29. | Munawir Gozali | 59 | 16 | 8 | 13 | 13 | 9 |
| 30. | Tedi | 60 | 17 | 9 | 12 | 13 | 9 |
| 31. | Muti'ah | 65 | 18 | 10 | 13 | 15 | 9 |
|  | TOTAL $=$ |  | 502 | 259 | 457 | 401 | 259 |

After writing the comparison between the score of pre-test and the post-test, the writer calculates deviation and squared deviation and the result of the calculation by using the formula-test can be seen as follow:

## B. Analysis of the Data

After getting the data, the writer analyzed it by using statistic calculation of the determine data. The result of the determine can be seen as follow:

## Table 5

The Score of Distribution Frequency

| No | $\mathbf{x 1}$ | $\mathbf{x 2}$ | $\mathbf{X 1}$ | $\mathbf{X 2}$ | $\mathbf{X 1}^{2}$ | $\mathbf{X 2}^{2}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1. | 68 | 39 | 7.5 | -5.3 | 56.25 | 28.09 |


| 2. | 60 | 45 | -0.5 | 0.7 | 0.25 | 0.49 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 3. | 65 | 40 | 4.5 | -4.3 | 20.25 | 18.49 |
| 4. | 70 | 45 | 9.5 | 0.7 | 90.25 | 0.49 |
| 5. | 68 | 39 | 7.5 | -5.3 | 56.25 | 28.09 |
| 6. | 73 | 41 | 12.5 | -3.3 | 156.25 | 10.89 |
| 7. | 60 | 40 | -0.5 | -4.3 | 0.25 | 18.49 |
| 8. | 58 | 45 | -2.5 | 0.7 | 6.25 | 0.49 |
| 9. | 60 | 50 | -0.5 | 5.7 | 0.25 | 32.49 |
| 10. | 59 | 39 | -1.5 | -5.3 | 2.25 | 28.09 |
| 11. | 55 | 52 | -5.5 | 7.7 | 30.25 | 59.29 |
| 12. | 62 | 40 | 1.8 | -4.3 | 3.24 | 18.49 |
| 13. | 55 | 45 | -5.5 | 0.7 | 30.25 | 0.49 |
| 14. | 59 | 45 | -1.2 | 0.7 | 1.44 | 0.49 |
| 15. | 55 | 49 | -5.5 | 4.7 | 30.25 | 22.09 |
| 16. | 60 | 36 | -0.5 | -8.3 | 0.25 | 68.89 |
| 17. | 52 | 42 | -8.5 | -2.3 | 72.25 | 5.29 |
| 18. | 60 | 39 | -0.5 | -5.3 | 0.25 | 28.09 |
| 19. | 57 | 45 | -3.5 | 0.7 | 12.25 | 0.49 |
| 20. | 59 | 50 | -1.2 | 5.7 | 1.44 | 32.49 |


| 21. | 55 | 50 | -5.5 | 5.7 | 30.25 | 32.49 |
| ---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 22. | 59 | 52 | -1.2 | 7.7 | 1.44 | 59.29 |
| 23. | 60 | 50 | -0.5 | 5.7 | 0.25 | 32.49 |
| 24. | 60 | 53 | -0.5 | 8.7 | 0.25 | 75.69 |
| 25. | 60 | 48 | -0.5 | 3.7 | 0.25 | 13.69 |
| 26. | 63 | 49 | 2.5 | 4.7 | 6.25 | 22.09 |
| 27. | 60 | 45 | -0.5 | 0.7 | 0.25 | 0.49 |
| 28. | 62 | 40 | 1.5 | -4.3 | 2.25 | 18.49 |
| 29. | 59 | 53 | -1.2 | 8.7 | 1.44 | 75.69 |
| 30. | 60 | 46 | -0.5 | 1.7 | 0.25 | 2.89 |
| 31. | 65 | 42 | 4.5 | -2.3 | 20.25 | 5.29 |
|  |  |  |  |  | $\mathbf{1}$ |  |

Note :
$\mathbf{x} \mathbf{1}=$ Score Post-Test (Experiment Class) $\quad \mathbf{X 1} \mathbf{=} \mathbf{x} \mathbf{1 - M 1}$
$\mathbf{x} \mathbf{2}=$ Score Post-Test (Control Class) $\mathbf{X 2}=\mathbf{x} \mathbf{2 - M 2}$
$\mathbf{X 1}{ }^{1}=$ the Squared value of $\mathrm{X} 1 \quad \mathbf{X} \mathbf{2}^{\mathbf{2}}=$ the squared value of X2

```
df = N1+N2-2
    = 31+31-2
    = 64
\[
=2.00
\]
\[
=\overline{\bar{\sum} \quad}
\]
\[
=\overline{\overline{(. \quad . \quad)( })}
\]
\[
=\bar{\square}
\]
\[
=\overline{\overline{\{\cdot\}\{\cdot\}}}
\]
\[
=\frac{\cdot}{\sqrt{\cdot}}
\]
\[
=\frac{.}{.}
\]
\[
=11.8
\]
```

In general, score of post test in experiment class was better than post test in control class. It can be seen from the total amount of the score of post test in experiment class was 1878 And pre test was 1552 , and average of post test was 60.5 And pre test was 50.1 , while, the total amount of the score post test in control class was 1376 And pre test was 1246, and average of post test was 44.3 and pre test was 40.1 .

Based on the result statistic calculation, it is obtained that the score of $t_{o}$ is $=11.8$ degree of freedom is $(5 \%)$ and the score of $t_{0}$ is $=$ 11.8 degree of freedom is $(1 \%)$. The value of 64 is mentioned in the table about 2.00 (as degree of significant) and The value of 64 is mentioned in the table about 2.65 (as degree of significant).

To prove the hypothesis, the data obtained from the experimental class is calculated by using t-test formula with assumption as follow: If $t_{\text {observation }}>t_{\text {table }}$ the alternative hypothesis is accepted. It means there is significant different between learning using group investigation technique and students' speaking ability.

If $\mathrm{t}_{\text {observation }}<\mathrm{t}_{\text {table }}$ the alternative hypothesis is rejected. It means there is no significant different between learning using group investigation technique and students' speaking ability.

## C. Interpretation of the Data

The analysis is aimed to know is the effectiveness of teaching speaking by using group investigation technique. We have already known that the mean score of experiment class is 50.1 in pre test and 60.5 In post test. But the mean score of control class is 40.1 in pre test and 44.3 in post test. Seeing calculation above, the experiment class get increase on 10.4 points. It is better than the control class get increase on 4.2 points.

Before deciding the result of hypothesis, the writer proposes interpretation towards to with procedure as follow:
a. $\mathrm{Ha}=\mathrm{t}_{\text {observation }}>\mathrm{t}_{\text {table }}$. It means there is significant effectiveness of teaching speaking by using group investigation technique.
b. $\mathrm{Ho}=\mathrm{t}_{\text {observation }}<\mathrm{t}_{\text {table }}$. It means there is no significant effectiveness of teaching speaking by using group investigation technique.

According to the data, the value of $\mathrm{t}_{\text {observation }}$ is bigger than $\mathrm{t}_{\text {table }} . \mathrm{t}_{\text {observation }}=11.8>\mathrm{t}_{\text {table }}=2.00(5 \%)$ or $\mathrm{t}_{\text {observation }}=11.8>\mathrm{t}_{\text {table }}=$ 2, $65(1 \%)$, so $\mathrm{H}_{o}$ is rejected and $\mathrm{H}_{\mathrm{a}}$ is accepted.

From the result above, the writer give conclusion that there is the effectiveness of teaching speaking by using group investigation
technique. It can be seen that the student get good or better score by using group investigation technique.

