# CHAPTER IV

# FINDINGS AND DISCUSSIONS

The data collection was conducted by scoring and analyzing the pre test and post test outcome. The data collected in a form of scores from the students' achievement in reading skill tests. But as mentioned in the previous chapters, before administering the actual pre test and post test, the researcher first ordered a try out test to find out whether the instrument is valid and reliable or not.

Students score is the parameter in this research for both control and experimental group. The experimental group receives treatment, while the control does not. To see the differences in reading achievement between control and experimental group, the testing of hypothesis was conducted. The results of data analysis are as follow:

## 4.1 Analysis on Try Out Test

To ensure whether the test instrument for the pre test and the post test is good and can be used, the writer analyzed the validity and reliability.

### 4.1.1 Instrument Validity

The validity of the instrument was tested to measure the accuracy of the test. The try out was conducted to the eight grade of SMPN 3 Bandung which was not included to the experimental or the control group.

#### 4.1.1.1 First Try Out

The first try out was conducted on March 12'th 2008. Class 8-B of SMPN 3 Bandung was incorporated in this try out. Several steps were taken in the analysis, they are:

a. Validity Check

Testing the validity of the first instrument was carried out to measure the accuracy of the instrument. The steps undergone by researcher to check the validity of the instrument were

1. Arranging the obtained data from the highest score to the lowest score. The scores were:

   95, 95, 90, 90, 90, 90, 90, 85, 85, 85, 85, 80, 75, 75, 75, 75, 70, 70, 70, 70, 70, 70, 65, 65, 65, 65, 65, 65, 65, 60, 60, 60, 60, 50, 50, 50.

2. Determining the upper and lower group to calculate the discriminating power of each item:

   The upper group = $\frac{27}{100}$ X 36 = 11

   The lower group = $\frac{27}{100}$ X 36 = 11

3. Calculating the discrimination power of each item

   For example, item number 7

$$DP = \frac{\overline{X}_a - \overline{X}_b}{IMS} = \frac{1 - 0.6}{1} = 0.4$$

The discriminating power of item number 7 is 0.4, which means that this item is good enough and should be used in the actual test. The term “enough” here means that the item is quite successful in differentiating high achiever and the under achiever between students.

Also, according to Sugiyono (1998), this specific item is valid. Other item analysis on discriminating power can be viewed further in the appendices.

b. Reliability

Checking the reliability of the test instrument was very much needed to ensure the consistency of the test. The researcher has undergone a few steps to calculate the reliability of the instrument. The steps were:

1. Dividing the score into two groups, where the odd numbered item becomes the X variable, and the even numbered item becomes the Y variable.
2. Calculating the correlation between the two half.

$$r_{xy} = \frac{N\Sigma XY - (\Sigma X)(\Sigma Y)}{\sqrt{\{N\Sigma X^2 - (\Sigma X)^2\}\{N\Sigma Y^2 - (\Sigma Y)^2\}}}$$

Where : $\sum X = 267$

$\sum X^2 = 2059$

$\sum Y = 258$

$\sum Y^2 = 1936$

$\sum XY = 1947$

The result of the calculation is 0.405 for the correlation between the two half of the items.

3. Calculating the reliability of the full test using the Spearman-Brown prophecy formula.

$$r_{11} = \frac{2\, r_{1/2\ 1/2}}{(1+ r_{1/2\ 1/2})}$$

Where:

$r_{1/2\ 1/2}$ = correlation between each half test score which is 0.405

$r_{11}$ = coefficient reliability

The result of the calculation is 0.576. According to the r-table of interpretation, the outcome of the calculation reveals that the test instrument is reliable.

**4.1.1.2 Second Try Out**

The second try out was conducted on March 13'th 2008. Class 8-C of SMPN 3 Bandung was incorporated in this try out. The steps taken in the analysis were similar with the steps taken in the previous try out, they are:

a. Validity

Testing the validity of the first instrument was carried out to measure the accuracy of the instrument. The steps undergone by researcher to check the validity of the instrument were

1. Arranging the obtained data from the highest score to the lowest score. The scores were:

95, 85, 85, 85, 80, 75, 75, 75, 75, 75,75, 70, 70, 70, 70, 70, 70, 70, 65, 65, 65, 65, 65, 65, 65, 60, 60, 55, 55, 55, 55, 55, 50, 50, 50, 50, 45 35.

2. Determining the upper and lower group to calculate the discriminating power of each item:

The upper group = $\frac{27}{100}$ X 39 = 11

The lower group = $\frac{27}{100}$ X 39 = 11

3. Calculating the discrimination power of each item

For example, item number 1

$$DP = \frac{\overline{X}_a - \overline{X}_b}{IMS} = \frac{0.72 - 0.90}{1} = -0.18$$

The discriminating power of item number 7 is -0.18, which means that this item is not valid and should not be used in the real test later on in the research. Also, according to Sugiyono (1998), this specific item is valid. Other item analysis on discriminating power can be viewed further in the appendices.

b. Reliability

Checking the reliability of the test instrument was very much needed to ensure the consistency of the test. The researcher has undergone a few steps to calculate the reliability of the instrument. The steps were:

1. Dividing the score into two groups, where the odd numbered item becomes the X variable, and the even numbered item becomes the Y variable.
2. Calculating the correlation between the two half.

$$r_{xy} = \frac{N\Sigma XY - (\Sigma X)(\Sigma Y)}{\sqrt{\{N\Sigma X^2 - (\Sigma X)^2\}\{N\Sigma Y^2 - (\Sigma Y)^2\}}}$$

Where : $\sum X = 275$

$\sum X^2 = 2033$

$\sum Y = 236$

$\sum Y^2 = 1486$

$\sum XY = 1707$

The result of the calculation is 0.581 for the correlation between the two halfs of the items.

1. Calculating the reliability of the full test using the Spearman-Brown prophecy formula.

$$r_{11} = \frac{2\, r_{1/2\ 1/2}}{(1 + r_{1/2\ 1/2})}$$

Where:

$r_{1/2\ 1/2}$ = correlation between each half test score which is 0.581

$r_{11}$ = coefficient reliability

The result of the calculation is 0.734. According to the r-table of interpretation, the outcome of the calculation reveals that the test instrument is reliable.

### 1.2 Pre-Test Score

The pre-test was conducted on March 27 and 29, 2008. The first pre-test was administered to class 8I of SMPN 3 Bandung, this class becomes the experimental group. The second pre-test was administered to class 8J of SMPN 3 Bandung, this class becomes the control group. A detailed table about the experimental and control group scores in the pre–test is provided in the appendices.

### 1.3 Post-Test Score

The post-test was conducted on March 9 and 10, 2008. The first post-test was administered to class 8I of SMPN 3 Bandung, this class becomes the experimental group. The second post-test was administered to class 8J of SMPN 3 Bandung, this class becomes the control group. A detailed table about the experimental and control group scores in the pre–test is provided in the appendices.

After having administered both pre-test and post-test, the researcher chose 32 students from each group to be the sample of the research. Te decision was based on students' attendance. Students who attended both test were chosen to be the research sample.

### 1.4 Testing Hypothesis

After the data was obtained, the researcher moved on to analyze it.

### 1.4.1 Normal Distribution of Pre-Test and Post-Test from the Experimental Group

Before conducting further analysis, the researcher decided to look into the normality of Pre-Test and Post-Test of the experimental group. The hypotheses are as follow:

a. Ho : The pre-test data of the experimental group are normally distributed.

   Hi : The pre-test data of the experimental group are not normally distributed.

b. Ho : The post-test data of the experimental group are normally distributed.

   Hi : The post-test data of the experimental group are not normally distributed.

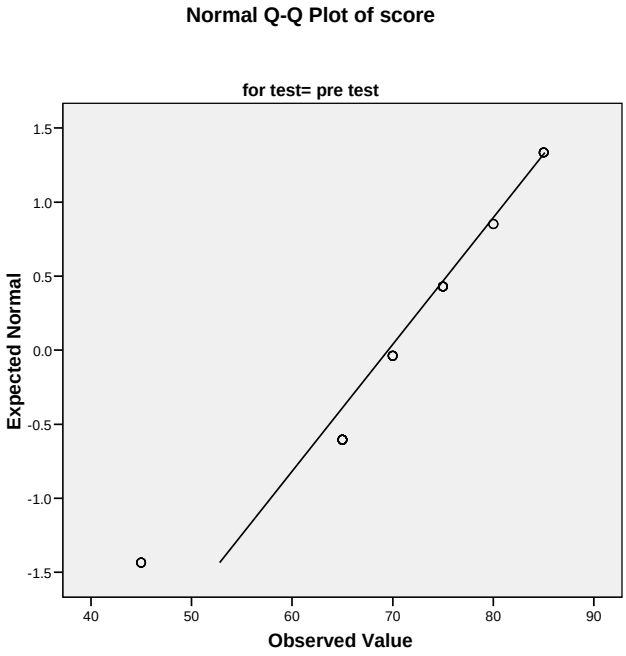
The decision making was based on the Q-Q plot statistics of the two data. Santoso (2007,155) exerts that:

> *"…terlihat ada garis lurus dari kiri ke kanan atas. Garis itu berasal dari nilai z. Jika suatu distribusi data normal, maka data akan tersebar disekeliling baris."*

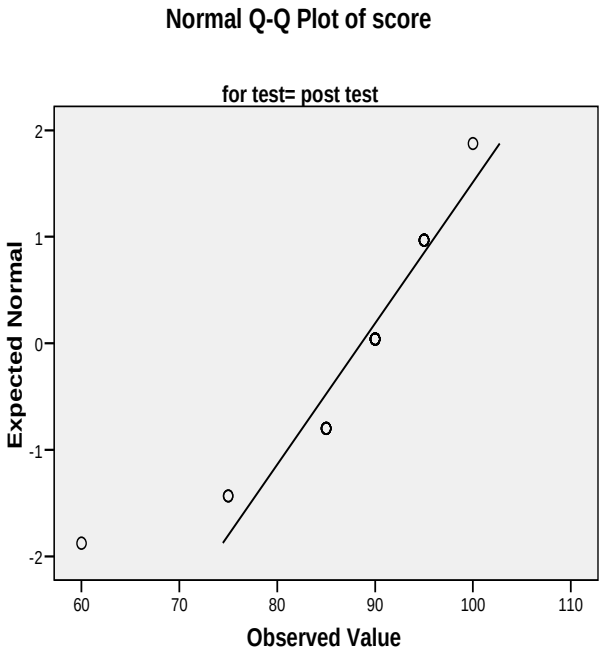
Again the computer statistical program SPSS 15.0 was incorporated to help the researcher analyze the data. The result is as follow.

The calculation of the Normal Distribution of Experimental group

**Graphic 4.1 Normality of Pre-test in Experimental Group**




**Graphic 4.2 Normality of Post-test in Experimental Group**



Based on the result, we can see that the data distribution is normal, except for one sample from each outcome. These are what we call as outlier (Santoso 2007,156).

### 1.4.2 Normal Distribution of Pre-Test and Post-Test from the Control Group

Similar steps were taken to analyze the normal distribution of the control group pre-test and post test outcome. The hypotheses are as follow:

a. Ho : The pre-test data of the experiment group are normally distributed.

Hi : The pre-test data of the control group are not normally distributed.

b. Ho : The post-test data of the control group are normally distributed.

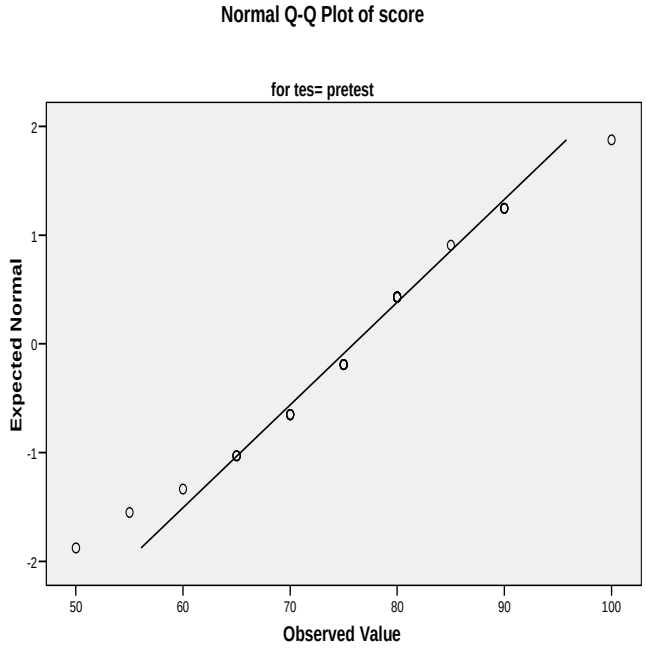
Hi : The post-test data of the experiment group are not normally distributed.

The decision making was based on the Q-Q plot statistics of the two data. Santoso (2007,155) put forward that:

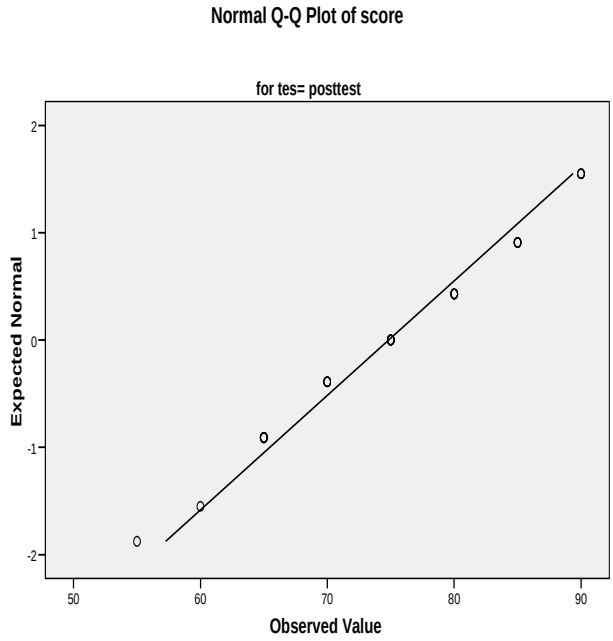
> *"…terlihat ada garis lurus dari kiri ke kanan atas. Garis itu berasal dari nilai z. Jika suatu distribusi data normal, maka data akan tersebar disekeliling baris."*

Again the computer statistical program SPSS 15.0 was incorporated to help the researcher analyze the data. The result is as follow:

**Graphic 4.3 Normality of Pre-test in Control Group**




**Graphic 4.4 Normality of Post-test in Control Group**



Based on the result, we can see that the data distribution of the control group is normal.

### 1.4.3 Homogeneity of Variances of Pre-Test from the Experimental and Control Group

After unfolding the fact that both groups are normally distributed, researcher moves on to investigate whether the variances were homogenous or not. The researcher uses the SPSS 15.0 program to assist the process of data analysis. The hypotheses are:

a. Ho: Both variances of the population are homogenous (variances on pre-test)
b. Hi: Both variances of the population are not homogenous (variances on pre-test)

The basic of decision making is:

a. If the probability > 0.05 Ho is accepted
b. If the probability < 0.05 Hi is rejected

The calculation results are:

**Table 4.1 Test of Homogeneity of Variances on Pre-test**

| Levene Statistic | df1 | df2 | Sig. |
|---|---|---|---|
| .198 | 1 | 62 | .658 |

From the calculation results table, we can see that the value of the Leveane test is 0.658. Since the probability is quite higher than 0.05, the first hypothesis can be

accepted. In other words, both variances of the experiment and the control group are homogenous.

### 1.4.4 Paired T-test of Experimental Group

As explained in the previous chapter, the paired T-test was chosen so that it is possible for the researcher to unfold any change or development in the students (samples) reading skill. The hypotheses are:

a. Ho: Both test outcomes of experimental group are statistically not different
b. Hi: Both test outcomes of experimental group are statistically different

The basic of decision making is:

c. If the probability > 0.05 Ho is accepted
d. If the probability < 0.05 Hi is rejected

After applying the SPSS 15.0 computer statistical program, the result is as follow:

**Table 4.2 Paired Sample T-test of Experimental Group**

| | | | Pair 1 |
|---|---|---|---|
| | | | before treatment - after treatment |
| Paired Differences | Mean | | -19.063 |
| | Std. Deviation | | 9.791 |
| | Std. Error Mean | | 1.731 |
| | 95% Confidence Interval of the Difference | Lower | -22.593 |
| | | Upper | -15.532 |
| t | | | -11.013 |
| df | | | 31 |
| Sig. (2-tailed) | | | .000 |

From the data result, it is clear that the probability is 0.00, since it is much smaller than 0.05, the null hypothesis is rejected. In other words, outcome of experiment groups pre-test and post-test are statistically different.

### 1.4.5 Paired T-test of Control Group

The researcher underwent the same steps to analyze the data. The hypotheses are:

a. Ho: Both test outcomes of control group are statistically not different
b. Hi: Both test outcomes of control group are statistically different

The basic of decision making is:

c. If the probability > 0.05 Ho is accepted
d. If the probability < 0.05 Hi is rejected

After applying the SPSS 15.0 computer statistical program, the result is as follow:

**Table 4.3 Paired Sample T-test of Control Group**

| | | | Pair 1 |
|---|---|---|---|
| | | | before class - after class |
| Paired Differences | Mean | | 1.094 |
| | Std. Deviation | | 9.897 |
| | Std. Error Mean | | 1.750 |
| | 95% Confidence Interval of the Difference | Lower | -2.475 |
| | | Upper | 4.662 |
| t | | | .625 |
| df | | | 31 |
| Sig. (2-tailed) | | | .536 |

The calculation outcome showed that the probability was 0.536. By consulting the provided basic of decision making it is obvious that the null hypothesis should be accepted. In other words, the outcome of control groups pre-test and post-test are statistically similar.

## 1.5 Discussion

The first step taken by the researcher right after obtaining pre-test data's from both experimental and control group is to find whether they were homogenous or not. From the apparent data, the outcome of the pretest is relatively similar between the two groups. To support this assumption, the Leveane method was incorporated. The data analysis outcome showed that they are. The researcher moved o to delve further into data analysis.

After treatments were applied, the post-test was administered to both groups. From the data collection, the experimental group score showed a dramatic

change while the control groups score revealed an insignificant change. However, to prove it statistically, the T-test was used by the researcher. The T-test calculation outcome shows that the paired T–test of the experimental group probability score is 0.00. Referring to Santoso (2007), this number shows that there is a significant difference between the experimental groups score in pre-test and post-test. The calculated probability result of the control group was 0.536. This figure illustrates that there are no significant change in the pre-test and post-test result of the control group.

In Chapter 1, the researcher proposed the hypothesis "Reading stories (narrative texts) have a significant influence on junior high school students' reading skill". The paired t-test probability score supports this hypothesis. As explained before, the probability score of the experiment group is 0.00, to put it in words, the students of experiment group undergone a significant change in reading skill. The probability score of control group was 0.536, this means that there are no significant change on students of control group reading skill.

The experimental groups reading skill improved dramatically after receiving treatments. While the control groups reading skill showed no significant improvement after receiving no treatment. This means that the Ho should be rejected, and the Hi should be accepted. The research proves that reading stories (narrative text) have a dramatic influence on students reading skill.

Reading stories (narrative texts) is the main factor that influences the difference level of improvement on the reading skill of the two groups. Stories (narrative texts) with its purpose of story telling, entertaining and acquiring the

attention of readers were proven to be quite useful in improving students reading skill. Narrative text also focuses on educating readers and to expand the imagination of readers. More over the school based curriculum applied by the researcher along treatment is proven able to create a conducive situation in the classroom. Students become aware of the learning purpose. The students' ample amount of positive contribution fueled this research all the way through to its completion.