CHAPTER IV

FINDING AND DISCUSSION

This chapter presents the finding and discussion of using guessing technique on reading achievement of the first grade science students in MA Darul Huda Wonodadi Blitar. This chapter is presented in three parts, they are the description of data, hypothesis testing, and discussion.

A. The Description of Data

In this section, the researcher presents the students' achievement in reading before and after being taught by using guessing technique. As mentioned before, the researcher used test as the instrument of collecting data. The test was consist of 20 questions in the form of multiple choices. The test was given to the first grade science students of MA Darul Huda Wonodadi Blitar that occupied by 30 students. In this research, the researcher used two kinds of the text, they are pre-test and post-test. Pre-test was given before the students were being taught by using guessing technique, while post-test was given after the students were taught by using guessing technique.

1. Raw Score

Here are the numeric data resulted from pre-test and post-test.

Table 4.1 Students' Result of Pre-test and Post-test

No.	Pre-test Score (Y_1)	$(Y_1)^2$	Post-test Score (Y_2)	$(Y_2)^2$	D $(Y_2 . Y_1)$	D^2
1	70	4900	75	5625	5	25
2	60	3600	70	4900	10	100
3	50	2500	65	4225	5	25
4	65	4225	75	5625	10	100
5	70	4900	75	5625	5	25
6	75	5625	80	6400	5	25
7	60	3600	65	4225	5	25
8	60	3600	65	4225	5	25
9	60	3600	75	5625	15	625
10	60	3600	70	4900	10	100
11	75	5625	80	6400	5	25
12	80	6400	85	7225	5	25
13	65	4225	70	4900	5	25
14	75	5625	80	6400	5	25
15	75	5625	80	6400	5	25
16	50	2500	65	4225	15	625
17	75	5625	80	6400	5	25
18	75	5625	80	6400	5	25
19	70	4900	75	5625	5	25
20	75	5625	80	6400	5	25
21	60	3600	65	4225	5	25
22	55	3025	65	4225	10	100
23	55	3025	60	3600	5	25
24	50	2500	60	3600	10	100

Continuation

25	55	3025	65	4225	5	25
26	50	2500	60	3600	10	100
27	70	4900	75	5625	5	25
28	55	3025	60	3600	5	25
29	65	4225	70	4900	5	25
30	75	5625	80	6400	5	25
$\sum$	**1935**	**127375**	**2150**	**155750**	**200**	**2400**

2. **Mean Score**

$$M_{Y1} = \frac{\sum Y1}{N}$$

$$M_{Y2} = \frac{\sum Y2}{N}$$

Where:

$\sum Y1$: Total score of pre-test

$\sum Y2$: Total score of post-test

N   : Total students

a. Mean of pre-test

$$M_{Y1} = \frac{\sum Y1}{N}$$

$$M_{Y1} = \frac{1935}{30}$$

$$M_{Y1} = 64.50$$

b. Mean of post-test

$$M_{Y2} = \frac{\sum Y2}{N}$$

$$M_{Y2} = \frac{2150}{30}$$

$$M_{Y2} = 71.67$$

c. Mean difference between pre-test and post-test

$$M_D = \frac{\sum D}{N}$$

$$= \frac{200}{30}$$

$$= 6.67$$

Based on table showed in table 4.1, there were 30 students who did the pre-test and post-test. The highest score of pre-test was 75 and the lowest score was 50. After getting the treatment, they did the post-test. The highest score of post-test was 80 and the lowest score was 60. While the mean of pre-test was 64.5 and the mean of post-test is 71.67. From that, it can be found that the different mean was 6.67.

3. Standard Deviation

$$SD_{Y1} = \sqrt{\frac{\sum Y1^2 - \frac{(\sum Y1)^2}{N}}{N-1}} \qquad SD_{Y2} = \sqrt{\frac{\sum Y2^2 - \frac{(\sum Y2)^2}{N}}{N-1}}$$

Where:

SD : standard deviation

$\sum Y1^2$: sum of pre-test quadrat score

$\sum Y1$: sum of pre-test score

$\sum Y2^2$: sum of post-test quadrat score

$\sum Y2$: sum of post-test score

N : number of students

a. Standard deviation of pre-test:

$$SD_{Y1} = \sqrt{\frac{\sum Y1^2 - \frac{(\sum Y1)^2}{N}}{N-1}}$$

$$= \sqrt{\frac{127375 - \frac{1935^2}{30}}{30-1}}$$

$$= \sqrt{\frac{127375 - \frac{3744225}{30}}{29}}$$

$$= \sqrt{\frac{127375 - 124807.5}{29}}$$

$$= \sqrt{\frac{2567.5}{29}}$$

$$= \sqrt{88.534}$$

$$= 9.409$$

b. Standard deviation of post-test:

$$SD_{Y2} = \sqrt{\frac{\sum Y2^2 - \frac{(\sum Y2)^2}{N}}{N-1}}$$

$$= \sqrt{\frac{155750 - \frac{2150^2}{30}}{30-1}}$$

$$= \sqrt{\frac{155750 - \frac{4622500}{30}}{29}}$$

$$= \sqrt{\frac{155750 - 154083}{29}}$$

$$= \sqrt{\frac{1666.6}{29}}$$

$$= \sqrt{57.471}$$

$$= 7.581$$

To prove the manual statistical results, the researcher used SPSS 16.0. The results of SPSS 16.0 as presented on the table below:

Table 4.2 Paired Samples Statistics

Paired Sample Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	pretest	64.50	30	9.409	1.718
	Posttest	71.67	30	7.581	1.384

The manual statistical results were same with results in SPSS 16.0. Table 4.2 showed the students' score before and after being taught by using guessing technique. The students who done both of pre-test and post-test were 30 students. The result of paired sample statistics above showed that the mean score of pre-test and post-test are different. Mean score of pre-test is 64.50 and mean score of post-test is 71.67. Then, standard deviation of pre-test was 9.409, while post-test was 7.581. In this case, the mean of post-test was higher than the mean of pre-test. It can be conclude that there was improvement of students' achievement before and after they were being taught by using guessing technique.

To know whether there was significant difference between pre-test and post-test, the researcher used Paired Samples Correlation.

Here was the result:

Table 4.3 Paired Samples Correlations

Paired Sample Correlations

	N	Correlation	Sig.
Pair pretest & postest	30	.943	.000

From the table above, it can be seen that the correlation between pre-test and post-test were 0.943, while the significance value was 0.000. If the significance value less than 0.05, means that H_0 rejected. While, if the significance value higher than 0.05 means that H_0 accepted. Based on the result, the significance value was less than 0.05. It means that H_0 rejected and H_1 accepted. So, there was significant difference between the students' reading achievement before and after they taught by guessing technique.

4. Normality Testing

a. Normality testing of pre-test

Table 4.4 Pre-test Normality Testing

One-Sample Kolmogorov-Smirnov Test

		pretest
N		30
Normal Parameters[a]	Mean	64.50
	Std. Deviation	9.409
Most Extreme Differences	Absolute	.168
	Positive	.150
	Negative	-.168
Kolmogorov-Smirnov Z		.919
Asymp. Sig. (2-tailed)		.367

a. Test distribution is Normal.

b. Normality testing of post-test

Table 4.5 Post-test Normality Testing

One-Sample Kolmogorov-Smirnov Test

		posttest
N		30
Normal Parameters[a]	Mean	71.67
	Std. Deviation	7.581
Most Extreme Differences	Absolute	.177
	Positive	.177
	Negative	-.170
Kolmogorov-Smirnov Z		.970
Asymp. Sig. (2-tailed)		.304

a. Test distribution is Normal.

Based on the result of One- Sample Kolmogorov-Smirnov Test above, it has known that the significance value from pre-test is 0.367 and significance value of post-test is 0.304. Both of pre-test and post-test have significance value higher than 0.05. It can be concluded that both of the data pre-test and post-test score were in normal distribution.

5. **Homogeneity Testing**

Homogeneity test used to measure whether the data is homogeneous or not. The formula of homogeneity testing is follow:

$$F_{max} = \frac{SDY1}{SDY2}$$

$$= \frac{9.409}{7.581}$$

$$= 1.241$$

Where:

F_{max} : Homogeneity Testing

SD_{Y1} : Standard deviation of pre-test

SD_{Y2} : Standard deviation of post-test

$$\text{Degree of freedom } (df)_{Y1} = N - 1$$
$$= 30 - 1$$
$$= 29$$
$$\text{Degree of freedom } (df)_{Y2} = N - 1$$
$$= 30 - 1$$
$$= 29$$

From the calculation above, we know that F_{max} was 1.241. Homogeneity is fulfilled if F_{max} calculation is lower than F table. The value of F table in 0.05 significant level with dfx = dfy = 30 is 1.84. The result of F_{max} is lower than F table (1.241 < 1.84), it means that the variance values in the samples based on pre-test and post-test score is homogeneous.

6. **T-test**

As stated in previous chapter, the formula of t test as follows:

$$ t = \frac{\bar{D}}{\sqrt{\frac{\sum D^2 - \frac{(\sum D)^2}{N}}{N(N-1)}}} $$

Where:

t = t ratio

$\bar{D}$ = average difference

$\sum D^2$ = different scores squared, then summed

$(\sum D)^2$ = different scores summed, then squared

N = number of pairs

Firstly, the researcher calculated the average or mean of difference of pre-test and post-test.

$$\bar{D} = \frac{\Sigma D}{N}$$

$$\bar{D} = \frac{200}{30}$$

$$\bar{D} = 6.67$$

Then, the researcher found the t test value:

$$t = \frac{\bar{D}}{\sqrt{\frac{\Sigma D^2 - \frac{(\Sigma D)^2}{N}}{N(N-1)}}}$$

$$t = \frac{6.67}{\sqrt{\frac{2400 - \frac{(200)^2}{30}}{30(30-1)}}}$$

$$t = \frac{6.67}{\sqrt{\frac{2400 - \frac{40000}{30}}{30(29)}}}$$

$$t = \frac{6.67}{\sqrt{\frac{1066.67}{870}}}$$

$$t = \frac{6.67}{\sqrt{1.23}}$$

$$t = \frac{6.67}{1.11}$$

$$t = 11.564$$

After the researcher calculated the t test manually, she proved the calculation using SPSS 16.0.

Table 4.6 Paired Sample Test

Paired Sample Test

	Paired Differences					t	df	Sig. (2-tailed)
				95% Confidence Interval of the Difference				
	Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
Pair 1 pretest – posttest	-7.167	3.395	.620	-8.434	-5.899	-11.564	29	.000

The result paired samples test above was the mean of pre-test and post-test is -7.167, the standard deviation was 3.395, and the standard error mean is 0.620. The lower difference is -17.05821, while the upper difference is -7.13534. Then, t_{count} is -11.564 (symbol minus ignored), df is 29, and the significance value (2-tailed) is 0.000.

Table 4.8 showed that the manual calculation result was same with the result calculation from SPSS 16.0. The calculation above showed that df is 29 and t_{count} is 11.564, and to know whether it was significant or not, the researcher used t_{table}. It can be seen that t_{table} with significance level 5% and df 29 is 2.045. So, it can be said that t_{count} is greater than t_{table}. ($t_{count} > t_{table}$). If t_{count} is greater than t_{table} means that H_0 is rejected and H_1 is accepted. In contrary, if t_{count} is less than t_{table} means that H_0 is accepted and H_1 is rejected.

B. Hypothesis Testing

From the data analysis above, it could be identify that:

1. H_0 (null hypothesis) stated that there is no significant difference between students' achievement in reading before and after being taught by using contextual guessing technique

2. H_1 (Alternative Hypothesis) stated that there is significant difference between students' achievement in reading before and after being taught by using contextual guessing technique

In this research, t_{count} is greater than t_{table}. It can be proved based on statistical calculation on SPSS 16.0 by using paired sample test above. Hence, the Null Hypothesis (H_0) is rejected and Alternative Hypothesis (H_1) is accepted. So, there is significant difference between the students' reading achievement before and after they taught by using guessing technique. It can be concluded that guessing technique was effective to be applied in MA Darul Huda Wonodadi Blitar.

C. Discussion

From the data analysis, it can be seen that there was significant difference between students' reading achievement before and after they taught by using guessing technique of the first grade science students at MA Darul Huda Wonodadi Blitar.

The finding showed that the mean of pre-test was 64.50, while post-test was 71.67. in other words, the mean of pre-test was higher than post-test. It means that here there was improvement in their reading achievement. To analyze the data and to find out the effectiveness of the technique applied, the researcher used t-test from SPSS 16.00 for windows. The result was 11.654 (t_{count} = 11.654) and df was 29. Then, the researcher used t_{table} to check whether there was significant difference or not. The t_{table} was 2.045 from the significance level 5% and df 29. In sum, the t_{count} was higher than t_{table} ($t_{count} > t_{table}$).

t_{count} was higher than t_{table}. It means that the Null Hypothesis (H_0) was rejected and automatically the Alternative Hypothesis (H_1) accepted. Hence, there was significant difference between students' reading achievement before and after they taught by using guessing technique. According to Oxford (1990) Contextual guessing strategies are commonly used to infer the meaning of unfamiliar words in situations when language learners have a lack of knowledge in vocabulary, grammar, or other linguistic elements to read a given text. From here it can be drawn that guessing technique is a technique that asked the students can guess the words' meaning when they did not know the meaning based on the situation given by the words or sentences around them.

As stated before, the mean of post-test showed was higher than the mean of pre-test. It indicated that the students' reading achievement was improved after they taught by using guessing technique. The improvement made the technique became effective in teaching reading. This conclusion was in line with the research studies conducted by Merawati (2003), Bakhtiarvand (2007), and

Hardanti (2015). They got the conclusion that guessing technique was effective to use in teaching reading. Alderson (2000: 15) stated that learners can use guessing to their advantage to 1) Guess the meaning of a word 2) Guess a grammatical relationship (e.g., a pronoun reference) 3) Guess a discourse relationship 4) Infer implied meaning ("between the lines") 5) Guess about a cultural reference 6) Guess content messages. When the students guess the meaning, they not only got the meaning but also the messages implied.

> The ability to determine the meaning of unfamiliar words from their context is an essential skill for reading comprehension. Sometimes, there will be unfamiliar words whose meaning you cannot determine without a dictionary. But more often than not, a careful look at the context will give you enough clues to meaning. (Elizabeth, 2009: 38)

From the statement above, it can be concluded that guessing technique was good for the reader because it was an important skill that must be mastered in reading.

The guessing technique was effective and successfully implemented by Bakhtiarvand (2007) under the title "The Effect of Contextual Guessing Strategy on Vocabulary Recognition in Reading Comprehension texts of Iranian EFL Junior High school students." In this research, the treatment which was the application of "Contextual Guessing" strategy with the purpose of improving reading comprehension ability of Junior High School students through expanding their vocabulary scope, proved very effective. It was indicated , at least through this study ,that the ability of the participants in understanding the meaning of unfamiliar words in a context and there by their reading comprehension ability improved a lot from the pre-test to the post-test .

Guessing technique was effective proven by Merawati (2003) showed that the teaching of guessing meaning of words from context could improve reading skills and strategies. She applied a classroom action research design and had the students study vocabulary by following three cycles. Merawati's study showed that practice on guessing meaning from context helped students understand word meaning from sentences and paragraphs within the text and understand the meaning of a large amount of conceptual words.

Another research study was conducted by Hardanti (2015). Her study was aimed to investigate whether there was a significant difference of students' reading comprehension achievement before and after being taught by using guessing meaning from context strategy and to find out in terms of strategies for guessing meaning from context which strategies produced better achievement by the students. She carried out quantitative study with one group Pre-test Post-test Design, involving one class as experimental class. The instrument of her research was reading test. The result of data analysis showed that the significance value (2-tailed) was 0.000 ($p<0.05$). It means that there was a significant difference on students' reading achievement after being taught by using guessing meaning from context strategy. It could be concluded that guessing meaning from context strategy increase the students' reading comprehension in all aspects.

The three research studies above agreed that guessing technique was effective in teaching reading to improve students' reading achievement. In line with their conclusion, the result of this research proved that there was significant difference between students' achievement before and after they taught by using

guessing technique. It showed that the Guessing techniquewas effective for teaching reading especially to improve students' reading achievement of the first grade science students at MA Darul Huda Wonodadi Blitar.