

THE EFFECTIVENESS OF MIND MAPPING TECHNIQUE IN TEACHING READING COMPREHENSION OF NARRATIVE TEXT AT THE SECOND GRADE STUDENTS' OF SMA ISLAM AL-HIKMAH MAYONG IN THE ACADEMIC YEAR OF 2017/2018

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ABSTRACT

The objective of this study is to examine the effectiveness of mind mapping technique applied in teaching reading comprehension of narrative text. In this study, the data collected by using quantitative research through experimental research. The study was carried out in two classes; the experimental class and the controlled class. The data were collected through tests which were delivered into the pre-test and the post-test. The result of the study showed that using mind mapping technique is effective in teaching reading comprehension of narrative text. The gained score of the experimental class (28.46) is higher than the controlled class (21.34). from the result of statistic calculation, it is obtained that the value of t-observation (t_o) is 2.39 and the degree of freedom (df) is 50. In the table of significance 5%, the value of degree of significance is 2.00. comparing those values, the result is $2.39 > 2.00$ which means t -observation (t_o) score is higher than t -table (t_t) score. In other word, the Alternative Hypothesis (H_a) is accepted and the Null Hypothesis (H_o) is rejected. Therefore, teaching reading comprehension of narrative text by using mind mapping technique is effective.

Keywords: *Mind Mapping Technique, Reading Comprehension, Narrative Text, Experimental Study*

INTRODUCTION

English is an international language and it is used all over the world. Nowadays, English become an important language. Harmer (2007:1) states that English is a language used widely for communication between people who do not share the same first or second language. It means that English is considered as a universal language which is spoken by many people all over the world either as the first or second language. In Indonesia, English as a foreign language and it is a

compulsory subject in the curriculum. This subject is taught start from elementary school until university and also tested in the national exam.

In learning English, there are four basic skills that have to be mastered by learners. They are listening, speaking, reading, and writing. In foreign language learning, reading is skill that has to be acquired by learners. Mubarak et al (2016:26) states that reading skill as one of the language skills always plays an important role in helping students of language in order

to have better understanding of their language. It argues that reading is the most essential skill for success in all educational contexts (Brown, 2004:185). It means that learners can get and learn many things through reading. In other words, the more they read, the more knowledge they get.

Reading ability cannot be separated from comprehension. In comprehending a text, students have to be guided by a teacher which has ability to guide them properly. In addition, reading comprehensively can be facilitated by many strategies. In this case, comprehension strategy is needed by students in reading as stated by NSW Department of Education and Training (2010:4) that comprehension strategies are the cognitive and metacognitive strategies readers accomplish the goal of comprehension.

At second grade students of senior high school level, students are expected to learn some types of text, such as report, analytical exposition, narrative, hortatory exposition, and spoof. Narrative text is a common text which is used in teaching and learning activities and national examination. Narrative text is a text which tells a story using a series of events (NSW Department of Education and Communities, 2011:3). Based on the theory, it can be assumed that narrative text can be interesting and easy to study since its purpose is to entertain readers.

There are some difficulties in comprehending a text for second grade students of senior high school, especially narrative text. Commonly, they cannot find the generic structure of a story, such as orientation, complication, resolution and re-orientation and also other elements of a story, such as plot, character, and setting. Moreover, students are lack of vocabularies. It makes students cannot translate and interpret the content of a text properly. It is caused because the students are

taught through conventional strategy without appropriate teaching methodology and media in teaching and learning process of reading.

In addition, they cannot get the main and supporting idea from a text. Winanda (2015:6) states that students had difficulties in getting information from the text, in this case is narrative text. In fact, most of students also think twice before they start to read a text comprehensively, whereas reading is a long process. It can be seen when they are prefer to answer the questions quickly rather than read and comprehend the text deeply. As a result, it will lead students to have bad achievement in reading. Considering that facts, it is needed to find an applicable technique in teaching reading comprehension, where students are guided in getting proper ideas and information from a text. In this case, mind mapping technique can help students increase their competence in comprehending a written text. Buzan (2005:16) states that with mind map, a long list of boring information can be turned into a colorful, highly organized, memorable diagram that works in line with your brain's natural way of doing things. As a result, it will make students more enthusiastic and interested in teaching and learning process of reading comprehension. In addition, it can be considered that mind mapping can be an alternative technique in helping students read a text comprehensively and achieve their academic success in the future.

Based on the explanation above, the research aims to examine the effectiveness of mind mapping technique in teaching reading comprehension of narrative text. The study attempts to address the following research question: How effective is mind mapping technique in teaching reading comprehension of narrative text for the second grade students

of SMA Islam Al-Hikmah Mayong in the academic year of 2017/2018?

RESEARCH METHOD

The research method used in this study was quantitative research. The design of this experimental research is true-experimental design. The designs are called true experiment because subjects are randomly assigned to groups. Because of the control they provide, they are most highly recommended designs for experimentation in education (Ary et al, 2010:305). In addition, the data was taken from pre-test and post-test score in order to know whether or not mind mapping was effective than conventional technique.

This research was conducted in SMA Islam Al-Hikmah Mayong which is located on Jl. Pancur Gg.1 Pelemkerep, Mayong, Jepara, 59465. The writer decided four classes of the second grade students as the population of the research. Thus, the sample of this research was XI IPA-2 as the experimental class and XI IPS-1 as the controlled class. This research was carried out for a month, start from August 9th, 2017 to September 9th, 2017 in the odd semester 2017/2018.

The instruments used were pre-test and post-test. The pre-test was held on August 24th, 2017 for the experimental class and August

25th, 2017 for the controlled class. The post-test was held on September 5th, 2017 for the experimental class and September 9th, 2017 for the controlled class. It was delivered in the last time as a final test after the writer implement the treatment. After conducting post-test, the calculation of t-test was also used. T-test formula was applied to analyze the data through manual and SPSS calculation. It was used in examining the significant difference of students' reading comprehension achievement between the experimental class and the controlled class.

FINDING AND DISCUSSION

The Data Description

In this part, it shows the description of students' score in both the experimental and the controlled class. The description is divided into some sections; the pre-test scores, the post-test scores, and the gained scores.

The Pre-test Scores

The pre-test was held at the first meeting before the writer implement the treatments. It was done on August 24th, 2017 for the experimental class and August 25th, 2017 for the controlled class. The following table shows the result of pre-test:

Table 3.1
The Result of Pre-Test Scores in General

No	Classification	Experimental Class	Controlled Class
1	The Highest Score	75	75
2	The Lowest Score	35	35
3	The Median Score	55	50
4	The Average Score	53.26	49.23

The Post-test Scores

The post-test was held after treatments given to the students both in the experimental and controlled class. It was used to know the

students' progress in learning reading comprehension after the implementation of the technique and whether or not mind mapping technique effective to teach

students' reading comprehension. The post-test was held on September 5th, 2017 for the experimental class and September 9th, 2017 for the controlled class. Moreover, each test

was arranged into 20 items of multiple choices taken from students' English book. The tests were given to the experimental and controlled classes' students.

Table 3.2
The Result of Post-Test Scores in General

No	Classification	Experimental Class	Controlled Class
1	The Highest Score	95	85
2	The Lowest Score	35	35
3	The Median Score	70	55
4	The Average Score	81.73	70.57

The Gained Scores

The gained score is difference on the improvement from pre-test to post-test for the

experimental and controlled class. Here, the data reports the students' gained scores of the experimental and controlled class

Table 3.3
The Result of Gained Scores in General

No	Classification	Experimental Class	Controlled Class
1	The Highest Score	45	35
2	The Lowest Score	15	-20
3	The Median Score	25	25
4	The Average Score	28.46	21.34

The Data Analysis

This part is intended to answer the research question whether mind mapping technique is effective in teaching reading comprehension

of narrative text at the second grade students of SMA Islam Al-Hikmah Mayong. T-test was used to answer the research question by using manual calculation as follows:

Table 3.4
The Comparison Scores of Each Student in the Experimental and Controlled Class

Students	X	Y	X-MX	Y-MY	(X-MX) ²	(Y-MY) ²
1	25	25	-3.47	3.66	12.04	13.39
2	45	20	16.53	-1.34	273.24	1.79
3	25	10	-3.47	-11.34	12.04	128.59
4	25	25	-3.47	3.66	12.04	13.39
5	30	30	1.53	8.66	2.34	74.99
6	25	20	-3.47	-1.34	12.04	1.79
7	20	30	-8.47	8.66	71.74	74.99
8	20	25	-8.47	3.66	71.74	13.39
9	15	25	-13.47	3.66	181.44	13.39

Students	X	Y	X-MX	Y-MX	(X-MX) ²	(Y-MY) ²
10	20	30	-8.47	8.66	71.74	74.99
11	45	-20	16.53	-41.34	273.24	1709
12	40	25	11.53	3.66	132.94	13.39
13	20	25	-8.47	3.66	71.74	13.39
14	30	35	1.53	13.66	2.34	186.59
15	30	10	1.53	-11.34	2.34	128.59
16	40	20	11.53	-1.34	132.94	1.79
17	20	20	-8.47	-1.34	71.74	1.79
18	20	15	-8.47	-6.34	71.74	40.19
19	15	30	-13.47	8.66	181.44	74.99
20	25	40	-3.47	18.66	12.04	348.19
21	30	15	1.53	-6.34	2.34	40.19
22	35	0	6.53	-21.34	42.64	455.39
23	40	30	11.53	8.66	132.94	74.99
24	40	35	11.53	13.66	132.94	186.59
25	25	20	-3.47	-1.34	12.04	1.79
26	35	15	6.53	-6.34	42.64	40.19
Σ	740	555	-0.22	0.16	2038.46	3727.89
Mean	28.46	21.34	-0.00	0.00	78.40	143.38

The procedures of calculation are as follows:

1. The mean of variable X

$$M_x = \frac{\sum X}{N_1}$$

$$M_x = \frac{740}{26}$$

$$M_x = 28.46$$

2. The mean of variable Y

$$M_y = \frac{\sum Y}{N_1}$$

$$M_y = \frac{555}{26}$$

$$M_y = 21.34$$

3. Determining standard deviation score of variable X

$$S_x = \sqrt{\frac{\sum X^2}{N_1}}$$

$$S_x = \sqrt{\frac{2038.46}{26}}$$

$$S_x = \sqrt{78.40}$$

$$S_x = 8.85$$

4. Determining standard deviation score of variable Y

$$S_y = \sqrt{\frac{\sum Y^2}{N_1}}$$

$$S_y = \sqrt{\frac{3727.89}{26}}$$

$$S_y = \sqrt{143.38}$$

$$S_y = 11.97$$

5. Determining standard error of mean of variable X

$$S_x = \frac{S_x}{\sqrt{N_1 - 1}}$$

$$S_x = \frac{8.85}{\sqrt{26 - 1}}$$

$$S_x = \frac{8.85}{\sqrt{25}}$$

$$S_x = \frac{8.85}{5}$$

$$S_x = 1.77$$

6. Determining standard error of mean of variable Y

$$S_y = \frac{S_y}{\sqrt{N_1 - 1}}$$

$$S_y = \frac{11.97}{\sqrt{26 - 1}}$$

$$S_y = \frac{11.97}{\sqrt{25}}$$

$$S_y = \frac{11.97}{5}$$

$$S_y = 2.39$$

7. Determining standard error of different mean of variable X and variable Y

$$S_{M_x - M_y} = \sqrt{S_{M_x}^2 + S_{M_y}^2}$$

$$S_{M_x - M_y} = \sqrt{1.77^2 + 2.39^2}$$

$$S_{M_x - M_y} = \sqrt{3.13 + 5.71}$$

$$S_{M_x - M_y} = \sqrt{8.84}$$

$$S_{M_x - M_y} = 2.97$$

8. Determining t_o

$$t_o = \frac{M_x - M_y}{SE_{M_x - M_y}}$$

$$t_o = \frac{28.46 - 21.34}{2.97}$$

$$t_o = \frac{7.12}{2.97}$$

$$t_o = 2.39$$

9. Determining t-table in significance level 5% with *degree of freedom (df)*

$$d = (N_1 + N_2) - 2$$

$$d = (26 + 26) - 2$$

$$d = 52 - 2$$

$$d = 50$$

Thus, the degree of freedom (df) is 50 and the critical value of the df 50 by using the degree of significance 5% is 2.009 and the t_{observe} is 2.39. Clearly, it can be seen that the post-test score of experimental class is higher than the score of controlled class. The result of the comparison between t_{observe} and t_{table} is $2.39 > 2.00 = t_{\text{observe}} > t_{\text{table}}$.

Secondly, after analyzing the t-test score by using manual calculation, the t-test was also done by using SPSS calculation. The result can be seen as follows:

Table 3.5
The t-test of Pre-test in the Experimental Class and Controlled Class
Group Statistics

	Group	N	Mean	Std. Deviation	Std. Error Mean
Pretest	Exp	26	53.26	11.219	2.200
	Cont	26	49.23	8.909	1.747

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2- taile d)	Mean Diffe rence	Std. Error Diffe rence	95% Confidence Interval of the Difference	
									Lower	Upper
Pre tes t	Equal variances assumed	2.93 1	.093	1.437	50	.157	4.038	2.809	-1.605	9.682
	Equal variances not assumed			1.437	47.5 59	.157	4.038	2.809	-1.612	9.689

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Table 3.5 reports the t-test analysis of pre-test both the experimental and controlled class. The analysis showed that the difference was significant at .157. It indicates that there is no significant difference between the pre-test score of the experimental and controlled class which is the significance level of 0.157 is higher than 0.05. Furthermore, it means that

pre-test scores of the experimental and controlled class are equal. The group statistics table shows that the mean of the experimental is 53.26 and the mean of the controlled class is 49.23. In addition, the mean difference both the experimental and controlled class is 4.038. Moreover, the interval of the difference is between -1.605 and 9.682.

Table 3.6
The t-test of Post-test in the Experimental Class and Controlled Class
Group Statistics

	Group	N	Mean	Std. Deviation	Std. Error Mean
Posttest	Exp	26	81.73	7.340	1.439
	Cont	26	70.57	9.308	1.825

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Posttest	Equal variances assumed	.214	.645	4.797	50	.000	11.153	2.324	6.484	15.823
	Equal variances not assumed			4.797	47.422	.000	11.153	2.324	6.477	15.829

Table 3.6 describes the t-test analysis of post-test for both the experimental and controlled class. The significant difference is 0.000. This result reports that the significant level of 0.000 is lower than 0.05. In other words, it can be concluded that there was significance of the treatment. The group statistics table shows that post-test score mean of the experimental class is 81.73 and the controlled class is 70.57. Moreover, the mean difference between the experimental and controlled class is 11.153. Meanwhile, the interval of the difference is between 6.484 and 15.823.

Finally, in order to see the comparison of scores between the experimental and controlled class, the writer also took t-test measurement of gained score. Here, gained score is calculated by computing the difference between the pre-test and post-test score for each student. This step is really important to know whether there is a significant difference and to answer whether the alternative hypothesis (H_a) is accepted or rejected. The t-test calculation can be seen as following table:

Table 3.7
The t-test of Gained Scores in the Experimental and Controlled Class

Group Statistics					
	Group	N	Mean	Std. Deviation	Std. Error Mean
Gained	Exp	26	28.46	9.029	1.770
	Cont	26	21.34	12.211	2.394

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Gained	Equal variances assumed	.261	.612	2.389	50	.021	7.115	2.978	1.132	13.097
	Equal variances not assumed			2.389	46.047	.021	7.115	2.978	1.120	13.110

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The above table describes that there is a significant difference of the experimental and controlled class from measurement score. Based on the result of the statistic calculation above, the score of t_{observe} is 2.389. By using degree of freedom 5%, the value of 50 (the degree of significance) as stated in the t-table is 2.009.

The Data Interpretation

In this section, the writer explains the interpretation of the research finding. The research is conducted to answer the question whether the use of mind mapping is effective to teach students' reading comprehension of narrative text at the second grade of SMA Islam Al-Hikmah Mayong. In order to answer the question, the writer states the *Alternative Hypothesis (Ha)* and the *Null Hypothesis (Ho)* as follows:

The Null Hypothesis (H_0): there is no significant difference between students who are taught by using mind mapping technique in teaching reading comprehension of narrative text than students who are not taught by using mind mapping technique.

The Alternative Hypothesis (H_a): there is a significant difference between students who are taught by using mind mapping technique in teaching reading comprehension of narrative text than students who are not taught by using mind mapping technique.

To prove the hypothesis, the data gained in experimental and control class is calculated by using t-test formula with assumption as follows:

If $t_o > t_{\text{table}}$, the null hypothesis (H_0) is rejected and alternative hypothesis (H_a) is accepted. It is proven that mind mapping is effective to improve students' reading comprehension.

If $t_o < t_{\text{table}}$, the null hypothesis (H_0) is accepted and alternative hypothesis (H_a) is rejected. It is proven that mind mapping is not effective to improve students' reading comprehension.

Based on the analysis of the results above, there is a significant difference between the post-test score in the experimental class and the controlled class. Both of t-test results by using manual and SPSS calculation are the same. The results show that the experimental class got higher post-test score than the

controlled class. Thus, there is a significant measurement score in the experimental class and the controlled class. The data are $M_x=28.46$, $M_y=21.34$, $SD_x=8.85$, $SD_y=11.97$, $t(50)=2.39$.

The result reports that the t-test is higher than t-table ($2.39 > 2.00$). It can be defined that teaching reading comprehension of narrative text by using mind mapping is more effective than teaching reading comprehension of narrative text without mind mapping since the alternative hypothesis (H_a) was accepted and the null hypothesis (H_o) was rejected. In other words, teaching reading comprehension of narrative text by using mind mapping gives positive influence on the students' achievement of the second grade in SMA Islam Al-Hikmah Mayong.

CONCLUSION

Based on the discussion above, it can be concluded that mind mapping technique is one of applicable teaching strategy that can be applied in teaching reading. With mind mapping, students more enthusiastic and

interested in the teaching and learning process because they remember ideas and comprehend information through keyword, pattern, and colors. Shortly, mind mapping technique can be an alternative technique in helping students read a text comprehensively. Furthermore, the use of mind mapping gave significant improvement on students' reading comprehension of narrative text. This is proven based on the statistical calculation at the previous chapter, there is a significant difference between teaching reading comprehension of narrative text by using mind mapping technique and without mind mapping technique. The result shows that the value of t-test (2.39) is higher than t_{table} (2.00) at the significant level 5%. It means that the Null Hypothesis (H_o) is rejected and the Alternative Hypothesis (H_a) is accepted. In short, mind mapping technique is effective to improve students' achievement in reading comprehension of narrative text at the second grade of SMA Islam Al-Hikmah Mayong.

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