

The Effect of Mind Mapping on Reading Comprehension of Grade Eight Students in SMP N 3 Pematangsiantar

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ABSTRACT

This research attempted to find out whether there is an effect of using mind mapping in teaching reading comprehension or not. The problem of this research is about the effect of using Mind Mapping on Reading Comprehension of the Students of Grade Eight Students of SMP N 3 Pematangsiantar. To solve the problem of the research, the writer used some theories that can support this research. The writer focused on the theories of Arikunto (2006), (Alfassi, 2004; Zhang, 1993). Buzan (1994), Gay (1992:66), Grabe and Stoller (2002:13), Jacobs (2008), Salinger (2003), Napper (2007), Sujana (2006), Longman Advance Dictionary (2007). This research applied quantitative method and applied pre-test and post-test in experimental and control group. The sample of this research is the Students of Grade Eight Students of SMP N 3 Pematangsiantar. In this research, the writer took two classes as the sample. The classes are VIIIA (experimental group) consisting of 30 students and VIIIB (control group) consisting of 30 students. The total numbers of sample are 60 students. Based on the calculation of testing hypothesis, the researcher got the critical value of T_{obs} is 7,47 in the degree of freedom 58. While the T_{table} in the df at α 0,05 is 2,00. So, the result showed that T_{obs} is higher than T_{table} ($7,47 > 2,00$). The result proved that there is a significant effect of mind mapping to the students' reading comprehension. From the result of analysis, the writer concluded that there was an effect of using mind mapping in teaching reading comprehension. That was why the teacher suggested to use mapping in teaching reading comprehension in junior high school.

KEYWORDS: Mind mapping, Reading, Descriptive

Date of Submission: 18-07-2020

Date of Acceptance: 03-08-2020

I. INTRODUCTION

English has become an International language in the world; the students should master it in order to survive in the global era. There are four skills of English that is reading, writing, listening and speaking. Reading is one of the four skills which is difficult to be mastered. Reading is not a passive activity for learners as what people imagine. Reading is a difficult one even though it's not a productive skill such as speaking and writing.

Recent research on reading has shown that reading is a complex cognitive activity that is indispensable for adequate functioning and obtaining information in contemporary society (Alfassi, 2004; Zhang, 1993). In classroom activity, teacher tends to use the conventional technique to teach reading that is by giving the text to the students and they should answer the question on it.

Based on the background of the Research above, the writer states the problem as follow: What is the effect of mind mapping on students' reading comprehension on descriptive Text?

In teaching and learning process of English, there are four skills should be taught: listening, speaking, reading, and writing. In this Research, the writer focuses on reading especially reading comprehension. Reading is one of the language skills that plays an important role in foreign language acquisition. Teaching reading comprehension have many technique, such as: jigsaw, scanning, skimming, mind mapping, etc. So in this Research, the writer suggests mind mapping as the technique for teaching reading comprehension. Mind mapping is an expression of radiant thinking which includes on a nature function of human mind.

II. THEORETICAL REVIEW

A. General Concepts of Reading Comprehension

There are some definition of reading comprehension. According to Wainwright (2007:37), "Reading comprehension is a process in which the reader has to decide linguistic symbol and reconstruct them up to meaningful whole intended by the writer." Reading comprehension is only a term referring to reading skill through the important thing is not on the pronouncing or load reading, but it is the understanding taken into consideration.

Reading comprehension is a complex process which comprises the successful or unsuccessful use of many abilities. Parson and Dale (1978:8) said, "Reading comprehension is viewed as a process subject to the same constraints as human memory and problem solving." It seems to involve language, motivation, concept development, the whole of experience itself. It seems to be subject to the same constrain as thinking, reasoning and problem solving.

Based on some opinion above, the writer can conclude that reading is about understanding written text. It is a complex activity that involves both perception and thought. Reading consists of two related process, word recognition and comprehension. Word recognition refers to the process of perceiving how written symbol correspondent to one spoken language. Comprehension is the process of making sense of words, sentences and connected text.

B. Mind Mapping

1. Definition of Mind Mapping

There is the definition of mind mapping. According to Buzan (1994:59), "The mind map is an expression of radiant thinking which includes on a nature function of human mind." A mind map always radiants from a central image. Every word and image becomes in itself a subcentre of association, the whole proceeding in a potentially infinite chain of branching patterns away from or towards the common centre. Major categories radiate from a central node and lesser categories are sub-branches of larger branches. Categories can represent words, ideas, tasks, or other items related to a central key word or idea.

Based on the definition above, it can be concluded that a mind-map is a creative way to represent idea or information through diagram.

Mind-mapping was designed to use both sides to increase memory retention and productivity. It is because the brain works in different ways; different people think in different ways. However, while students thinking and reasoning follow a structure that is personal to themselves, they still use a number of techniques that apply to most people.

According to Buzan (1994:59), there are four essential characteristics of mind mapping:

- a) The subject of attention is crystallised on a central image.
- b) The main theme of the subject radiate from the sentral image as branches.
- c) Branches comprise a key image or key word printed on an associated line. Topic of lesser are also represented as branches attached to higher level branches.
- d) The branches form are a connected modal structures.

Mind map may be enhanced and enriched through colour, pictures, codes, and dimension to add interest, beauty, and individuality. This is used to help in increasing creativity, memory and specifically the recall of information. According to Buzan and Buzan (1994:96-97), there are several principles in making mind mapping, as states below:

- a) Use emphasis

- 1) Always use a central image.

An image automatically focuses the eye and the brain.

- 2) Use images throughout personal mind map.

Using images wherever possible gives all the benefits described above, as well as creating a stimulating balance between the visual and linguistic cortical skills, and improving the visual perception.

- 3) Use three or more colours per central image.

Colours stimulate memory and creativity, enabling to escape the danger of monochrome monotony.

- 4) Use dimension in images and around words.

Dimension makes things stand out, and whatever stands out is more easily remembered and communicated.

- 5) Use synaesthesia (the blending of the physical senses).

Synaesthesia refer to the senses of sight, hearing, smell, taste, touch and kinaesthesia (physical sensation).

- 6) Use variations of size of printing, line, and image.

Variation in size is the best way of indicating the relative importance of items is a hierarchy.

- 7) Use organised spacing.

Organised spacing increases the clarity of the image, helps in the use of hierarchy and categorisation, leaves the Mind Map 'open' to additions, and is aesthetically pleasing.

- 8) Use appropriate spacing.

- b) Use association

- 1) Use arrows when want to make connections within and across the branch pattern.

Arrows automatically guide the eye to connect one part of a mind map with another.

- 2) Use colours.

Colour is one of the most powerful tools for enhancing memory and creativity.

- 3) Use codes.

Codes enable to make instant connections between different parts of the mind map.

- c) Be clear
- 1) Use only one key word per line.
- 2) Print all words.
- 3) Print key words on lines.
- 4) Make line length equal to word length.
- 5) Make major branches connect to central image.
- 6) Connect lines to other lines.
- 7) Make the central lines thicker.
- 8) Make the boundaries, embrace the branch outline.
- 9) Make the images as clear as possible.
- 10) Keep the paper placed horizontally.
- 11) Keep the printing as upright as possible.
- d) Develop a personal style
- 1) Use hierarchy.
- 2) Use numerical order.

In summary, mind mapping can be maximized in using through colors, pictures, and connections. These terms will be more useful when the students also use their creativity in the process. It is undeniable that creativity lets the students to think free in mapping their minds about the reading materials. Hence, the students can comprehend the reading materials much easier.

2. The Purposes of Mind Mapping

Everything happens for a purpose. As the way to help the students easier in reading comprehension, using mind mapping also has purpose. The purpose of mind mapping is to associate between ideas, topics or things.

There are several specific purposes of mind mapping below:

- a) Mind mapping activates whole brain.
- b) Mind mapping fixes the mental tangled.
- c) Mind mapping lets the students focus on main explanation.
- d) Mind mapping helps to show the relationship between the separated information parts.
- e) Mind mapping gives clear description wholly and specifically.
- f) Mind mapping lets the students to group the concept and compare it.

Based on the explanation above, mind mapping is hoped to help the students in getting better learning process. By activating the whole brain activities, it can be concluded that mind mapping is expected to make the students easier in comprehending the text or written information.

3. The Procedure of Mind Mapping

There are several ways to make mind map. The ways will lead someone to make the mind map. There are eight steps as follow :

- a) Start with the topic in the middle of paper.
- b) Use keywords.
- c) Make the branch from the main topic.
- d) Use symbols, colours, words, or pictures mainly in the mind mapping.
- e) Make it as interesting as possible.
- f) Make it full of colours.
- g) Repeat again two or three times to make it perfect.
- h) Do it by yourself.

Other procedures of making mind map are quoted by Buzan and Buzan (1994:212-213). They points out some steps to create a mind map. There are five steps. Here are those steps:

- a) Prepare the equipment to make mind map such as paper, pencil or pen, stabile, marker or colour pen.
- b) Determine the topic, make a central image in the centre of the paper, the position of the paper is landscape, draw the topic and give colour to it. It can be the combination of three or four colours.
- c) Make a main branch which is the idea of the topic, make the word in the same length with the main branch, make a word per branch, write down the word with capital letters, and then give them some colours.
- d) Make a thin branch which is a sub-topic, add the words or pictures, add the main idea and develop it with the sub-topics. All the sub-topics are placed in every branch separately.
- e) Continue it with other ideas by making a new branch.

Furthermore, there are some steps of making a mind map. These steps consist of nine points:

- a) Make a circle of main idea in the middle of paper.

- b) Make branch from the main idea to make key points. Do not forget to use a colour pen to make it.
- c) Write the keywords or phrases in every branch and then develop them with details.
- d) Give additional symbols and illustrations.
- e) Do not forget to use capital letters.
- f) Write down the main ideas with the bigger letter.
- g) Be creative and express it freely.
- h) Use the unique form to show the points or ideas.
- i) Do not forget to make it horizontally to make a wider space.

A famous expert of mind map is Buzan (1994:97). He makes several recommendations when making mind map. These are the recommendations:

- a) Place an image or topic in the centre using at least 3 colours.
- b) Use images, symbols, codes, and dimensions throughout your mind map.
- c) Select key words and print using upper or lower case letters.
- d) Each word/image is alone and put on its own line.
- e) Connect the lines starting from the central image. The central lines are thicker, organic and flowing, becoming thinner as they radiate out from the centre.
- f) Make the lines the same length as the word/image.
- g) Use colours, your own code, throughout the mind map.
- h) Develop your own personal style of mind mapping.
- i) Use emphasis and show associations in your mind map.
- j) Keep the mind map clear by using radial hierarchy, numerical order or outlines to embrace your branches.

Among the expert' types of making mind map, there is a focus. He emphasizes the sequences in creating a graphic. It means that making a mind map is formulating information of a written text into a picture which is more interesting way to be understood by a reader.

C. Descriptive Text

Descriptive text is a kind of text which describes particular thing, animal, person, or others, for instance: our pets or a person that is known well (Wardiman, 2008: 122).

1. Social Function of Descriptive Text

The specific function of descriptive text is to give description about an object (human or non-human) (Pardiono, 2007: 34).

2. The Generic Structure of Descriptive Text

Generic structure are the special characteristic of language in the text. The generic structure of descriptive text are as follow:

a. Identification

It is part of paragraph which introduces or identifies the character to be described. It can be called general description of the subject. Usually it contains object's name, kind of the object, etc.

b. Description

It is part of paragraph which describes parts and characteristics of the person or something that will be described in detail, so the readers can get clear description of the subject.

3. The Language Features of Descriptive Text

According to Wardiman (2008: 122) the language features of descriptive text are as follow:

- a. Focus on one specific object
- b. The Use of Simple Present Tense

Pattern:

(+) S + V₁ s/es

Example: They write a letter

(-) S + do/does + not + V₁

Example: I do not bring money.

(?) Do/does + S + V₁

Example: Does she go to campus?

c. The Use of Adjectives

Example: thick, long, funny, love

Example of descriptive text

The Eiffel Tower

The Eiffel Tower is situated on the Champ de Mars in Paris. Inherent 1889, it has get to be both a worldwide symbol of France and a standout amongst the most conspicuous building on the planet. The tower is the most astounding building in Paris and the most-went by landmark on the planet; a huge number of

individuals visit it consistently. The specialist Gustave Eiffel thought of his name for this tower. The tower was constructed as the passage curve to the 1889 World's Fair.

The tower is 324 meters (1,063 ft) tall, and as tallness as a 81-story building. Upon its finish, it is higher than the Washington Monument to expect the title of tallest man-made structure on the planet, a title it held for a long time, until the Chrysler Building in New York City was inherent 1930; be that as it may, because of the expansion in 1957 of the receiving wire, the tower is presently higher than the Chrysler Building and it is the second-tallest structure in France after the 2004 Millau Viaduct.

III. RESEARCH METHODS

A. Research Design

In this research, the writer used a quantitative research. According to Aliaga and Gunderson (2000:45), "Quantitative research is explaining phenomena by collecting numerical data that are analysed using mathematically based methods in particular statistics." These experiments are sometimes referred to as true science, and use traditional mathematical and statistical means to measure results conclusively.

The writer will conduct research by using a quantitative research because this Research is about to know the effect of using mind mapping to improve students reading comprehension on report text.

B. Population and Sample

a. Population

Fraenkle and Wallen (2012:92) said, "Population is the larger group to which one hopes to apply the result, while sample is the group on which information is obtained." The population of this research are the students of Grade Eight Students of SMP N 3 Pematangsiantar which consists 6 parallel classes. One class consists of 30 students, so the population of this research are 180 students.

b. Sample

According to Arikunto (2006), sample is the proposition of a population which will be observed. The writer took 2 of the 10 parallel classes as the sample of this research. The classes are VIIIA (experimental group) consisting of 30 students and VIIIB (control group) consisting of 30 students. The total numbers of sample are 60 students..

C. The Instrument of Research

Instrument is tool of collecting data. According to Arikunto (2006:126), Instrument is the device the researcher uses to collect data is called instrument. The instrument in this research is test. Test is a means of measuring knowledge, skill, feeling, intelligences, or aptitude of an individual group. The writer required 20 questions which is 10 questions of multiple choice and 10 true or false.

The forms of multiple choice and true or false an effective technique to test a reading comprehension. The test form of multiple choice can giving choice so the learner can choose the correct answer based on their comprehending of text. While true or false give students the exact statement, they have choosing whether it is true or false. It means, when the learners have understood the text, they did not hesitate to choose the best statement.

D. The Technique of Collecting Data

A quantitative research involved two groups: experimental group and control group. Experimental group received a new treatment by using mind mapping while control group received a usual treatment by using conventional technique. To collect the data, this Research used pre-test, treatment, and post-test.

1. Pre-test

At the first meeting, the writer gave a pre-test to the students. There are 20 questions; 10 questions are in the form of multiple choice and 10 questions in the form of true or false. It was conducted to know the scores of the students reading comprehension before being taught the treatment.

2. Treatment

The treatment was conducted after the administration of the pre-test. The experimental group was taught by using mind mapping, while the control group was taught by conventional teaching without using mind mapping.

Table 3. 1
Experimental Group and Control Group

Group	Pre-test	Treatment	Post-test
Experimental	✓	Using Mind Mapping	✓
Control	✓	Conventional Technique	✓

3. Post-test

The writer gave a post-test to the students after conducting the treatment of using mind mapping to improve the students' reading comprehension. Similar to pre-test, the writer ask students to answer 20 questions in the form of multiple choice and true or false

E. The Technique of Analyzing Data

Data analysis is a technique to analyze data in order to know the result of a research. To see the effectiveness of the Research, whether it affected success or not, the researcher conducted pre-test and post-test to collect data. Then, the researcher measured the score differences from pre-test and post-test of experimental group and control group by the statistical calculation. In this Research, the researcher used t-test formula to find out whether the mean difference between the two groups were significant or not. T-test used to measure and compared the difference of means score between experimental group and control group.

The students' scores were analyzed statistically by using a procedure of t-test, with the steps below:

First, the researcher scoring the test. The test will be scores by using rank from 0-100 by counting the correct answer and applying the following formula (Hatch and Farhady, 1982:43):

$$S = \frac{R}{N} \times 100$$

Note :

S = Score of the test

R = Number of the correct answer

N = Number of test item.

Second, the researcher calculated the mean and standard deviation from overall scores of pretest and posttest of both groups. The following formula was used to calculate the mean and standard deviation:

$$X = \frac{\sum x}{N} \quad (\text{Arikunto, 2001:264})$$

Note :

X = Mean

$\sum x$ = sum of scores

N = total of the students

$$SD = \sqrt{\frac{n\sum x^2 - (\sum x)^2}{n(n-1)}} \quad (\text{Arikunto, 2001:264})$$

Note :

SD = Standard Deviation

N = number of sample in X_1 or X_2

$\sum x_1$ = the sum of the score X

Third, after collected the overall score of data of pre-test and post-test from both of groups, then the researcher calculated of the t-test used the formula below:

$$t = \frac{Mx - My}{\sqrt{\left(\frac{x^2 + y^2}{Nx + Ny - 2}\right)\left(\frac{1}{Nx} + \frac{1}{Ny}\right)}} \quad (\text{Arikunto, 2006:311})$$

Note :

Mx = The mean of experimental group.

My = The mean of control group.

X^2 = The standard deviation of experimental group.

Y^2 = The standard deviation of control group.

Nx = The total number of experimental group.

Ny = The total number of control group.

IV. FINDINGS AND DISCUSSION

I. Research Finding

1. Scoring the Test

Table 4.1
The Score of Pre-Test of Experimental Class

No.	Name of Students	Pre-Test Score (X)	Post-Test Score (Y)
1.	ALS	70	85
2.	CN	65	75
3.	CS	70	85
4.	DB	70	80
5.	ES	50	65
6.	FS	50	75
7.	FJS	55	75
8.	GMS	65	75
9.	HBP	55	85
10.	IP	25	90
11.	JT	30	70
12.	JRS	55	70
13.	LVS	60	80
14.	LWS	65	85
15.	NFS	55	70
16.	NS	50	80
17.	PRS	65	85
18.	RP	60	85
19.	RA	60	75
20.	SGH	55	75
21.	SRS	70	65
22.	SS	70	90
23.	TMS	65	80
24.	VD	40	85
25.	WD	55	70
26.	WS	55	80
27.	YS	60	70
28.	Y	60	75
29.	YA	65	70
30.	ZP	65	70

Table 4.1 above shows that in Experimental group, the highest score in pre-test (X_{max}) is 70 and the lowest score (X_{min}) is 25 while in post-test, the highest score in Experimental group (X_{max}) is 90 and the lowest score (X_{min}) is 65.

Table 4.2
The Score of Pre-Test of Control Group

No.	Name of Students	Pre-Test Score (X)	Post-Test Score (Y)
1.	AL	50	50
2.	CS	60	67
3.	DS	60	68
4.	DP	65	70
5.	EN	70	55
6.	FT	50	60
7.	GS	60	65
8.	GT	70	65
9.	HD	70	75
10.	IS	65	65

No.	Name of Students	Pre-Test Score (X)	Post-Test Score (Y)
11.	JN	70	50
12.	JS	75	75
13.	KS	60	70
14.	MP	75	70
15.	NS	70	70
16.	PR	60	75
17.	RS	65	70
18.	RSI	70	75
19.	RS	80	75
20.	RH	85	60
21.	RG	70	65
22.	SS	60	70
23.	SY	75	80
24.	STS	70	80
25.	TS	60	75
26.	VS	70	70
27.	WS	60	75
28.	WS	60	70
29.	YL	70	65
30.	YS	75	70

Table 4.2 above shows that in Control group, the highest score in pre-test (X_{max}) is 85 and the lowest score (X_{min}) is 50, While in Control group, the highest score in post-test (X_{max}) is 80 and the lowest score (X_{min}) is 50.

2. The Effect of Mind Mapping

Table 4.3
The Score of Pre-Test and Post Test of Experimental Class

No	Name of Students	Pre-Test Score (X)	Post-Test Score (Y)	X ²	Y ²	XY
1.	ALS	70	85	4900	7225	5950
2.	CN	65	75	4225	5625	4875
3.	CS	70	85	4900	7225	5950
4.	DB	70	80	4900	6400	5600
5.	ES	50	65	2500	4225	3250
6.	FS	50	75	2500	5625	3750
7.	FJS	55	75	3025	5625	4125
8.	GMS	65	75	4225	5625	4875
9.	HBP	55	85	3025	7225	4675
10.	IP	25	90	625	8100	2250
11.	JT	30	70	900	4900	2100
12.	JRS	55	70	3025	4900	3850
13.	LVS	60	80	3600	6400	4800
14.	LWS	65	85	4225	7225	5525
15.	NFS	55	70	3025	4900	3850
16.	NS	50	80	2500	6400	4000
17.	PRS	65	85	4225	7225	5525
18.	RP	60	85	3600	7225	5100
19.	RA	60	75	3600	5625	4500
20.	SGH	55	75	3025	5625	4125
21.	SRS	70	70	4900	4900	4900
22.	SS	70	90	4900	8100	6300
23.	TMS	65	80	4225	6400	5200
24.	VD	40	85	1600	7225	3400
25.	WD	55	70	3025	4900	3850

No	Name of Students	Pre-Test Score (X)	Post-Test Score (Y)	X ²	Y ²	XY
26.	WS	55	80	3025	6400	4400
27.	YS	60	70	3600	4900	4200
28.	Y	60	75	3600	5625	4500
29.	YA	65	70	4225	4900	4550
30.	ZP	65	70	4225	4900	4550
	TOTAL	$\sum X=1735$	$\sum Y=2320$	$\sum X^2=103875$	$\sum Y^2=174350$	$\sum XY=134525$

The researcher has listed the marks of pre-test and post-test of experimental class in the table above. It shows that the lowest score of the pre-test is 25 and the highest is 75, while the lowest score in post-test is 65 and the highest is 90. After listing the name and the score, the researcher calculated the sum of all pre-test and post-test scores. The result showed that the sum of pre-test ($\sum X$) is 1735 while the sum of post-test ($\sum Y$) is 2320. After getting the sum of pre-test and post-test then researcher squares the score of pre-test and post-test that shown in rows of X² and Y². Then the result shows that the sum of X² ($\sum X^2$) is 103875 and sum of Y² ($\sum Y^2$) is 174350. While, the sum of multiplication of X and Y ($\sum XY$) is 134525. The data shows that the ability of the students in post-test is more increasing than in pre-test. Below is the table that shows the students' scores in control class.

Table 4.6
The Result of Pre-Test and Post-Test of Control Group

No.	Name of Students	Pre-Test Score (X)	Post-Test Score (Y)	X ²	Y ²	XY
1.	AL	50	55	2500	3025	2750
2.	CS	60	60	3600	3600	3600
3.	DS	60	65	3600	4225	3900
4.	DP	65	65	4225	4225	4225
5.	EN	70	75	4900	5625	5250
6.	FT	50	65	2500	4225	3250
7.	GS	60	50	3600	2500	3000
8.	GT	70	75	4900	5625	5250
9.	HD	70	70	4900	4900	4900
10.	IS	65	70	4225	4900	4550
11.	JN	70	70	4900	4900	4900
12.	JS	75	75	5625	5625	5625
13.	KS	60	70	3600	4900	4200
14.	MP	75	75	5625	5625	5625
15.	NS	70	75	4900	5625	5250
16.	PR	60	60	3600	3600	3600
17.	RS	65	65	4225	4225	4225
18.	RSI	70	70	4900	4900	4900
19.	RS	80	80	6400	6400	6400
20.	RH	85	80	7225	6400	6800
21.	RG	70	75	4900	5625	5250
22.	SS	60	70	3600	4900	4200
23.	SY	75	75	5625	5625	5625
24.	STS	70	70	4900	4900	4900
25.	TS	60	65	3600	4225	3900
26.	VS	70	70	4900	4900	4900
27.	WS	60	65	3600	4225	3900
28.	WS	60	60	3600	3600	3600
29.	YL	70	75	4900	5625	5250
30.	YS	75	75	5625	5625	5625
	TOTAL	$\sum X=2000$	$\sum Y=2070$	$\sum X^2=135200$	$\sum Y^2=144300$	$\sum XY=139350$

The researcher has listed the marks of pre-test and post-test of control class in the table above. It shows that the lowest score of the pre-test is 50 and the highest is 85, while the lowest score in post-test is 50 and the highest is 80. After listing the name and the score, the researcher calculated the sum of all pre-test and post-test scores. The result showed that the sum of pre-test ($\sum X$) is 2000 while the sum of post-test ($\sum Y$) is 2070. After getting the sum of pre-test and post-test then researcher squares the score of pre-test and post-test that shown in rows of X^2 and Y^2 . Then the result shows that the sum of X^2 ($\sum X^2$) is 135200 and sum of Y^2 ($\sum Y^2$) is 144300. While, the sum of multiplication of X and Y ($\sum XY$) is 139350. The data shows that the ability of the students in post-test is more increasing than in pre-test.

3 . Testing the T-Test Formula

In order to know whether there is any effect of mind mapping on students' reading comprehension, the difference of mean scores on experimental group and control group are calculated by using t test.

Table 4.7 Experimental Group

No	Name of Students	Pre-Test (T ₁)	Post-Test (T ₂)	T ₂ -T ₁ (d)	D ²
1.	ALS	70	85	15	225
2.	CN	65	75	10	100
3.	CS	70	85	15	225
4.	DB	70	80	10	100
5.	ES	50	65	15	225
6.	FS	50	75	25	625
7.	FJS	55	75	20	400
8.	GMS	65	75	10	100
9.	HBP	55	85	30	900
10.	IP	25	90	65	4225
11.	JT	30	70	40	1600
12.	JRS	55	70	15	225
13.	LVS	60	80	20	400
14.	LWS	65	85	20	400
15.	NFS	55	70	15	225
16.	NS	50	80	30	900
17.	PRS	65	85	20	400
18.	RP	60	85	25	625
19.	RA	60	75	15	225
20.	SGH	55	75	20	400
21.	SRS	70	70	0	0
22.	SS	70	90	20	400
23.	TMS	65	80	15	225
24.	VD	40	85	45	2025
25.	WD	55	70	15	225
26.	WS	55	80	25	625
27.	YS	60	70	10	100
28.	Y	60	75	15	225
29.	YA	65	70	5	25
30.	ZP	65	70	5	25
	TOTAL	$\sum=1735$	$\sum=2325$	$\sum=590$	$\sum=16400$

Table 4.8 Control Group

No.	Name of Students	Pre-Test (T ₁)	Post-Test (T ₂)	T ₂ -T ₁ (d)	D ²
1.	AL	50	55	5	25
2.	CS	60	60	0	0
3.	DS	60	65	5	25
4.	DP	65	65	0	0
5.	EN	70	75	5	25
6.	FT	50	65	10	100
7.	GS	60	50	-10	100
8.	GT	70	75	5	25

No.	Name of Students	Pre-Test (T ₁)	Post-Test (T ₂)	T ₂ -T ₁ (d)	D ²
9.	HD	70	70	0	0
10.	IS	65	70	5	25
11.	JN	70	70	0	0
12.	JS	75	75	0	0
13.	KS	60	70	10	100
14.	MP	75	75	0	0
15.	NS	70	75	5	25
16.	PR	60	60	0	0
17.	RS	65	65	0	0
18.	RSI	70	70	0	0
19.	RS	80	80	0	0
20.	RH	85	80	-5	25
21.	RG	70	75	5	25
22.	SS	60	70	10	100
23.	SY	75	75	0	0
24.	STS	70	70	0	0
25.	TS	60	65	5	25
26.	VS	70	70	0	0
27.	WS	60	65	5	25
28.	WS	60	60	0	0
29.	YL	70	75	5	25
30.	YS	75	75	0	0
TOTAL		Σ=2000	Σ= 2070	Σ= 65	Σ=675

The value of $t_{\text{observed}} = 7,47$, $df = 58$ and $t_{\text{table}} \text{ in } 5\% = 2,00$. Based on the result, t_{observed} was higher than $t_{\text{table}} 7,47 > 2,00$. So, the researcher conclude that there is a significant effect of mind mapping to the reading comprehension grade eleventh students of SMP Negeri 7 Pematangsiantar on descriptive text.

4. The Testing Hypothesis

The researcher has formulated the hypothesis of this researcher in chapter III as follow:

Ha : the students who are taught by using mind mapping will get higher comprehension in reading than those who are taught without using mind mapping.

Ho : the students who are taught by using mind mapping will not get higher comprehension in reading than those who are taught without using mind mapping.

According to the statistic calculation, it is obtained the value of t_{obs} is 7,47 and the degree of freedom (df) is 58 obtaining from =

$$\begin{aligned} df &= N_x + N_y - 2 \\ &= 30 + 30 - 2 \\ &= 58 \end{aligned}$$

So, the writer made the conclusion of the hypothesis that t_o is bigger than t_t namely $7,47 > 2,00$. It means that the alternative hypothesis (Ha) is accepted and null hypothesis (Ho) is rejected.

After the researcher has done a research and has collected the data and then the researcher calculated the data, the researcher got finding from the result of data calculation. Based on the calculation of testing hypothesis, the researcher got the critical value of T_{obs} is 7,47 in the degree of freedom 58. While the T_{table} in the df at $\alpha 0,05$ is 2,00. So, the result showed that T_{obs} is higher than $T_{\text{table}} (7,47 > 2,00)$. The result proved that there is a significant effect of mind mapping to the students' reading comprehension. It is proven based on the mean of experimental class is higher than control class. The researcher concluded that Ho (the students who are taught by using mind mapping will not get higher comprehension in reading than those who are taught without using mind mapping) is rejected.

V. DISCUSSION

The purpose of this thesis is basically to find out of the effect of mind mapping to the students' comprehension. It is expected to improve students' reading comprehension. The reality indicates that the students became more activated in reading comprehension. The researcher had given a test about the using of mind mapping to improve the students' ability and analyse it to get the score of the students. To know the level of students reading comprehension the researcher used the Hatch and Farhady theory in which to find out

the level of students. By using mind mapping, the teacher could create an interesting teaching learning process in classroom because the students' could be happy and they would not get bored.

VI. CONCLUSION AND SUGGESTION

After analyzing the data presented in the previous chapter, so the researcher got some conclusions as follows: After using mind mapping, the students' reading comprehension is better, it can be seen from the mean of score from pre-test and post-test. The result showed that T_{obs} is higher than T_{table} ($7,47 > 2,00$). The result proved that there is a significant effect of mind mapping to the students' reading comprehension. It means that the alternative hypothesis (H_a) is accepted, while the null hypothesis (H_0) is rejected. In other words it can be said that mind mapping more significantly affects the students' reading comprehension of descriptive text. It is hoped that the teachers should use the mind mapping technique more often so that the students' reading comprehension could be improved and the students need to practice and to improve their reading.

Based on the findings, some suggestions are recommended, namely: (1) the English teachers should apply Mind Mapping in reading comprehension, (2) the students should be active in comprehending reading text, (3) for the other researchers, it needs further researches to find out why the interaction does not occur in reading skill.

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Firinta Togatorop. "The Effect of Mind Mapping on Reading Comprehension of Grade Eight Students in SMP N 3 Pematangsiantar." *IOSR Journal of Humanities and Social Science (IOSR-JHSS)*, 25(8), 2020, pp. 09-20.