

The effectiveness of using Mind Mapping Technique to improve students' reading comprehension in the Narrative Text

Muhammad Husaein Jaya Negara¹, Ujang Suparman², Khairun Nisa³

Universitas Lampung, Jl. Prof. Dr. Sumantri Brojonegoro, Rajabasa, Bandar Lampung^{1,2,3}

¹Correspondence: ucenjr123@gmail.com

Abstract. The objectives of this research were to investigate if there was an improvement in students' reading comprehension and to find out students' attitudes toward the implementation of the mind mapping technique for teaching reading comprehension. The samples of this research were 30 students of first-year students of SMAN 1Natar. The data were obtained through a pre-test and post-test in which the results were analyzed by using *Paired Sample T-Test*. The results of the research showed that there was a significant improvement in students' reading comprehension since the t-value was 9.253 with the significance level of 0.00 and the student's attitude toward the implementation of the technique was positive. It can be concluded that the mind mapping technique enables students to improve their reading comprehension and they have a positive attitude toward the use of the strategy for teaching reading.

Keywords: *mind mapping technique, reading comprehension, students' attitude*

I. INTRODUCTION

There are four skills in English that students need to acquire, i.e., listening, speaking, reading, and writing. Those skills are related to each other and cannot be separated. Therefore, learners need to master all of the four skills. Chitra and Thiagarajan (2001) state that mastering language skills will determine students' communicative competence in the target language. In communication itself, there are two macro skills of language, they are receptive and productive skills. Speaking and writing are parts of productive skills for communicating and delivering learners' ideas while listening and reading are parts of receptive skills from which learners receive and understand language as well as gain the meaning of the message (Masduqi, 2016).

As a receptive skill, reading plays an important role in expanding students' knowledge of a language through its important activities (Patel and Jain, 2008). It is not simple because the readers should combine their background knowledge with the information from the text (Anderson, 2008). According to Pang, Angaluki, Elisabeth and Michael (2003) reading consists of two related processes, word recognition and comprehension; word recognition refers to the process of perceiving how written symbols correspond to the spoken language and comprehension refers to the process of making sense of words, sentences, and connected text.

According to Suparman (2005), there are two major reasons for reading, reading for pleasure and reading for gaining information. In order to gain information from a text, learners need more comprehension for understanding the content of the text. McNamara (2006) states that a reading comprehension strategy is a cognitive or behavioural action that is enacted under particular

contextual conditions to improve some aspects of comprehension. For example, when students find a new word in the text that they do not know the meaning of, they consult their dictionary to find the word as a behaviour action and read the word's definition in a dictionary as a cognitive action. It is in line with Shihab (2011) reading is sophisticated activity, which includes psychological, linguistic, and sociological aspects. In the reading process, we cannot separate reading from comprehension because we take something from reading and derive meaning from those words in reading text.

The researcher found a problem that the students did not understand the lesson well because most of them weren't reading the text effectively. As a result, the students did not comprehend the text optimally. It implies that the teacher did not implement an effective technique to make the students more active and to encourage them to increase their reading comprehension ability. Thus, to solve those problems mentioned, it could be concluded that the teachers need an appropriate technique to facilitate the students in reading. Teachers have to apply a suitable technique to improve their students' reading comprehension ability. One of the appropriate techniques which can improve students' reading ability is the mind mapping technique. Mind mapping technique orders many keywords in every branch. The keywords in the branches could suggest a new idea or topic make the learners comprehend text easily. In other words, it helps students to associate ideas, think creatively, and make connections in a sentence.

Buzan (2007) says that by using mind mapping, people could represent ideas into visualization and graphic forms where one idea is connected to another idea by using branches. Besides, he also says that by using mind mapping, it is easy for people to put information into their memory. Mind mapping is a diagram that has functions as a way to organize ideas and represent words, tasks or another link that arranges a central keyword by branches and typically it contains words, colours, short phrases and pictures (Buzan, 2006). Buzan also says that mind mapping is a primary tool used for stimulating thought that shows ideas that are generated around a central theme and how they are interlinked. He also says that the education system primarily focuses on the left and right brain strengths which includes the use of language, logic, numbers, sequence, looks at detail, linear, symbolic representation and judgmental characteristics.

Therefore, the researcher decided to investigate the improvement of students' reading comprehension ability after the implementation of the technique and to find out students' attitudes toward the implementation of the technique. Based on the explanation above, the researcher was interested in researching the effectiveness of using the mind mapping technique to improve students' reading comprehension in the narrative text.

II. METHODS

This research used a quantitative method which used a one-group pre-test post-test design. The researcher investigated whether there was a significant improvement in students' reading

comprehension ability by using the mind mapping technique and found out students' attitudes after the implementation mind mapping technique. The instruments of this research were reading tests and attitude's questionnaires. The researcher took one class through purposive sampling as a sample of this research. The population of this research were the first-year students of SMAN 1Natar and the sample was X science 1 consisted of 30 students. The researcher conducted the pre-test to measure students' ability in comprehending the text before the treatment. After giving the pre-test, the treatment was conducted three times. To know the result, the researcher gave a post-test to measure students' ability in comprehending the text after the treatment. Then, the researcher compared the result between pre-test and post-test and analyzed it using *Paired Sample T-Test*.

III. RESULTS AND DISCUSSIONS

Results

After conducting the research, the researcher gathers the results of the pre-test and post-test after the implementation of the mind mapping technique.

Table 1. Improvement of Students' Reading Comprehension

Mean Score Pre-Test	Mean Score Post-Test	Gain
62.1	75.4	13.3

Table 1 shows that the mean score of the pre-test is 62.1 and the mean score of the post-test is 75.4. It is clear that the students' reading comprehension increased after the implementation of the mind mapping technique with the gain is 13.3.

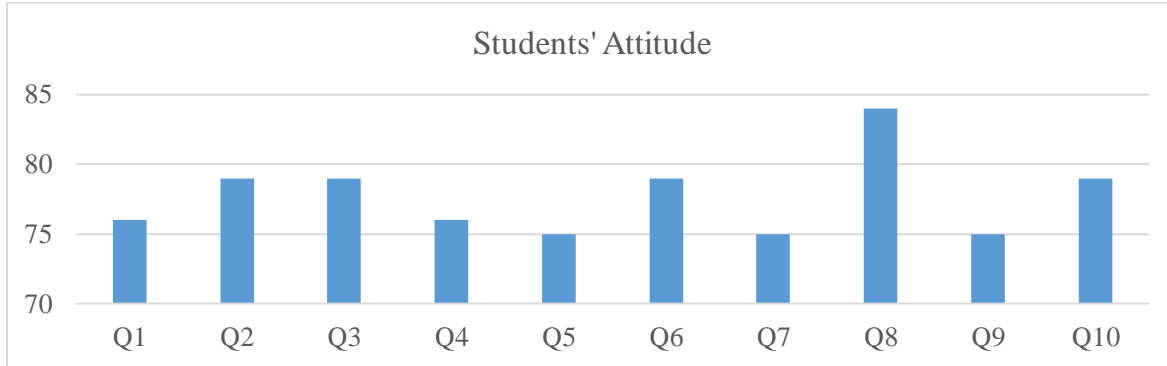
Table 2. Analysis of the Hypothesis Testing

Paired Samples Test

		Paired Differences				T	df	Sig. (2-tailed)	
Pair 1	Posttest – Pretest	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
		13.3200	7.8843	1.4395	10.3760	16.2640	9.253	29	.000

Table 2 provides evidence that the result of the computation of the value of two-tailed significance is 0.000 which is lower than 0.005. It means that H_1 is accepted and H_0 is rejected. It proves that there is an improvement in students' reading comprehension from pre-test to post-test after being taught by using the mind mapping technique. Thus, if the t-value (9.253) is compared with the t-table (2.045), it can be seen that the student's reading comprehension is increased since the t-value > t-table. As a result, there is an improvement in the students' reading comprehension after being taught by the mind mapping technique for the first-grade students of SMAN 1Natar. Therefore, the hypothesis was accepted.

Graph 1 Result of the Questionnaire



Graph 1 shows the result of the attitude's questionnaire. Based on the data obtained from the questionnaire, it was found that the majority of students agree to use the mind mapping technique to apply in reading comprehension. It can be concluded that the student's attitudes toward the use of the mind mapping technique were positive.

Discussions

1.The Improvement of Students' Reading Comprehension using Mind MappingTechnique

The purpose of this research was to investigate whether there was a significant improvement in students' reading comprehension ability and to find out the attitude after the implementation of the mind mapping technique. The students' scores in pre-test and post-test were compared to know the improvement of students' reading comprehension. The result of the research indicated that an increase in students' reading comprehension scores in the experimental class after treatment is given. The data showed the improvement of reading comprehension ability was at the significance level with significance < 0.05 . The data were gotten after the researcher implemented the technique. Then, this study found that the implementation of the mind mapping technique was effective. After conducting pre-test and post-test, the data were run by SPSS 16.0 for windows and analyzed by using *Paired Sample T-Test*. As a result, the students' scores of pre-test and post-test were compared to determine the students' significant improvement.

Hallen and Sangeetha (2015) found that the mind map method could be of much help to the teacher to teach English moreeffectively and believe that the same technique may bring positive results if applied in theteaching of other branches of other English subjects.This is in line with Buran and Filyukov (2015) also found that the use of mind mapping techniquethe mind mapping technique can be successfully implemented in the language classroom, providing a creative and available tool for students, educators, and researchers.

Furthermore, the highest increase of the result is in making inference and the lowest improvement is in identifying the main idea. The improvement of students' scores is caused by all the processes of applying the mind mapping technique. It helps students to associate their background knowledge and information from the text that they have read. This is in line with Graesser and Wiemer (2001) says that inference is the output of the interaction between the reader's knowledge and the

information in the text. In the learning process, the researcher asked the students to make a concept mind map from the text that they have read and identified the relation of each word in their mind map along with summarizing their form of mind map to know their output after they read the text. As the result, it helps them to comprehend the text easily.

On the other hand, the lowest improvement is identifying the main idea. This happened because the students were too lazy to read long sentences and lack an understanding of sentence patterns to identify the main idea. It is in line with Dwiarti (2005) who says that the length of the sentence and poor technique are problems that students are facing in identifying the main idea. Therefore, this might be the reason why identifying the main idea became the lowest improvement.

2. Students' Attitude toward Mind Mapping Technique

The second research question of the research is to find out how the students' attitude using mind mapping technique in teaching reading comprehension. After the implementation of the mind mapping technique, the attitude's questionnaire was administered. The questionnaire consisted of 10 statements that could illustrate whether the implementation of the mind mapping technique could give students' a positive attitude and improve their reading comprehension ability or not. According to Mothersbaugh and Hawkins (2016) attitude is divided into three components, cognitive, affective, and conative. Those three components show students' beliefs, emotions, and also behaviours toward the mind mapping technique.

Based on the data, the first component is cognitive. The item numbers of the questionnaire are statements one until three. The first statement is "*Saya memahamipapa yang dimaksuddengan mind mapping technique*". The second statement is "*Saya yakinbahwa mind mapping technique akanmenimbulkanhubungan timbal balik yang salingmenguntungkanantarasiswa dengan guru*". The third statement is "*Saya memahami bahwa mind mapping technique bertujuan agar siswaberperanaktifdalamsetiap pembahasan*". The researcher found that most of the students preferred the researcher applying the mind mapping technique in reading comprehension. It is because the mind mapping technique makes them interested in reading comprehension. It made the students know the benefits of using the mind mapping technique to comprehend the text.

The second component is affective. The item numbers of the questionnaire are statement four until seven. The fourth statement is "*Saya merasa senang karena mind mapping technique bermanfaat untuk proses pembelajaran*". The fifth statement is "*Saya merasasenangdengan mind mapping technique karenasayadapatberpartisipasidalamsetiap pembahasan*". The sixth statement is "*Saya merasatermotivasiikutdalampelajaranbahasainggrismenggunakan mind mapping technique*". And the seventh statement is "*Saya merasalebihpercaya dirisaat menggunakan mind mapping technique dalampembelajaran*". Based on the data, the researcher stated that the students enjoy using mind mapping technique in the learning process. It happened because mind mapping technique could make the students enthusiastic about using the technique.

The third component is conative. The item numbers of the questionnaire are statement eight until ten. The eighth statement is "*Model pembelajaran mind mapping technique dalam proses*

pembelajaran membuat saya rajin untuk membaca untuk mendapatkan pengetahuan”. The ninth statement is *“Dengan melakukan pembelajaran menggunakan mind mapping technique memudahkan saya untuk menulis ringkasan dari teks yang telah dibaca”*. And the tenth statement is *“Setelah melakukan pembelajaran menggunakan mind mapping technique, saya dapat menjawab pertanyaan-pertanyaan berdasarkan teks yang dibaca dengan baik”*.

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After the implementation of the mind mapping technique, it can be implied that the students felt the effect of using the mind mapping technique in reading comprehension. It was obtained because the technique could increase their reading comprehension. The result of the questionnaire is positive, which can be concluded that most of the students agree with using the mind mapping technique in the learning process of reading. This is in line with Karahan (2007) who states language attitudes let learners have a positive influence on learning English and play a crucial role in students' success or failure in language learning processes.

The positive influence and students' motivation shows that the effective utilization of the mind mapping technique in reading activity can make them curious about the text by making mind map concept to recall their memory after reading. The mind map concept that they have formulated could help them to comprehend the content of the text. It could trigger the students' creativity, organization, productivity, memory and improve their reading comprehension. Furthermore, the students feel motivated and enjoyable in implementing the mind mapping technique in teaching reading. In line with Buzan (2005) that mind mapping is a creative thinking tool reflecting the brain's way to work. It enables the brain to use all its images and association in the pattern of radial and brain internally. It is the easiest way to place information that goes out from the brain. Mind mapping is a way to write creatively and effectively. The improvement of the students after the implementation of the mind mapping technique was supported by the result of the attitude's questionnaire. The data showed that 77.73% of students agreed that the implementation of this technique could help them increase their reading comprehension ability. It means that the technique made the students be more active and enjoy comprehending the text well.

IV. CONCLUSIONS AND SUGGESTIONS

Conclusions

Based on the result of data analysis and discussions, the researcher concludes that there is a significant improvement in students' reading comprehension before and after the implementation of the mind mapping technique. It can be seen from the result of the hypothesis that the significance level is lower than alpha ($0.00 < 0.05$). It can be concluded that the use of the mind mapping technique improved students' reading comprehension.

Besides that, students' attitude toward the implementation of the mind mapping technique in teaching reading comprehension is positive. The majority of students agree if the technique is applied. They seem to enjoy the learning process.

Suggestions

Regarding the several conclusions above, the researcher would like to propose some suggestions. Firstly, for the teacher, it is suggested to apply the mind mapping technique as an alternative technique in teaching reading because it can help the students comprehend the text easier. Students should preview the text at home. The teacher also has to make a clear instruction in order to control the class, to make sure that the students can follow the instructions and focus on the material. The teacher can apply other kinds of text like descriptive text, recount text, report text, etc.

Secondly, for the further researcher, it is suggested to conduct this technique more than three meetings in order to get more accurate results of data. A longer frequency of the treatment day is needed to get a better finding. It is also suggested to include another proper method of data collection like the interview to make the result of the data more informative. Moreover, the researcher also suggests other researchers apply different kinds of text and find out the effect of using mind mapping technique in other skills such as reading, listening and speaking.

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