THE USE OF MIND MAPPING IN TEACHING READING COMPREHENSION

Rissa San Rizqiya
STKIP Siliwangi, Bandung

ABSTRACT

It is reported by World Bank that Indonesian students' reading comprehension is very low. That is why, it is crucial to conduct a research on appropriate techniques to develop students' reading comprehension. One of them is mind mapping (MM). MM is a technique that can increase one's ability in note taking. It not only includes the key words of information or ideas but also implements the use of colors and drawing, thus MM project becomes fun and enjoyable. The aim of this study is to observe the implementation of MM in a class of first graders of a senior high school in Bandung. For that reason , two meetings are observed. There are three instruments employed: students' mind maps, observation (by observer and the teacher), and open-ended questionnaire. From the data obtained, it is revealed that there is improvement from the first meeting (90.4%) to the second one (94.6%) of the students mind maps. The MM can make the students recall their background knowledge and focus on their reading. Meanwhile, the questionnaires indicate that they are unfamiliar with the technique, yet they enjoy it. Therefore, MM can be considered to be an alternative technique in teaching reading comprehension.

KEYWORDS: *mind mapping, open-ended questionnaire*

A. Introduction

World Bank on its report "*Education in Indonesia - From Crisis to Recovery"* (cited in Supriyoko, 2004) states that Indonesian students reading comprehension is very low. This problem, however, does not only occur in Indonesia. Lyod (cited in Strydom and Plessis, 2009) affirms approximately 20 to 30 percent USA school-age children have difficulties in learning to read. Moreover, the lack of reading comprehension negatively affects human behavior. This is in line with Lyon (cited in Wolfe and Nevills, 2001: 1-2) who affirms that at least half of adults and adolescents who did crime have reading difficulties. Therefore, reading comprehension is one of the aspects that should receive a great attention from teachers and be practiced frequently by students.

Additionally, reading comprehension, reading habit, and reading interest have a positive correlation (Supriyoko, 2004). The low of reading comprehension is a consequence of the low reading habit, which is due to reading interest. Therefore, with the intention of improving the students' reading habit and comprehension, the teacher has to increase the students' reading interest in the beginning. One of the ways to increase the students'

reading interest is by providing them the materials that will be enjoyable and challenging to read.

Narrative is considered appropriate to facilitate the requirement. It includes story telling, which will interest the students to develop their curiosity. However, since the students in this study are the first graders of senior high school, they are also obliged to be familiar with the generic structure of the text. Hence, the duty of the students is not only to read the text but also to recognize the generic structure of the text. This could be a boring activity for the students since the technique that is used would not be far away from Grammar Translation Method; therefore the teacher should be creative to find an appropriate technique that can lessen the boredom.

Related to the issue of improving students' reading comprehension, many techniques have been proposed to help the students improve their reading ability. One of the techniques proposed by some experts to widen up our mind is by mind-mapping. It is not only done by restricted professions but almost in all fields, not to mention education. Based on Wikipedia, "a mind map is a diagram used to represent words, ideas, tasks, or other items linked to and arranged radially around a central key word or idea". By mind-mapping, the students also train the left side of brain because it deals color, draw, and creativity. A further explanation about this technique will be discussed in the following chapter.

Although mind mapping is claimed of having been conducted almost in all fields, the observation of its implementation in reading comprehension was still limited. Therefore the purpose of this study was to observe the implementation of mind mapping in teaching reading comprehension. During the study, it was expected to find out whether mind mapping could be used as an alternative technique to develop students' reading comprehension; also to find out the students' and the teacher's opinion about mind mapping; and to find out the problems occur during teaching reading comprehension through mind mapping as well.

B. Literature Review

The sub-chapter explains about the theory of this study. It includes the theory of reading: definitions and purposes, reading comprehension process, and mind mapping relates to reading comprehension.

1. Reading: Definitions and Purposes

Many experts proposed the definition of reading. This subchapter will discuss some definitions of reading and the purposes of reading.

Reading is an active process that communicates the author and the reader. As stated by Barnett (1989, cited in Hadley, 2001: 177) who defined reading "as communication, as a mental process, as the reader's active participation in the creation of meaning, as a manipulation of strategies, as a *receptive* rather than as *passive skill*". Along with Barnett, Thorndike (1917, cited in Silberstein, 1994: 6) established that reading is an active process related to problem solving. In contrast, Silberstein (1994: 6) argued that reading is an active process in order to create meaningful discourse. Nevertheless both agreed that reading is an active process; regardless creating meaningful discourse or

solving a problem. It was stated that reading as an active skill due to the involvement of the reader to process the text they read in their mind.

The process in the reader's mind itself is not so simple. It was supported by Pang, et al. (2003) who identified reading as a complex activity in order to understand written text which involves both perception and thought. Meanwhile Grabe and Stoller (2002: 9) defined reading as "the ability to draw meaning from the printed page and interpret this information appropriately." Both definitions concurred at the complexity of the reading process that involved written text or printed page and interpreting it by perception and thought to get the information correctly.

Moreover McGinnis and Smith (1982: 13) defined reading, as "a purposeful process of identifying, interpreting, and evaluating ideas in terms of the mental content or the total awareness of the reader." It may be concluded that the reader set the purpose of the reading before she began the reading process. In line with McGinnis and Smith, Hadley (2001: 205) believed that the successful of reading comprehension depends on the purpose of the reading itself.

Many experts proposed the purposes of reading. However this paper will only jot down some of them. Grabe and Stoller (2002:13) pointed up seven purposes for reading:

1) to search for simple information,

2) to skim quickly,

3) to learn from the texts,

4) to integrate information,

5) to write,

6) to critique texts, and

7) to comprehend the text generally.

In addition, Tarigan (1994: 9-10) stated seven purposes of reading:

1) reading for details or facts,

2) reading for main ideas,

3) reading for sequence or organization,

4) reading for inference,

5) reading for classifying,

6) reading for evaluating, and

7) reading for comparing or for contrasting.

Additionally, Day and Bamford (2002) proposed that a reader reads a text generally for pleasure, information, and general understanding.

In spite of the lists above, the writer tends to be in agreement that the purpose of reading is categorized into two, intensive and extensive reading. The terms were introduced by Munby (1979, cited in Hadley, 2001: 205). Intensive reading requires readers to understand both linguistic and semantic aspect as well as paying attention to the text. While in extensive reading, speed and skill in getting the general picture, play important

role in reading process. The purpose of extensive reading is to get the general idea of the text, usually for pleasure, whether it is to enjoy a story, to get the main idea, to know the author's intent, or to react personally to the text.

2. Reading Comprehension Process

Many researches have been conducted to reveal how the human brain works when the reading process is performed. Many theories emerged. Some of them mutually supported, while some reciprocally opposed. However they seemed to be agreed that reading is the most complicated process of individual reception (Shaywitz, cited in Wolfe and Nevills, 2004), as shown by a model of reading in Figure 1.

The figure showed that reading comprehension restricted on the linguistic aspects mere. In contrast, Grabe and Stoller (2002: 29) divided the process of reading into two levels; they are lower-level processes and higher-level processes. Lower-level processes include lexical access (word recognition), syntactic parsing, semantic proposition formation, and working memory activation. While higher-level processes include text model of comprehension, situation model of reader interpretation, background knowledge use and inferencing, and executive control processes. They underlined that the prior processes do not simply easier than the later ones.
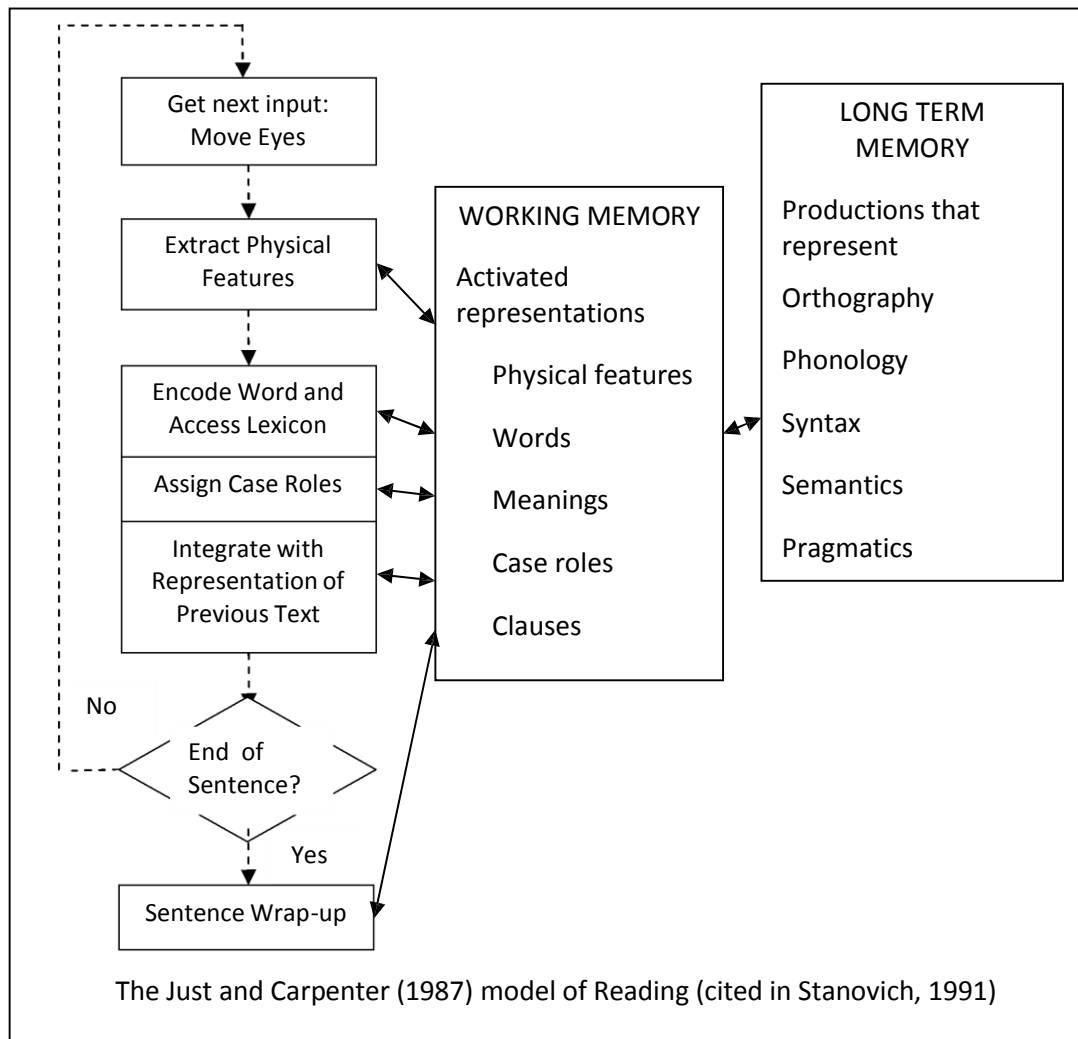
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The Just and Carpenter (1987) model of Reading (cited in Stanovich, 1991)

Figure 1

In addition, many researchers have proven that background knowledge plays a very important role in comprehending a text. A study was conducted into two different sets of background knowledge. They were sophomore female music major and sophomore male physical education major. Both groups were given a same passage and asked to answer several questions. The answers of both groups were surprisingly astonishing. Female group had different answer with male group. Another study was conducted into two different cultural background, African-American students and rural Anglo-American. The study showed a similar result (Reynolds, 2008).

On the other hand, Stanovich (1991) believed that background knowledge is not sufficient for good comprehension; the readers must have good word-recognition as well. Along with Stanovich, McNamara et al. (1991) stated that "language comprehension requires knowledge of the world as well as knowledge of the language". In addition, Silberstein (1994) proposed two terms of background knowledge, which are formal schemata and content schemata. The term of formal schemata, in short, is similar to knowledge of language, while a content schema is similar to knowledge of the world beyond the text.

Nevertheless, reading English as foreign language seems to be more complicated for the students since it is not their native language. They need to accomplish a complex steps to comprehend the text. As what has been explained that the students need the knowledge of the language and the world, they also need some cognitive skills to comprehend a text; consequently, the students need to construct strategies in order to comprehend the text.

Strategies help readers understand, connect, and determine the importance of what they are reading. Brown (2001, cited in Permadi, 2008: 20) defined strategies as specific method of approaching a problem or a task, modes of operation to accomplish a particular end, or planned designs to organize and operate certain information.

Many strategies have been offered by many experts. Skimming and scanning were considered to be the most popular. Skimming is a quick survey by determining the main idea of the text in order to get the general point of view and skip the difficult words; for example in reading newspaper. While scanning is a quick survey by looking for keywords in order to get the details of the text; for example in searching a name in a phonebook. Both strategies require a quick eye move.

Additionally, in order to comprehend factual and important details, a reader may take a note. The note, however, would be better in form of her/his words so it helps her/him comprehend of the information. Nevertheless, note taking in EFL learning seemed to be more complicated than in native language. The reader must process the text they read then produce it in their own words, which require appropriate linguistic skills. In addition, the form of note taking itself may differ. One of them is mind mapping. A further explanation follows.

3. The Relationship of Mind Mapping to Reading Comprehension

Mind mapping is popularized by Buzan (2005) who claims that it is an enormous superior note-taking method. By mind mapping one can develop their ability in memorizing, brainstorming, learning, as well as creativity (Ingemann, 2008). As has been stated previously, to comprehend a text the students must have background knowledge which is divided into two, background knowledge of the language and background knowledge of the world (Stanovich, 1991; McNamara, 1991, Silberstein, 1994). This means through mind mapping the students are guided to develop their background knowledge of the text they are to read. They recall the existing knowledge ands relate it with the text. By doing this they practice to brainstorming.

Moreover, Kaufman (2010) argued that "mind mapping is a useful technique to use while reading, since the non-linear format allows you to view the entirety of your notes at a glance, then easily place new information in the appropriate branch or make connections between ideas." This is in line with the theory of top-down process proposed by Nuttall (1996, cited in Brown, 2001:299). Top down is a process where the reader draws their own intelligence and experience to understand a text.

Beside, the involvement of the generic structure of the text also covered by bottom-up process. Bottom-up is deals with the linguistics aspects such as words, phrase, grammatical cues and discourse marker (Brown, 2001: 299). Generally speaking, mind

mapping combines two process of reading comprehension: top-down and bottom-up processes. In other words, it adopts the way brain organizes our knowledge and experiences. In simple words, mind map is a visualization of the brain works.

Mind mapping technique is similar to semantic-map technique. What makes them different is the use of colors and drawings. Combined with **KWL** strategy this technique is expected to create an attractive and effective learning of reading comprehension. KWL is derived from know, want and learn. Ogle (1986, cited in Virginia Dept. Of Edu., 2004) describes that KWL is a framework that connects students' prior knowledge to what they are learning.

K for **K**now is the pre-reading activity by recalling any ideas about the title of the text. In this stage, the students are guided to recall their background knowledge and experience. As supported by Stanovich (1991), McNamara et al. (1991), Silberstein (1994), Grabe and Stoller (2002), Reynolds (2008), background knowledge plays important role in reading comprehension. Next, **W** for **W**ant describes what a reader wants to know or expects from reading the text. It is suggested that reader stated the purpose of the reading before they began to read. The question words of what and why would help the reader to focus on the reading. Lastly, **L** for **L**earn; explains what a reader has learnt after the reading. Moreover, in the L point, the students were emphasized to focus on the generic structure of the text; which parts belong to orientation, complication, and resolution. It would be better if they could write the main idea of each item; however, the "quotation" of the text would be considered enough.

The combination of mind mapping and KWL covers the whole process of reading comprehension. It is expected that this combination would lessen the boredom of the classroom activity and at the same time they comprehend the text they were reading.

C. Research Methodology

As has been stated previously, the purpose of this study is to answer the research question: *How is the implementation of mind mapping in teaching reading comprehension?* In order to come to the answer some approaches conducted. They included research design, data collection, and data analysis. Research Design deals with the approach in conducting the study. The instrumentation of this study is discussed in Data Collection; whilst the measurement of the implementation of mind mapping in teaching reading comprehension is covered in the Data Analysis.

1. Research Design

The research method used in this study was qualitative study. This study concerned with process and as well as product and the data collected in the form of words and were analyzed inductively (Fraenkel and Wallen, 2007: 431-432). Dawson (2009:14) added that qualitative study "explores attitudes, behavior and experiences…." Since the purpose of this study was to observe the implementation of mind mapping in teaching reading comprehension, which explore attitudes, behavior, and experiences, qualitative approach is appropriate to be conducted.

In this study, the position of the researcher was an observer. Fraenkel and Wallen (2007:431) stated the natural setting is the direct source of data. Since the observer is an outsider of the school environment, the teaching and learning process was conducted by

the actual teacher. However, the observer and the teacher cooperated in developing the lesson plans. This was conducted since the teacher has already known the characteristics of the class and the students, and for the sake of the study the observer tried to arrange the appropriate approach in the study.

2. Description of Setting

The study was conducted in one state senior high school in Bandung at tenth grade. Actually the class consists of 40 students; however only 34 students involved in the study since the other 6 were absent when the study was conducted.

There were some reasons that underlie this research site. First, the class was chosen due to the convenient of the researcher since the class was taught by one of her colleagues. Second, the curriculum for the first grader of senior high school supported the research material which was narrative text. As has been stated earlier narrative text might attract the students' interest to read. Moreover identifying the generic structure or rhetorical movement would challenge them.

The curriculum used is Kurikulum Tingkat Satuan Pendidikan (KTSP) where the standard competence and the basic competence were standardized by the government while the classroom activities were up to the school themselves. Table 1 shows the standard competence and the basic competence in this study.

Table 1

Standard Competence and Basic Competence

Standar Kompetensi	Kompetensi Dasar
Berkomunikasi lisan dan tertulis menggunakan ragam bahasa yang sesuai dengan lancar dan akurat dalam wacana interaksional dan/atau monolog terutama berkenaan dengan wacana berbentuk naratif, prosedur, *spoof/recount, report dan news item*. (Tema disesuaikan dengan jenis teks yang sedang dibahas dan tingkat kemampuan linguistik siswa.)	**Membaca** Memahami nuansa makna dan langkah-langkah pengembangan retorika di dalam teks tertulis berbentuk naratif, prosedur, *spoof/recount, report,*dan *news item*.

As can be seen from Table 1 above, the basic competence of reading that the students must master is to understand the rhetorical movement of the text. Since by chance narrative was mentioned as one of the texts that the students must master, the implementation of mind mapping (which also included the rhetorical movement of the text) was appropriate to be conducted.

3. Data Collection

The instrumentation used in this study includes 1) the students' mind maps, 2) open-ended questionnaire, and 3) teacher and observer observation. In this study, each student would collect two mind maps. Due to the limited time, after accomplishing the study, an open ended questionnaire was spread out to the students. In addition, based on the observer and teacher observation, an explanation about the process of teaching and learning would be provided. From the observation, the teacher's opinion about mind mapping would be explained.

4. Data Analysis

Based on the instrumentation, each data which had been collected were analyzed through two perspectives. First, the students' mind maps were analyzed through their completeness of the criteria that had been set before. These criteria were derived from subchapter 2. They are Know, Want, and Learn items; where Learn item consists of the generic structure of the text (orientation: setting and characters & characterization; complication, resolution, and reorientation). The completeness of each item were analyzed whether they reproduced the sentence or quoted from the text. The technique might be suggested to teach reading comprehension when each of the students reach 15 points from 20, and overall, 80% of the students could complete the mind map criteria. The completion of the mind maps was measured as in the Table 2.

Table 2

Mind Map Criteria

Know	Want	Characters & characterizations	Generic structure	Moral value	Colors & Drawings	Total Points
3 points	3 points	4 points	6 points	1 point	3 points	20 points

Second, open-ended questionnaire fulfilled by the students and teacher and observer were analyzed by generalizing their opinion and observation, and also draw a conclusion about the problems occurred while the teaching-learning process happened.

5. Validity

Although validity issue inhibits the objectivity in a qualitative study, some efforts have been made. First, the participants did not know the observer. Therefore, the observer could prevent the data collection and data analysis to the minimum subjectivity. Second, the criteria that had been set observed the completion of the mind maps. Hence, the data were analyzed regardless of the subjectivity of the observer. However, the creativity features such as the color and drawing usages may affect in some way. Third, the data were analyzed in relation to the reading comprehension process in chapter 2. Although the observer's ideas may affect the discussion, the discussion itself would be attempted to be based on the existing theories. Fourth, the students' opinion about mind mapping would be concluded generally, which means the percentage of the students who liked and disliked was formulated. From the explanation above the validity of this study may be proven.

D. Findings and Discussion

The findings of this study would be discussed in four sections: the students' mind maps, the students' opinion, the teacher's opinion, and theemerging problems.

1. The Students' Mind Maps

The findings of the students' mind maps would be presented in Table 3 (see appendices). As shown in the figure most of the students completed the criteria set

(90.4%). They wrote what they already known about the text and they also wrote what they want to know from the text as well as the generic structure required.

As what has been stated, mind map is a technique for note-taking, which means that the technique focuses on the details occur explicitly on the text. On the other hand, the students are able to categorize the generic structure of the text and the tenses used in the text. It proves that mind map technique can be used to train cognitive aspects of the students. This means that beside mind map is used for extensive reading; it is also used for intensive reading. However, it depends on the purpose of the reading itself. In this point, the students show that the reading process is not linear. They read the text both extensively and intensively.

Additionally, the students' creativity develops. It occurs when some of them draw pictures in their mind map, not only for the characters and the settings but also for the generic structures. In fact, a few students draw a different concept of mind map; instead of what has been illustrated by the teacher, they draw it in the form they preferred.

The role of **K** and **W** on KWL strategy is that it builds students' background knowledge of the story and their critical thinking. Some of the students who already known the story added the aspects that they know in the K slot and related them to the generic structure.

Nevertheless, some of them were not able to produce the idea in their own words. They tent to quote the text to sign the part of the generic structure. However some of them were able to reproduce the sentence in their own words. Additionally, one or two students seemed to not enjoy this technique. It appeared in their min maps that only use one or two colors only. In fact they were expected to use as many colors and drawings as they wanted.

The main purpose of this study, which is to find out the extent of mind mapping can lead to reading comprehension, has been answered. In general, mind map succeed to attract the students` interest to read the text. It also succeeded to improve their reading comprehension in the form of generic structure. Nevertheless, only a few students were able to draw the main ideas in their own words.

2. The Students' Opinions (from open-ended questionnaire)

Almost all the students enjoy the learning process. From the open-ended questionnaire, they explicitly wrote, "very interesting for me, I enjoy on study," "it is fun, colorful, and it is not make us boring," "I feel enjoy, cool, not make me bored, I like this method," "I feel understand, I think it is good for me, I like this," "we can practice our creativity," Whilst the others generally wrote in bahasa Indonesia, "*tidak membosankan,*" "*mendapat pelajaran baru,*" "*mendapat metode pembelajaran yang lebih bagus dan dapat gampang dimengerti,*" "*tidak membosankan,*" "*tidak membuat saya ngantuk,*" "*rame buuu.., kayak maen-maen tapi mudah dipahami,*" "*lebih semangat untuk mengerjakannya karena ada warna-warni dari spidol,*" and such.

However some others also added that even mind mapping was easy, they still had confusion. One of them wrote, "*metode pembelajarannya mudah jadi saya bisa mengerti walau masih membingungkan.*" Moreover, one of them felt that the time was not enough. She wrote, "it is fun but a time so short and not boring, not bad." And one student wrote, "it needs preparation, some of us are lazy."

The students' reactions to the mind mapping to comprehend the texts were categorized as good. They stated that it was new for the most of them; a student acknowledged that she has been used to mind mapping ("*saya sudah terbiasa sejak SMP*"). They were curios about the text. They wanted to draw of what they had read. They did not consider it as an evaluation of reading comprehension.

3. The Teacher's Opinion (from teacher's observation)

The teacher wrote that the students paid more attention to the teacher explanation than usually. They were more focused and at the same time they were curious about the mind mapping project. The teacher noticed that the students did not chat with their mates or played their mobile. They asked questions to get more clear explanation. The teacher believed that the teaching and learning process was ore conducive than usual.

4. The Emerging Problems (from teacher's and observer's observation)

At the beginning, the teacher and observer noticed that the students preferred drawing to completing the criteria. Since most of them were new to the technique, they asked some questions about it. However most of them were able to complete the mind maps.

On the second meeting, the students had already known the technique, they did not ask any question but they responded very well to the teacher' questions. However they still needed guidance to brainstorming when they were completing the **K** criterion.

E. Conclusion, Suggestion, and Implication

There have been many techniques proposed to help students comprehend a text. However, a conventional way appears to be popular among the teachers and the students. The students have to understand each word of the text and answer several questions based on the text. This situation affects students' perspective on learning reading course, especially reading English. They tend to be lazy to read since there are too many words they do not know the meanings.

Based on the research statement, it was concluded that, *first*, mind map is one of the techniques that are fun to do. It involves colors and pictures or drawings. The students somehow do not realize that they are drawing their comprehension of the text. *Second*, there is no major problem in teaching mind map to the students. The noise that the class made was seen to be an interactive process. Third, mind map is good to train students' comprehension on the facts and details. It proves that mind map is a superior note-taking technique. *And the last*, the students' reaction on mind mapping is mainly positive.

Based on the findings, discussions, and the conclusions, several suggestions in order to make improvement for the next study are proposed. First, mind map technique can be used to improve students' reading comprehension combine with other strategies beside KWL. Second, mind map technique can be used not only on reading narrative text but also other genres of the text. Third, the teacher and the students need to apply the technique continuously with some changes in the method so it will not be monotonous.

This study is important to reveal the mind mapping technique in comprehending a text. It is a contribution to EFL methodology where mind map is an alternative technique to be used in teaching and learning reading comprehension. This study seemed to be

effective in improving students' reading interest and comprehension. This technique may be applied in other classes that have similar problem

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