

# THE APPLICATION OF MIND MAPPING TECHNIQUE TO INCREASE STUDENTS' READING COMPREHENSION ACHIEVEMENT AT THE EIGHTH GRADE SMPN 38 PALEMBANG

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## Abstract

Reading certainly has many purposes, one of which was by reading people can find out the information, increase knowledge and to expand horizons. Thus the writer tried to explore the use of mind mapping technique to know the significant improvement in students' reading comprehension achievement in recount text after being taught with mind mapping technique and to know the significant mean difference in students reading comprehension between students who were taught by using mind mapping technique and those who were not. The research design in this study is a quasi-experimental design which the population of this study were students from two classes of eighth-grade of SMPN 38 Palembang which consisted of 32 students of each class. Data collection techniques used in this study were pre-test and post-test. Data were analyzed using t-test (paired sample t-test and independent sample t-test). The outcome of t-obtained in experimental group was higher than t-table ( $17.201 > 0.2913$ ). Also, the results of each aspect in experimental group showed that there was improvement. Besides, there was also significant mean difference between students who were taught by using mind mapping technique and those who were not. The findings revealed that teaching reading by using mind mapping technique was effective toward students' reading comprehension achievement in recount text at the eighth-grade students of SMPN 38 Palembang in the academic year of 2021/2022.

**Keywords:** *Reading Comprehension, Recount Text, Mind Mapping Technique*

## INTRODUCTION

Reading is very important in learning English to get information. In the reading activity, the reader should interpret the meaning of the written text. According (Angraini 2019) reading is one of the important skills which must be learned. It is a constructive process that can help students to acquire new knowledge of language and experience about life. Reading is very important for the students, because it influences the students when looking for job (Iman 2017). (Snow, 2002) states that reading comprehension is the ability to understand something and gain knowledge and information from written text. The reader must be able to understand what they read, which involves the process of acquiring of grammatical structures, vocabulary, and meaning. This means that students in demands need to understand the content of the text they read and think are important points of information in the text. English is a foreign language that must be taught in Indonesia, from elementary to university level. Students are taught English as a means to expand their knowledge of science, technology, culture, and the arts. Students are expected to be able to master English orally and in writing (Depdiknas, 2006). It is stated that the purpose of teaching English in Indonesia is to utilize the language to broaden students reasoning horizons and improve their communicative competence.

In English, four language skills must be mastered by students, namely speaking, reading, listening, and writing. In connection with the four skills, reading is one of the most important skills that must be mastered. Reading is the process of learning. Through reading, people can obtain information, ideas, and knowledge (Mogea, 2019). By reading students can gain new knowledge and also reading is one of the important keys to determining the success or failure of learning English. At school, students often think that reading is a difficult and boring skill. Therefore, the student cannot get reading achievement which is the most important aspect of reading comprehension. The reading level in Indonesia is low. It can be seen from the PISA 2015 to PISA 2018 results, which indicated that the 2015 PISA score reading was 397 and the 2018 PISA score reading was 371. It indicated that Indonesia's reading scores have dropped by 26 points (OECD, 2019). Furthermore, Novita & Angraini (2017, p. 31-32) stated that average students in Indonesia are unable to read English texts properly due to a lack of willingness and confidence in themselves, leading them to believe that reading English texts is a difficult task

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In some situations, reading in the first language is very different from a foreign language. The fact is that reading a foreign language is more difficult than reading the first language. (Nuttal,2005) stated that it is found in Indonesian students encounter reading difficulties as foreign language learner such as read slowly word by word, incompetence to apply reading strategy, easy frustrated and dissatisfied particularly when they meet some difficulty words, read the text aloud in which it may inhibit comprehension, and they confuse to read the authentic text in foreign language.

In addition to observation, the writer also conducted preliminary research to find the problems that exist in the eighth grade students of SMP N 38 Palembang. The writer has done pre-research. The writer collected data by giving tests to class VIII students of SMP N 38 Palembang. The writer gave 25 multiple choice questions to 164 students which were divided into 32 students from VIII.7, 32 students from VIII.6, 34 students from VIII.5, 33 students from VIII.4, and 33 students from VIII.3. The writer divides 4 categories for students assessment (A: Very Good, B: Good, C: Fair, D: Poor, E: Very Poor). After being given the test, the writer found that only 11% of students got an "A" score out of 164. This means that only 18 students got an "A" score, 15% of students or only 25 students got a "B" score, 14% of students means 23 students who got a "C" score, 28% of students or 46 students got a "D" score, and 32% of students or 52 students got an "E" score. From this preliminary study, it can be stated that only 66 students out of 164 comprehend and able to answer the questions from the text.

To overcome the problem above, the writer assumes that this should be the case some suitable technique in teaching reading to motivate students to read all the text so they can get the information fully. There are many ways and techniques to increase students reading ability. One of them is using a mind mapping technique. Mind mapping is a technique to capture information or idea through a map that was created by Tony Buzan in the early 1970s. According to Buzan (2005, p. 04), mind mapping is an easy way to make an interesting note. A mind mapping is being created through words, colors, lines, and pictures. Wood (1991, p. 151) adds that writing a note by categorizing the word into particular groups is easier to remember than a list note. Mind mapping allows the students to think freely, they can associate the word general to specific through the curve lines and also draw an image around the students remember easily. Moreover, Grellet (1996, p. 13) mentions that one of the ways to understand the meaning is by mapping the text. It can help the students to understand the most important information or details of the text by making a keyword and then signing it.

To overcome the problems raised above, the writer believes that appropriate reading teaching strategies should be used to encourage students to read all the texts to understand the contents. There are many methods and techniques to improve students reading skills. The writer proposed a Mind mapping technique, which according to some sources, has improved students reading comprehension of recount text.

### ***The definition of reading comprehension***

According to Grellet (1996), reading is an active skill that requires guessing, prediction, testing, and some questioning. It means that to understand a book, readers must guess, predict, and understand what the writer's message is. Then, according to Klinger et al (2007), reading comprehension is a multi-faceted, extremely complex process that involves the reader's prior knowledge and the application of strategy to the text. This means that the reader's feelings are influenced by the reader's interest in the text and the nature of the content. According to Hennings (2007), there are four types of reading comprehension. The student would complete a reading test covering all four types of comprehension in this research. Word comprehension, paragraph comprehension, and text comprehension are the four types of comprehension.

Reading comprehension is not just reading, but must be able to predict, guess and understand what message the writer conveys. Reading comprehension is also related to the ability of the reader and what knowledge was previously known, reading comprehension has four types namely, word comprehension, sentence comprehension, paragraph comprehension, and text comprehension.

### ***The definition of mind mapping technique***

Tony Buzan introduced mind mapping in 1970. It's used to visually organize data. Clustering or diagramming Langan (2008, p. 29), spidergram Harmer (2004, p. 89), and webbing are some of the various names for mind mapping Hennings (1997, p. 279). Those names, on the other hand, serve the same purpose to assist students in organizing their thoughts. Mind mapping is being studied to help students enhance their reading comprehension.

Mind mapping, according to Buzan (2005, p. 04), is a creative note-taking method that may "map" all of the imagery in the mind. Mind mapping can also be used to assess and activate students' background knowledge, according to Bos and Vaughn (1991, p. 220), which uses free association as a stimulus exercise to develop a list of words and phrases connected to the core topic. Furthermore, according to Ingleman(2008), "mid mapping is one of the very finest strategies for optimizing one's learning capacity and knowledge of how the pieces of complex systems are connected. "The conclusion drawn from these comments is that mind mapping can be defined

as a creative note-taking technique that aids students in generating words and phrases connected to the primary notion.

According to Boyley(2009), mind mapping can stimulate both the left and right sides of the brain. Furthermore, according to Buzan (2005, p. 9), mind mapping employs both sides of the brain ( left and right sides of the brain ) in a visual approach to get a fantastic lesson outcome. The right brain is responsible for creativity, visualization, and instinctual behavior. The left brain is responsible for reasoning, academics, and business. Students' brains will operate to their full potential if they balance their left and right brain.

As a result, mind mapping can be employed to help children address their reading comprehension problems. Students can use mind mapping to examine, interpret, and synthesize information from the book. It aids kids in remembering things more quickly.

### ***The advantages and disadvantages of mind mapping technique***

Mind mapping has several advantages when it comes to teaching reading comprehension. According to Gillet and Temple (1990), mind mapping may be used to access and activate background information by using a visual representation of the student's current grasp of the idea. Furthermore, according to Buzan (2005), mind mapping may be used to group keywords, record the text's material on one page, and inspire students to solve problems. Mind mapping, on the other hand, has drawbacks. According to Adodo (2013), one of the primary disadvantages of mind mapping is that students who are new to concept mind mapping may have difficulties reading sophisticated maps since they are accustomed to writing linearly.

Based on the explanations above, the teacher must plan how to avoid these disadvantages, the teacher must monitor the students throughout the teaching-learning process, then provide help in decision making for students who do not understand the words that will be written.

## **METHOD**

### **Methodology**

The method in this research was the quantitative approach. The quantitative approach generally uses numerical information and statistical evaluation Sugiyono (2017, p. 7). According to Creswell (2012, p. 2) that there are 3 designs inside the quantitative method, namely: experimental, correlation, and survey. The writer used experimental research because of the layout of the study. Experimental research is an exceptional way to establish a cause-and-effect relationship among variables Fraenkel & Wallen (2009, p. 261). The writer used experimental research because the writer wanted to look at the effect of the independent variable on the dependent variable. Similarly, the research design in this research was quasi-experimental design. The writer used quasi experimental design since the writer desired to examine the result of experimental and control groups without using the random sampling method.

### **Population**

A population is a group of individuals that share the same trait (Creswell, 2012, p. 142). The population groups used in this research are eighth-grade students of SMPN 38 Palembang in the 2021/2022 academic year.

In this eighth grade school, there are 7 classes. The writer took 2 classes for this research, namely classes 8.6 and 8.7. The total population in this study was 227 students.

### **Sample**

According to (Creswell, 2012, p. 142), a sample is a subset of the target population that the writer wishes to study to generalize about the target population. A sample is a portion of the population intended to represent the characteristics of the population.

The writer took a sample from the population. Based on the sampling technique, VIII.6 obtained as an experimental group and VIII.7 as a control group. Furthermore, (Arikunto, 2010, p. 112) stated that the sample size for experimental research, if the subject is less than 100 people, all should be taken. So they agree to join research into using Mind Mapping and were keen to improve their reading comprehension in English class.

### **Validity**

According to Tuckman (1991, p. 163) the validity of the test represents the extent to which a test measure. An instrument is valid if it can measure what is desired. An instrument is valid if it can properly reveal data from the variables under investigation. The degree of instrument validity indicates to what extent the collected data do not deviate from the description of the intended validity (Arikunto, 2019, p. 211). To determine the validity of the test, the writer opted for content validity. Experts were asked for their opinion on the instruments that have been prepared.

In this research, the writer consulted with a teacher about the suitability of the lesson in the pre-and post-

test. As Retnawati (2016, p. 30) said, “to assess validity, in the form of agreement between items and indicators”. There are 5 indicators, which are aspects of reading (main idea, specific information, reverence, inference, vocabulary). This rating was done using a Likert scale (score 1: invalid, score 2: less valid, score 3: quite valid, score 4: valid, score 5: very valid).

The results of validity test revealed that all questions were higher than 0.007. It means that all of the questions were valid. Therefore, it was appropriate to be applied in the eighth grade students.

## **Reliability**

Reliability is a tool that is familiar enough to be used as a data collection tool because the tool is good. A good instrument will not be biased in guiding respondents to choose certain answers. Instruments that can be trusted, that are reliable, will also produce reliable data. If the data is truthful, no matter how many times is taken, it will still be the same. According to Tuckman (1991, p. 160) the test reliability means that a test is consistent. A ruler made of rubber would not be a reliable ruler since it could stretch or contract to give varying measure.

The writer took 50 multiple choice questions, questions about recount text, especially personal recount text. Before the actual research, the instrument was tested on class VIII.5 students of SMPN 38 Palembang. Class VIII.6 is the experimental group and class VIII.7 is the control group. The purpose of conducted experiments in other classes is to get a truly reliable instrument. Reliability of the test is calculated using the Cronbach Alpha formula using SPSS v.25 program. The categories of reliability coefficients are as follows (Guilford, 1955, p. 145).

## **Data Collection**

Data collection technique is the type or process of collecting data needed to answer the research question (Mujis, 2004, p. 10). In this research, the test was used to collect data. The test was carried out in the experimental and control groups. The test used in this research are pre-test and post-test in multiple-choice form. Pre-test and post-test contained the same tasks also the same procedure when the writer conducting in the classroom.

The pre-test was carried out before the treatment. It aims to know students' knowledge in reading comprehension achievement of recount text. Meanwhile, the post-test will be performed after applying the treatment. The purpose of the post-test was to assess students reading comprehension of recount text after treatment

## **Data Analysis**

According to Saebani (2008), data analysis is the process of preparing the data to be able to interpret it. The writer used a t-test using SPSS v.25 to analyze data. In this research, paired-samples t-test and independent-sample t-test were applied. The paired-sample t-test was used to see the difference between mean reading comprehension scores in recount text. Meanwhile, an independent-sample t-test was used to determine whether significant differences exist between both groups.

## **FINDINGS AND DISCUSSION**

### **Finding**

After knowing the data were normal and homogenous. To explain the first and the second research question in this study, the paired sample t-test was conducted with SPSS v.25 program. Paired sample t-test was used in this research to find out whether the using mind mapping technique improved reading comprehension achievement of the eighth-grade students of SMPN 38 Palembang.

After calculating the data, the first was a results of paired sample t-test of reading comprehension achievement in the experimental group and reading aspect in the experimental and control groups. It can be explained, from reading comprehension achievement of the experimental group that the average pre-test score is (82.13 > 52.97) and the mean difference between pre-test and post-test was (-29.156), meaning that there was improvement in the average score in the experimental group and the data can be classified as improved if the significance (2-tailed) was less than 0.05 (<0.05). With the above results, the significance (2-tailed) was 0.000 means lower than 0.05.

The second was an explanation the results of the paired sample t-test reading comprehension achievement of the control group, the result of the mean score of the pre-test in control group was lower than the post-test (54.13 > 51.25) with an average difference (-2.844), although the improvement in the control group was not as significant as in the experimental group, there was still an improvement of (-2.844). Also the significance (2-tailed) of the data in the control group was 0.109. As already explained before the data can be classified as enhanced if the significance was lower than 0.05.

The third was an explanation above the results of the paired sample t-test of reading aspects in the experimental and control groups. There are five aspect of reading, namely: main idea, vocabulary knowledge,

specific information, references, and inference. From the results, the highest significant improvement in the reading aspect was found in the main idea with significance (2-tailed) 0.0002 and mean difference = 15.250 and the lowest score found in inference with mean difference = 9.000. The five reading aspects have an improvement in each post-test both in experimental group and in the control group.

Based on the explanation above, the writer concludes that the results from paired sample t-test of reading comprehension achievement and reading aspects answered the research question number 1 and 2 with the results there was significant improvement in students' reading comprehension and students' reading aspects after being taught by using mind mapping technique.

After knowing the data is normal homogenous. To answer the third research question in this research, the independent sample t-test was conducted with SPSS v.25 program. Independent sample t-test was used to see whether there was any significant mean difference between experimental and control groups. The result of independent sample t-test was describe between the post group test results in both of experimental and control group. It can be seen that the mean score of post-test of experimental group was higher than post-test of control group ( $82.13 > 54.13$ ) so the mean difference was 28.000. Can also, the significance (2-tailed) from the data was 0.000. The data can be classified if the significance (2-tailed) was lower than 0.05 ( $<0.05$ ). Based on the result above, the significance (2-tailed) was 0.000 it means lower than 0.05 ( $0.000 < 0.05$ ). In short, there was significant mean difference between the students who were taught by using mind mapping method and who were not.

## Discussion

Based on findings above, the writer made an interpretation based on the test results found during the study. First, there was a significant improvement in students' reading comprehension in recount text after being taught by using mind mapping technique in experimental group. It might happen because the mind mapping technique used made students easier to understand reading comprehension in recount text by making 5w+1h mapping consisting of what, who, why, where, when and how, makes it easier for students to answer the worksheets given.

At the time of giving treatment in class there were several things that were done to students which might be the reason why mind mapping technique was effectively applied to this experimental group. Second, there was significant mean difference between post-test from both of experimental and control group. This happens because after students are taught with mind mapping techniques they were highly motivated and excited, we know that students are more likely to be enthusiastic about learning if the learning is not only in the form of providing material and lecture method, by applying mind mapping technique which made students think creatively and imagine so that learning atmosphere does not be boring. This statement is supported by Sani (2015) mind mapping as way to encourage students are more creative and made easier when taking notes or concluding material only by using word, short sentence and pictures.

Apart from that, the writer gave the students brainstorming related to recount text material before starting the core lesson, this done with aim that students are already to master and understand the subject matter to be taught. As (Buzan, 2013) stated mind mapping is learning method to easiest way to put information into the brain and take information out of the brain when we need it, and also mind mapping technique is very effective, creative, and simple but very powerful to summarize a material. Therefore brainstorming is needed so that students can think more creatively and imaginatively before the lesson begins.

Beside, the writer asked the students to read the story while creating mind mapping, this is intended so that students can understand in advance the contents of the reading text and can express their opinions so that it is easier to pour important points obtained into mind mapping more creatively, it also aimed at making the teachers easier to carry out the learning process so that the expected learning objectives are achieved. Yuniarti Slamet & Setiawan (2013) stated what needs to be done when loading the mind mapping, first of all, participants students determine an idea or concept, then pour it on blank paper, students write down in the form of keywords accompanied by symbols or pictures. Next, students write or put a summary of the material that has been read or selected on the line curves like branches that enclose the center/ concept picture mind mapping.

After that, the writer asked the students to answer the questions provided based on the text to be studied, this aimed at seeing students learning outcomes by testing whether students who have been taught to make mind mapping are able to answer the recount texts that have been studied. Learning outcomes themselves are changes in behavior obtained by students after doing learning activities. According to Iskandar (2009) learning outcomes is a result of learning process using measurement tools, namely in the form of a planned test, written test, oral test as well as action tests. So the writer provides a worksheet at each recount text meeting along with multiple choice questions consisting of 10 questions so that students can read each others texts and answer questions directly and do not need to write in their book also to determine students learning outcomes.

The writer has five reading aspects in the pre-test and post-test questions which consisted of main idea, vocabulary knowledge, specific information, reference and inference. As explained at the beginning that students make 5w+1h from the recount text that has been given and made mind mapping from it. The highest reading

aspect was main idea. According to Brown (2004) it shows the context of reading text, in other word the main ideas is the important part that is develop by the writer throughout the paragraph. The students made mind mapping by using 5w+1h. It was easier for them to answer questions about the main idea because students have first understood and made mind mapping to find out the contents of the story.

Finally, based on the explanation above, the use of mind mapping techniques improve students' reading comprehension achievement because students who are taught using mind mapping are more motivated and enthusiastic in learning and more active in learning English. According Kaufman (2008) emphasizes that mind mapping is a valuable technique to use when reading and creating notes. This can be seen from the improve ment in students' reading comprehension achievement. The experimental group was better than the control group. So it can be interpreted that mind mapping is a good technique to improve students reading comprehension achievement also can be seen from the post-test results which are higher than pre-test results. The post-test in the experimental group was higher than the post-test in the control group using the same test. The writer interprets that this technique can help students learn better and motivate them.

## CONCLUSION

Based on the results of the research in chapter IV, it is proven that the mind mapping technique is quite effective in improving students' reading comprehension with recount text. The process in this technique made the students become active and enthusiastic during teaching learning process. This is stated by the obtained scores of experimental class students, pre-test score and post-test score and with a difference of score. Before entering the t-test, a conditional test was conducted using the normality test. After stating the two data are normally distributed, the next step is to test the calculation results from the paired sample t-test which shows that Sig. which states that the Null Hypothesis (Ho) is rejected and the Alternative Hypothesis (Ha) is accepted. That is, these results indicate that there is a significant difference in students' reading comprehension achievement in recount text taught with mind mapping techniques.

From the explanation above, it can be concluded that the mind mapping technique is effective in improving students' reading comprehension in recount text for class VIII students of SMPN 38 Palembang in the 2021/2022 academic year.

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