

Original Research Article

Improving Reading Comprehension of the Eleventh Grade of Man to Model Makassar through Mind Mapping Technique

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Abstract

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The research was conducted to know the effectiveness of the use of mind mapping to improve students' reading comprehension. It covered students' literal comprehension, inferential comprehension and critical comprehension. The research method employed was quasi experimental. This research was designed into two groups, namely experimental group and control group. Each group consisted of 34 students. The sample was chosen by applying cluster sampling technique. The researcher used multiple choice of reading test both in experimental and control groups. The data obtained through the test were analyzed by using inferential statistic through SPSS 17.0 program. The research findings showed that mind mapping technique gave higher contribution to the students' reading comprehension. The mean score of pretest of the experimental and control group was not significantly different. The mean score of posttest of the experimental group was higher than the control group ($24.17 > 21.82$). Besides, all the three level of comprehension improved after the treatment, the literal level got the highest improvement with 2.17 point. It was followed by inferential level which got 2.03 point and critical level which got 2.82 point improvement. This led to the conclusion that the application of mind mapping technique improved the students' reading comprehension. It means that the use of mind mapping technique in teaching reading is very effective to improve the students' reading comprehension.

Keywords: Mind mapping, Comprehension, Quasi experimental, Cluster sampling

INTRODUCTION

Being an international language, English occupies the first position in the world for communication nowadays. This position makes it widely used for all over the world in all aspects of human life. English knowledge is desired by students in higher education and by workers in certain professions. This is true because more information and thoughts may be obtained from people around the world through English as a medium of communication, either spoken or written. Getting as well as giving information and ideas in English may be from English broadcast, movies, video, textbooks, and scientific articles in newspaper, magazine, and journal, leaflet and

advertisement.

One of the easiest and the cheapest ways of getting information is by reading. It can help people to get information from the simple to the more complex one, therefore, reading is the fundamental and important skill among other skills, namely listening, speaking and writing.

Reading is a necessary skill that any learner needs. Unfortunately, how to teach reading has not been given due care in our schools. In the past, according to the traditional view, reading begins with the child's mastering the names of the letters, then mastering the letter sound

relationships, then learning some easy words in isolation, and finally reading simple stories with highly controlled vocabularies (Harp, and Brewer, 1996). Researchers and teachers as well complain that most learners are not able to understand what they read.

Moreover, reading is more than just a visual process or saying the words out loud with good pronunciation. Reading process is related to the development of learning and thinking process. In other words, reading must always be a meaning getting process. The eyes and mind work together as a reader is actively seeking meaning. This is what Thorndike (1973-1974) in Otto (1979) called "verbal reasoning".

Reading comprehension skills separates the 'passive' unskilled reader from the 'active' readers. Skilled readers do not just read, they interact with the text. Skilled readers, for instance: Predict what will happen next in a story using clues in text, create questions about the main idea, message, or plot of the text, and monitor understanding of the sequence, context, or characters (Sanders, 2001).

In addition, learner should probably develop reading comprehension skill much like learning to drive. Reading comprehension become so automatic that most skill readers forget that they had to develop their reading comprehension skill. Learning reading comprehension requires a technique where lesson plans progressively develop and reinforced reading comprehension skill, but a student does not seem to really get it by reading; this means that the student is successfully decoding words, but decoding without reading comprehension will not get him far.

In the fact, many students who struggle to learn how to be able to read, with appropriate instruction, to compensate for initial reading problems by becoming accurate decoders, but fail to reach a level of sufficient fluency to become fast and efficient readers (Adams, 1990). Further systematic research is needed to give us more comprehensive answers to questions concerning the best teaching reading strategies.

Some readers sometimes fail to grasp what they are reading even though they have decoded all the words in the text. Many students can read the word in a passage though the answers are directly contained in the words they are pronouncing. Some of them are unable to retell or to summarize what they have read. Others even have difficulties in understanding complicated sentences that complicated that combine ideas. In short, the ability to recognize or repeat the exact words in the text does not guarantee understanding.

Learners comprehend better when they see the text organized in such a way which can easily be understood, and which indicates the relationship between ideas. So, one of the ways that may have a significant impact on the teaching reading process is the mind mapping technique.

Problem Statement

Most students find it hard to connect their thought and ideas accurately in comprehending a text even though they have already studied and possessed adequate language form and vocabularies. This situation raises a problem statement as follows:

"Is mind mapping effective in improving students' reading comprehension?"

Objective of the Research

Relevant to the research questions above, the objective of the research is to know the effectiveness of the use of mind mapping to improve students' reading comprehension. It covers three levels of comprehension, those are:

1. Whether or not the use of mind mapping improve students' literal comprehension.
2. Whether or not the use of mind mapping improve students' inferential comprehension.
3. Whether or not the use of mind mapping improve students' critical comprehension.

Significance of the Research

The result of the research is expected to be useful theoretically and practically. Theoretically, it is expected to enrich the learning theory of reading and the technique to develop the students thinking skill. Practically, to facilitate teachers and students in teaching and learning reading and expected that the way of using mind mapping can be an attraction in learning reading.

Scope of the Research

The research is restricted to the effectiveness of mind mapping in improving students' reading comprehension of the eleventh grade students of MAN 2 Model Makassar. The level of comprehension includes the literal comprehension, the inferential comprehension, and the critical comprehension. The texts that will be used are limited to narrative and hortatory exposition texts.

Review of Related Literature

Previous Related Findings

Some researchers have reported their findings concerning with mind mapping as follows:

Hadijah (2003) in her research "Improving the vocabulary Master of the Second Year Students of SMPN 8 Makassar through Concept Mapping". She concluded

that teaching through mind mapping enables students to increase their vocabulary and also motivates them in learning vocabulary.

Nirwana (2004) in her research "Teaching Vocabulary of SMPN 18 Makassar through Mind Mapping Technique". She found that the use of Mind mapping technique in teaching was effective to enrich students' vocabulary to the second year students of SMPN 18 Makassar.

Some Pertinent Ideas

Concept of Reading

a. Definition of Reading

The following are some definition of reading proposed by some experts:

1) Rudolph Flesch (1955) in Burns (1984) defines reading as getting meaning from certain combination of letters.

2) Reading involves the identification of recognition of printed or written symbols, which serve as stimuli for the recall of meanings. The resulting meanings are recognized into thought processes according to the purposes that are operating in the reader (Tinker, 1975).

3) Burns (1984) defines reading as the attaining of meaning as a result of the interplay between perceptions of graphic symbols that represent language and the memory traces of the reader's past verbal and nonverbal experiences.

4) Reading is thinking.....reconstructing the ideas of others (Karlin, 1980).

5) Reading is the interpretation of signs and symbols (Downing, 1982).

b. Aspect of Reading

The following are aspects of reading which have been suggested by well-known authorities:

1) Visual in Sensory Aspect of Reading. The reader must be able to focus their eyes on a text. Eye movement during reading is considered to determine reading speed and comprehension. A reader makes stops or even regressions in order to react to the words and phrases.

2) Perceptual Aspect of Reading. Perception involves interpretation of the sensory impressions that reach the brain. When reading process occurs, the brain receives visual sensation of words and phrases from the text being read. It recognizes and gives meaning to these words and phrases and relates them with the reader's background knowledge of a text-content. Visual sensations reach the brain through the optic nerve. The brain compares each pattern of the nerve impulses that reach it with memory traces of similar patterns: its visual form, its verbal label, and the meanings that the reader has accumulated for it. In visual perception, identification and interpretation of size, shape, and relative position of letters and words are involved.

3) Sequential Aspect of Reading. The material written in English generally appears on a page in a left-to-right, top-to-bottom sequence; readers' eyes must follow this sequence when reading.

4) Thinking Aspect of Reading. In order to comprehend a text thoroughly, a reader must be able to use the information to make inferences and read critically and creatively. This involves thinking process.

5) Associational Aspect of Reading. Reading depends upon a number of types of association. A reader learns to associate objects and ideas with spoken words and then spoken words with written words.

6) Learning Aspect of Reading. Reading is a complex act that must be learned. It is also a means by which further learning takes place. In other words, a person learns to read and reads to learn.

Reading Comprehension

a. What is Reading Comprehension

In this part, the researcher finds some definitions about reading comprehension. Richard in Rahmi (2007), Reading comprehension is understanding a text that is read, or the process of constructing meaning from a text, comprehension is a "construction process" because it involves all the elements of the text in the reading mind.

Tinker and McCullough (1975:9) state that reading is the identification of written symbol, which serves as stimulator for the recall of meaning built through past experience.

"Reading comprehension understanding what has been read is an active thinking process that depends not only on comprehension skill but also the students' experiences and prior knowledge comprehension involves understanding the vocabulary seeing the relationship among words and concepts, organizing, ideas, recognizing author's purpose, making judgment, and evaluating". (Kustaryo: 1988: 11-12).

Wender and Rubbin (1982: 11-12) states that reading comprehension is a complex intellectual process involving a number of abilities. Pearson and Johnson in Burn (1989: 148) state that reading comprehension is at once unitary process and a set of discrete processes so, they explore comprehension from two angles.

Smith and Robinson (1980:205) state that reading comprehension means the understanding, evaluating and utilize of information and ideas gained through an interaction between the reader and the author. Reading comprehension is such a kind of dialogue between an author and a reader in which the written language becomes the medium that cause the dialogue happen when the two persons communicate through the medium of printed papers.

Reading is a complex. We can use the term to mean the process itself, or a response to literary text. It can mean the retrieved of information in a non-literacy text, or

take on wider meanings like 'reading situation'. Reading is not confined to print in a book. It is linked to issues of standards in education, and one functions of education itself.... (Brindley, 1994 in Dean, 1990).

b. Levels of Reading Comprehension

Richards (1995) states that different types of reading comprehension are distinguished according to the readers' purposes and the type of reading that they use. The following are commonly referred to:

1. Literal comprehension

According to Berg (2010) literal reading is reading the specific words printed on a page. This is unfortunately the type of reading widely used in most learning situations. Literal learning is accurate. The information you obtain is specific and often detailed. But, having details without understanding what they mean or how to use them is at the heart of many reading problems.

2. Inferential comprehension

It is the ability for you to read something and infer something else from what you read. For example, it may be reading a story and inferring what the overall mood is, or what a character's personality may be like from a brief description. It is the process of driving ideas that are implied rather than directly stated. This level demands higher level of thinking ability because the question in the category of interpretation are concerned with answer that are not directly stated in the text but are suggested or implied. Smith (1980) states that in interpretation the readers read between the lines, make connections, read between the lines to get inferences, or implied meanings from the text.

3. Critical or evaluative comprehension

Critical reading is evaluating written material comparing the ideas discovered in the material with known standards and drawing conclusion about their accuracy, appropriateness, and timeliness. Critical reading compares previous experience to elements in the new material such as content style, expression, information, and ideas, or values of the author. In this level of reading comprehension, the reader must be an active reader, questioning searching for facts, and suspending judgment until he or she has considered all of the material.

4. Appreciative comprehension: Reading in order to gain emotional or other kinds of valued response from a passage.

Cleland (1965) proposed a construct or model which he thought explained the intellectual processes employed by a reader for comprehension of the language of the writer or speaker. He listed six factors in comprehension: 1) perception; 2) apperception; 3) abstraction; 4) appraisal; 5) ideation; and 6) application. According to Cleland, the critical element in perception is the meaningful response rather than simple recognition. With apperception, Cleland is referring to the process of relating new material to one's background of experiences. These first two factors of Cleland's model relate closely to factors

referred to by other authors as literal and inferential reading comprehension.

c. Developing Reading Comprehension

There are some ways to improve reading comprehension. According to the language expert, Smith (1980:138-166) points out that there are five comprehension skills that the students need to learn to become good readers. Those are:

1. Most of the students learn to read sentences with appropriate intonation pattern. Oral reading is probably the only way to teach students to read with appropriate intonation patterns but it should always be followed by silent reading for specific purpose.

2. Most of the students learn to form mental pictures of situations or conditions that are described in a sentence or a larger passage. Forming mental images as one reads is important because many written materials require visualization in order to be comprehended.

3. Most of the students learn to answer questions about the facts or details presented in a sentence or a larger passage. Students are hoped gain not only a general impression from the material they read and for some material and for certain reading process, but also factual information and many details are important for a good understanding of the subject matter.

d. How to Teach Reading Comprehension

Various methods and strategies are offered to help to improve students reading comprehension, and possibly the most common technique of teaching reading is skimming and scanning. Skimming is reading to find out the main idea, while scanning is reading to find out a specific fact of information.

As a conclusion of how to teach reading comprehension, a teacher or a lecturer must consider several aspects, which are, topic, purpose, activities, students' ability, and motivation.

e. Reaching the Benefit of Reading

There are many benefits of reading books. Some are as follow:

1. Getting experiences by learning from the experience of author.

2. Protecting from the damage of brain. Reading helps us to grow new neurons in brain.

3. Stimulating creativity, because when reading we are flowing the author's idea to our idea, then creating the ideas into works we did, thing we produce, and into our relations we create with other people around us. In this case, we discover a unique side of ourselves. Creativity is a unique expression of ourselves in various aspects such as art, style, hobby, and career, act (Wycoft in Hernowo, 2004:44).

f. Building a Positive Idea and Perception of Reading

The same views of Roger Kanopasek that to be success is as many as the people are, however, he continued that actually there is one technique that can lead us to the success is by filling our mind with the positive thoughts (Kanopasek in Hernowo, 2003:54). Kanopasek possibly

will convey to us that the positive thoughts can empower us and recall the useful information become useful information become useful creativities for us, in this case, the positive thought or ideas in mind are the stimulus or positive suggestion to do a new thing.

In relating to reading, Hernomo stated that to increase the reading power, to support ourselves, to constantly keep reading, to feel enjoy in reading, we must build positive emotions in reading (Hernawati, 2003: 51&53). Possibly, we agree the statement because usually when we are doing something, what we think whether it is good or bad, the thoughts, and feeling steer us and effect in doing an activity.

g. Reading by Involving All the Sense

Reading involves many aspects, both thinking and feeling. According to Hernowo that reading should enable the three potentials, which are thinking, feeling, and acting (Hernowo, 2003:72).

Sometimes when reading, any words, sentences, or statements make us stop for a moment and asking to our self that it is true or not, or think to agree or disagree about the statement. It is actually an activity to think. In this case, "to think," means to grasp what implication and purpose of a word, or a statement into our self.

h. Activating Imagination When Reading

One of the big powers we have is the power of imagination. According to Viktor Frankl that, there are four big powers in our self, which are awareness, conscience, independent, and imagination (Frankl in Hernowo, 2003: 92). We will only discuss about the power of imagination in reading.

Imagination is ability to create an idea and a mental picture in mind (Gawain in Hernowo, 2003). Mental picture could means that we make visualization, the visualization is not in the form of concrete image, however the imagination in mind.

Ability to combine imagination with reality possibly will make the reading activity is effective. By imaging possibly also will help us to break down the difficult sentences, help us interpreting ideas and concluding the topic.

i. Maximizing the Memory When Reading

Remember and recall is the important step in reading. We will learn from Tony Buzan and Eric Jensen on how to maximize memory.

Remember is highly relating to recall or repeat. It is worthless we learn something however, we cannot remember and cannot be recalled when it is needed. In order to make the learning is effective; we should learn how to maximize the memory, and for intended that we should understand exactly how our memory works.

According to Tony Buzan that the memory is working within its strength and its weakness, so that the first step to improve memory is by realizing its weakness, further. He said that the human brain would be able to remember something for a long time if the memory is connected to the emotion (Buzan in Hernowo, 2003: 95, 99-100). It is understandable that we should give much attention to

any information; and the information closely linked to feeling or emotion.

Concept of Mind Mapping

a. Definition of Mind Mapping

Mind mapping is a note way taking created by the memory expert of English, Tony Buzan. This is constituted by result research into that way of brain process and information of keep information is not linearly, phase for the shake of phase, but brain of keep information and process information at random. From other side that, brain of keep information in the form of picture, and non in the form of article or letter.

According to Brown (2008), a mind map uses visual thinking to create an organized display of the plan, problem, or project—a diagram that mirrors the way our brains naturally processes information. Information and tasks radiate out from a central theme or goal, rather than falling below a header, as in a list. Related items link with connecting lines. New items can be captured randomly and then organized into the larger scheme, with new ideas flowing naturally as the map gains detail. Information can be illustrated with symbols, words, color, images, links, and attachments to add context, helping to reveal new directions, greater clarity, and big ideas.

This is very good for doing record-keeping, brainstorming, and to recollect items studied. Become, if someone wish to recollect items studied. Become, if someone wish to recollect entire or all items he which have study, hence he is only require to see map of mind he which have make, and he will remember altogether.

b. Parts of Mind Mapping

There are some parts of mind mapping (Windura, 2008:77-86) namely; (1) central image, (2) key word, (3) basic ordering ideas, (4) branches, (4) colour and (5) picture.

c. Benefits of Mind Mapping

By using a Mind Map to present lesson, the teacher is able to explain the meaning of each story section in a way that was creative and easy for her/his students to conceptualize. In addition, the students are able to have an interactive role in the lesson by providing story explanations that the teacher added to the map. The visuals and colors contained in the map continued to reinforce the story meanings by providing several points of mental associations for the students. Thus, the students were able to internalize the meaning of each story section

DePorter and Hernacki (2011:172) describe that there are some advantages of using mind mapping , they are as follows:

1. Flexible. Explaining something can be easy without confusing in add the material based on the mind mapping. We can put the label and category of

something based on our own opinion anywhere in the mind mapping.

2. Concentrate on the Topic. Getting the subtopics what we talk about with focus on the main ideas easily. Keep focus on the keyword can help us to make it simple and it does not waste the time.

d. The Criteria of Making Mind Mapping

Based on what Buzan (in Purwoko, 2005:20) states that the mind mapping uses colors and pictures to help constructing your imagination with your style in making mind mapping. Words or pictures which are in the curvy lines or branches will help the students' memory to make associations.

Teaching Procedure Using Mind Mapping

Learning by using mind mapping will activate all parts of the brain. Creating mind mapping can be by drawing the key points of information on a diagram, it can be used a colored pencil to be easy to remember the points. "Mind Mapping can help us freely to flow the thought and feeling we have into visual or image" (Hernowo, 2003: 114).

One way to know that the information we read is understandable by rewriting the information into our own language. If we have read a book and then we cannot recall into our own language, maybe we have not understood well the information.

Writing down what we understand from a reading is to take out the useful things for ourselves. If we rarely do it, probably we get nothing from the reading because we only fill the brain information and then it will be removed when new information is absorbed.

By practicing mind mapping in reading, the information will be saved stronger and longer in memory. Mind mapping is very enjoyable because the model is very individually; depend on the creator and different for everyone.

METHOD OF THE RESEARCH

Design of the Research

In this research, the researcher applied quasi-experimental method, which involved two groups. They were experimental and control group. The experimental group was given a treatment namely mind mapping technique, a treatment under investigation, while the control group was given a treatment without mind mapping technique. The researcher just provided the same material and was treated by the other English teacher.

Population and Sample

1. Population

The population of the research was the eleventh grade students of MAN 2 Model Makassar. It had seven classes with the number of population was 223 students.

2. Sample

Since the number of population was large, the writer used cluster random sampling. One class was chosen as the experimental group and one class for control group. From the sampling, the researcher determined class XI IPA 1 became experimental class and XI IPA 2 became control class. The number for every group was 34 students. So, the total number of sample was 68 students.

Variables of the Research

This research employed two variables; they are independent and dependent variables. The independent variable was mind mapping technique, and the dependent variable was the reading comprehension.

Operational Definition of the Variables

To make clear and avoid the readers' understanding, the researcher gave the operational definition of variables such as follows:

1. Mind mapping was a method of organizing information, which involved drawing diagrams to show how ideas in a text are related.
2. Reading comprehension was the clear grasp of what was read. Parts of comprehension to be investigated were:
 - a. Literal comprehension, that was to retrieve information stated in a passage.
 - b. Inferential comprehension, in order to find information which was not explicitly stated in the passage.
 - c. Critical comprehension, to compare information in a passage with the readers' own knowledge and values.

Instrument of the Research

The instruments were used to collect the data. The test was used as pretest and posttest by using objective tests. It consisted of 30 items. The pretest was given to the students before the treatment and the posttest was given after treatment in order to check their reading achievement.

Procedure of Data Collecting

Procedure of collecting data was chronologically performed as follows:

Pretest

The pretest was administered before the treatment was given in order to check the students' prior knowledge of reading skill.

Treatment

The treatment was conducted into eight meetings after giving pretest. The first meeting was held on September the researcher observed the teacher explain about reading through mind mapping application. Every meeting the researcher observed teacher gave one passage of the story to be mapped and discussed.

Data Analysis

To analyze the test result, the researcher used percentage analysis. The use of percentage analysis was to know the percentage of the students' reading achievement through mind mapping. To find out the mean score, standard deviation and the t-test value between the pretest and the posttest the writer uses *SPSS 17 program* (Gay, 2006:378).

FINDINGS AND DISCUSSION

Findings

The findings of the research deal with the effectiveness of mind mapping in improving students' reading comprehension which consist of the students' improvement of literal, inferential, and critical comprehension.

The effectiveness of Mind Mapping in improving students' reading comprehension before and after the treatment

The findings of the research present the result description of the research through the distribution score of pretest and posttest on literal level, inferential level, and critical level of reading comprehension. It also describes the students' reading comprehension achievement in general through the distribution score of pretest and posttest of the both groups, the experimental and the control class.

The mean score of the students' pretest and posttest

The students' achievement score in their reading comprehension. Before the treatment was conducted, both of the experimental and control groups were given

pretest to know the students' achievement on their reading comprehension. The purpose of the test was to find out whether both experimental and control group were in the same level or not. The standard deviation was meant to know how close the scores to the mean score.

DISCUSSION

The discussion deals with arguments and further interpretation of the research findings of test result both the pretest and posttest results.

The description of the data collected through test as explained in the previous section shows that the students' reading comprehension improves considerably. It is supported by the mean score rate of the students' pretest and posttest of experimental group. The mean score of pretest and posttest of experimental group was 17.14 to 24.17 while the mean score of pretest and posttest of control group was 17.82 to 21.82. The data in the previous section showed that the use of mind mapping technique gives better effect in learning reading than conventional way. It also can be seen from the mean score in which the mean score of posttest of the experimental and control group is quite different.

Although both mind mapping technique and conventional way can be used in teaching reading and they can improve the students' achievement, however, the mind mapping technique develops the students' reading comprehension more meaningfully than the conventional one. Mind mapping technique was able to change the students' reading comprehension better than before. So it can be inferred statistically based on t-test value that mind mapping technique is more effective in developing students' comprehension of literal, inferential and critical in reading skill.

Based on the result of the students' answers either in control or experimental group before and after treatment, the researcher noticed that students often did not understand the questions of the text. They would copy something from the text, sometimes totally missing the point of the question. As the researcher analyzed students' difficulties in reading comprehension, the researcher surmised that they had an underlying lack of linguistic competence in English that affected their reading. Some of the researcher's conclusions were their lack of vocabulary knowledge led to not recognizing the ideas of the reading, even when the question was literal and factual in the test. They also weak in interpreting the text given, and it also makes them difficult to read critically.

It proves that the problem on the background still occurs, however, the use of mind mapping technique was successfully maximized the students' reading comprehension. The students were encouraged with the use of mind mapping in their reading. As Buzan (2009)

states that mind mapping is a note way taking. This is constituted by result research into that way of brain process and information of keep information is not linearly, phase for the shake of phase, but brain of keep information and process information at random. From other side that, brain of keep information in the form of picture, and non in the form of article or letter.

The technique made the students be creative in doing their mind mapping of reading text. Furthermore, experimental group students gained greater autonomy in the development of their reading than the control group students. Yet, during and after the treatment period, the experimental group students were more concerned with their own activities. Through systematic practice of mind mapping technique just like a brainstorming that can help students understand what they read.

In applying mind mapping technique, the students are able improve the levels of reading comprehension. Those are literal, inferential, and critical. Richards (1995) states that different types of reading comprehension are distinguished according to the readers' purposes and the type of reading that they use. In this case, the students showed their interest to make mind mapping while and after reading. The students also could improve their understanding of the elements of text like orientation, resolution of the text, how does the character look like, and the moral value of the text.

From the data showed in the pretest and posttest the achievement of the students on their literal level of comprehension is increased where the data of posttest significantly improved from the distribution frequency of the result and the mean score as well as the standard deviation. The mean score of experimental group on literal level was 5.94 in pretest to 8.11 in posttest with the differences of mean score was 2.17, while the control group on literal level was 6.06 to 7.18 with the differences of mean score was 2.49.

The result of the students' achievement on the literal level of comprehension above indicates that the students have improvement to recognize the literal statements in the text. The students can explicitly or directly state the information given in the text; for example, main ideas, details, cause and effect and sequences written in the text.

On inferential level, the mean score of the experimental group in posttest is also increased from the pretest compared to the control group. The difference of the mean score was 2.03 with 5.73 for the pretest to 7.76 for the posttest. Similar to the control group, it also shows a little improvement with the difference of the mean score were 1.35. Unfortunately, the control group did not show a significant improvement, it can be seen from the mean score of the pretests' result was 5.97 to 7.14 for the posttest. On this inferential level, the students give better respond to the text given by using the instruction or guided questions of mind mapping technique. In this case, they are able to know the ideas that are not directly

stated in the text. So, it will help the students in getting meanings from the text without hardly read the text repeatedly. As Smith (1980: 218) states that in interpretation the readers read between the lines, make connections among individuals stated ideas, make inferences, draw conclusions, read between the lines to get inferences, or implied meanings from the text.

On the critical level of comprehension through the application of mind mapping technique, students are guided to read critically, they were guided to compare ideas in the text, think about text's big idea and messages that are implied in the written text. By relating those ideas to their own experiences in their real life, it will make them to find certain facts so they will be involved in logical thinking and reasoning as a part of reading critically. It can be seen from the improvement of the experimental group on critical level of comprehension where the mean score before the treatment given was 5.47 to 8.29 after the treatment, while the control group was 5.79 to 7.50.

Considering the mind mapping technique, the questions that have been given to students were suitable with taxonomy levels. The forms of question in treatment were yes/no questions, alternative questions, and informative-questions. Yes/no questions were simple questions that can be answered with either yes or no. These questions can be used to prompt the types of comprehension. When yes/no questions were used with personal response or evaluation, or other forms of questions seem to follow readily. For example, *Did you like this story? Why?* Similar to yes/no questions, alternative questions were subject to guessing and to explore students' comprehension deeply, the teacher continued to the informative-questions. The questions were beginning with *where, what, when, who, how, and why*. These kinds of questions have worked best and helped the students to improve their literal, inferential, and critical comprehension.

Based on the research result, the students have already made significant progress in reading after they are given the treatment. Mind mapping was very useful to lead the students recognize how ideas are organized within a text or concept. Apart from this, students are able to build up their own ideas by using mind mapping. Thus, the students' achievement in reading comprehension is better by using mind mapping technique than using a conventional way.

CONCLUSION AND SUGGESTION

Conclusion

The application of mind mapping technique more significantly improved the reading comprehension of the eleventh grade students of MAN 2 Model Makassar than non-mind mapping technique. The mean score of pretest

of the experimental and control group was not significantly different. The mean score of posttest of the experimental group was higher than the control group (24.17>21.82). Besides, all the three levels of comprehension are improved by using treatment, the literal level got the highest improvement with 2.17 point. It was followed by inferential level which got 2.03 point and critical level which got 2.82 point improvement. This led to the conclusion that the application of mind mapping technique improved the students' reading comprehension. It means that the use of mind mapping technique in teaching reading is very effective to improve the students' comprehension in terms of literal comprehension, inferential comprehension, and critical comprehension.

Suggestion

Based on the conclusion above, the researcher would like to give suggestions as follows:

1. The English teachers should be creative to manage the material presentation in the classroom for teaching reading comprehension such as using mind mapping technique. This is meant to avoid monotonous teaching technique.
2. It is suggested that the teaching literal, inferential and critical levels of reading comprehension should be continually implemented to the students. Further research needs to be conducted and explored more about the effectiveness of mind mapping technique particularly for university students.

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