Improving Students’ Reading Comprehension by using Semantic Mapping in Pre-reading

A Classroom Action Research to the Tenth Grade Students of a Senior High School in Mempawah

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Abstract
This research focuses on improving reading comprehension by using semantic mapping in pre-reading of the tenth grade students of one senior high school in Mempawah. There are some problems appeared in classroom while reading learning. The students have difficulties in reading comprehension. For that reason, the researcher conducted Classroom Action Research. The research was conducted in two cycles. It is followed by evaluation of a test. The finding showed that students’ reading comprehension of the tenth grade has improved. Then, the students’ responses to learning were positive. Their participation in cycle II has improved from cycle I and the teaching learning process was good. Semantic mapping is a good technique, which can be applied by the teacher in the classroom to improve the students’ reading comprehension.

Keywords: A Classroom Action Research (CAR), Reading Comprehension, Semantic Mapping, and Pre-Reading.

Introduction
In English learning, reading is a language skill that is crucial for EFL (English Foreign Language) learners. Through reading, the learners can explore and build their knowledge from what they
have read. In reading learning, reading comprehension is as a part of reading learning. Reading comprehension is an active process to construct a meaning of a written text while reading that relate the prior knowledge to new knowledge. When the students read the text, they used their prior knowledge and thought to comprehend the text. However, in fact, many students have lacked of reading comprehension, especially, the tenth grade students. The students have difficulties to comprehend the text.

Based on the researcher’s observation at the tenth grade there are some problems that faced by students in reading learning activity at the classroom. The students had difficulties in reading comprehension. The problems appeared during the teacher was reading the text, the students just listened and repeated the teacher’s reading but they did not understand what the information in the reading text that have been read by the teacher. After finish reading the text, the teacher asked the students to translate the text, only few students did the task. During reading activity in teaching and learning process, often students were not focus, busy with their businesses, talked to their friends and disturbed their friends. This was being bothered the teaching learning activity and few students finished their task well.

When the students translated the text, only some students came to the teacher and asked the difficult parts, like the new words or the words that they did not know the meaning. It caused
they have limited vocabulary and background knowledge. Besides that, the researcher observed the students score after they submitted the task, many students got low score and they have not reached the target score of KKM.

It made the teacher not satisfied. The researcher observed it and found that the students could not comprehend the reading text well. They could not focus to the text and the questions. These problems must be solved by the teacher with a good teaching reading strategy, so that the tenth grade students can get an improvement in reading comprehension. To improve students’ reading comprehension of the tenth grade students, the researcher proposes one strategy which can be applied and be a good strategy to solve the problems. The strategy that can be used for teaching reading is semantic mapping. Semantic mapping is one type of graphic organizers that relates with concept mapping. It is a visual strategy by graphic displaying words in categories and showing how they are related to one another. The researcher used this technique is to help the students to comprehend the text and answer the questions easier in order the students get improvement in their reading comprehension.

Semantic mapping has positive relation with reading comprehension. It can be a technique that works better and give good effect to the students in reading comprehension. In implementation of this research, semantic mapping would be
applied in pre-reading activity, which aimed to build the students’ prior knowledge before reading the text. Based on the explanation above, the researcher was interested in conducting a research to improve students’ reading comprehension by using semantic mapping in pre-reading to the tenth grade students of senior high school in Mempawah, so that the tenth grade students got improvements in reading comprehension.

**Research Question**

The research question in this research is: How can semantic mapping improve students’ reading comprehension of the tenth grade students of senior high school in Mempawah?

**Reading Comprehension**

Reading is a complex activity where the reader interacts with the written text to get information, ideas, and everything that the writer has shared in the text. “Reading is about understanding written texts. It is a complex activity that involves both perception and thought” (Pang, et al, 2003, p.6). In addition, Harris (1980) states that “reading is a form of communication. Information and ideas are exchanged between writer and reader in the act of communicating. The writer expresses his thoughts on paper with language, using whatever skills and styles he has developed personally” (as cited in Amoush, 2012, p.714). It means that the writer gives the information and the ideas to the reader when read writer’s writing.
Besides that, the definition of reading as stated by Nunan (1998) “it is a process of decoding written symbols, working from a smaller unit [individual letters] to large ones [words, clauses, and sentences]” (as cited in Agustina, Ngadiso, & Rochsantiningsih, 2013, p.25). Meanwhile, Alyousef (2006) states that reading is an interactive process (p.64). Barr, Sadow, & Blachwicz (1990) emphasizes that “reading is an active process in which readers interact with the text to reconstruct the message of the author or writer” (as cited in Amoush, 2012, p.719) and Amoush (2012) concluded from the recent studies, to comprehend what the readers read, the readers need to use the prior knowledge.

Pre-reading is the activity that should be done before reading on reading learning. “Pre-reading activities is refers to activities conducted in reading class before students engage in reading passage. Its purpose is to build students’ background knowledge, believing that such activation of prior knowledge can facilitate reading comprehension” Tateum (2007, p.7).

Before reading, try to make the students explore their prior knowledge and what they have already known from the text. It will build background knowledge and motivation for reading (Konza, 2011, p.4). This is good to give pre-reading activity to the students. Because it is helpful for them to activate their prior knowledge and make the students focus on what will be learnt by them while reading learning. Because of that, they can
comprehend the reading material better.

In reading, the reader must understand what they have read and the meaning of the text. “Comprehension is an understanding what you read” (McShane, 2005, p.71). To construct the meaning of the text, comprehension is needed. According to Pang, et al (2003), comprehension is “the process of making sense of words, sentences, and connected text and it is an active process.” The reader actively uses the conception of meaning and their prior knowledge to understand the information and ideas that there is in written text. That is why, it is stated as an active process; it is related to reader’s perception and thought that drawn in the reader’s mind with the result that the reader gets the writer’s messages.

In addition, according to the Literacy Information and Communication System online (2010, as cited in Richardson, 2010, p.9):

Comprehension is the reason for reading. If readers can read the words but do not understand what they are reading, they are not really reading. Good readers are both purposeful (they have a reason to read) and active (they think to make sense of what they read).

Good readers will comprehend the text. Whereas, the readers who read the words of reading text but they cannot understand what they read, they are not reading. So, they cannot comprehend well because, reading needs interaction between the reader and the
written text. The good readers are active to think to get the information what they have read.

Reading comprehension is a process of understanding the text that is an interactive process. “Reading and comprehension of text is a complex interactive process, and there is more to reading and comprehension than just decoding or word calling” (De Corte et al, 2001; McNaughton et al, 2004; Rivalland, 2000, as cited in Woolley, 2011). According to Tateum (2007) “reading comprehension is the process of the construction of meaning while reading” (p.7), everything that the writer writes to the text, the reader make uses their prior knowledge to get the information and understanding the meaning. Furthermore, Woolley (2011) states that “reading comprehension is the process of making meaning from text” (p.15).

“Reading comprehension is about relating prior knowledge to new knowledge contained in written text” (Pang, et al, 2003, p.19). “Background knowledge or knowledge that students already have from previous experience is the belief that new knowledge must be integrated with previous knowledge in order to achieve comprehension” (Denton, et al, 2007, p.46). The reader will build the knowledge more than before and different experience will make prior knowledge is also different that influence the students’ understanding of the text.
Semantic Mapping

Semantic mapping is like a brainstorming. To arrange the important point, words, or ideas, someone usually uses semantic mapping. The experts have introduce semantic mapping in learning. According to Johnson and Pearson (1984) “it is one technique of teaching word meanings which makes extensive use of classroom discussion is connection with a visual display (as cited in Stahl & Vancil, 1986).” It is purposed to help the students in motivation, and many aspects. The students can link new information with their previous knowledge (Masters, Mori, & Mori, 1993, as cited in Nyoni, 2012, p.266).

Moreover, many experts interpret the definition of semantic mapping. Antonnaci (1991, p.174) states that, “semantic mapping is a visual representation of knowledge, a picture of conceptual relationship” (as cited in Amoush, 2012, p.715). Little & Box (2011) states that “semantic maps are graphic representations of student-generated ideas related to the major concept to be read in the text” (p.27).

Furthermore, according to Heimlich & Pittelman (1986), “semantic mapping is one type of graphic organizer. It helps students visually organize and graphically show the relationship between one piece of information and another” (as cited in Amoush, 2012, p.718). So, from the explanations above, it can be concluded that semantic mapping is a technique of teaching word
that is connection with visual organizer that shows the ideas and information in the concept that relates one to another.

Figure 1 Semantic Map (adapted from Graney, 1992 cited in Manoli and Papadopoulou, 2012, p.350)

Moreover, semantic mapping is described as “diagrams that can be used to represent words, ideas, or other items linked to and arrange around a central key word or idea of the text” (Graney, 1992; Iranmehr, 2011 as cited in Manoli & Papadopoulou, 2012). In addition, Baleghizadeh and Naeim (2011) state that “the basis of semantic mapping is the relationships among its elements” (p.12). The words or may be the ideas are arranged to categorize and sub-categorize in the concept of semantic mapping is related to another.

Pearson and Johnson explain that for any concept, there are at least three types of associations. First, associations of class that is the order of things the concept falls into; second, associations of property. It is the attributes that define the concept; and third, associations of example. It is exemplars of the concept (as cited in Nyoni, 2012, p.265).
Semantic mapping is one type of graphic organizer that relate to concept map, so that it many applied in the any discipline, especially in academic. As stated by Little & Box (2011), it aims “to make better sense of a reading, document learning or thinking, or brainstorming of a project” (p.27). We can make a set of concept map with linking the ideas that have connection and it will help the students easy to learn the reading material, so they will interest in reading learning.

Here, semantic mapping has an important aspect as explained by Little & Box (2011) “a very important aspect of semantic mapping is that the teacher makes use of the students’ collective prior knowledge of a particular concept and arranges that prior knowledge into related conceptual sub-categories” (p.27). While applying semantic mapping, students’ prior knowledge or information and ideas that they already know will be explored and arrange it to the concept. In implementation, the strategy that can
be used for teaching reading is semantic mapping (McShane, 2005). Semantic mapping can be applied in pre-reading and post-reading (Little & Box, 2011). Moreover, semantic mapping is most effective when is used in before, during, and after reading (Agustina, Ngadiso, & Rochsantiningsih, 2013, p.24). Here are the following procedure exemplifies all three stages of the use of semantic mapping in the classroom. The five phases are introducing the topic, brainstorming, categorization, personalizing the map, and post-assignment synthesis (Zaid, 1995).

The procedure of semantic mapping according to Hague (1987) are write target topic on chalk board, have students brainstorm words related to topic, write/list the words by categories in form of a map, have the students provide labels for each category, discuss the words on the semantic map, and revise map after discussion (as cited in Supramaniam, 2011, p.32).

In using semantic mapping, it has some benefits that are useful for the students. It can help the students in learning, especially in reading comprehension. The benefits of semantic mapping have been explained in the recent studies. First, it is about prior knowledge. Zaid (1995) explains that it may be used as a pre-assignment strategy to activate students’ prior knowledge. As stated by Little & Box (2011) “semantic mapping is an excellent pre-reading strategy and is especially useful for students who have a lack of sufficient prior knowledge related to a concept
to be read and studied” (p.29). It works in pre-reading that aim to develop their knowledge by build the prior knowledge while reading learning, especially in reading comprehension.

Moreover, when the students encountered the new reading material and they lacked of prior knowledge, semantic mapping will make easier and helps the students to comprehend the words and the meaning of content from reading materials (Little & Box, 2011, p.24). As stated by Ueta (2005) semantic mapping can build students’ background knowledge. Besides, Agustina, Ngadiso, & Rochsantiningsih (2013) stated that semantic mapping helps the students to active students’ prior knowledge when it is as pre-reading (p.24).

In addition, Antonnaci, et. al. (2011) as cited in Agustina, Ngadiso, & Rochsantiningsih (2013) explain the advantages of using semantic mapping are helping to develop word knowledge, activate students’ prior knowledge, and to determine how much building knowledge is required (p.27).

Second is about improvement of reading comprehension. Semantic mapping helps the students to improvement in reading comprehension, written expression, and vocabulary development (Zaid, 1995). Besides that, it can help the students more understand, remember the words of text, and it is more memorable (Duke & Pearson, 2002).

Amoush (2012) stated that almost the same findings, many
studies showed that the learners’ reading comprehension get improving by using semantic mapping strategy. Besides, Supramaniam (2011) is also states that student’s reading comprehension will get improving by using semantic mapping (p.20). In addition, as stated by Alyousef (2006) he believes semantic mapping strategy can be done in pre-reading activity that aimed for increasing learners’ motivation (p.68). This is show that semantic mapping can become an improvement of reading.

Research Method

The method used in the study is Classroom Action Research (CAR). Kemmis & McTaggart (1992) argue that “action research is an approach to improving education by changing it and learning from the consequences of changes” (as cited in Cohen, Manion, & Morrison, 2000, p.226). “Classroom Action Research is a method of finding out what works best in your own classroom so that you can improve students’ learning” (Mettetal, 2001, p.7). The researcher does observation and identifies what are the problems to be in the classroom for teaching learning process and find as well as use what are strategy for instruction that suitable to be applied in improvement of students learning and teachers’ performance. The researcher finds out the best solution to improve students’ learning.

The researcher used classroom action research design by Kemmis and McTaggart that contained cycles of planning, acting,
observing, and reflecting.

**Planning.** According to Kemmis & McTaggart (1988) planning is to “identify a problem or issue and develop a plan of action in order to bring about improvements in a specific area of the research context” (as cited in Burns, 2010, p.8). Whereas, according to Burns & Kurtoglu-Hooton (2014) “the planning stage involves refining your ideas about what to investigate in your classroom” (p.23). From the explanation above, in this phase, the researcher does the discussion with the teacher at the school and makes a planning for the action after investigated and identified the students’ problems.

**Acting.** In this phase, the researcher implemented the technique and the planning in teaching learning process which bring to improvement. Burns & Kurtoglu-Hooton (2014) state that “acting involves acting on your plans and experimenting with new approaches or activities” (p.23). In addition, acting according to Kemmis & McTaggart (1988) “plan is a carefully considered one which involves some deliberate interventions into your teaching situation that you put into action over an agreed period of time” (as cited in Burns, 2010, p.8).

**Observing.** In this phase, the researcher did the observation and got the information about the class condition. Burns & Kurtoglu-Hooton (2014) explain “in observe, you collect information, or data, on what is happening as a result of
implementing your plans” (p.23). According to Kemmis & McTaggart (1988) “this phase involves you in observing systematically the effects of the action and documenting the context, actions and opinions of those involved” (as cited in Burns, 2010, p.8).

**Reflecting.** This phase was carried out after the researcher did the planning, acting and observing. Burns & Kurtoglu-Hooton (2014) state that “this part of the process occurs from the time the research begins as you reflect more systematically than usual on what effect your research is having” (p.23). In addition, Kemmis & McTaggart (1988) say that “you reflect on, evaluate and describe the effects of the action in order to make sense of what has happened and to understand the issue you have explored more clearly” (as cited in Burns, 2010, p.8). In this phase, the researcher does an evaluating the effect of the action and reflecting about the result of acting and observing or what happened when the action.

**Population and Sample**

In this research, the population was the tenth grade of senior high school in Mempawah consist of 81 students. The number of students in each class is not the same. This research used purposive sampling where the participants were “selected by some arbitrary method because it is known to be representative of the total population. The Idea is to pick out the sample in relation to some criterion,” (Singh, 2006, p.91) and the participants of the
research are 31 students of a class of the tenth grade. The students had more difficulties in reading comprehension than the other classes of same level.

The Technique for Collecting Data

In this class action research (CAR), there are two types of data collection tools: qualitative data (observation) and quantitative data (measurement).

Observation. It is an important part to collect the data and most used as an instrument in action research and we can make decisions from the observation (Koshy, 2005, p.98). In this case, the researcher used observation field note and checklist that was done directly in the classroom. “Observation field notes are used to note descriptions and accounts of what happened in the classroom” (Burns, 2010, p.67), whereas observation checklist is called structured observation using checklist (Burns, 2010, p.62).

From the observation, the description of students’ activity and their participation for reading learning process could be gained. It took place when the implementation of CAR, reading learning, and the participation of students in applying semantic mapping as an improvement of students’ reading comprehension.

Measurement/Test Instrument. Measurement, according to Burns (2010), “is a single value given to the set of quantitative data. The number shows where the set of data collects around a central point” (p.121). Dowdy, Wearden, & Chilko (2004) states
“collecting sample data consists in recording the various values the variables assume for each member of the sample” (p.31). One of tests according to McShane (2006) is available in written form that is written tests of silent reading comprehension (p.76). The learner reads a passage and answers questions. In this research, the researcher gives the evaluation to the students at the end of reading learning, after the students applied semantic mapping in pre-reading and read the text which has been given to them by the researcher. The researcher used the students’ scores to get the data result of each cycle.

The Technique of Data Analysis

The data used in this research is the observation of the students’ activities in the classroom during teaching learning process. The researcher analyzed the scores of each student in each cycle and put on an average of students’ reading score per action in each cycle to analyze the statistical data, it is the students’ mean score in each cycle of classroom action research. It uses the formula adapted from Singh (2006, p.286).

Findings

Cycle I. After teaching learning process, the researcher and the teacher discussed the conclusion of the implementation of the action. The researcher did the reflecting for the first cycle. Based on the findings of observation toward teaching learning process in this cycle, the students’ participation was still low, because they
did not actively propose the ideas were, not enthusiastic, and did not do the tasks according to the instructions. Those were be the problems which encountered by the researcher in the first cycle. Following the teacher’s suggestion, the researcher might use media to make the students understand the material well.

In addition, based on the findings of evaluation in cycle I, there were 14 students who passed the KKM from 31 students and the students’ mean score in cycle I is 64.52. This condition has not reached the KKM yet and the researcher continued the next cycle to get the students’ improvement score through semantic mapping. The researcher would calculate the student’s score and the mean score in cycle I and cycle II.

**Cycle II.** Based on the findings of acting and observing toward teaching learning process in this cycle, the researcher and the teacher were satisfied because the improvement of the students’ reading comprehension has been reached. The researcher and the teacher reflected the findings, many improvements after did the second cycle of classroom action research. Furthermore, the students’ participation in learning process was better than first cycle and has reached as with the target of observation, it can be seen in appendices. There was not a problem that appeared and was encountered by the researcher in this cycle.

Moreover, there was a progress of their score from cycle I to cycle II which has been showed 20 students who passed the KKM
from 31 students and the students’ mean score in the second cycle is 74.84. It means that were some student’s improvement scores if 10.32 (74.84 – 64.52) from the mean score in the first cycle to the second cycle and there are 6 students get an improvement from first cycle.

Furthermore, the researcher has analyzed the score of each student from cycle I to cycle II and arranged it to some categories.

**Table 1 The categories of students’ score**

<table>
<thead>
<tr>
<th>No.</th>
<th>Category</th>
<th>Number of students</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Improving score</td>
<td>18</td>
</tr>
<tr>
<td>2.</td>
<td>Improving score under KKM</td>
<td>6</td>
</tr>
<tr>
<td>3.</td>
<td>Improving score reach KKM</td>
<td>12</td>
</tr>
<tr>
<td>4.</td>
<td>Decrease score</td>
<td>2</td>
</tr>
<tr>
<td>5.</td>
<td>Constant score</td>
<td>11</td>
</tr>
<tr>
<td>6.</td>
<td>Constant score under KKM</td>
<td>5</td>
</tr>
<tr>
<td>7.</td>
<td>Constant score reach KKM</td>
<td>6</td>
</tr>
</tbody>
</table>

From the table, it can be explained that the students who get an improving score are 18 students from 31 students in cycle I to cycle II. The students who have decrease scores are 2 students and 11 students who get the constant score. The total number of students in those categories (improving score, decrease score, and constant score) are blended of the students who passed the KKM and the students who did not pass the KKM. Meanwhile, the students who get an improving score under KKM are 6 students and 12 students get an improving score which reached the KKM. Moreover, 5 students get the constant score under the KKM.
whereas 6 students get the constant score which reached the KKM.

Based on the findings, the researcher decided to stop the cycle of CAR because it succeeded. The students’ score have improvement and this research has reached the target of students’ mean score that is the target score of KKM and based on the observation, students’ participation were positive and had many progresses. It should be concluded that the implementing of classroom action research by using semantic mapping can improving students’ comprehension and the cycle was stopped.

**Discussion**

As the findings of measurement, the researcher has concluded the research findings of students score. The researcher has analyzed the score of each students in cycle I and cycle II. The students who get an improving score are 18 students from 31 students in cycle I to cycle II. The students who have decrease score are 2 students and their score reach the target of KKM. It still can be said that the action is not failed although their score is decrease. Whereas, 11 students who get the constant score.

Meanwhile, the students who get an improving score under KKM are 6 students. The action cannot be said failed, because the students still got increasing to their score, it just the target of KKM has not reached and 12 students get an improving score which reached the KKM. Moreover, 5 students get the constant score under the KKM. Their score is under the target of KKM and has
not increased from cycle I to cycle II. Besides that, 6 students get the constant score which reached the KKM. Their score is not change, but their score from cycle I to cycle II has reached the target of KKM.

Based on the observation data, the students’ participation in cycle I was still low. Because they were still confused and shy to propose their idea, and asked to the researcher. They did not focus on the material. They were busy with their business and like to disturb their friends. So that, the tasks were not did as with command by the students, because they did not listen the instructions well. Some students come late to the class with all of their reasoning.

For the cycle II, the students have active, enthusiastic and given the positive participations. During teaching learning process, the students actively to write down the material and focused to the material. The students have come on time to the class and their attendance was well. They actively ask the questions to the researcher and proposed the ideas. When did the evaluation, the students were be quiet and calm, and did the tasks as with the researcher’s instructions. They were seemed easier to do their work than first cycle.

From the explanation above, the classroom action research (CAR) is succeeded and the next cycle is stopped as states by Latief (2009) “the targeted criteria of success have been
completely achieved, the cycle is successful, and no further cycle is needed” (p.20.) The students have had improvement in reading comprehension by using semantic mapping in pre-reading from cycle I to cycle II.

As for the research question, the researcher found a result that by using semantic mapping in pre-reading can improve students’ reading comprehension of the tenth grade. The result of this research support previous findings that report semantic mapping has positive relation with reading comprehension (Tateum, 2007) and students’ reading comprehension get improvement by using semantic mapping (Amoush, 2012; Supramaniam, 2011; Zaid, 1995). Besides that, semantic mapping helps to activate and build students’ prior knowledge (Zaid, 1995; Ueta, 2005; Little and Box, 2011; Antonnaci, et al, 2011, as cited in Agustina, , Ngadiso, and Rochsantiningsih, 2013) and comprehend the text (Little and Box, 2011). Moreover, the students are motivated in reading learning by semantic mapping technique (Masters, Mori, and Mori, 1993, as cited in Nyoni, 2012, p.266). It has shown that semantic mapping is a good technique which can be applied for improving students’ reading comprehension; and help the teacher to solve the problems in the classroom and students’ difficulties in reading comprehension.
Conclusion

From the findings of the Classroom Action Research (CAR) which has held in senior high school in Mempawah, it can be concluded that the students’ reading comprehension could be improved by using semantic mapping in pre-reading. The most important one, the researcher believes that semantic mapping can help the teacher to solve the problems which appeared in the classroom while reading learning and students’ difficulties in reading comprehension.

The use of semantic mapping in pre-reading activity, it can build the student’s prior knowledge by only reading the topic. Semantic mapping is created with the circle of keyword and some categories. In the center circle of semantic mapping is written the keyword or the topic of reading text. It will stimulate the students to propose the ideas that relates with the topic and arrange them to the categories. To propose the ideas, the students use their prior knowledge. In this section, the students are become more active. To arrange the ideas in the categories, it is discussed together by the teacher and the students.

After applied the semantic mapping in pre-reading, the students are given the reading text that will be the evaluation on reading comprehension. The ideas on the semantic mapping are related to the reading text by the students. Furthermore, semantic mapping helps the students to comprehend the reading text well
and they are easy to answer the questions. It is a good technique
and can be a supportive technique to be applied by the teacher. If
the students have known to implement the semantic mapping, they
can do it by themselves.

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