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Research paper

The Effects of Using Semantic Mapping Strategy Training on Reading Comprehension Performance Among Uthm Students

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Abstract

The objective of this study is to identify the effects of semantic mapping on the reading comprehension texts among University Tun Hussein Onn Malaysia (UTHM) degree students. This study sought to determine if there are any benefits in instructing UTHM students to use semantic mapping as a mean of improving their comprehension of information in reading texts. The effects will be measured by comparing the results of pre test and post test conducted among the students. The sample consisted of 40 UTHM degree students who were from one class. All of them received the semantic mapping strategy training and sat for both pre test and post test. The findings indicated that semantic mapping strategy training affected the reading comprehension performance among the students based on the differences in the students' results of pre test and post test. The results of this finding can be implied by educators in their teaching and learning process.

Keywords: *ESL; semantic mapping strategy training; reading comprehension; reading text; pre and post test.*

1. Introduction

In Malaysia, the Government has been encouraging the use of the English language and has, in fact, embarked on some adjustments in the education system. The government was of the view that the change was not only necessary but also vital to Malaysia's ability to keep pace and move ahead in the fast changing world as English has become the global lingua franca. Due to this Malaysians are encouraged to embrace English as their language of knowledge.

As English has now developed to become the language of knowledge and most of today's reading materials are written in English, a lot of non-native students are required to gain information from various fields of knowledge through the medium of written English. For students who are pursuing their studies in tertiary education, English is significantly important because through reading materials written in English, these students are able to exploit in depth any topic of interest. Specifically, in this Information Age, information and knowledge needed for us to develop further are found mostly in English written materials and university students find the need and necessity to carry out an extensive amount of reading these materials in order to undertake term assignments. Therefore, in order to meet their needs, university students need to show that they have increasing independence in their ability to acquire information from what is read. In other words, university students must be able to read efficiently in order to gain information from the texts they read.

There are several reading strategies that can be practiced by university students to help them comprehend expository texts they read. This present study examines one of several metacognitive strategies in reading that can be practiced by university students in order to help them gain information needed from various expository texts.

The term "metacognitive" was introduced by Flavell consisting primarily of an understanding or perception of the ways different factors act and interact to affect the course and outcome of cognitive enterprises (1). Tei and Steward defined metacognitive as "having knowledge (cognitive) and having understanding, control over and appropriate use of that knowledge" (2). In other words, 'metacognitive' can be simply be defined as 'thinking about thinking'. Learners who are metacognitively aware have their own strategies in order to find out or figure out what they need to do.

Nowadays, educators are still interested with the idea that student can be taught to independently employ specific reading strategies during the reading process. Garner had written that "….. metacognitive processes are those processes in which the individual carefully considers thoughts in problem solving situations through the strategies of self-planning, self-monitoring, self-regulating, self-questioning, self-reflecting, or self-reviewing" (3).

Traditional remedial courses often do not ask students to engage with texts, but instead focus on rote drills at a phrase or sentence level. The technique which is the focus of this research, the graphic organizer, is one which helps develop metacognitive awareness and reader engagement by asking students to interact with the text as a whole. Graphic organizers require direct interaction with the text more than other metacognitive strategies because more engagement is necessary during the construction of the organizers. These organizers are often called by a number of different names: semantic webs or maps, idea, discussion or story webs and flow charts.

From the above statement, it is clear that the focus of this present study is on the effects of semantic mappings strategy training on the reading comprehension of expository texts among college students. Semantic mapping is metacognitive strategy training in reading that will be discussed in this study.

All English teachers would like their students to be good readers, but not all agree on the best way to teach reading skills. Effective reading requires not only accurate reading skills, but also to be

able to comprehend easily and automatically (4). Researchers found that one of the ways that may have a significant effect on the teaching of reading process is the semantic mapping strategy. Antonnaci states that, "semantic mapping is a visual representation of knowledge, a picture of conceptual relationship (5). It means that semantic mapping can be as a visual representation of knowledge. Zaid said that, "the students who use semantic mapping manifest considerable improvement reading comprehension, written expression and vocabulary development (6).

Generally, semantic mapping is defined simply as a visual strategy for vocabulary expansion and extension of knowledge by displaying in categories words related to one another (5). Semantic mapping is an adaptation of concept definition mapping but builds on students' prior knowledge or schema. While it draws on prior knowledge it recognizes important components and shows the relationships among the components. The framework of semantic mapping includes: the concept word, two category examples, and other examples. This is a very interactive process and should be modeled by the teacher first.

Hanf was the first to develop the mapping procedure; it was originally designed to improve the teaching of study skills (7). Semantic mapping is a term which embraces a variety of strategies designed to display graphically information within categories related to a central concept. Research indicated that semantic mapping can be a very useful reading strategy and a good alternative to traditional pre reading and post reading activities (8). Semantic mapping involves brainstorm session in which students are to develop a map based on a topic before or after reading a text. It is effective for vocabulary development. In pre reading and post reading activities, semantic mapping can be used in introducing the key vocabulary from the reading passage and also provides the teachers with an assessment of the background knowledge (9).

Reading theorists have likened the process of reading comprehension to the building of bridges between the new and the unknown (10). Since the 1970s, a number of schema researchers have demonstrated that having background knowledge of text structure helps to build comprehension (11). Certainly, one of the major benefits of semantic mapping is that it helps to build schemata; however, this is only one of many possible benefits of using semantic mapping activities in reading classrooms.

Bromley states that mapping develops schema by allowing new information to be related to prior knowledge (12). Bos and Anders used semantic mapping as one of the experimental conditions in a study of metacognitive strategies with learning disabled bilingual students (13). They found that because of their interactive nature, the use of semantic mapping was found to be an effective instructional tool in the learning of content area concepts. Armbuster and Anderson found that semantic mapping helps students to analyze the relationships between ideas in the text, thereby facilitating comprehension and the recall of ideas at a later time (14).

In the Malaysian context, studies on metacognitive strategies in reading do exist, but the issue of the effects of semantic mapping on reading comprehension remains an unexplored area. As shown in past researches, semantic mapping is an effective teaching strategy in different areas of reading instruction. Based on the previous researches findings mostly done in the West that are mentioned above, the present study sought to determine the effects of semantic mapping on reading comprehension among UTHM students.

Most Malaysian classroom observations in schools and tertiary level show that ESL students face problems in comprehending texts in English (15). The lack of ability to comprehend texts in English is a major obstacle in academic pursuit for ESL students at tertiary level as they need to read for information from reference books written in English.

It has often been mentioned that as ESL students progress through university, they may experience difficulty in reading. This is because of the higher expectations of the varied types of texts, especially those related to their academic disciplines. At tertiary level, a unique characteristic of advanced informational materials is that they are mostly expository. Students who are familiar with the structure of narrative material are often at a loss to organize or to recognize organization in expository texts. They find it difficult to see the relationships of the ideas and information and they have difficulty in recalling information (16). This essentially means that students have to use specific reading strategies in helping them to comprehend the texts they read as the reading and understanding of expository texts appear to be of paramount importance when students need to produce term paper reports and assignments.

The lack of research in determining the effects of semantic mapping on the reading comprehension of university students formed the impetus for conducting this study. To the best of the researcher's knowledge, similar research has not been conducted in Malaysia, especially among university students.

The purpose of this study is to identify the effects of semantic mapping strategy training on the reading comprehension of texts among UTHM degree students Semester 2 2015/16 in Foundation English classroom. This study sought to determine if there are any benefits in instructing UTHM students to use semantic mapping as a mean of improving their comprehension of information in reading texts. The effects will be measured by comparing the results of pretest and post test conducted among the students.

Specifically, this study is based on these objectives:

1. To investigate the effects of using semantic mapping strategy training in understanding reading text among students.
2. To identify the difference in the comprehension test performance between the pretest and posttest.

2. Research Methodology

This study is mainly focused on a group of 40 UTHM degree students, who are from one class. They are Semester 2 2015/16 students who are taking Foundation English subject. This class consists of 40 students from combination of various faculties in UTHM. They are all first-year students who are from different previous background of studies such as matriculation, polytechnics, form six and also diploma students. The 40 students chosen for this study were those considered to be below average in English proficiency. They were those who obtained scores ranging from band 1 to band 2 in the Malaysian University English Test (MUET) which is compulsory for all the students as a requirement to enter university.

The participants were taught by the researcher herself. During the training sessions, a few passages related to general knowledge were randomly selected. The major reason of choosing these types of texts were to expose the participants to more issues related to their surroundings and this study was also hoped to help the participants in their comprehension of various types of texts.

During the first day of the training session, a simple reading passage that was appropriate to the participants' reading level entitled 'Pen Pal' was selected. The passage was selected since it was a general knowledge passage and contained a lot of details which was appropriate for the exercises on creating semantic map.

On the first day of the training session, the participants and researcher discussed the meaning of the word 'Pen Pal';. The researcher wrote the word 'Pen Pal' on the whiteboard and a list of questions were asked to stimulate discussion among the students and researcher. The ideas brought up by the participants were written on the whiteboard in a form of semantic map. The researcher, using the other whiteboard discussed with the participants on how to organize the semantic map drawn earlier according to main topic, sub topics and supporting details. Both semantic maps were compared and the participants agreed that the second semantic map was clearer. Towards the end of the class the participants were asked to copy the semantic map and were given the passage on 'Pen Pal' adapted from the internet. They were asked to read the passage and to expand the pre reading semantic map in their groups. The participants worked in a group of five. The researcher then appointed a participant to gather input from the

class members and wrote the information on the whiteboard. The researcher and participants compared the pre reading and post reading maps and discussed on how helpful semantic map are to them in helping them to comprehend the passage as it was a passage containing a lot of details. At the end of the class hour, the researcher instructed them to work in pairs and create semantic map based on a reading passage of 'Looking for a Pen Pal'. They were instructed to use a software from the internet called GoConqr (www.goconqr.com) to design the mind map. They were to present their mind map in the next class.

As for the second day of the training session, after the presentation the participants were given to passages and were instructed to create one map for each passage with the researchers' guide.

One day prior to the commencement of the training, all the participants were given a pretest. After three hours (on week) of training, the participants were again given the same set of test as a posttest. The participants were not provided with the correct answers after the pretest, so even if they remember what they answered during pretest, they had no idea whether their answers were correct or not.

Both pre test and post test were a set of assessment test for reading assigned by the Department of Language and Communication, Faculty of Science, Technology and Human Development, UTHM for Semester 2 2015/16. The pretest marks were used for the participants' assessment marks that were part of their coursework marks. The posttest results will not change their assessment marks. It will only be used for the purpose of this research.

Results of the present study seem to show positive effects that teaching students semantic mapping is fruitful as it promotes comprehension. Yet, several limiting factors pertaining to the study require consideration.

First, the participants of the present study were the UTHM students. The findings of this study are confined to these students and may not be representative to other Universities in Malaysia. Besides that, the findings are only generalized to university ESL readers from one particular academic discipline that is Engineering students who were average in English proficiency. Therefore, the findings cannot be applied to ESL learners from other education background, for example, secondary schools or even to ESL learners of other language proficiency levels or reading ability.

Secondly, the set of test used were the same for both pre and post tests. Participants were maybe able to remember the reading texts and the set of questions during the post test since they have read and did the same questions during pre test.

The third limitation relates to the scope of the research that was only the usage of semantic mapping in reading. Semantic mapping can be a useful strategy in prewriting activity as it encourages students to 'map out' their ideas before writing. In addition, semantic mapping is only one of the various meta-cognitive strategies used in the present study. There are other meta-cognitive strategies that can enhance reading comprehension among students.

3. Results and Discussion

The focus of this study was to see the effects of semantic mapping on the reading comprehension of UTHM students. The effects were measured based on the participants' performance in the reading test. The results of the pre test and post test were compared. Each pre test and post test of was scored by the researcher herself. The total of the test was converted from 45 to 40%. Below (Table 1) are the comparisons of the results;

Table 1: Students Pre-test and Post-test Result

	Pre test	Post test
A	5	10
A-	7	10
B+	10	15
B	8	3
B-	10	2

From the findings, it can be summarized that semantic mapping strategy is very useful in helping the participants to comprehend the passage better. The data of the post test revealed that the students improved after the semantic mapping strategy training session.

The students' perceptions on semantic mapping were based on data collected in the posttest interview. (Refer to Appendix A)

Six participants were asked to return for an additional session of individual follow-up interview. Participants who scored A were considered top performers, those who scored B+ middle performers and those who scored of B- and below were considered bottom performers.

The purpose of the interviews was primarily to collect anecdotal information regarding the participants' perceptions of semantic mapping process. Other reasons for conducting the interviews were to determine what the participants taught about the impact of discussion upon their comprehension of the test, the perceived difficulty of the readings texts, and their likelihood of using semantic mapping after being involved in the training.

All the participants expressed positive feelings about the semantic mapping strategy and all believed that the technique improved their comprehension. One noted, " The mapping made the readings easier to remember and organize. They are good references because the important ideas are right on the map". Another said, "I think mapping is good because as I read, I write things down and organizing it helps me to remember. It is also easier because later I can go back and reread the map and study. It is very useful with text that contains a lot of details". One participants said, "I think mapping is really good and can help me in understanding what that I read and have to report on".

The interviews showed that the semantic mapping training were very helpful for the students.

4. Conclusion and Recommendations

The present study was concerned with the role of semantic mapping in the ESL reading. Specifically, this study attempted to examine the effects of semantic mapping on the reading comprehension of ESL readers.

This study was mainly focused on a group of 40 UTHM first-year degree students, who were from one class who were taking Foundation English subject. The students were given trainings on semantic mapping based on few reading passages. Before the training, the students had already sat for the pretest. After three hours of training sessions, the students were given the posttest using the same set of test.

The major findings of the present study showed that after the students received the semantic mapping strategy training performed better in their posttest compared to the pretest. It showed that the semantic mapping strategy training on the students was effective.

This study was carried out on only 40 students in UTHM. Although this study revealed the semantic mapping strategy training did provide significant benefit to the 40 students, this finding cannot be generalized to other ESL readers in Malaysia. There is further need to replicate the present study, using the same design but with different samples of ESL subjects of different reading ability, language proficiency levels, education background and with more time used for the training and testing sessions.

This study had only examined the students' performance in the reading comprehension after the semantic mapping strategy training based on the pre and post tests. Perhaps, a research on the students' performance on writing could be done after sessions of using semantic mapping in reading lesson is done. As in most researchers conducted in the West, the output of the researches were measured from the participants retelling procedure (17, 18). By doing this, the researcher may even evaluate the usage of language structure of the students.

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References

[1] Flavell JH. Metacognition and cognitive monitoring: A new area of cognitive–developmental inquiry. American psychologist. 1979;34(10):906.
[2] Tei E, Stewart O, editors. Effective studying from text: Applying metacognitive strategies. Forum for reading; 1985: University of Wisconsin-Parkside.
[3] Garner R. Metacognition and reading comprehension: Ablex Publishing; 1987.
[4] Amoush K. The effectiveness of using semantic mapping strategy on reading comprehension of Jordanian University students. Interdisciplinary Journal of Contemporary Research in Business. 2012;4(6):714-9.
[5] Antonacci PA. Students Search for Meaning in the Text through Semantic Mapping. Social Education. 1991;55(3):174.
[6] Zaid MA, editor Semantic mapping in communicative language teaching. English Teaching Forum; 1995.
[7] Hanf MB. Mapping: A technique for translating reading into thinking. Journal of reading. 1971;14(4):225-70.
[8] Carrell PL, Pharis BG, Liberto JC. Metacognitive strategy training for ESL reading. Tesol Quarterly. 1989:647-78.
[9] Rasekh ZE, Ranjbary R. Metacognitive strategy training for vocabulary learning. Tesl-Ej. 2003;7(2):1-18.
[10] Pearson PD, Hansen J, Gordon C. The effect of background knowledge on young children's comprehension of explicit and implicit information. Journal of Literacy Research. 1979;11(3):201-9.
[11] Carrell PL. Content and formal schemata in ESL reading. Tesol quarterly. 1987:461-81.
[12] Bromley KDA. Webbing with literature: Creating story maps with children's books: Allyn & Bacon; 1996.
[13] Bos CS, Anders PL. Using interactive teaching and learning strategies to promote text comprehension and content learning for students with learning disabilities. International Journal of Disability, Development and Education. 1992;39(3):225-38.
[14] Armbruster BB, Lehr F, Osborn J, Adler CR. Putting Reading First: The Research Building Blocks for Teaching Children to Read: Kindergarten Through Grade 3: National Institute for Literacy, National Institute of Child Health and Human Development, US Department of Education; 2003.
[15] Ting SH. Examining Comprehension Strategy-Use Via Thinking Aloud and Comprehension Via Retelling: A Comparative Study of Proficient and Less Proficient ESL Readers at Matriculation Level: Universiti Pertanian Malaysia; 1995.
[16] Naughton VM. Creative mapping for content reading. Journal of Reading. 1993;37(4):324-6.
[17] Schmid RF, Telaro G. Concept mapping as an instructional strategy for high school biology. The Journal of Educational Research. 1990;84(2):78-85.
[18] Hoppes G. Spinning a Prereading Lesson. Reading Teacher. 1989;42(6):450.

Appendix A

Interview Questions

1. What do you think about the process of semantic mapping?
2. Do you remember doing anything special in your mind when you were reading the texts?
3. What about when you were answering the questions in the test for the first time?
4. The second time?
5. Did the training on how to use semantic mapping help you to comprehend the readings better?
6. Were the readings difficult?