

The Effect of Mind Mapping Strategy on Comprehending Implicit Information in EFL Reading Texts

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Abstract – The ability to read English as a foreign language (EFL) and a Second Language (ESL) is required to the language proficiency of intermediate level of students. To extend the students' reading comprehension, mind mapping strategy becomes a variety solution to be utilized in teaching. Hence, this study tries to determine the effectiveness of leading mind mapping strategy in enhancing the students' comprehension in reading instruction text. This study has used a quasi-experimental design. The researchers carries out a treatment by using mind mapping strategy containing brainstorming to the experimental class, while the control group didn't receive such treatment. The data were assessed using independent sample t-test to determine where there is a vital discrepancy between the test scores of experimental and control classes. Then, it results that the difference between the two means is important. So, mind mapping strategy is influential in enhancing the students' reading comprehension and null hypothesis will be rejected. The findings of this study can assist to teachers, instructors, teacher trainers and researchers.

Keywords: mind mapping, reading skill

I.INTRODUCTION

A. Background of the Study

All four skills of listening, speaking, reading and writing are significant in teaching and learning process. In foreign language learning, reading is a skill by which students can learn many things, increase the knowledge and comprehend the text. The students cannot attain their academic achievement without comprehending what they read. Thus, students need some help in achieving their desired level of ability to comprehend texts.

Teaching reading comprehension has some phases: choosing a text, describing the strategy, modeling the strategy, practicing independently, and reflecting. Therefore, it can be stated that reading comprehension is a long process.

Taking into account the realities, the writer offers mind mapping as the technique for teaching reading comprehension. Drawing mind mapping is a function which makes the brain easier to remind visually arousing mind maps, rather than monotonous, boring linear notes. Theoretically, it can be stated that mind mapping is an omnificent technique which lets the students remember ideas or comprehend written information. In addition, this technique enables students to link stories through patterns, keywords, or symbols.

Mind Mapping is a strategy for assisting students order and structures their thinking through mentally mapping words or notions. Mind Mappings contain visual frameworks like figures, diagrams, or charts utilized to display structural knowledge. They are influential in that they assist students communicate information because they can explain complex notions in simple, meaningful representations so that learners can expand a comprehensive comprehension of the content to be learnt. Many students struggle to learn to read and these problems can insist. A mind map is a graphic organizer in which the major classes are described as chapters of larger chapters (Budd, 2004). It can be utilized to create ideas, take notes, develop notions and ideas, and enhance memory (Buzan & Buzan, 2000). It is a powerful tool that teachers can use to enhance learning and create a foundation for learning. It is useful for visual learners as they are instruments that help with managing thought, leading learning, and making relationship (Stephen & Hermus, 2007). In mind mapping strategy, educators do not have any limitation for expressing their ideas about the notions of visual and linear structure (Ruffini, 2008). In this research; the researchers will take into account mind maps to enhance students' reading comprehension.

B. Statement of the Problem

Most research have represented that mind maps has a positive influence in deep learning, enhancing the students' comprehension, especially reading comprehension (Marton & Booth, 1997). Novak (1990) express that mind mappings is a powerful instrument to raise meaningful learning, determined as representing a deeper recognition of materials. Furthermore, Hay et al. (2008) illustrates that mind maps assist evaluates meaningful knowledge acquisition in learning. Pearson (1978) expresses that mind mapping is a graphic arrangement of words and it represents how new words and ideas linked with in text. Moreover, Buzan (1993) states that the mind map is kind of strategy to note taking method, he also emphasizes that mind map use both left and right cortical skill. It assists the learner to organize and get the ideas easily from the mind map.

As a result, the use of mind map assists to fracture the difficult text passage into words for easier understanding and achieve to these consequences: First, students recognize and remind the comprehension better in creating meaningful links, patterns relationship among notions. Second, visual mapping also assists students extend their thinking skills, arranging of information, thus developing better understanding in a topic area. Third, students attain confidence in endeavoring comprehension questions.

The purpose of this study is to identify the effectiveness of mind mapping on students' reading comprehension in a training environment.

C. Research Question & Hypothesis

Research Question. To attempt to consider the problems, the following research questions will be raised: 1) Does mind mapping have any effects on students' understanding of implicit information in reading texts?

Research Hypothesis. Mind mapping does not have any effect on students' understanding of information implicitly in the reading text.

D. Significance of the Study

Our study is to take into account introducing mind map as one of the comprehension strategies in teaching of comprehending text passages. The utilization of mind map will assist to change the complexity of the text passage into words for easier comprehending. Students will be able to recognize and remember the comprehension passage better in making meaningful links, pattern, relationship among notions and information, aid students to expand their thinking skills, arranging of information and ideas, attain confidence in endeavoring comprehension questions. When students adept the skills in comprehension; they will then find it relatively easier to reply the comprehension questions.

II. REVIEW OF LITERATURE

A. Mind mapping & Reading Comprehension

The ability in reading English as a foreign language is necessary to the language learning and teaching of students. Although most of them know English well, they still encounter problem to understand the text easily and they are seldom educated to learn English Strategies to enhance their reading comprehension. To develop the students' reading ability, Mind Mapping Strategy becomes a different solution to be utilized in teaching. The research problem of this study can be as follow: Is Mind Mapping Strategy influential in enhancing students' reading comprehension at the eighth grade of SMPN I Beji? This research is useful for the teachers to offer variety in teaching reading abilities; for more researchers, it can increase information on the effectiveness of Mind Mapping Strategy based on more research can be performed.

Goodman in Carrel (1988) identifies that reading is a receptive language process. It is a psycholinguistic process in that it begins with a linguistic surface display mystified by a writer and ends with meaning, which the reader makes.

Meanwhile, Alexander (1988) determines reading is a communication process between the writer and the reader, using written language. In reading, a text there is an active communication between the writer on one side and the reader on the other side. The writer attempts hard to communicate his ideas of the message through the content of the text to the reader while the reader endeavors understanding the message from the text (Baradja, 1990).

In this study, the researcher attempted to emphasize on the factors such as lexical, structure and background knowledge which make reading hard for the students. To defeat the vocabulary and structure many people utilize the term of reading in many ways but there is not congruent in determining reading means what.

Goodman in Carrel (1988) determines that reading is a psycholinguistic process in that it begins with a linguistic surface representation and ends with meaning, which the reader

makes. Therefore, there is an interaction between language and thought while someone is reading a textbook reading. The writer mystifies thought as language and the reader decodes language into thought.

In addition, Nuttal (1982) is also of the idea that reading is process of communication between the writer and reader. Here, the writer mystifies the message in his mind might be an idea, a fact, and an argument, etc. On one hand, while the reader mystifies the message on the other hand. So, in reading there is really an active-communication process not just passive process.

Similar to Alexander, Harris and Sipay (1980) provide a definition that reading is the meaningful explanation of written verbal symbols. Reading comprehending is a consequence of interplay between the notion of graphic symbols that display language and the reader' language skills and knowledge of the worlds. In this interactive process, the reader attempts to re-make the meaning intended by the writer.

Tony Buzan, the founder of the technique, illustrates mind mapping as a manifest, hierarchical thinking technique. By this he means that mind maps are made by beginning at the centre and radiating out to successive levels of detail. They generally take a hierarchical or tree branch format, with ideas branching into their subscales. Mind mapping permits for more creativity when managing opinions and information, as well as permitting the note taker to relate words with visual representations. Mind mapping is a thinking technique. "It is vital for note making – explaining your own thoughts, planning, organizing, thinking creatively, making relationships and attaining views - and for note-taking – recording information in meetings, debate, lectures etc. or summarizing books and other written material". (Buzan, 2010, p. 12).

Teachers who are master at lecturing are not effective case leaders. Successful case teaching needs patience, a willingness to foster open student participation, and (perhaps most importantly) an ability to skillfully arouse proliferous dialogue over a long period of time (Barnes et al., 1994; Rangan, 1995). We have discovered mind mapping to be a potent instrument for case teaching, especially in EMBA programs, where students are needed to collect, illustrate, and interact large quantities of complex information. It is an effective technique for keening the thinking and learning process (Buzan, 1989). Mind mapping is a creativity- and productivity-improving technique that can enhance the learning and yield of individuals and organizations. It is a rotational system for conquering ideas and views horizontally on paper. It can be utilized in every activity where thought, planning, recall or creativity is included (Buzan, 1989).

III. METHODOLOGY

A. Design

In order to find out the effectiveness of using Mind Mapping Strategy in developing students' reading skill, the design used in this research is an intact quasi-experimental design. This design is used because the treatment is not random assignment of participants to groups (Creswell, 2008, p. 313). It means that there is no selection in the sample. The groups can be

in experimental or control group. The quasi-experimental design can be applied to experimental and control group with pre-test and post-test (Creswell, 2008, p.314). Thus, the groups are divided into experimental and control groups with a pre-test and a post-test to identify the effectiveness of the treatment.

B. Participants

130 students from two intact classes were selected for the purpose of the study. The participants consisted of male and female learners at intermediate level from Safir Institute in Tehran, Hafthouz Branch. Participants had a mean age of 25. Each intact class was selected as an experimental group and a control group. They were homogenized on the basis of their scores on the TOEFL proficiency test. Those whose scores were between one standard deviation above the mean and one standard deviation below the mean were selected for the study. Because some of the students were absent during the implementation of one of the tests, they were excluded from the main participants, resulting in 35 students in the experimental group and 32 in the control group.

C. Instruments

In the process of carrying out the study, the investigators took the following instruments to achieve the objectives of the current study:

TOEFL Proficiency test. This test is comprised of a multiple-choice reading passage, a vocabulary section, and a grammar section. In order to test the reliability of the proficiency test, a pilot study was carried out on 50 students. Its reliability through the K-R21 formula turned out to be .75, which was supportive of the next step to be taken.

A pre-test and a post-test extracted from *Select Reading book*. The pretest and posttest were the same. There was a one-month interval between pretest and posttest. The educational program consists of two sessions in a week. Every session takes (1 and half hour) in the classroom for one month.

To assess the progress of reading comprehension the pre- and post- test were used. The tests were designed to assess understanding or reading comprehension rather than vocabularies. The test composed of 30 multiple choice items. The tests lasted 1.30 hours. The pretest and posttest were the same.

D. Procedure

Based on the result of the pre-test, the participants were divided into two groups. Then, all participants received a reading test including 30 multiple-choice questions. After the completion of these tests, the next step was some treatment sessions that included using mind mapping model instruction to the experimental group and there was no instruction for the control group. The students practiced the reading comprehension which was prepared by the

instructor. Based on the constructivist theory, in order to construct mind maps, the following model of mind mapping was used:

- Making vocabulary schema by mind mapping strategy in pre-reading stage
- Working collectively to answer comprehension questions during reading stage
- Creating mind maps and displays it to class.

After the treatment sessions, which lasted about one month, the participants did a post-test, which was the same reading test as the pre-test. All participants answered the questions. After the treatment sessions, the post-test was given to the students in both groups in order to see whether there would be any significant difference between students' scores on the pretest and posttest. Finally, the results of both pretest and posttest were compared.

E. Data Analysis

The data on the pre- and post- test were collected, and analyzed with the SPSS program. Percentages and mean scores on the pre- and post-test were calculated to identify the progress in reading comprehension. T-test for dependent samples was utilized to determine significant differences between the mean scores on the pre- and post-test.

IV. RESULTS

This section outlines the entire technical and statistical procedures involved in the study. It describes all the steps taken by the researcher in the analysis of the relevant data and elaborates on the results.

Some statistical analyses were run to prove the homogeneity of the participants: 1. a TOEFL test was run among 100 students. Among them, those students whose scores were one standard deviation above or below the mean were chosen for the study. The descriptive data of language proficiency test are shown in table 1.

Table 1: Descriptive Statistics of Pretest Scores of Control and Experimental

Class	Mean	Std. Deviation	N
Control Group	45.40	7.75	50
Experimental Group	44.82	7.79	50
Total			100

In this study, the table above shows the pre-test results of both experimental and control groups. The mean score of the experimental group is 44.82 (SD = 7.79) while the control group is 45.40 (SD = 7.75) which shows the homogeneity of the groups based on the TOEFL proficiency test. By considering the mean of each group, one can infer the homogeneity of both groups; however, to make sure statistically a t-test between control

group and experimental group has been run to be sure that there is no significant difference between the means.

Table 2: T-test of Control and Experimental of Pretest

Sig.	Mean	N	Pretest
.67	45.40	50	Control
.67	44.82	50	Experimental

Table 3: Descriptive Statistics of posttest scores of Control and Experiment

Class	Mean	Std. Deviation	N
Control Group	47.28	16.96	50
Experimental Group	57.98	15.39	50
Total			100

The result of the posttest presented in table 3 shows that the mean score of the experimental group, to which the mind mapping strategy was implemented, is 57.98 (SD = 15.39) while the mean score of the control group is 47.28 (SD = 16.96). It shows that the mean score of the experimental group is higher than that of the control group. The increase on the mean of the posttest score of the experimental group was 57.98, while the mean of control group was 47.28, it means the increase of performance of the experimental group was much better on the post-test than the control group's.

As done with the pre-test, a t-test was run to select any significant difference between two groups. The results of the t-test are shown in table 4 below:

Table 4: Independent Samples (t-test)

Pretest	N	Mean	Sig.
Control	50	45.40	.67
Experimental	50	44.82	.67

Posttest	N	Mean	Sig(2-tailed)
Control	50	47.28	.001
Experimental	50	57.98	.001

As displayed in table.4, the t-test shows that the sig. (.001) is lower than 0.05. Based on the result, the researcher concluded that there was a significance difference in the performance of the experimental group on the posttest in comparison with pretest. As a matter of fact, the researcher concluded that there was a significance difference on the pretest and posttest of students who used mind mapping strategies.

As a result, the hypothesis is rejected, and there is a significant effect via mind mapping strategy on students' understanding implicit information in reading text.

IV. DISCUSSION AND CONCLUSION

Based on the results, there was significant difference on the post-test scores between the experimental and control groups. The results showed that the experimental group who were taught using *mind mapping strategy* obtained better achievement in the reading comprehension than the control group who were not taught by mind mapping. The strategy applied during the treatment highly contributed to the success of the experimental group as compared to the control group.

The researchers believe that mind mapping strategy is appropriate for understanding a text. By utilizing this strategy, students could identify the text by investigating their ideas, gathering some information and epitomizing the new information. Buzan (2010, p. 12) expresses mind mapping is a thinking technique for note making, investigating your own thought, planning, organizing, and thinking creatively. Previous research has shown that this strategy assist students to comprehend the text easily. When students were acquainted the topics they were going to write simple information of the text. They attempted to reply the teacher's questions by using their previous knowledge.

Ausubel's (1963) theory of meaningful learning was perhaps the most considerable incentive for Novak and his colleagues who displayed and developed mind mapping strategy (Novak, 1981; Novak & Gowin, 1984).

Also, this finding was in agreement with Koda's (2005, cited in Grabe, 2009, p. 73) that readers can attain good comprehension through integrative interplay of extracted text information and readers' previous knowledge. However the finding represented that comprehension would be very hard to achieve when students were unfamiliar with the topic. Another significant finding was related to the second phase of mind mapping strategy what the students want to learn. This phase was really to connect the students' previous knowledge with the new information and knowledge. The students attempted to relate their prior knowledge with the new ones by creating their own sentences. The process of making sentences gave them opportunities to state their ideas about the topics being learned. They were educated not only to have logical thinking but also learn to put their ideas in grammatical order to reply the questions. The last phase, the students considered the consequence of the debate by replying the questions and wrote mind mapping of the texts in groups. The teacher should make interesting environment that make the students feel enjoyable in learning reading.

As the result of the reading strategy named mind mapping strategy with which the experimental group was taught, comprehensions as the main concern of the study had been achieved. The activation of the background knowledge with the new information from the text and finally summarized and illustrated with the knowledge affluence the process of reading comprehension made easy way to make mind mapping from the texts. In other words

not only did the students learn to read and reply the questions of the texts but also write the highlight of the text by utilizing mind mapping. (Jones & Davies, 1983).

In addition, the findings of the current study can be scaffold by many studies that examined the effect of mind mapping on reading comprehension of different academic subject concerns. Gahr (2003) discovered that the introduction of a notion map that gives a visual reference as to how the classroom activities are to advance was an influential instrument to enable the teacher to observe the students at work rather than the students observing the teacher in explanation.

A. Recommendation for Further Research

Since this study is restricted to reading comprehension of descriptive texts for the students, it examines other studies to other kinds of texts and other grades or even other levels of study. Based on mind mapping, it is offered that other studies be led to examine the similar problem with more complicated levels of comprehensions. It is indicated that other studies be carried out with detached analysis of various levels of comprehensions.

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