



University of Guilan
Faculty of Literature and Humanities
English Language Department

M.A. Thesis

**The Impact of Using Mind Mapping Technique on
EFL Learners' Reading Comprehension**

by

Mahsa Hariri

Supervisor

Dr. Abdorreza Tahriri

Advisor

Dr. Behzad Barekat

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In the Name of God

Dedication

This thesis is dedicated to all teachers who try to enrich the learning process as my Mum and Dad.

Acknowledgement

Though words may never say what we want to express, still they are most appropriate for expressing our emotions. This thesis is the end of my journey in obtaining my M. A. I have not traveled in a vacuum in this journey. This thesis has been kept on track and been seen through to completion with the support, and encouragement of numerous people. At the end of my thesis I would like to thank all those people the epitome of whose persistent attempts this thesis is and they made it possible and an unforgettable experience for me.

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Abstract

The Impact of Using Mind Mapping Technique on EFL Learners' Reading Comprehension

The present study sought to investigate the effect of using mind-mapping technique instruction on female elementary EFL learners' reading comprehension; it also investigated their attitudes towards using mind-mapping technique as a tool to improve their reading comprehension. This study followed a quasi-experimental design with two intact groups as experimental and control groups. The participants of the experimental and control groups were 36 and 30 female students respectively at Hakiman Institute of Higher Education, Bojnourd. The participants were first-year university students majoring in Business management. During one semester, they took two placement tests (General & Reading Comprehension), one pretest, and two posttests. The mind mapping-based teaching was introduced as the treatment for the experimental group. Also, a Likert-type questionnaire was given to the participants to explore their attitudes towards the use of mind maps while reading. Oral interviews with ten participants of the experimental group were also conducted to gain further insights into the perceptions of the participants. The quantitative data of two placement tests, a reading pretest, and two reading posttests (the first without mind map & the second with a mind map) were analyzed using Mann-Whitney U and Wilcoxon tests. In the qualitative part of the study, to analyze the questionnaire's data, the mean score of each item was calculated and then the frequency and the percentage for each item were given. The data of the interview were also transcribed and analyzed via a cross-case analysis and the frequencies of the common responses for each item were calculated. Based on the findings, the effectiveness of the treatment was approved by the quantitative data. Further, the students' responses to the questionnaire items indicated that their attitude towards using mind-mapping technique to improve reading comprehension was positive. In addition, the findings of the oral interview also revealed that all the participants enjoyed this technique, and nearly all of them agreed with the fun nature of mind maps, but about half of them liked to design mind maps on their own.

Key Words: Mind Mapping Technique, Reading Comprehension, Attitude.

TABLE OF CONTENTS

List of Tables.....	
IX	
List of Figures.....	
X	
List of Abbreviations.....	XI
CHAPTER ONE: INTRODUCTION.....	1
1.1 Preliminaries	2
1.2 Statement of the Problem.....	3
1.3 Significance of the Study.....	3
1.4 Objectives of the Study.....	4
1.5 Research Questions.....	5
1.6 Statement of the Hypothesis.....	5
1.7 Limitations and Delimitations of the study.....	5
1.8 Definitions of Key Terms.....	6
1.9 Organization of the Study.....	7
CHAPTER TWO: REVIEW OF RELATED LITERATURE	9
2.1 Introduction.....	10
2.2 Reading Comprehension.....	10
2.2.1 Teaching Reading Comprehension in EFL Context.....	11
2.2.2 Reading Comprehension Strategies.....	12
2.3 Differences in Learning Styles.....	13
2.4 Functions of the Brain.....	15
2.5 Mnemonic Devices.....	16
2.5.1 Definition and types of mnemonic devices.....	16
2.5.2 Studies on Mnemonic Devices.....	17
2.6 Mind Maps.....	19
2.6.1 Origin of Mind Maps.....	19
2.6.2 Mind Maps and the Brain.....	20
2.6.3 Studies on the Use of Mind Maps in Reading Comprehension.....	21
2.6.4 Visualization.....	23
2.6.5 Association.....	24

2.6.6 Mind Maps vs. Linear Text.....	24
2.6.7 Building a Mind Map.....	26
2.6.8 The Role of Interaction.....	26
2.6.9 Mind Mapping Softwares.....	27
CHAPTER THREE: METHODOLOGY.....	30
3.1 Introduction.....	31
3.2 Participants.....	31
3.3 Instrumentation.....	32
3.3.1 Oxford Placement Test (OPT).....	32
3.3.2 The Reading Placement Test.....	33
3.3.3 The Reading Pre-test.....	33
3.3.4 The Reading Post-test.....	33
3.3.5 A Reading Post-test with Mind Map.....	33
3.3.6 Questionnaire.....	34
3.3.7 Validity and Reliability of the Placement Tests.....	34
3.3.8 Interview.....	35
3.4 Design.....	35
3.5 Procedure.....	35
3.6 Data Analysis.....	36
CHAPTER FOUR: RESULTS AND DISCUSSION.....	38
4.1. Introduction.....	39
4.2. Quantitative Section.....	39
4.3. Qualitative Section.....	45
4.3.1. Questionnaire.....	45
4.3.2. Interviews.....	48
4.4. Discussion.....	50
CHAPTER FIVE: CONCLUSIONS.....	53
5.1. Introduction.....	54
5.2. Conclusions.....	54
5.3. Pedagogical Implications.....	55
5.4. Suggestions for Future Research.....	56
REFERENCES.....	57
APPENDICES	
A: General Placement Test (OPT for Solutions Books).....	57

B: Reading Placement Test (OPT for Connections and New Adventures Books)...	61
C: Reading Pretest.....	63
D: Reading Posttest.....	66
E: Reading Posttest with Mind Map.....	69
F: Questionnaire of Learner's Attitudes towards Using Mind Maps in Reading Comprehension.....	72
G: Persian Version of Students Questionnaire.....	74
H: Questions of Interview.....	76

List of Tables

Table 4.1. Test of Normality for the Answers of Experimental Group to the Pretest Items.....	40
Table 4.2. Results of General Placement Test (Descriptive Statistics).....	41
Table 4.3. The Results of Mann-Whitney U Test (The Pre-test Scores of Experimental & Control Groups on General Placement Test).....	41
Table 4.4. The Results of Reading Placement Test (Descriptive Statistics).....	42
Table 4.5. The Results of Mann-Whitney U Test (The Pre-test Scores of Experimental & Control Groups on Reading Placement Test).....	42
Table 4.6. The Results of Mann-Whitney U Test (The Effect of Mapping strategy Training on the Reading Comprehension).....	43
Table 4.7. The Results of Wilcoxon Test for the Effect of Mind Mapping strategy Training on the Reading Comprehension by Reading Test plus Mind Map.....	44
Table 4.8. Means of Responses to Attitude Items on the Use of Mind Maps in Reading Comprehension.....	46
Table 4.9. Students' Responses to Attitudes Items about the Use of Mind Mapping in Reading Comprehension.....	47
Table 4.10. The Results of the Interview (Question 1).....	48
Table 4.11. The Results of the Interview (Question 2: What specifically did you like?).....	49
Table 4.12. The Results of the Interview (Question 3: What specifically did you dislike?).....	49

List of Figures

Figure 2.1. Functions of the brain.....	16
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List of Abbreviations

ANOVA: Analysis of Variance

B.A.: Bachelor of Art

EFL: English as a Foreign language

ELT: English Language Teaching

ESL: English as Second Language

HAM: Theory of Human Associative Memory

M.A.: Master of Arts

M.Sc: Master of Science

OERI: The United States Department of Education's Office of Educational Research and Improvement

OPT: Oxford Placement Test

S: A Great Memorizer (Shereshevsky)

SD: Standard Deviation

SMK Negeri 8 Semarang: Sekolah Menengah Kejuruan Negeri 8 Semarang

SPSS: The Statistical Package for Social Sciences

CHAPTER ONE

INTRODUCTION

1.1. Preliminaries

Reading English texts plays a significant role in second language learning programs. The importance of reading skill is mainly because it is one of the central tools for learning new information (Grabe & Stoller, 2001). It is one of the essential macro skills especially for students who study English as a part of their education and they might be required to read textbooks, carry out research, prepare reports, etc. Therefore, they need to comprehend successfully as well as to read effectively.

As Freese (1997) indicated, some students might face problems while reading and that is their inability in comprehending paragraphs of the text. On the other hand, Carrell and Grabe (2002) introduced another group of readers who are different from the group referred to by Freese (1997). These students are proficient readers who can use different reading skills when reading different texts or reading for different purposes. For example, they scan the key words of a manual in order to search for the information. Therefore, this sharp contrast between various types of readers and their level of comprehension sparks the curiosity of researchers who are interested in the issues related to reading comprehension and different procedures to enhance it.

As mentioned above, content materials present texts which are too dense for foreign language students; therefore, the effects of different tools or strategies are investigated by numerous researchers to help learners learn better and comprehend the texts in a more satisfactory manner. This can also promote teachers' instruction in addition to students' learning. One of these tools is mnemonic technique; it is applied as an aid for information retention and it includes several subtechniques. In fact, mnemonics change the original form of information into a form that is more comprehensible and retainable for the brain. Mnemonic techniques have the ability of storing and retrieval of facts, ideas, and concepts in one's memory. Also, the mapping as a mnemonic tool improves one's both retrieval and storage ability (Troy, 2009).

A mind map can be defined as "a graphic organizer in which the major categories radiate from a central image and lesser categories are portrayed as branches of larger branches" (Budd, 2004, p. 35). It can be used to generate ideas, take notes, develop concepts and ideas, and improve memory (Buzan, 2000). In other words, mind maps are graphical representation of ideas and concepts. As a visual thinking tool, they help organizing, structuring, analyzing, and retention of new information.

1.2. Statement of the Problem

Difficulty in comprehending what is read is one of the major problems of EFL learners. In addition, it does not belong to a certain level of proficiency. Therefore, numerous researchers sought to find some solutions to the problem by examining different related variables such as level and context. The findings were not conclusive. For example, Karbalaei and Azimi Amoli (2011) suggested that college students could be instructed to improve their reading through the development of their paraphrasing skills. Abdollahzadeh (2009) conducted a study on the effect of rhetorical and cognitive structure of texts on reading comprehension and the result was that the low-level readers failed to use it, but it had a positive effect on high-level readers. Folds and Best (1987) conducted a research about the use of mnemonic strategies by good readers and poor readers. They reported that good readers benefit most from 'learning by doing' in a supportive context, while poor readers perform better with explicit training procedures.

These studies are just some of the vast range of studies in the realm of reading comprehension. Especially in the recent years, following the spread of mnemonic strategies, there are numerous studies on the impact of other visual and graphical techniques on reading comprehension such as key words, concept maps, mind maps, etc.

Thanks to the suppleness format of mind maps in any directions, they have the capacity to express ideas clearly and in an understandable fashion to audience. Mind maps help to retrieve the information stored in the memory. In fact, they act as a memory aid to remember the information easily. They can be designed collaboratively in class and enhance the sense of cooperation of learners.

Therefore, as the teaching methods tend to favor active and collaborative learning techniques that cover diverse learning styles, mind map strategies might be a good choice to investigate its effects on reading comprehension.

In spite of the few studies (Deesri, 2002; Singtui, 2008; Siriphanich & Laohawiriyanon, 2010) carried out on the effects of mind mapping in comparison to the other fields of second language as writing, spelling, reading speed, etc., this study tries to investigate its effect on reading comprehension especially in EFL setting in which there is a paucity of research.

1.3. Significance of the Study

Although comprehending what is read by EFL learners is one of the most problematic areas of learning English, it is important for them to learn how to comprehend what they read,

because of the prevalence of reading in everyday life and especially for educational purposes. The results of this study are not just for students, but they are useful for EFL instructors as they can have a better understanding of the role of mind mapping technique (or strategy as used interchangeably by numerous scholars) as a mnemonic device in reading classes.

It is very important for language teachers to understand and recognize the role of mind mapping strategy for better reading comprehension of their students. The instructors need to have a wide variety of specific strategies to use them in their classes. Mind mapping strategy is a kind of collaborative one and helps teachers to have a dynamic class, and generally the application of these active and collaborative techniques in teaching programs is recommended by lots of researchers (e.g. Johnson, Johnson, & Smith 1991).

In addition, the non-linear format of mind map strategy as a kind of graphic organizer sparks the curiosity of lots of researchers to investigate the effect of this strategy on the students who have visual learning style. Generally it is recommended to teachers to use teaching strategies that suited diverse learning styles (e.g. Sarasin, 1999).

The present study seeks to investigate the role of mind mapping strategy in reading comprehension of Iranian EFL learners. Prior studies, which sought to investigate the effect of mind mapping on reading comprehension, did not endeavor to address this issue in Iranian EFL context. Moreover, there is a paucity of research on this issue in EFL context in general.

The result of this study is an indicator of the role of applying mind mapping strategy in reading. Accordingly, the findings of this research will offer insights to both language instructors who search for some ways to improve their students' comprehension and language learners who suffer from incomplete or partial understanding of what they read.

Moreover, the findings of this research can be helpful for EFL textbook designers. Mind mapping exercises can be incorporated within textbooks and the way through which the students can visualize information, organize mind maps, and use them can be planned and taught.

1.4. Objectives of the Study

This study focuses on mind mapping strategy and its main objective is to investigate whether the use of mind mapping strategy can improve reading comprehension of female elementary Iranian EFL learners. This study also aims to find the attitudes of the participants towards using mind map strategy during their reading through a questionnaire. The attitudes of participating EFL learners towards the use of mind map, its effectiveness and related issues will be explored. The results of this study can hopefully give fruitful insights to EFL

instructors and learners to apply to language classes in order to improve and enhance their instruction and reading comprehension respectively.

1.5. Research Questions

In order to investigate the effect of mind mapping strategies on EFL learners' reading comprehension, the present study addresses two major research questions:

- 1) Does the use of mind mapping strategy have any effect on female elementary EFL learners' reading comprehension?
- 2) What are the attitudes of female elementary EFL learners towards using mind mapping strategy as a tool to improve their reading comprehension?

1.6. Statement of the Hypothesis

To answer the first research question, the following hypothesis is to be tested:

H₀: There is not any significant relationship between mind mapping strategy and reading comprehension of elementary female EFL learners.

1.7. Limitations and Delimitation of the Study

In this study, some limitations and delimitations need to be acknowledged regarding the present study. One limitation concerns the limited knowledge of learners about mind mapping strategies and its use in reading comprehension activities, especially in the setting where the current study was concerned. The delimitation of this study is about the level of participants. The students in this study were all at elementary level as far as their knowledge of proficiency were concerned. In terms of the context of the study, since participants were selected based on convenience sampling, the generalizability of the findings is limited to EFL learners in Iran who share similar characteristics with the participants. The last limitation is the gender of the participants; in this study, the participants were limited to female EFL learners only.

1.8. Definitions of Key Terms

Mind Mapping Strategy

Mind mapping strategy is a way for taking notes and brainstorming. It consists of a central theme and the other minor related ideas around it. "By focusing on key ideas written down in your own words and looking for connections between them, you can map knowledge in a way that will help you to better understand and retain information" (Velliaris, 2009, Para. 1).

Reading Comprehension

Reading comprehension is a vital skill in learning English as a foreign language. "The ability to comprehend any reading text requires interpreting text through making accurate connection between the linguistic representations or meaning of words and sentences and their pragmatic outcomes" (Behroozizad & Bakhtiyarzadeh, 2012). It is the process of the construction of meaning while reading. The reader decodes the writers' words and draws on his own background knowledge to construct an understanding of the text in the process.

Visual Learners

A visual-spatial student is a learner "who learns holistically rather than in a step-by-step fashion. Visual imagery plays an important role in the student's learning process. Because the individual is processing primarily in pictures rather than words, ideas are interconnected" (Silverman & Freed, 1991, p. 4).

Auditory Learners

Auditory learning is a learning style based on which a person learns through listening. An auditory learner depends on hearing and speaking as a main way of learning (Kostelnik, Soderman, & Whiren, 2004). Auditory learners must be able to hear what is being said in order to understand and may have difficulty with instructions that are written. They also use their listening and repeating skills to sort through the information that is sent to them (Vincent & Ross, 2001).

Cognitive Process

The cognitive information processing theory looks at the role of the three stages of memory (sensory, short-term, and long-term) in retrieving information and then transferring it to store and then recall in memory (Reiser & Dempsey, 2007).

Concept Mapping

Concept mapping is often confused with mind mapping and are sometimes used interchangeably (Ahlberg, 2004). However, unlike mind mapping, concept mapping is more structured, and less pictorial in nature. The aim of concept mapping is not to generate spontaneous associative elements but to outline relationships between ideas. Thus, concept mapping is relational device. A concept map has a hierarchical 'tree' structure with superordinate and subordinate parts (primary, secondary and tertiary ideas). The map normally begins with a word, a concept or a phrase that represents a focus question that requires an answer (Novak & Can˜as, 2006).

Constructivist Theory

Constructivist theory is rooted in the subjectivist worldview, which emphasizes the role of the learner within the context of his environment. The interaction between the learner and his environment results in meaning or understanding; therefore, the two are inextricable (Burrell & Morgan, 1979). Based on constructivist theory, in order to construct mind maps, the students have to work in groups and exchange their knowledge with peers in order to help construct their own knowledge (Kanselaar, 2002).

Mind Mapping Software

New technology creates new markets and new opportunities to mind mapping strategy. It appears that mind mapping software programs have some superiority over the hand-made ones. Their capability of easier use of images and colors, rearranging, saving, and sharing them online are some of these advantages.

1.9. Outline of the Study

This study consists of five chapters. Apart from this introductory chapter, the thesis is organized into four more chapters.

Chapter Two reviews the relevant literature on the effects of mind mapping strategy on reading comprehension of EFL learners and the implications of mind mapping for English language teaching.

Chapter Three describes the methodology that was used to conduct this research. It introduces the participants of the study and explains research design and data collection and data analysis procedures.

Chapter Four illustrates and analyzes the data collected in an attempt to provide an answer to the research questions. The findings are also discussed with reference to other studies conducted so far.

Chapter Five summarizes the findings, specifies how these answer the research questions, states a set of pedagogical implications and provides suggestions for further research.

CHAPTER TWO

REVIEW OF RELATED LITERATURE