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*Thesis Submitted in Partial Fulfillment of the
Requirements for the Degree of Master of Arts
(M.A.) in Teaching English as a Foreign
Language (TEFL)*

**The Effect of Practicing Analysis and Synthesis on
EFL Learners' Critical Thinking and Reading
Comprehension Skill**

By: Behnaz Rabi'ee
Supervisor: Dr. M. Ghazanfari
Advisor: Dr. M. Davoudi

September, 2010

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In The Name of God

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September 2010

Dedication

To my dear husband,

For his everlasting support

To my parents,

For their kindness

To my lovely daughter,

For her patience

Acknowledgements

This study has been guided and supported by a number of people. First, I express my deepest gratitude to my thesis supervisor, Dr. Ghanzafari, for his patience in correcting the various drafts of this thesis; and also for his encouragement and intellectual support which made this thesis possible.

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Abstract

The purpose of this study was to determine whether engaging students in analysis and synthesis practice would help them develop effective critical thinking and reading comprehension skills. The subjects were 60 female pre-university students at Fateh girls' high school. Two intact classes were assigned to the experimental and control groups. To ensure the homogeneity of both groups, a sample of Michigan test was administered. Also, the students responded to the Watson-Glaser critical thinking and reading comprehension test at the beginning of a semester. Following the initial tests, students in the experimental group practiced analysis and synthesis as higher-order thinking skills by answering some analysis and synthesis questions developed by the researcher for the prepared English texts. The students in the control group just answered some knowledge questions developed by the researcher for the same texts. Twelve texts with analysis and synthesis questions were taught in the experimental group. The same twelve texts with knowledge questions were taught in the control group. After twenty-four weeks, the students responded to Watson-Glaser critical thinking and reading comprehension test. They also responded to a reading comprehension achievement test developed by the researcher based on the instructed texts.

The data were analyzed using the independent sample t-test for all of the tests including critical thinking, reading comprehension and reading comprehension achievement test. Results showed significantly higher critical thinking scores for the students in the experimental group. They also got significantly higher scores in both reading comprehension and reading comprehension achievement test.

Consequently, it appears that the students improved their skills in critical thinking and reading comprehension areas by doing analysis and synthesis practices. Also their performance in reading comprehension achievement test was influenced by doing the mentioned practices.

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CHAPTER ONE

INTRODUCTION

1.1 Overview

Every day, we are exposed to many written materials with lots of different information and ideas. Being exposed to these ideas, the readers might react in different ways: They might think about them or ignore them. They might accept presented ideas or deny them. Still, the question to answer is whether there are any criteria to make a selection of those ideas or that our brain is just a big box to store whatever is put in it. It, for sure, depends on us. According to Wallace and Wray (2006), we can change our minds into saving boxes or into producing factories. The latter can be done by critical thinking. In fact, it helps us evaluate the information by relating it to other information.

It seems evident that critical thinking is a universal goal of higher education in the world. The current Internet Age and the complexity of the information environment require learners to validate and assess information to verify its reliability. Byerly and Brodie (1999) believe that learners should be able to evaluate information critically and competently and to use them accurately and creatively. They also state that users should have both information-gathering strategies and the critical thinking skills to select, discard, synthesize, and present information in new ways to solve real-life problems.

It is assumed that the science world needs generators of knowledge. Popper (n.d.) asserts that "one learns little by simply rehearsing what is already known and new knowledge develops by critically falsifying the known" (cited in Mason, 2007, p. 340). Mason believes that achieving this goal is possible by training the learners with

the skills of critical thinking, such as the ability to assess the reasons appropriately, to identify wrong arguments, or to weigh relevant evidence. In other words, they should train critical thinkers - the ones who can ask inquiring questions.

Alston (2001, cited in Mason 2007) states that "critical thinkers will be attuned to the varieties of human problems, and will be able to envision ways of making meaningful connections between thought, activity, expression, and relationship" (p. 343).

However, using our mind in a right and critical way is not an easy job; it needs teaching and practicing (Gelder, 2005). Nevertheless, not all kinds of teaching and learning could be helpful.

Tsui (2002) in her article "Fostering Critical Thinking Through Effective Pedagogy" emphasizes the importance of teaching critical thinking ability to the learners. She justifies her ideas in the following lines:

In the United States, formal education largely entails knowledge building through subject matter content coverage. Unfortunately, this often comes at the expense of skills building. Rather than devote so much effort to teaching students what to think, perhaps we need to do more to teach them how to think. Higher-order cognitive skills, such as the ability to think critically, are invaluable to students' future; they prepare individuals to tackle a multitude of challenges that they are likely to face in their personal lives, careers, and duties as responsible citizens. Moreover, by instilling critical thinking in students we groom individuals to become independent lifelong learners. (Tsui, 2002, p. 1)

The arguments mentioned above demonstrate the importance of fostering critical thinking as a higher-order thinking skill in learners in any educational system.

1.2 Statement of the Problem

It is supposed that there is a concerning situation in the educational system in Iran. It seems that the current educational system in our country is based on rote memorization and didactic way of teaching. The teachers have the role of lecturer and the students are their audiences. Most of the time it is observed that the students are not enthusiastic audiences. Some reasons can be assigned to this problem. One may be that the students are expected to pass the tests that do not require any thinking or any creation or any comprehension; they require a lot of memorization. Others may argue that the teacher's speech is the repetition of the book sentences, so it can be crammed for the exam with a little effort.

It looks that the same condition is common in English reading courses. Common activities that are utilized in the courses are: defining basic concepts, recalling facts, stating the main existing ideas, summarizing the content of the text and paraphrasing the sentences. The formats of some reading questions are like comprehension tests and do not teach any reading strategies to learners. For example, the question "when was Mr. X born?" following a text about the life of a famous person is a kind of testing comprehension, or exercises which call for translation check the student's understanding of a particular piece of language, but they do little to develop techniques that can be transferred to other texts. It is assumed that knowledge and comprehension

are the only skills that are widely emphasized in reading courses. All that is required to answer these questions is the recall of the appropriate information.

According to Mc Donough and Shaw (2003), in traditional approaches, the readers are seen as the recipients of the written materials with no role in meaning construction. That appears similar to what is going on in English reading classes in our country. It seems that learners experience poor learning situation. Hannel and Hannel (1998) accept that “a low stimulus environment will almost inevitably create a poor – performing student” (p. 87).

Shanker (1985) maintains that “if you have a whole bunch of tests that do not require any thinking or any creation or any comprehension, they require a lot of memorization” (p. 12). He adds that to teach children to think is not inferior to teaching them how to answer multiple choice questions on examinations.

The researcher’s observations represent that memorization is the most common technique that is utilized by the learners in English reading courses. No time is devoted to think about the text, to analyze its content, to criticize the presented ideas, to draw some conclusions, to make some inferences, to identify different parts, to make generalization from given facts and other higher-order thinking activities that can enhance critical thinking skill in learners.

In fact, it seems that learners undergo the poor-learning situation. In other words, their learning is a surface level learning. They rarely meet the deep level of learning. According to Bloom’s (1956) taxonomy of educational objectives, memorization and comprehension are accounted as lower-order thinking skills.

The division between “lower-order” and “higher-order” thinking skills dates back to the taxonomy of educational objectives (Bloom, 1956, cited in Reece, 2007). Bloom (1956) listed thinking skills in a hierarchical order which suggest the skills teachers / faculty should promote. The skills from the simplest to the most complex are: knowledge, comprehension, application, analysis, synthesis, and evaluation. Anderson and Krathwohl (2001) have revised Bloom’s taxonomy. Knowledge was re-named “remembering” in the revision (cited in Reece, 2007).

Bloom included thinking skills related to critical thinking in his taxonomy of educational objectives (Beyer, 1987, cited in Garside, 1996). In contrast to lower-order thinking skills with a focus on knowledge, comprehension and application, critical thinking is often equated with analysis, synthesis and evaluation, the higher-order thinking skills (Dam & Volman, 2004). Several authors go back to Bloom’s work in order to characterize critical thinking (Kennedy, Fisher & Ennis 1991; Halpern, 1998, cited in Dam & Volman, 2004).

Halpern (1998), for example, comes to the following taxonomy of critical-thinking skills:

“verbal-reasoning skills, argument-analysis skills, thinking skills such as hypothesis testing, thinking in terms of likelihood and uncertainty, decision-making and problem-solving skills” (cited in Dam & Volman, 2004, p. 362).

As previously stated, it is supposed that knowledge and comprehension are the cognitive skills that are taught commonly in EFL reading courses in our country. Reece (2007) believes that “they are crucial because they form the foundation of all other

skills, but if the instruction addresses only these levels there is no basis for a student to transfer the skills to novel situations” (p. 484).

Davidson (1998) maintains that second language teachers have a good reason to introduce higher level students to aspects of critical thinking, perhaps more than first language teachers. According to his opinion, “part of the English teacher's task is to prepare learners to interact with native speakers who value explicit comment, and intelligent criticism. If they do not, the students may well flounder when they are confronted with necessity of thinking critically, especially in an academic setting” (p. 121).

“The ability to read academic texts is considered one of the most important skills that university students of English as a second language and English as a foreign language need to acquire” (Levine, Ferenz & Reves, 2000, para. 2).

Levine et.al (2000) state that the current Internet Age and explosion of information add an additional challenge to SL/FL readers. The readers should have the ability to comprehend various text forms and actively create an individualized learning environment that would enhance the creation of meaning. They maintain that reading situation is different from reading classrooms. They justify their idea in this way:

In terms of Second or Foreign language instruction, the transition from reading within the confines of the classroom to reading under authentic circumstances may be a difficult task. In conventional ESL / EFL reading classrooms, students work under the guidance and intervention of the teacher and the instruction is carried out in a gradient manner in order to build up appropriate reading skills.

The reading situation is different, however, when the ESL/EFL students call upon to deal independently with authentic texts. In such cases, students may not have someone to provide guidance or to intervene when a reading problem occurs. (Levine et.al 2000, para. 7)

Therefore, “no one questions the need for critical reading skills in L2 / FL reading, while there is no consensus as to the learning environment in which these skills may be developed by L2/FL learners” (Levine et.al 2000, para. 8).

As a result, it seems that there is an urgent need to practice higher-order thinking skills in our educational system. EFL reading courses are assumed as one good subject area that higher-order thinking skills can be practiced. It may have two advantages: The first is an increase in learner’s critical thinking ability, and the second is improvement in learner’s reading comprehension skill.

It has been hypothesized, at the outset of the present study, that critical readers can be critical thinkers and vice-versa. The hypothesis is that critical thinking skills can be developed by providing the student-reader with some exercises on a number of English language texts.

1.3 Significance of the Study

The movement to the information age has focused attention on good thinking as an important element of life success. These changing conditions require new outcomes, such as critical thinking, to be included as a focus of schooling. Old standards of simply being able to score well on a standardized test of basic skills cannot be the sole

means by which we judge the academic success or failure of our students (Huitt, 1995; Thomas & Smoot, 1994; cited in Huitt, 1998, para. 1).

It seems that educators have long praised the value of critical thinking in their teaching. Supporters of the Critical Thinking Movement present various reasons for teaching critical thinking. Freely and Steinberg (2000) note that we need critical thinkers to have a good progressive society, ones who leave old frames of thoughts and try to have new ideas. They would not yield to problems, but challenge them through research. They do not accept any ideas without enough reasons and proofs and they themselves provide their addressees with enough evidence for their ideas.

Freire and Macedo (1987) assert that “students should be taught to read the world instead of reading the word” (cited in Dam & Volman, 2004, p. 364). This utterance shows the importance of training students who can think critically, evaluate their own thinking, and have the ability to argue about the problems and solutions to the problems.

Fedyk (2008) believes that to start to teach people to be critical thinkers in their lives, the best way is to start from the most tangible and controlled one, that is, from reading. Here, the word reading refers to the printed materials, not to the reading on the screen, because the latter is uncontrollable; people can upload their articles and materials to the net easily. Such ease of spreading ideas through the internet and satellite underlies the importance of critical thinking and its studying globally.

Albert Shanker (1985) in his article, “Critical Thinking and Education Reform” has uttered that we are living in the world in which the information of the issues is

developing rapidly and “if you train people narrowly, you are not going to get the edge” (p.7).

As previously stated, it looks that the lower-order thinking skills are mostly focused in the current educational system in our country. According to Reece (2007), the lower-order skills are pre-requisites for the higher skills, but educators should not be content with their students gaining mastery over the lower alone.

Therefore, it is imagined that there is a necessity to make some changes. The system should move in the way that critical learners can be trained. If critical thinker learners are trained, they will not be easily deceived by fallacious information, they will not be followers of the others’ ideas without evaluation. Furthermore, training critical thinkers can be effective for the science world. The reason is that the science world does not need to the learners that have just stored lots of memorized knowledge in their mind; it requires the creative ones, the ones that can generate new knowledge, attempt to promote the science world and find better solutions for the human being problems. So, this study tries to introduce critical thinking by practicing it in English reading courses.

1.4 Definition of Terms:

Critical thinking: It refers to students’ abilities to identify issues and assumptions, recognize important relationships, make correct inferences, evaluate evidence or authority, and deduce conclusions (Furedy & Furedy, 1985).