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# A Study on the Relationship between Iranian EFL University Students' Critical Thinking and their Reading Comprehension Skill

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Summer, 2012

# In the Name of God

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*To the ones who suffered their whole lives to give me the chance to prove and improve myself; to the ones who nurtured in me the love for learning,*

*To my parents*

*For their Love and Support*

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# ABSTRACT

## A Study on the Relationship between Iranian EFL University Students' Critical Thinking and their Reading Comprehension Skill

*Critical thinking refers to higher-order thinking ability which makes individual learners capable of analyzing, synthesizing, evaluating, and solving problems. The ability of thinking critically has recently obtained a high position in the context of foreign language teaching. The number of studies is progressively increasing in the setting of language education with the purpose of examining to what extent the development of higher-order thinking skills might facilitate language learning. Furthermore, L2 reading as a complex psychological process requires readers to apply various cognitive skills of inferencing, analyzing, and evaluating based on their purpose(s) of reading. This study intended to explore whether there is a significant relationship between critical thinking and reading skill of Iranian EFL university students. More to this, the study aimed to see to what extent subscales of critical thinking can predict reading comprehension skill of Iranian EFL students. To this end, first, the researcher homogenized 127 students of English Translation through administration of the Oxford Placement Test (2001). Then, the Persian version of the California Critical Thinking Skills Test (CCTST), Form B was administered to the participants in order to determine their critical thinking skills. Afterwards, the Reading Section of TOEFL (1996) was given to students to measure their reading comprehension skill. The results of the study were twofold; first, after conducting the Pearson product-moment formula, it was found that there is a positive relationship between students' critical thinking and their reading comprehension skill (r=0.69, N=111, P ≤ 0.01). Second, the results of multiple regression analysis indicated that subscales of critical thinking could acceptably explain the variance on the reading comprehension test. In addition, inferencing was fairly good predictor of reading comprehension skill of Iranian EFL university students.*

***Key Terms:*** *critical thinking, reading comprehension, analysis, inference, evaluation, deductive reasoning, inductive reasoning*

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# List of Abbreviations

| | |
|---|---|
| **CT** | Critical Thinking |
| **CCTST** | California Critical Thinking Test |
| **EFL** | English as a Foreign Language |
| **ESL** | English as a Second Language |
| **IELTS** | International English Language Testing System |
| **L1** | First Language |
| **L2** | Second Language |
| **OPT** | Oxford Placement Test |
| **N** | Number |
| **RC** | Reading Comprehension |
| **RCT** | Reading Comprehension Test |
| **TOEFL** | Test of English as a Foreign Language |
| **WGCTA** | Watson-Glaser Critical Thinking Appraisal |

# Chapter One

# Introduction

This introductory chapter gives a general overview of the subject of the present research project. It introduces the concept of critical thinking and gives a description of the position of critical thinking in education, in general, and in second or foreign language teaching and learning context, in particular. A brief description of reading comprehension as the major concern of the study among other language skills will also be presented. Afterwards, the problem, which is going to be investigated in the present study, will be stated. Next, the significance of the study is elaborated in detail. After that, the assumptions, upon which the study is established, will be asserted. Then, research questions and hypotheses are put forward. Finally, definitions of key terms are put.

## 1.1. General Overview

The concept of critical thinking is not new in education. Generally speaking, critical thinking is concerned with higher-order thinking skills that enable individuals to successfully participate in a society. In fact, critical thinking skills allow individuals to become independent thinkers, capable of analyzing and solving problems. Review of the literature shows that critical thinking as a key term is associated with a combination of other terms including problem-based learning, discovery learning, inquiry learning, and critical pedagogy. It also indicates that different models of critical thinking take a diversity of thinking skills into consideration. Among an extensive inventory of critical thinking skills, we can refer to analysis, interpretation, inference, explanation, synthesis, evaluation, reasoning, self-regulation, decision-making, and problem-solving as the core skills at the heart of critical thinking models or taxonomies (Moseley et al., 2005). It can be stated that

almost all models of critical thinking consider similar skills and pursue identical goals. According to the proponents of critical pedagogy, the main goal of education is not only to offer content knowledge in specific courses but also to consider the why of such knowledge and the how of learning process. On the whole, the principal purpose of critical thinking movement in education is to cultivate the ability of learners to think reasonably about complex issues and encourage them to take multiple perspectives into consideration in evaluating arguments.

In this line, the incorporation of critical thinking skills in educational programs has been the concern of theorists and practitioners around the world for years. In recent decades, many scholars have forcefully agreed upon the fact that teaching individual learners how to think critically must become the primary goal of schooling (Paul, 1990; Schafersman, 1991; Ennis, 1997; Fisher, 2001; Browne and Keeley, 2007; Facione, 2007). They have faith in the fact that it is necessary to enable learners "to take control of and responsibility for their own thinking" and "participate effectively" (Moseley et al., 2005, p. 12) in the real-world situations.

This might be for the reason that in the age of information explosion, individual human beings receive a great deal of data from a wide variety of sources such as books, newspapers, TV, radio, and more recently, Internet. Moreover, this massive bulk of information is rapidly changing and developing day by day. This brings about the fact that "the level of expectation for a person to function well in a modern print environment is higher than ever before" (Grabe, 2009, p. 6). In other words, the present conditions all require individuals to reasonably and reflectively judge and decide "what to believe or do" (Ennis, 1997, p. 2). Furthermore, the importance of critical thinking skills has recently been emphasized due to great changes and demands of workplace. Nowadays, people, who are proficient and competent enough to think, judge, decide, and take actions quickly and properly, are more needed and preferred in modern world.

However, in Willingham' words (2007), as a central objective of education, critical thinking has remained an "insufficiently met" (p. 8) area in the curriculum. The review of the related literature has also manifested that the main concern of scholars and educationists at the present time is whether critical thinking should be taught separately as an independent course or embedded in other subject matters (Ennis, 1997). Although most of the scholars

endorse the third alternative, calling this the "mixed approach" (Ennis, 1997, p. 1), the issue is still under consideration.

Turning specifically to language learning, the integration of critical thinking skills into the realm of English as a second or foreign language learning has been widely acknowledged by experts in the field. This is based on the assumption that there is a close relationship between "language learning and thinking processes" (Iakovos, 2011, p. 82). As a matter of fact, thinking seems to be associated with any kind of learning. Learning English as a second or foreign language is not an exception, and therefore, the notion of thinking plays a crucial role in the process of second or foreign language acquisition (SLA/FLA).

In this context, then, the concept of critical thinking reflects the idea that EFL learners can actively be engaged in such mental processes as problem-solving, discovery-learning, questioning, analyzing, making predictions, formulating and reformulating hypotheses to expand their knowledge of language. These processes, indeed, allow learners to become efficient as well as competent language users and encourage them to avoid acquiring information and content via memorization and rote learning. In addition, a number of studies indicated that the settings of language learning and teaching provide learners with helpful opportunities to promote critical thinking skills (Thompson, 1999; Ishikawa, Sasaki, & Yamamoto, 2007; Iakovos, 2011). Likewise, Davidson (1998) puts emphasis upon the teachability of critical thinking skills in language learning and teaching context.

In accordance with this perspective, several studies in the ESL/EFL settings have tended to explore if the incorporation of critical thinking skills can influence the development of principal skills of language i.e., listening, speaking, reading, and writing (Morady Moghaddam & Malekzadeh, 2011; Shangarffam & Mamipour, 2011; Hashemi & Zabihi, 2012).

Among these skills, reading has been the center of attention of L2 reading researchers. According to Richards and Schmidt (2002, p. 489), skill refers to "an acquired ability to perform an activity well". In this sense, for L2 readers, reading skill is an ability that is acquired and developed over time. As Moreillon (2007) argues, the process of reading involves a set of cognitive skills of inferencing, interpreting, analyzing, synthesizing, and evaluating. These subskills are different from reading strategies which are intentional actions facilitating reading at any level of processing (Erler & Finkbeiner, 2007). However, as reading strategies are divided into cognitive, metacognitive, memory, compensation, social,

textual, and affective strategies (Oxford, 1990a), there might be overlap between reading subskills and reading strategies.

Scholars in the area of L2 reading argue that in EFL settings for academic purposes, where English is the medium of learning and teaching materials, reading is regarded as the most important skill. That is, learners need to be able to read written language at an acceptable rate and simultaneously have a good comprehension of what they read if they desire to succeed in their education. This is endorsed by Grabe and Stoller (2001) claiming that in academic settings, reading skill provides learners with a basic means for "learning new information and gaining access to alternative explanations and interpretations" (p. 187). To achieve any one of these goals and comprehend a text, L2 readers need to possess a set of skills since interactive nature of reading process embraces cognitive capacities together with lexical knowledge, background or topic knowledge, and linguistic or discourse knowledge (Snow, 2002).

In this sense, it is worth mentioning that the complexity of reading is not only due to the multiple processes involved in it, but also because of the invisibility of these cognitive processes. That is, difficulty for teachers and researchers is that the readers' "problems, judgments, and decisions are invisible" (Casanave, 1988, p. 289). This means, in order to get a coherent picture of what is going on inside the mind of readers, researchers have to rely on indirect technique of think-aloud which may not provide clear, accurate, and reliable information about the complex process of reading (Casanave, 1988). In other words, it is difficult even for expert readers to exactly articulate the invisible mental processes taking place in their mind during reading process.

In recent years, research in this area has shifted from concentration upon the impact of lexical and linguistic knowledge to the cognitive skills required in the process of reading, i.e. inference, interpretation, analysis, synthesis, and evaluation (Moreillon, 2007) and the strategies needed to accomplish the purpose of reading. Scholars in the field of cognitive psychology have also attempted to provide models to explain and conceptualize reading comprehension, making use of relevant cognitive concepts such as inference, prior knowledge, cognitive as well as metacognitive skills (Aloqaili, 2012). Among these skills, critical thinking has received much attention in the area of L2 reading research. A small number of studies have investigated the impact of teaching a number of critical thinking skills on the enhancement of reading comprehension of EFL learners (Fahim & Sa'eepour, 2011,

Fahim, Barjesteh, & Vaseghi, 2012). Few studies have also concentrated on the relationship between critical thinking and reading comprehension of EFL learners from a variety of academic backgrounds (Fahim, Bagherkazemi, & Alemi, 2010; Hashemi & Zabihi, 2012).

Therefore, since critical thinking can be studied in the area of L2 learning, the present study is going to investigate critical thinking skill in the realm of L2 reading, focusing on the nature of the relationship between these two variables.

## 1.2. Statement of the Problem

Review of literature manifests that a few studies have directly or indirectly intended to explore whether, or not, instruction of critical thinking skills affect EFL learners' performance in reading comprehension tasks (Koupaee Dar, Rahimi, & Shams, 2010; Fahim & Sa'eepour, 2011, Fahim, Barjesteh, & Vaseghi, 2012). The results showed that teaching critical thinking skills to L2 readers positively affect their reading comprehension skill. Moreover, few studies have attempted to examine if critical thinking and reading comprehension skill of EFL learners are related to one another (Fahim, Bagherkazemi, & Alemi, 2010; Hashemi & Zabihi, 2012). Although the studies indicated a relationship between critical thinking and reading comprehension of Iranian EFL learners, they could not provide convincing results due to some limitations such as methodological problems, small number of participants, and uncontrolled variables. Furthermore, the investigations have been limited to EFL learners with diverse academic backgrounds; and hence, the problem under examination has not been studied with EFL university students, who are directly involved in the process of reading and thinking, since for them English is the main medium of learning. In addition to these, the previous investigations have concentrated upon the whole process of critical thinking in EFL learners, paying no heed to the process of every individual subscales of critical thinking i.e., analysis, inference, evaluation, deductive and inductive reasoning and their relationship to the process of reading comprehension.

Hence, to fill the gap in the area of L2 reading research, the present study, firstly, aims to test out the relationship between critical thinking and reading comprehension of EFL university students. Secondly, the research intends to examine if critical thinking subscales i.e., analysis, evaluation, inference, deductive and inductive reasoning can act as predictors of students' reading comprehension skill.

## 1.3. Significance of the Study

The review of literature manifests that both critical thinking and reading comprehension are crucial skills in EFL learning settings, especially in academic contexts. So, the findings of the present study might give awareness to L2 reading instructors regarding the cognitive skills involved in the complicated process of reading.

Moreover, the findings of the study might provide curriculum developers with helpful information concerning the importance of higher-order thinking skills such as analyzing, solving problems, making judgments, and making decisions in second or foreign language curricula just as it has previously been considered in some studies (Davidson, 1998; Thompson, 1999; Ishikawa., Sasaki, & Yamamoto, 2007; Iakovos, 2011).

The findings of the study might also be of benefit to material designers to include problem-solving activities in reading textbooks in order to develop L2 readers' cognitive capacity of inferencing, interpreting, analyzing, as well as evaluating. Furthermore, the results of the present study might give insight to EFL teachers so that they reconsider the importance of cognitive processes required for a successful reading in second or foreign language learning context.

## 1.4. Research Assumptions

On the basis of the literature, the relationship between language and thought has been advocated by Locke (1690 cited in Steinberg, 1982) centuries ago, declaring the idea that language is dependent on thought. Likewise, Goodman as a prominent theoretician in the field of second language reading, describes reading as a "psycholinguistic guessing game", putting emphasis upon the psycholinguistic aspects of reading and contends that "language and thought interact" (Carrell, Devine, & Eskey, 1988, p. 9) with one another in the process of reading.

Indeed, cognitive processes in the mind of language learner as well as reader provide a basis for learning and comprehending. This is based on the assumption that there is a close relationship between "language learning and thinking processes" (Iakovos, 2011, p. 82). In the same token, other scholars in the field "view second language reading as an active process in which the second language reader is an active information processor" (Carrell et al., 1988,

p. 3). This means that incoming information is structured and processed in the mind of readers under the effect of prior experience and knowledge, contributing to the process of comprehension.

This study is established on the assumption that

1. Reading comprehension process depends upon multitude thinking processes which are invisible to readers themselves. Reading texts in a foreign language, readers apply some cognitive skills such as inferencing, analyzing, interpreting, and evaluating to accomplish the task of reading.

2. It is also assumed that the processes required in L2 reading are similar to some processes of critical thinking which is concerned with analyzing information, interpreting meanings, synthesizing information from diverse sources, assessing different points of view, drawing conclusions about the validity of the arguments, evaluating, making decision regarding the existing problem (Fisher, 2001; Cottrell, 2005).

## 1.5. Research Questions

The present study aims to investigate the following research questions:

1. Is there any significant relationship between Iranian EFL university students' critical thinking and their reading comprehension skill?

2. To what extent can subscales of critical thinking predict reading comprehension skill of Iranian EFL university students?

## 1.6. Research Null Hypotheses

Based on the research questions, the following null hypotheses are developed to be tested out:

$H_{01}$: There is no significant relationship between Iranian EFL university students' critical thinking and their reading comprehension skill.

**H$_{02}$:** Subscales of critical thinking cannot predict reading comprehension skill of Iranian EFL university students.

## 1.7. Definition of Key Terms

Definitions of key terms used in the study are presented as follows:

### *Critical Thinking (CT)*

Among several definitions of the term *critical thinking*, we consider the following working definitions:

- "The use of cognitive skills or strategies that increase the probability of a desired outcome… thinking that is purposeful, reasoned, and goal-directed… and effective for the particular context and type of thinking task" (Halpern, 1997, quoted in Moseley et al., 2005, p. 141).

  In a broader sense, *critical thinking* is defined as

- "the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by observation, experience, reflection, reasoning, or communication as a rubric to belief and action" (Scriven & Paul, 2003 quoted in Condon & Kelly-Riley, 2004, p. 64).

### *Critical thinking subscales:*

- **Analysis:** the ability of classification, interpretation, recognition and analysis of ideas
- **Inference:** the ability to draw inferences and conjecture alternatives
- **Evaluation:** the ability to distinguish claims, opinions, and arguments and state results, explaining and justifying procedures
- **Deductive reasoning:** the ability to determine certain conclusions based on the given statements or premises
- **Inductive reasoning:** the ability to conclude from statements and arguments and make judgment based on the assumptions, ideas, and logical reasoning