

**REPUBLIC OF TURKEY
DOKUZ EYLUL UNIVERSITY
INSTITUTE OF EDUCATIONAL SCIENCES
DEPARTMENT OF FOREIGN LANGUAGES
ENGLISH LANGUAGE EDUCATION
DOCTORAL DISSERTATION**

**A COMPARATIVE STUDY OF CRITICAL
THINKING STRATEGIES IN READING IN
MONGOLIA AND TURKEY**

Chimedlkham ERDENEBAATAR

İzmir

2017

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by

Chimedlkham ERDENEBAATAR

Supervisor

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İzmir

2017

YEMİN METNİ

Doktora Tezi olarak sunduğum “A Comparative Study of Critical Thinking Strategies in Reading in Mongolia and Turkey” adlı çalışmanın, tarafımdan, bilimsel ahlak ve geleneklere aykırı düşecek bir yardıma başvurmaksınız yazıldığını ve yararlandığım eserlerin kaynakçada gösterilenlerden oluştuğunu, bunlara atıf yapılarak yararlanılmış olduğunu belirtir ve bunu onurumla doğrularım.

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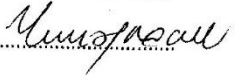
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Abstract

A large number of the world's population is reported to read and it is safe to say that the majority of people are able to read in their first language at some basic levels. In the globalized world, productive and educated citizens will require stronger literacy abilities, including reading and writing.

Most of the societies and countries around the world are multilingual, and people are facing an increased need for speaking well in more than one language. Within this larger context, reading in the second language (L2) settings continues to take on increasing importance. English is not only considered as a global language for communication but also it is a language for science, technology, literature and advanced academic research. Benefits of learning a second language give us a greater global understanding of the world such as knowing many fascinating cultures around the world, and academic achievement.

Besides that, nowadays, the purpose for most college and university tends to prepare critical thinker and critical readers in the first language (L1) and L2. So, the importance of critical thinking skills has been set as a primary goal in higher education in the world. As an important part of learning process, especially in reading, critical thinking enables students to analyze, evaluate and draw a conclusion. Therefore, this study is devoted to the understanding of reading comprehension and critical thinking skills in reading.

The purpose of this study is to analyze current literature based on critical thinking, reading comprehension, critical reading and to investigate the level of Turkish and Mongolian English pre-service teachers' critical thinking skills, the level of reading comprehension and their use of reading strategies. Second, to investigate the relationship between critical thinking skills and reading strategies and to what extent critical thinking skills affect the level of reading comprehension and to what extent reading strategies affect the successful reading comprehension. The research was carried out as a correlational research among 3rd and 4th grade English

pre-service teachers in two universities, one in Turkey and the other one in Mongolia.

In order to conduct the research, we administered Background Information Questionnaire, Survey of Reading Strategy, Reading Comprehension Test, and Cornell Critical Thinking Tests among the participants. In the analysis of the data, the Pearson product-moment correlation was used to find out the relationship between critical thinking and reading comprehension. Besides, Pearson Correlation, a t-test was also employed to explore the differences between male and female students' critical thinking skills. Thus, a t-test was used to explore the differences between Turkish and Mongolian students.

As a result, first, Turkish and Mongolian English pre-service teachers showed high and medium uses of reading strategies in reading. They used Problem Solving Strategies more frequently than Global and Support Strategies. Second, overall use of the reading strategies was not significantly related to their reading comprehension. Third, the findings reveal that there was not a significant relationship between Turkish and Mongolian English pre-service teachers' critical thinking skills and reading comprehension. The importance of critical thinking in education cannot be ignored. Many studies were conducted to determine the effect and relationship of critical thinking with different areas of language.

Key words: Critical thinking, reading comprehension, reading strategy, global, problem solving, and support reading strategies, creative thinking, critical reading.

Özet

Küreselleşen dünyada, İngilizce, hem Türkiye'nin hem de Moğolistan'ın yabancı yatırımı çekmesinde ve dış ticaretini geliştirmesinde ana faktörlerden biri olarak görülmüştür. Yani, İngilizce hem Türkiye'nin hem de Moğolistan'ın eğitim sisteminde önemli bir yere sahip olmuştur. Öğrencilerin dört temel beceri olan dinleme, konuşma, okuma ve yazmada uzmanlaşması istenmesine rağmen en fazla okuma becerisine önem verilmektedir.

Günümüzde çoğu üniversitelerin amaçlarından biri öğrencilerinin kendi alanlarında eleştirel okuma becerilerini geliştirmelerini sağlamaktır. Eleştirel düşünme günümüz eğitim programlarının bir hedefidir. Ancak eleştirel düşünmeyi yaşamlarında etkili biçimde kullanabilen bireyler eleştirel düşünme becerilerine ve eleştirel düşünme eğilimlerine sahip bireylerdir. Öğrenme sürecinin önemli bir parçası olan eleştirel düşünme özellikle okuma yaparken öğrencilerin kavramları analiz etmelerini, değerlendirmelerini ve açıklamalarını sağlamaktadır. Diğer bir deyişle, metni anlamak ve karmaşık etkileşimi kolaylaştırmak için öğrencilerin eleştirel düşünebilmesi gerekir.

Bu çalışmanın amacı, eleştirel düşünme, okuduğunu anlama, eleştirel okuma ve eleştirel düşünme becerilerini literatür incelemesine dayanarak analiz edip eleştirel düşünme becerilerini belirlemek ve okuduğunu anlama ile okuma stratejilerinin ilişkilerini belirlemektir.

Bu araştırma koralasyonel araştırma yöntem ve teknikleri kullanılarak yapılandırılmıştır. Araştırmanın grubu, 2015-2016 öğretim yılında Dokuz Eylül Üniversitesi'nin İngilizce öğretmenliği bölümü ve Moğolistan Bilgi ve Teknoloji Üniversitesindeki İngilizce öğretmenliği bölümünde öğrenim gören üçüncü ve dördüncü sınıf öğrencilerinden çalışmada yer almak isteyen gönüllü öğrenciler arasından seçkisiz olarak oluşturulmuştur.

Bu çalışmada dört temel veri toplama aracı kullanılmıştır. Bunlar okuma anlama testi, üst bilişsel okuma stratejileri ölçeği, Cornell Eleştirel Düşünme Testi ve

Oxford'un dil öğrenenler için kişisel bilgi formlarından oluşmaktadır. Araştırma sonucunda elde edilen veriler SPSS (2015) paket programı kullanılarak analiz edilmiştir. Verilerin analizinde betimsel istatistiklerin yanında bağımsız t-testi ve korelasyon teknikleri kullanılmıştır.

Sonuçlar öğrencilerin akademik materyalleri okurken birçok Problem Çözme Stratejisi ve Destek Stratejileri kullandıklarını ortaya çıkartmıştır. Çalışma sonuçlarına göre öğrencilerin okuma stratejilerinin farkındalığı yüksek ve orta düzeyde gerçekleşmiştir. İkincisi, Üst Bilişsel Okuma Stratejilerini kullanma algıları ile okuma anlama testi arasında istatistiksel açıdan anlamlı bir ilişki bulunmamıştır. Üçüncü olarak, Türk ve Moğol İngilizce öğretmenliği adaylarının eleştirel düşünme becerileri ile okuma strateji kullanımı arasında anlamlı bir ilişki olmadığı ortaya konulmuştur.

Anahtar Kelimeler: Eleştirel düşünme, okuma anlama, okuma stratejileri, küresel okuma stratejisi, problem çözme stratejisi, destek stratejisi, yaratıcı düşünme, eleştirel okuma.

CHAPTER I

INTRODUCTION

In the globalized world, English has been regarded as a key factor in Mongolia's development, a way of attracting foreign investment, improving foreign trade, providing opportunities to the students who would like to study abroad, and widening cultural, international communication in a variety of contexts. As a required subject from high school to university, English has a special position in both Mongolian and Turkish education. It has become one of the core subjects in the National College Entrance Examination in Mongolia. Turkey has many universities which offer programs that are instructed entirely in English. Although learners are required to master all the language skills, more emphasis is laid on reading skills. Reading activity is considered one of the most important skills taught in school. In addition, Mongolian English learners do not have many chances to listen, speak, or write in English, but they have more opportunities to read in English. For instance, there are many English texts, information, novels, bookshops, and library catalogs that they may access on the internet.

Critical thinking is a highly valued educational outcome for college and university students. Nowadays, the importance of critical thinking skills has been set as a primary goal in higher education in the world (Maltepe, 2016; Adair & Jaeger, 2016; Sarita, 2016). As an important part of learning process, especially in reading, critical thinking enables students to analyze, evaluate and explain the concepts. In other words, in order to understand the text and facilitate complex interaction they need to be critical thinkers; that is, to learn, to value their own thinking, to compare their thinking and interpretations with others. The importance of connecting and commenting on the ideas became the key elements of social and academic success for learners. In this era, questioning has become the most frequently used technique in every part of our lives. The need for the students to question and make

connections between their studies and the world in which they live is now a necessity in order to have social and academic success.

Although there are many definitions of critical thinking, nearly all emphasize the skills and the tendency to gather, evaluate, and use information effectively. Critical thinking can be referred to as an evaluation of an argument, higher cognitive skills, reasoning skills, reflective thinking, critical habits, and critical spirit (Facione, 1984; Daniel & Auric, 2011; Ennis, 1985; Siegel, 1988).

According to Ennis (1993), critical thinking is the ability to think clearly and rationally. It includes the ability to engage in reflective and independent thinking; the ability to decide what to do or what to believe. Halpern (1998) defines critical thinking as the use of cognitive skills or strategies that increase the probability of a desirable outcome. It is the kind of thinking involved in solving problems, formulating inferences, calculating likelihoods, and making decisions.

1.1 Statement of the problem

Although critical thinking is almost a new concept in the second language education, it is considered one of the main concerns of researchers in second language. There are researchers who have investigated the relationship between critical thinking and motivation, critical thinking and gender influence, and critical writing (Baxter, 1992; Ghadi, et al. 2000; İçmez, 2009;), but research concerning the relationship between critical thinking and each specific group of skills (listening, speaking, reading, writing) is limited.

Researchers have made connections between critical thinking and creativity (Bailin, 2002; Ennis, 1993; Marzano et al. (1991). At first glance, critical thinking and creativity might seem to have little in common, or even to be mutually exclusive constructs. However, Bailin (2002) argues that a certain amount of creativity is necessary for critical thought. Paul and Elder (2008) noted that both creativity and critical thinking are aspects of “good,” purposeful thinking.

Little attention to critical reading has continued to the present day in Mongolian universities. In most of the high schools and universities throughout the country, little evidence of the goal of emphasizing critical thought has been accomplished. Based on our university professors' observations and experiences, many of our students do not acquire the "higher order" intellectual skills we expect of them (Khaliunaa, 2014; Burmaa, 2011). Most of the students are often passive in their use of drawing inferences, analyzing facts, generating ideas, writing a persuasive essay, evaluating, and explaining concepts properly. Therefore, educators in Mongolia are still trying to teach and enhance critical thinking strategies for learners in their academic lives. It is called on the schools to prepare students to comprehend, interpret and evaluate what they read, to write well-organized effective papers, to listen effectively and discuss ideas intelligently- all aspects of critical thinking. At this point, more studies need to be investigated to make a greater effort to develop students' higher-level thinking skills, such as problem solving, reasoning, evaluating, and learning ability and inform understanding the importance of critical reading.

1.2. Purpose of the study

The objectives of this study are to analyze current literature based on critical thinking, reading comprehension, critical reading and to determine the level of Turkish and Mongolian English pre-service teachers' critical thinking skills, their levels of reading comprehension and their use of reading strategies. Second, to examine the relationship between critical thinking skills and reading strategies and to what extent critical thinking skills affect the level of reading comprehension and to what extent reading strategies affect the successful reading comprehension.

Research questions

Based on the aim of the research, the following research questions have been set in this study:

1. Which categories of reading strategies are mostly used by Turkish and Mongolian English pre-service teachers?

2. What is the level of critical thinking skills for Turkish and Mongolian English pre-service teachers?

3. Is there a significant relationship between the critical thinking skill of Turkish and Mongolian English pre-service teachers and their level of reading comprehension?

4. Is there a significant difference between the critical thinking skill of male and female Turkish and Mongolian English pre-service teachers?

5. Is there a significant relationship between the use of reading strategy and reading comprehension for Turkish and Mongolian English pre-service teachers?

1.3 Significance of the Study

The result of this study will be a great contribution to the tree of knowledge for researchers and students. First, the study will provide a deeper understanding of the importance of critical thinking skills, including the ability to think rationally, make an inference, solve problems, use various learning strategies, analyze ideas of the text, make a critical and independent judgment and evaluate the text objectively. Besides, the above critical thinking skills, the amount of input can be given to the students for their successful academic reading. Students could demonstrate critical reading skills such as analyzing issues that author has tried to solve; evaluating and interpreting the author's keywords in given text, identifying argument and point of view of the author; determining the solved and unsolved problems of the author; and comparing ideas in the text and forming their own views. As an outcome of the study, students could understand the benefits of critical reading that assert one's abilities to discuss any issues with other students. By learning critical thinking in educational institutions, learners can generalize and apply it to their whole life. Fourth, the result of this study may suggest a broader hypothesis for further research consideration in the development of future research and activities to support critical thinking in universities.

1.4 Operational Definitions

In the current study, there are some important terms which need to be clearly defined. These are as follows:

Reading comprehension: Reading is considered one of the most fundamental language skills in language teaching and learning process. Reading is better modeled as “a psycholinguistic guessing game” in which a text provides clues for readers and intention of the writer has to be guessed (Goatly, 2000, p.161). The most useful types of context clues are contrast clues, restatement clues, definition clues, illustration clues, and experience clues (Lewis, 2002, p. 70).

Reading strategy: Reading strategy can be defined as “plan for solving problems encountered in constructing meaning” (Lewis, 2002, p.232)

Critical thinking: Critical thinking is regarded as an important skill in the globalized world and number of theorists have suggested many definitions of critical thinking. Critical thinking is conceptualized in terms of processes or skills. It refers to cognitive thinking skills and equates with mental processes (Bailin, 2002, p. 362). The literature suggests that most commonly offered definitions tend to be emphasized the skill to gather, evaluate, reflect the information effectively (Ennis 1993).

Critical reading: Critical reading involves analytical and reflective processes such as making judgments, evaluating information, and considering the logic of the ideas (Lewis, 2002, p. 201).

CHAPTER II

LITERATURE REVIEW

2.1 Critical Thinking

Critical thinking has been considered an important and a debatable subject in literature. The etymology of critical thinking is attained from the Greek word “critic” and determines the intellectual capacity and meaning the art of judgment (Yıldırım, Özkahraman, & Karabudak, 2011). Critical thinking does not only emphasize the act of examining words but it also deeply reflects on one’s own ideas and notions to be expressed. Therefore, many historians believe that root of critical thinking can be related to Socrates’ teaching practice 2500 years ago (Kanik, 2010).

In this section different philosophers and psychologists who have developed theories of critical thinking such as Ennis, Lipman, Paul, Mcpeck, Siegel, and Elder have been reviewed. In addition, the literature concerning the concept of critical thinking is reviewed under five main headings as below:

- What does it mean to think critically?
- Core critical thinking skills and standards
- Critical thinking in gender
- Critical thinking skills in education
- Assessment of critical thinking

2.1.1 What Does It Mean to Think Critically?

There are a number of widespread disagreements and confusions about the definitions of what critical thinking actually is and it has been defined in several ways among educators, philosophers, and psychologists in the field of critical thinking. As a concept, the nature of critical thinking is explained on philosophy based theories and psychology-based theories. Philosophers attempt to describe

critical thinking on the nature and quality of products whereas psychologists have emphasized about the process which involves cognition and the components (Reed 1998). In addition, psychologists have conducted empirical research based studies whereas philosophy based researchers focused on theory and logical reasoning in order to attain the final conclusion (Fasko, 2003).

Philosophy- based theories and definitions:

Philosophy generally relates to the discipline that examines concepts in detail. Philosophy has been considered an intellectual activity that concentrates on complex cognitive skills and predispositions. Furthermore, cognitive skills such as examining, reviewing, distinguishing, evaluating, and predispositions referring to curiosity, open-mindedness, thoroughness, acceptance of criticism are related to the concept of critical thinking (Daniel & Auric, 2011). The ancient philosophers Socrates, Plato, Aristotle, and more recently, Lipman (1988) and Paul, (1989), Paul & Elder, (2002,) define the term using philosophical approach. Mainly philosophy-based approach attempts to determine the qualities and nature of critical thinker rather than the behaviors or actions of the person (Lewis & Smith, 1993). Yet, a literature review about critical thinking contains widespread definitions of critical thinking by leading researchers, but most of these definitions have similarities from the philosophical and psychological view.

In philosophical view, Ennis (1985) points out that conception of critical thinking is based on particular skills such as observing reports, making inferences, generalizing ideas, reasoning, judging or evaluating reason. Ennis defined critical thinking as logical thinking which is characterized by complex cognitive skills. Skills in cognitive domains are related to knowledge, comprehension, analysis, evaluation and clarification. According to Facione (1984), critical thinking is considered “the development and evaluation of arguments” (p.259) while Lipman (1988) argues that critical thinking is “skillful, responsible thinking that facilitates good judgment because it is sensitive to context, it relies upon criteria, and it is self-correcting” (p.39). Critical thinking, criteria, and judgment are connected in logical ways. Judgement is a skill, critical thinking is skillful thinking, and skills cannot be defined

without criteria (Lipman, 1988. p. 40). To Lipman, critical thinking presupposes skills under the category of conceptualization, reasoning, and generalization. As Minakova (2014) views the general definition of critical thinking as skills to analyze and evaluate the selected problems. So it is crucial to choose the pedagogical technologies for critical understanding and evaluating.

There is also an agreement that thinking critically does not only require the skill and ability to assess the reason properly. Educators and researchers consider that both critical and creative thinking is a key at every level of learning. Ennis (1993) state that the influence of creative thinking and predisposition integrated to critical thinking. For Ennis, becoming a good critical thinker is a matter of developing creativity. Creativity presupposes skills such as inventing, associating ideas, suggesting alternatives, making analogies, and formulating hypotheses, whereas predispositions refer to attitudes such as being curious, strategic, rigorous, etc. Hence critical thinking is “the ability to judge the credibility of sources, to identify conclusion, reason, and hypothesis, to appreciate the quality of an argument, to develop and defend a point of view, to ask relevant clarifying questions, to search for reasons, to draw conclusions that are credible and viable ” (Ennis, 1993, p. 180). As for creative thinking, Marzano et al. (1991) asserted that students need to be creative in order to think effectively about any problem and issue. Creative process always begins with the thought. It is a good motivator for learning (Thompson, 2017, p. 29). According to Forrester (2008), creativity involves the generation of new and unique ideas. Similarly, Gardener (1993) views creativity as an ability to generate new products and raise new questions. As Fisher (2002) states there are three major processes in creative thinking. First, learners form and generate ideas and designs in thought. Second, learners differentiate their generated ideas in some ways from others. Third, learners create effective and unique features. Briefly, according to Fisher (2002), creative thinking relates to generation, variation, and uniqueness.

From this point of view, creative thinking generally relates to critical thinking process to develop the ideas. Teaching creativity leads to meaningful learning, and it helps to prepare creative and potential learners to the society. Thus it is important to consider the common understanding of creativity.

Besides being skillful and purposeful, critical thinking also refers to a reasonable, reflective, self-monitored, and responsible thinking which concentrates on constructing personal meaning. Ennis views critical thinking as “a correct assessing of statement” but he has defined it as “reasonable reflective thinking that is focused on deciding what to believe and do” (Ennis, 1985, pp.9-26). According to Ennis (1985), critical thinking is composed of both skills and dispositions. Skills are more cognitive aspects of critical thinking, whereas dispositions and attitudes are more effective aspect. As stated by Nosich (2001) each individual is able to think things through, and think them accurately, cogently, clearly, and reasonably. Critical thinking starts once he reflects on his thinking. Individuals initiate with some questions and then try to answer questions by reasoning out answers.

Paul (1990); Paul and Elder (2000) introduced more recent concepts in the critical arena. Paul and Elder’s (2002) distinction between weak-sense and strong-sense critical thinking helps us to understand these two antagonistic uses of critical thinking. The purpose of weak-sense critical thinking involves being resistible for one’s opinion and reasoning different from one’s own thought. It misses some important and high level of critical thinking skills and values of thinking. In contrast, to think critically in strong sense requires students to develop fair-mindedness and use critical thinking in a reasonable manner. According to Paul and Elder (2002), strong-sense critical thinkers try to understand and appreciate the others’ viewpoints. In other words, the important characteristic of being a strong-sense critical thinker is to develop fair-mindedness. Paul and Elder (2002) adds that strong sense critical thinkers cultivate moral traits such as; humbleness, courage, empathy and integrity. In addition, they use thinking in an ethical and responsible way, instead of using their thinking to manipulate others. Paul (1990) defined critical thinking:

Critical thinking is disciplined, self-directed thinking which exemplifies the perfections of thinking appropriate to a particular mode or domain of thought. It comes in two forms. If disciplined to serve the interest of a particular individual or groups, to the exclusion of other relevant persons and groups, it is sophistic or weak sense critical thinking. If disciplined to take into account the interests of diverse persons or groups, it is fair minded or strong sense critical thinking. (pp.52-53)

Regarding this statement, first, critical thinking is a learned skill. Second, critical thinking is a habit of mind – intellectual virtues – those are possessed by fair-minded and strong-sense critical thinkers. Paul's another classic definition of critical thinking includes: "thinking about your thinking while you're thinking to make your thinking better" (Paul, 1990). Each of these definitions attempts to stress the metacognitive aspect of critical thinking, independent thinking, and the importance of thinking about one's own thinking based on standards. According to Paul, critical thinking should not be confused with criticism which involves negative judgment. Rather, it is a mean of examining, evaluating materials and presenting one's own beliefs logically and coherently. To McPeck (1994), critical thinking is the ability and the propensity to engage in a reflexive and active skepticism. Depending on knowledge, experience, and understanding of content and specific discipline, critical thinking can only be judged within the composed part of each specific discipline (McPeck, 1994). According to McPeck (1994), critical thinking is generally viewed as "an inconceivable concept (p. 115)". Everyone often thinks of something in different ways and the quality of one's thinking always depends on manner. Critical thinking cannot be taught independently of a particular subject domain. As mentioned above, according to McPeck critical thinking depends on knowledge and understanding of epistemology of the discipline. From this perspective, it is difficult to think critically about an issue in the specific field if one knows very little about it. His point is that besides having critical thinking skills and dispositions, it is essential to obtain wide and deep knowledge of discipline for critical thought in particular context.

Siegel (1988) points out a conceptual connection between critical thinking and rationality. For Siegel, the conception of critical thinking is defined as "thinking appropriately to be moved by reasons" (p. 32) and to be rational to believe and act on the basis of reasons. "A critical thinker is a person who acts, takes a stand, works out judgments based on reasons, and who understands and adapts to the principles that govern the evaluation of these reasons" (Siegel, 1988, p. 38). Siegel suggests that critical spirit should be included in the concept of critical thinking. According to

Siegel (1988), disposition of mind, personality, inclination, traits and characteristics of mind enables thinkers to become more expert thinkers and get them relevant to an issue. Furthermore, his definition regarding reason assessment is defined as:

A critical thinker must be able to assess reasons and their ability to warrant beliefs, claims, and actions properly. Therefore, the critical thinker must have a good understanding of, and the ability to utilize, subject-specific and subject – neutral (logical) principles governing the assessment of reason (Siegel, 1988, p.38).

A philosophical research field also emphasizes qualities or standards of thought. Bailin (2002) views that general notion of critical thinking is a normative notion and it is specified as the quality of particular thinking rather than the mental process of thinking. In addition, specific criteria or standards of adequacy and accuracy are crucial to making a good thinking. Furthermore, rules of logic are a key consideration for the philosophical approach (Lewis & Smith, 1993). Whenever people think, make decisions, or study, it may be impossible to communicate without logic. The study of logic is essential to improve the mind and habit of critical reasoning.

Here are some definitions of critical thinking by leading researchers from the philosophical approach:

- “reasonable and reflective thinking that is focused upon deciding what to believe and do” (Ennis, 1985, p. 46)
- “art of thinking about your thinking while you are thinking so as to make your thinking more clear, precise, accurate, relevant, consistent, and fair” (Paul, 1989, p.213)
- thinking that is goal-directed and purposive, “thinking aimed at forming a judgment,” where the thinking itself meets standards of adequacy and accuracy (Bailin et al., 1999, p. 287);

Popular debates around critical thinking generally attempt to emphasize the skills and dispositions linked with a reasonable and reflective approach. Ennis (1985) stresses the skills of critical thinking mostly and Siegel (1988) emphasizes critical thinking as involving the matter of assessing reasons properly. In this way, Siegel

takes critical thinking as a process that involves assessing claims and making judgments for the purpose of reaching the truth.

Psychology-based theories and definitions:

Psychology-based theories relate to the cognitive dimension of critical thinking. Such theories are emphasized to explore the concepts including cognition, attention, emotion and experimental research paradigm. Psychology-based theories tend to define critical thinking by the types of actions or behaviors. Siegel (1988) viewed it as “an active process involving a number of denotable mental operations such as induction, deduction, reasoning, sequencing, classification and definition of relationships” (p.18). Similarly, Saade et al. (2012) mentioned critical thinking as a cognitive ability which involves making decision and judgment.

Here are some definitions of critical thinking from a psychological perspective; (Halpern, 1998; Mayer & Goodchild, 1990; Willingham, 2007)

- “the use of those cognitive skills or strategies that increase the probability of a desirable outcome” (Halpern, 1998, p. 450);
- “an active and systematic attempt to understand and evaluate arguments” (Mayer & Goodchild, 1990, p.4);
- “seeing both sides of an issue, being open to new evidence that disconfirms your ideas, reasoning dispassionately, demanding that claims be backed by evidence, deducing and inferring conclusions from available facts, solving problems, and so forth” (Willingham, 2007, p. 8).

Furthermore, Bloom’s Taxonomy is a popular and helpful tool which is used by most teachers in modern education. Bloom’s taxonomy (1956) is a well-known and most widely used hierarchical framework of cognitive processing for teaching and assessing thinking skills in education. It views thinking as a set of skills that range from a lower order to higher order — the higher order skills require more complex thinking than the lower ones which require less complex thinking. Original taxonomy consists of six major categories. The categories are knowledge, comprehension, application, analysis, synthesis, and evaluation (Figure 1). Bloom’s

taxonomy is hierarchical, with “comprehension” at the bottom and “evaluation” at the top. The three highest levels (analysis, synthesis, and evaluation) are frequently said to represent critical thinking (Kennedy et al. 1991). Anderson et al., (2001) have modified Bloom’s taxonomy based on classroom experience and observations of students learning. In the revised taxonomy, three categories were renamed, the order of two was changed, and all categories were renamed to verb form (Krathwohl, 2002). The six major categories of the revised taxonomy are: remember, understand, apply, evaluate, and create (Figure 1). (The detailed structure of the Original and the Revised Taxonomy are attached in Appendix A). Sharma (2000) mentioned that both original and modified taxonomy is sorted from one level to higher levels focused on cognitive process.

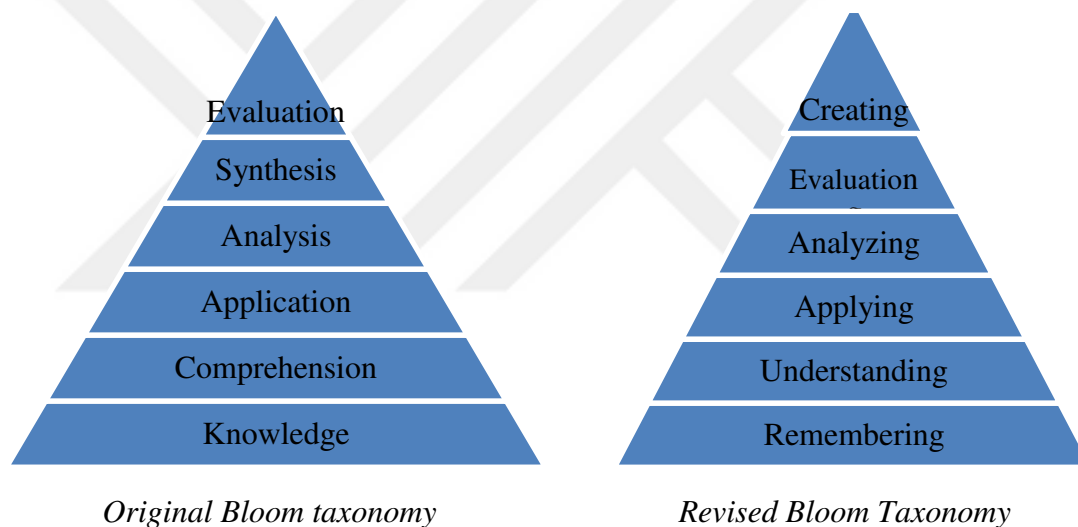


Figure 1. Original and Revised version of Bloom Taxonomy (Krathwohl, 2002, p. 213-214).

Numerous studies in cognitive and developmental psychological field have been considered to connect critical thinking with problem solving. Halpern (1998), for example, defined critical thinking as “thinking that is purposeful, reasoned, and goal directed. It is the kind of thinking involved in solving problems, formulating inferences, calculating likelihoods, and making decisions” (pp. 450-451). Generally, psychologists have concentrated on skills involved in thinking critically rather than requiring the development of intellectual dispositions (inclinations, sensitivities, intellectual humility) and standards (criteria for evaluating thinking). But in recent

years several psychologists have begun focusing on the importance of students' dispositions and have emphasized the models for critical thinking (Halpern, 1998).

2.1.2 Core Critical Thinking Skills and Standards

Thinking is an important mental process and ability that requires a person to form and produce thought about a given problem in contemporary life. Meanwhile, critical thinking is not the same as thinking. It is an extensive thinking to make decision and solution. Regarding this statement, it is a deeper thinking about a particular issue or situation before deciding and acting. Critical thinkers regard the subject itself and all its aspects when they think. Critical thinking often requires a lot of questions, considerations, and standards and involves a longer process before arriving at a conclusion or decision.

According to Nosich (2001):

Two primary ingredients turn thinking into critical thinking. The first is that critical thinking is reflective thinking. It involves a degree of thinking about one's thinking. The second is that critical thinking is thinking that is done well. It's thinking that meets high standards of thinking (p.117).

Paul (1990) believes that critical thinking improves the quality of one's thinking based on intellectual standards. According to Paul & Elder (2002), critical thinking is a process which involves the elements of thought and universal intellectual standards. The element of thought is; the point of view, purpose, the question at issue, information, interpretation and inference, concepts, assumptions, and implications and consequences. Comprehensive critical thinking has the following characteristics; first, it is a kind of thinking that is associated with intellectual standards; namely, clarity, accuracy, precision, relevance, depth, breadth, logic and fairness. (Table 1) Second, critical thinking involves the development of intellectual traits. These intellectual traits are guided by intellectual humility, intellectual courage, intellectual empathy, intellectual integrity, intellectual perseverance, faith in reason, and intellectual sense of justice. (The detailed framework for critical thinking is attached in Appendix B). Paul & Elder (2002)

believed that below seven intellectual traits are interdependent and help learners to become a good critical thinker.

Table 1

Intellectual Standards

Standards	Explanation
Clarity	Clarity is an important attribute of thought to determine whether it is accurate or relevant. It refers to how clear one's thinking is. In the evaluation process, the thinker would ask the following questions to address clarity. Could you elaborate further? Could you give me an example? Could you illustrate what you mean?
Accuracy	It refers to representing thought and information in accordance with the way it actually is. Questions can be posed to look at the accuracy follow: How could we check on that? How could we find out if that is true? How could we verify or test that?
Precision	It is closely connected to clarity. It refers to giving the details to that clarity. The questions to help with precision follow: Could you be more specific? Could you give me more details? Could you be more exact?
Relevance	It refers to the ability to consider facts on questions. These are examples of question to evaluate relevance. How does that relate to the problem? How does that bear on the question? How does that help us with the issue?
Depth	It contains complexities and multiple interrelations of the issue. Following questions could be asked to evaluate depth. What factors make this a difficult problem? What are some of the difficulties we

	need to deal with?
Breadth	It refers to encompassing multiple viewpoints in a broader way. Questions focusing on breadth may include: Do we need to look at this from another perspective? Do we need to consider another point of view? Do we need to look at this in other ways?
Logic	The parts make sense together, and have no contradictions. Does your first paragraph fit in with your last? Does what you say follow from the evidence?
Fairness	It is an essential attribute of critical thinker which refers to be justifiable, not one-sided in context. Questions focusing on fairness may include: Am I sympathetically representing the viewpoints of others? Are assumptions justified?

From: Paul, R., Elder, L, (2002). *Critical thinking tools for taking charge of your professional and personal life*.

In addition, there are some additional critical thinking standards such as reasonable, logical, rational, consistent, falsifiable, testable, well-organized, authenticated, effective, and factual (Nosich, 2001). It is important to understand and incorporate the elements of thought with intellectual standards in thought. For being a critical thinker, it is not sufficient to understand these intellectual standards in abstract (Nosich, 2001). In addition, in order to improve one's thinking, these intellectual standards require extensive practice.

Ennis (1985) offered one of the pioneering taxonomies in the concept of critical thinking. The skills that Ennis identifies are classified according to the following categories:

- I. Elementary classification
 - A. Focusing on questions
 - B. Analyzing arguments

- C. Asking and answering question of clarification
- II. Basic support
 - A. Judging the credibility of a source
 - B. Observing and judging observation reports
- III. Inference
 - A. Deducing and judging deductions
 - B. Inducing and judging inductions
 - C. Making value statement
- IV. Advanced clarification
 - A. Defining term and definition
 - B. Identifying assumptions
- V. Strategy and tactics
 - A. Deciding on an action
 - B. Interacting with others

Ennis, R. (1985, p. 32).

Researchers of critical thinking generally agree on the specific abilities encompassed by the definitions which include:

- Analyzing and examining arguments or set of claims based on evidence (Ennis, 1985; Halpern, 1998).
- Making inferences using clues, inductive or deductive reasoning about the observation (Ennis, 1985; Lipman, 1988, Willingham, 2007).
- Judging or evaluating the quality of arguments (Ennis, 1985; Facione, 1984; Lipman, 1988 ;).
- Making decisions effectively or solving different problems (Ennis, 1985; Halpern, 1998; Willingham, 2007).
- Evaluating form of inquiry (D'Angelo, 1971).

A summarization of lists of critical thinking skills can embody the following skills:

- Identifying the key issues
- Recognizing underlying assumption
- Recognizing bias, emotional factors in presentation

- Distinguishing between verifiable and unverifiable data
- Distinguishing between relevant and irrelevant data
- Distinguishing between essentials and incidental
- Recognizing adequacy of data
- Determining whether fact support or generalization
- Drawing conclusion or inference
- Formulating or evaluating hypothesis
- Reference skills
- Comparing similarities or differences among ideas or events
- Classifying items according to rational criteria
- Making informed judgment
- Drawing applications to a different context
- Making decision
- Evaluating questions
- Building theories

From (California assessment program, 1985, p. 125)

2.1.2.1 Characteristics of a Critical Thinker

Millman (1988) states that “it is generally agreed that it is not enough for students to have critical thinking skills. Students must also be willing to use them: appropriate attitudes or dispositions are required for someone actually to be a critical thinker” (p.47). Thinking critically begins with an attitude of being to consider in a thoughtful, perceptive manner of one's life. It is important to encourage the attitude and the critical thinking dispositions in classroom instruction. Millman (1988) gave some useful suggestions to teach and foster critical thinking skills. These suggestions are: first, critical thinkers must have motivations and relevant attitudes using critical thinking skills. Second, critical thinkers need to have the abilities to transfer their skill to different situations. Third, it is important to get metacognitive skills. Besides, these cognitive and emotional skills, critical thinkers need to be aware of knowledge.

As mentioned before, Paul (1984) distinguishes between critical thinking skills in a weak sense and in a strong sense. He asserts:

In a weak sense, critical thinking skills are understood as a set of discrete micrological skills ultimately extrinsic to the character of the person; skills that can be tacked onto other learning. In the strong sense, critical thinking skills are understood as a set of integrated macro-logical skills ultimately intrinsic to the character of the person and to insight into one's own cognitive and affective processes (pp.162-163).

Paul (1990) indicates that dealing with issues or problems from multiple perspectives relates to characteristics of strong sense critical thinking and even it demands open-mindedness to understanding points of view. D'Angelo (1971) distinguished particular attitudes as necessary for critical thinking:

1. Intellectual Curiosity. It involves how to apply knowledge in effective ways such as seeking answers to various kinds of questions and investigating the causes and explanations of events; asking why, how, who, what, when, where.

2. Objectivity. It refers to acting objectively and rationally when making any decision. It is based on empirical evidence and valid arguments in reaching conclusion, not the influence of emotional and subjective factors.

3. Open-Mindedness. It is a fundamental intellectual inquiry which involves considering a variety of beliefs and ideas as possible being true. In addition, making a judgment without any bias or prejudice is an essential attitude in critical thinking.

4. Flexibility. It refers to the willingness or mental ability to change one's beliefs to another category.

5. Intellectual Skepticism. It relates to an attitude toward beliefs and opinions.

6. Intellectual Honesty. It refers to considering the statements and facts in an open-minded manner. The statement is accepted based on the sufficient evidence.

7. Being Systematic. It is necessary to think and solve problems critically through one's habit. Systematic thinking allows students to identify and analyze the issues consistently to a particular conclusion.

8. Persistence. It is an important attitude for reaching the goal. It is an attitude to be determined to persist in seeking ways of resolving disputes and

supporting certain points of view without giving up the task finding evidence and argument.

9. Decisiveness. It refers to avoid unnecessarily drawn out arguments, snap judgments and delays in reaching decisions until all necessary information is obtained.

10. Respect for Other Viewpoints. Students have different backgrounds and different views that may bring up students to believe in different viewpoints. So listening carefully to another point of view and responding accurately to what has been said is important for maintaining positive environment (p.78).

According to Halpern (1998):

a critical thinking attitude is a habitual willingness or commitment to engage in purposeful deliberation about claims or ideas rather than simply accepting them at face value. It is the foundation of critical thinking behavior and consists of the willingness to (a) engage in and persist at a complex task, (b) use plans and suppress impulsive activity (c) remain flexible or open-minded (d) abandon nonproductive strategies, and (e) remain aware of social realities (such as the need to seek consensus or compromise) so that thought can become actions. (p.452)

Furthermore, Millman (1988) suggests five kinds of items that involve critical thinking attitude. First, critical thinkers must have the motivation to use their critical thinking skills in decision-making. Second, critical thinkers need to be able to transfer their skills to new situations. Third, critical thinkers need to have metacognitive skills. Forth, they need to have meta-affective skills. Fifth, critical thinkers should be aware of philosophical, psychological, and sociological characteristics of knowledge (p.51).

Critical thinking is a practical and deliberate determination if students accept or reject statements. Skills alone cannot guarantee success in student's academic achievement. A variety of views about critical thinking attitudes and dispositions, strong sense critical thinking is important for being a critical thinker.

2.1.3 Critical Thinking in Gender

In the field of TESOL and SLA, applied linguistics and gender specialists have revealed a growing interest in gender and its impact on ESL and EFL teaching and learning. Researchers have demonstrated that women have different “ways of knowing” from men (Khaliunaa, 2014; Wheary & Ennis, 1995). Researching the scope of gender differences in critical thinking and its components such as argument analysis and reflective judgment has been discussed broadly among researchers recently.

Baxter (1992) attempted to investigate gender issues in intellectual development. This study showed gender differences in students’ reasoning and knowing patterns. No single reasoning pattern was used exclusively by male or female students, or between different domains. Further, she found more similarities than differences in men and women’s ways of knowing, and she also determined that different reasoning patterns led to equally complex ways of viewing the world. As cited in Smitha’s work Kuhn’s (1992) data supported Baxter’s findings; Kuhn concluded that argumentative reasoning ability does not differ systematically as a function of sex. No evidence from Kuhn’s investigation has suggested that one sex is any more disposed to engage in argumentative thinking than the other.

Similarly, Halpern (1986) investigated the cognition and gender differences. Halpern (1986) concluded that gender differences in performance on cognitive tests turn up consistently. In the areas of quantitative and visual/ spatial abilities, males usually outperform females; and in verbal skills, females outperform males. There are no differences between male and female students in critical thinking disposition (Ghadi, et al. 2000). They suggested that further study should be investigated on the students’ demographic status not only gender. Ennis (1985) reported no gender differences on the Cornell critical thinking tests.

The question of gender differences in critical thinking remains a topic of controversy among scholars. Gender differences in critical thinking need to be further investigated under the questions of the implications of cognitive gender

differences for the teaching of critical thinking, whether gender makes a different performance in the learning of critical thinking and what abilities can master.

2.1.4 Critical Thinking Skills in Education

Critical thinking plays a fundamental role in education. Educational institutions consider that critical thinking is a key at every level of learning (Adair & Jaeger, 2016). In other words, it helps students choose correct multiple answers from exam questions to make major decisions in life. Colleges and universities aim to achieve students' thinking skills that would be applicable in their lives and far beyond. Besides, Mongolian national private and public institutions are also paying attention to the development of responsible, capable, independent, cooperative and critical learners both inside and outside the classroom (MUST). They strive to prepare creative and potential learners who love learning and who have a sense of how to critically analyze one's learning, experiences, bias in one's thinking and who will gain competence.

There are some significant programs and courses that successfully implemented critical thinking at different stages in higher education. As Lee et al. (2015) mentioned, preparing critical and creative learners is one of the important educational missions, but many universities do not appropriately adapt these skills as a part of the instructional program. These universities should consider if learners' outcomes are adjusted to their institutional or educational mission. It is important to understand the concept of critical thinking in order to consider the challenges of developing curriculum content and appropriate teaching methodologies. Educational institutes need to improve students' way of thinking that encourages social positions (Weaver & Kulesza 2014).

2.1.5 Assessment of Critical Thinking

Variety of useful tests are developed to assess learners' critical thinking skills. Most of the tests are in the form of multiple choice, essay, interview, and performance assessment. For decades researchers in higher education are

concentrating on assessing learners' critical thinking skills, mainly, in analyzing, synthesizing, evaluating, and creating ideas in different situations. Important issues in the assessment of critical thinking are stressing what is exactly being assessed and establishing the best instruments for assessment. (Ennis, 1993; Paul, 1990).

Paul & Elder (2008) stated that there is no perfect technique and method for fostering critical thinking and engaging the intellect for students. Discussing the assessment of critical thinking in academia, any critical thinking assessment needs to be based on an operational definition of critical thinking (Halpern, 1998). It is crucial that any critical thinking assessment instrument should be based on a definition and conceptualization of critical thinking. Also, it should be suitable for any well-designed classroom activities (Facione, 1990; Anderson 1999). From epistemological perspectives, critical thinking enables the students to gain a better understanding of one's surroundings and examining and questioning given information. Students need to be able to discern the epistemological and value-based commitments (Jones & Merrit, 1999).

For the educational sector, assessment of the learners' critical thinking skills and its associated sub-skills are generally based on the conceptual definition of critical thinking and tend to rely on the course and the faculty's objectives. In other words, attention must be given to the purpose of the assessment. Purposes may include program evaluation and improvement, research, individual student achievement with a diagnosis of strengths and weaknesses, a collection of data for accountability, and assisting with decisions regarding an individual student's admission to certain programs (Ennis, 1993).

Furthermore, much attention has to be paid to the reliability and validity of existing measurements. It is not easy to create and develop a reliable and valid tool to assess learners' critical thinking skills. McMillan (2004) identified the following criteria for evaluating instrumentation:

1. Evidence for validity should be stated clearly.
2. Evidence for the reliability should be stated clearly.
3. The instruments should be clearly described.

4. The procedures for administering the instruments should be clearly described.
5. Norms should be specified for norm-referenced interpretations.
6. Procedures for setting standards should be indicated for criterion-referenced interpretations.
7. The scores used in reporting results should be meaningful.
8. Observers and interviewers should be trained.
9. The effect of the interviewer or observer should be minimal (p.173-174).

A number of useful assessments have been developed in the field of critical thinking including; California Critical Thinking Skills Test [CCTST] (Facione, 1990), Cornell Critical Thinking Tests [CCTT] (Ennis & Millman, 1985), the Ennis-Weir Critical Thinking Essay Test [EWCTET] (Ennis & Weir, 1985), and the Watson-Glaser Critical Thinking Appraisal [WGCTA] (Watson & Glaser, 1980). These critical thinking tests vary in their purposes, formats, and contexts (Ku, 2009).

2.2 L2 Reading Comprehension

Among the four skills, reading has always been the most challenging one for students' academic studies. In the globalized world, productive and educated citizens will require stronger literacy ability, including reading and writing. As reading is considered an important skill, the understanding of first and second language reading comprehension is a debatable subject in research (Demiröz, 2008).

Most of the societies and countries around the world are multilingual, and people are facing an increased need for speaking well in more than one language. Within this larger context, reading in L2 settings continues to take on increasing importance. English is not only considered as a global language for communication but also it is a language for science, technology, literature and advanced academic research. Furthermore, learning a second language is a good way for students to practice reading. Even people need to read in L2 at a high level of proficiency to achieve personal, occupational and professional goals. Benefits of second language

needs give us a greater global understanding of the world such as assessing many fascinating cultures around the world, academic achievement and so on. Therefore this part is devoted to the understanding of reading comprehension, the process of reading comprehension, reading strategies and sources of reading difficulties.

2.2.1 What Is L2 Reading Comprehension?

A common way to begin with a discussion of reading is to provide a definition of a concept. In recent years, an extensive research in the field of reading has been carried out. Although a considerable amount of research has led to significant improvements in reading, there are many gaps in our knowledge and understanding of the process of skilled reading. In particular, our understanding of comprehension processes still seems limited. Researchers determined the role of reading comprehension and its definition in different ways. Grabe & Stoller (2002) explain reading as a way of creating meaning from text and to form a meaningful interpretation of information. In trying to create meaning from the text, readers are involved in the active process. However, this definition does not really consider what happens when we read and how we comprehend a text. Reading comprehension is remarkably complex, involving many processing skills that are coordinated in an efficient combination.

Many conceptions of reading find their definitional roots based on the following main theories of language learning which explain the nature of learning to read and comprehend texts. These theories are generally viewed under the heading of:

(a) behaviorism theories focused on environmental factors and conceptualized learning as something that occurs from the outside,

(b) cognitivist theories focused on mental activities and the understanding of the complex material,

(c) social constructivist learning theory which involves the way of learning things through interaction. Learners generate knowledge and meaning from contact and then meaning and comprehension are constructed in the social context through

the paradigm of language (Woolley, 2011). These different theoretical views have influenced educators for conceptualizing the process of learning on how to read.

Here we start by explaining the different points of view concerning comprehension process. Psychologists (Gough, 1972; Reyhner, 2008) suggest that most reading models can be categorized as generally bottom-up, top-down, or interactive processing. In a bottom-up processing, meaning is constructed by decoding words and assembling sentences and paragraphs. Theories that stress bottom-up processing focus on how readers extract information from the printed page (Gough 1972). Reading begins by translating the parts of written language into speech sounds and then pieces the sounds together to form individual words, and then segment the words together to arrive at an understanding of the author's written message. In bottom-up processing, the reader begins decoding and recognizing letters, words, phrases, and sentence structure and finally building up meaning from incoming text. Phonemic awareness would be one example employing "bottom-up" processing, which focuses on more narrowly identifying individual sounds within words, then move to decoding words, reading sentences and then creating meanings of the text (Reyhner, 2008). According to Grabe & Stoller (2002), bottom-up processing involves the use of mechanical pattern in which the reader creates a piece-by-piece mental translation of the information of the text.

Furthermore, a number of researchers believe that reading is closely related to the reader and not only the words or the phonemes. In top-down processing, the readers activate their background knowledge (the knowledge that relates to the general knowledge of the world including history, geography, science or a specific situation that can be relevant in making sense of text), make predictions and then attempt to confirm predictions. Similarly, Ruddell & Singer (1994) mentioned that forming a hypothesis is important to develop the meaning from the text because readers raise hypothesis to comprehend a written text. According to Alberto et al. (2013), reading comprehension starts from the global aspects and then focuses on linguistic units. From these perspectives, top-down processing is based on prior knowledge of reader and the information from the text is directed by the reader's

previous experiences and expectations. Goodman (1979) referred to reading “as being a psycholinguistic guessing game in which the readers use their background knowledge and language ability to predict the meaning of sentence or passage” (p.9). As USA (National Reading Panel [NRP], noted (2000), several types of background knowledge influence comprehension and memory. These types are general knowledge of the world, specific knowledge about various subjects, knowledge of the text, and strategic (or process) knowledge. From this perspective, students need to recall above knowledge for successful reading. If students have an incompatible background knowledge or lack of ability to access background knowledge, students may face comprehension difficulties during reading.

Besides bottom-up and top-down processing, one important and significant research tendency to reading is a combination of both bottom-up and top-down processing or called interactive reading. The interactive model combines the bottom-up and top-down models as an interactive process that readers use simultaneously to gather meaning from text. Readers interact with text using their prior knowledge, experience and cultural background (Mokhtari & Sheory 2001). As Gunning (2002, p.10) states, we engage in parallel processing so that we simultaneously use knowledge of the language as well as contextual and letter-sound cues. According to Kintsch (2005), reading comprehension is based on both bottom-up and top-down processes and these are integral parts of perception, recognition, problem solving, and text comprehension.

There is also a view that reading comprehension is a transactional process involving the reader, the text, and purpose. Rosenblatt (1978) first presented the theory of a transactional model of reading. According to Rosenblatt (1988), the act of reading is a transactional relationship between the reader and the text. This model refers to the process of reading comprehension as a transaction which takes place between reader and text, where the reader is very much a part of, and actively engaged in constructing meaning. Similarly, readers approach texts in different ways (Damico et al. 2009). Transactional theory describes the relationship between the reader and the text and it is influenced by others. Like the interactive theory, the text

influences the reader and the reader influences the text. Thus, the act of reading is not simply putting words together into sentences. It also involves the feeling, imagination, and situation.

Yet, a review of the literature on reading reveals there are many definitions of reading comprehension and there is no general consensus definition. Here are some definitions of reading comprehension:

- “reading is a psycholinguistic guessing game, in which the reader actively interacts with the text to construct meaning ” (Goodman, 1979, p. 22);
- “every reading act is a transaction involving a particular reader and a particular text in a particular context, and “meaning” comes into during the transaction between the reader and the text” (Rosenblatt, 1988, p. 6);
- “reading comprehension is the process of making meaning from text” (Woolley, 2011, p.15);
- “an interaction between a wide range of cognitive skills and processes” (Cain & Oakhill, 2008, p. 43)

On the other hand, most of the definitions have similarities. Primarily, researchers and teachers in the field of reading in L2 tend to follow the contexts of L1 reading. Studies in the L1 acquisition have been contributed much about the understanding and development of reading process and its development. Grabe and Stoller (2002) pointed that “current research in reading is well supported by L1 reading context and is compatible with L2 reading” (p.37). Grabe & Stoller, also, suggested several factors related to the discussion of why student’s reading ability in L1 is well described. First, significant numbers of studies have been conducted on the issues of L1 reading. Second, reading in L1 readings have been explored extensively rather than L2. Whether the process of L2 reading is similar to the process of L1 reading, the theories or models for L1 reading are applicable to L2 reading. It is still highly controversial issues among reading scholars (Bernhardt, 1991; Fitzgerald, 1995; Grabe & Stoller, 2002). Bernhardt (1991) believes that L2

reading is “a different phenomenon from L1 reading and a specific reading theory to L2 reading is needed” (p. 226). One basic difference existed between L1 and L2 reading is that L2 readers understand the text through their L1 language framework. Grabe & Stoller (2002) stated that L2 reading is more complex and is qualitatively different from L1 issues. They suggested three general areas including linguistic and processing differences, individual and experimental differences, and socio-cultural differences between L1 and L2 readings.

Fitzgerald (1995), in contrast, believes that L2 reader’s cognitive process is similar to L1 reader’s cognitive process. As a consistent result of studies on cognitive reading processes, Fitzgerald (1995) suggested that the cognitive reading processes of ESL learners are substantively the same as those of native English speakers and raised a question about the need of specific reading instructions for ESL learners under the theoretical framework. As a result of reviewing and analyzing a number of studies, NRP (2000) suggested the following key components for development of reading:

1. Phonemic awareness is the ability to hear and manipulate the individual sounds within words.
2. Phonics instruction teaches students to use the relationship between letters and sounds to translate printed text into pronunciation. It teaches how the relationships between the letter of written language and the individual sound of spoken language are used to read and write.
3. Oral reading fluency is the ability to read text aloud with accuracy, speed, and proper expression.
4. Vocabulary refers to both word recognition and word meaning.
5. Text comprehension is a form of active and dynamic thinking that includes interpreting information through the filter of one’s own knowledge and beliefs, using the author’s organizational plan to think about information.
6. Comprehension strategies are intentional actions that a reader can take to increase the chances of understanding or remembering the information in a text (pp. 6- 28). As identifying these elements, NRP (2000) defined that reading is a complex cognitive and active process requiring an intentional and thoughtful interaction

between a reader and a text. Even though these elements were identified from L1 reading research, they are key components for L2 reading development as well. Koda (2005) describes comprehension occurs when the reader extracts and integrates various kind of information from the text and combines it with what is already known (p.4). In addition, a number of various theories and studies, related to reading, have a common goal to develop the reading comprehension.

2.2.2 The Processes of Reading Comprehension

There are many processes involved in reading comprehension. According to Rayner (1990), it should be noted that primary focus is paid on the process of comprehension and not on the product of comprehension. When one reads it is necessary to recognize the individual words that are printed on the page. There is a large literature dealing with the recognition of printed words (Rayner, 1990). Understanding how individual words are comprehended is directly related to the process that occurs in reading and it has been a considerable interest in this issue.

As mentioned before, reading comprehension can be broadly defined as “the process of constructing meaning by coordinating a number of complex processes that include language, word reading, word knowledge and fluency” (Paris et al, 1991, p. 620). Similarly, Goatly (2000) noted that comprehension is highly interactive; readers use a variety of skills and processes when encountering a text. These processes are complex and consist of multiple components. Kintsch and Rawson Situation Model (2005) suggests that the reader builds a semantic network of ideas when they try to construct the meaning of a text. The reader employs language and visual skills to decode words and combine words, phrases that form meaning.

Further discourse processing is necessary to develop an understanding of a text. The comprehension of a text involves something more than the recognition of words and parsing of sentences into propositional units (Myers, 1990). According to Woolley (2011), except for decoding words and vocabulary, good comprehension depends on processing text in phrases, sentences, and discourses. The reading

process requires continuous practice, creativity and critical analysis for development. Readers should build their ability to engage in purposeful reading, to develop their confidence, and to develop critical awareness including the structure of written text, knowledge of the world and so on.

2.2.3 Reading Strategies

In order to learn successfully, the following factors need be taken into consideration: the reader, the text, the strategies, and the goal. Strategies are often confused with skills or processes. Awareness (or consciousness) has been used to explain those differences; according to Schmeck (1988, p.5), skills mean capabilities or abilities that can be expressed in behavior, whereas learning strategies refer to a sequence of conscious procedures for accomplishing learning. According to Grabe & Stoller (2002), skills represent linguistic processing abilities that are relatively automatic in their use. Strategies are often defined as a set of abilities under conscious control of the reader (p.15). The reader needs to recognize processing difficulties, address imbalances between text information and reader knowledge. Being a strategic reader means being able to read flexibly in line with changing purposes and the ongoing monitoring of comprehension. Readers can become skilled readers and learners if they are given instruction in effective strategies. Reading comprehension can be achieved by explicit metacognitive strategy. (Çubukçu, 2008). Paris et al. (1991) define strategies as “actions selected deliberately to achieve particular goals. In contrast, skills are “information processing techniques that are automatic and applied to unconsciously” (pp. 610-611).

A number of theoretical definitions of a reading strategy are defined in the reading research. Brantmeier (2002) viewed reading strategies as “the comprehension processes that readers use in order to make sense of what they read” (p. 1). Koda (2005) characterizes reading strategies with three core elements: “deliberate, goal/problem oriented, and reader-initiated/controlled” (p. 205). Almasi & King (2012) define reading strategies in a similar view. They follow that reading strategies are deliberate and it helps students to reach their goal of understanding. As

to choosing the strategy intentionally, the choices of strategies are aimed at particular goals such as decoding words, understanding the text, and constructing meaning. Afflerbach et al. (2008) defined reading strategy as “deliberate, goal-directed attempts to control and modify the reader’s effort to decode text, understand words, and construct the meaning of the text” (p.368).

For the most second language learners, reading comprehension is generally a matter of expanding appropriate, efficient comprehension strategies. Some strategies are related to bottom-up processing, and others related to top-down processing. Survey of Reading Strategies (SORS), which was developed by Mokhtari & Sheorey (2002), is intended to measure the students’ perceived use of reading strategies while reading academic materials. Reading strategies are intentionally, carefully planned techniques and mechanisms to monitor or manage their reading comprehension, actions, and procedures. (Mokhtari & Sheorey, 2002). Accordingly, this survey of reading strategy focuses on metacognitive strategy use within the context of reading and measures three categories of reading strategies: global reading strategies (setting a purpose for reading, using context to predict new lexical items, confirming or rejecting predictions), problem solving strategies (adjusting reading rate, focusing when concentration is lost), support reading strategies (taking notes while reading, highlighting important ideas in the text). According to Mokhtari & Sheorey (2001), research in reading and its use of reading strategy awareness among the readers of English as a second language has revealed that good readers typically reflect on and monitor their cognitive processes while reading. They are aware of which strategy to use while reading and how to use strategies to ensure success in reading comprehension.

2.2.4 Exploring Sources of Reading Comprehension Difficulties

When considering whether a person has a reading difficulty, the reader’s intellectual capacity is frequently taken into consideration. Theoretically, it is generally agreed that readers should be able to read at a level equal to their intellectual capacity or level of oral language development. Students with reading

problems are considered as a complex problem. It may relate to students with learning difficulties and learning disabilities (Siegal 2003). Gunning (2002) noted that reading difficulty is often the result of interacting factors or contributing causes. These factors may be classified as cognitive, linguistic, social, emotional, and educational.

A number of cognitive factors are possible causes of reading problems. These include overall cognitive ability or the ability to learn, memory, ability to pay attention. Students with limited cognitive ability may not learn to read successfully. Such students do well with decoding but have difficulty with comprehension (Gunning, 2002). The relationship between reading, language, and cognitive ability should be considered. Moreover, reading leads to fuller development in vocabulary and syntax and may also promote greater cognitive efficiency. According to Elabsy (2013), there are some main sources which make language difficulty. These sources are associated with illegibility, unfamiliar words, lack of background knowledge, a difficult concept, complex syntax, nominalization, advanced cohesion, and poor writing. Learning the meaning of a new word that represents an unknown concept is difficult and it requires the most elaborate instruction. Carr and Thompson (1996) state that prior knowledge affects both students with disabilities and those without disabilities. They discovered different patterns of results depending on the familiarity of the text topic. Students were tested using reading passages on topics that were familiar and unfamiliar to the participant in order to check the effect of prior knowledge while reading. Their study reported that students' prior knowledge was a significant predictor of reading comprehension test result. In addition, cognitive factor memory is developmental which contains three important processes. These are encoding, storage, and retrieval. Working memory holds all the information that reader are conscious, including what has been perceived and what has been thought (Gunning, 2002, p. 28). According to Baddeley (1992), working memory is composed of three subsystems named central executive, phonological memory, and visuospatial sketchpad (Figure 2).

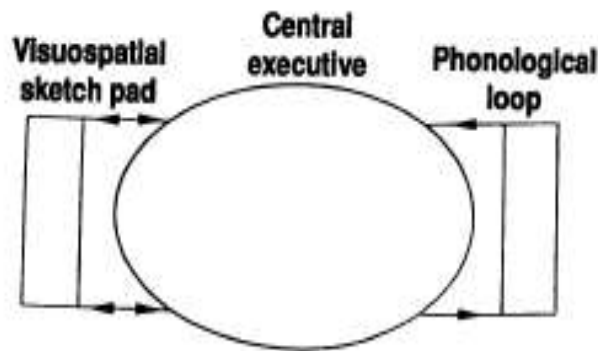


Figure 2. Representation of the Baddeley Working Memory Model (Baddeley, A. 1992, pp. 556-559)

In addition, it is important to process information more efficiently and store more information into working memory. Another important condition for learning to read is attention. There can be no learning without attention. Attention fulfills three functions: screening our irrelevant stimuli, selecting relevant elements, shifting from one side to another (Robeck & Wallace 1990). Gunning (2002) suggested the following for working with students who have difficulty paying attention in reading.

- Let students read brief rather than lengthy selections
- Use color and highlight important details
- Provide a variety of interesting practice activities to attract their interest
- Use positive reinforcement
- Add visual elements to oral direction
- Provide students with strategies that help them for their difficulties (p. 34).

Students with language difficulties are almost sure to have problems with reading. Speech articulation problems may also contribute to reading difficulties. Additional difficulties that might contribute to a reading difficulty include poor phonological awareness, lack of vocabulary, and deficient word finding. According to Liberman (1990) students with phonological awareness face reading difficulties. Poor readers usually unable to segment words into phonological constituents. Moreover, inadequate vocabulary causes the reading difficulty for many students. Students read different types of materials which contain technical terminology, irony,

humor, and term with extensive contextual knowledge. Shanker & Ekwai, (2003) mentioned five different levels of vocabulary knowledge.

1. Students have no recognition of a word.
2. Students recognize the word but have no knowledge of its meaning.
3. Students recognize the word in a context and have vague of its meaning.
4. Students know the meaning of the word in the context.
5. Students know the multiple meaning of the word and can use it in thinking, writing, or speaking (p. 141).

For students with a limited English vocabulary, much practice in reading practice is essential. Also, it is important to encourage them to read widely about a number of subjects.

Social factors such as nationality, culture, and socioeconomics can be considered as important factors in second language reading. Moreover, the home, social and cultural environments in which children grow can influence their ability to read. According to Wallance (2003), texts are the outcome of social and cultural collaborations. Social factors directly or indirectly influence the learners' reading abilities, perceptions, and motivation. Building a sense of community is crucial for readers. It induces the students' reading ability, motivation, and self-perception (Gunning 2002). In many cultures, learning is cooperative. Students do better when their material is related and reflected to their cultural heritage (Gunning, 2002. p.59).

It is important to consider the students' physical condition and health factors. Poor health does not greatly affect the successful reading. But at least both hearing and vision should be screened (Gunning, 2002). Reading difficulties can be rooted in educational factors (Gunning, 2002). Inappropriate materials, poor pacing, lack of effective instruction, overuse of skill and drill may lead to a reading problem. A key problem is that students with the reading problem often do not read enough to develop the ability to read effectively. Students with the reading problem are a challenge to teach, but they still must be provided with the best instruction possible (Margaret et.al, 2002, p. 9). Good instruction is the most powerful means of

promoting proficient comprehension and preventing comprehension problems (Carnine et al. 2004). To benefit from the reading instruction and practice, activities should be presented at the appropriate level of reading difficulty. Too high level of instruction or too difficult material make students frustrated (Shanker &Ekwal, 2003). Reading teachers should motivate students to read for information and pleasure. Once students engaged in the act of reading, students gradually develop the fluency that makes reading an automatic process. Furthermore, in order to improve students' reading skill, researchers and educators need to consider the cause of students' reading difficulties.

2.3 Critical Reading

In everyday life, people frequently encounter different kinds of problems and they need to deal with issues, make decisions, and solve problems. It is crucial to evaluate critically and creatively what they see, hear and especially read. In order to solve and deal with problems efficiently, we require ourselves to examine ideas, ask questions, challenge arguments, and choose appropriate viewpoints. In other words, critical and analytical skills are crucial for both our life and academic success. Furthermore, as obtaining critical skills, we are able to enhance our confidence and value.

For the college and university students, learning to read critically is considered an important element which involves critical thinking. According to Freire (1983), "reading is not exhausted merely by decoding the written word or written language, but rather anticipated by and extending into the knowledge of world" (p.5). As stated by Freire, language and reality are united. Critical reading involves the understanding of a text that implies perceiving the relationship between text and context. As being an important part of learning, especially reading, developing students' critical reading strategies has been an increasing emphasis in higher education. This part reviews the literature related to critical reading and tries to provide the understandings of critical reading, its relationship between literal reading and critical reading, and assessment.

2.3.1 Literal Reading and Critical Reading

For many years, reading educators and researchers propose a number of broad definitions about reading comprehension. Isolating and defining basic skills involved in reading comprehension is complicated. But educators and researchers are still trying to discover what specific skills help students to understand the literal, factual and critical reading.

According to Lewis (2002), reading occurs at two levels: the literal and critical level. On the literal level, readers pay attention to what the author says and look for the main idea that supports it. At the critical level, readers carefully focus on what the author means (Lewis, 2002, p. 202). At the most elementary level, reading involves a literal interpretation of the author's words. To Alptekin and Erçetin (2010) literal reading refers to the lower-order conceptual and linguistic operations at the text-based level and it generally involves dealing with decoding words and parsing sentences.

Regarding these statements, reading for literal meaning involves the reader's goal to discover the main ideas and support details and facts, identify main ideas and opinion in a text in a literal reading. Similarly, Lewis (2002) views that literal level of reading comprehension, involves reading the lines, or reading and understanding exactly what is on the page. Students may give facts or details directly from the passage as they read. The critical level of reading comprehension requires a high level of understanding of the given information. The students must judge the passage they have read. The critical level is one of the highest of the levels of understanding.

According to Jude and Ajayi (2012, p. 120), "Literal reading is a basic and surface form of reading comprehension which involves reading to understand explicit facts and descriptions". Jude and Ajayi (2012) state that the readers' ability to recognize the form and supporting points of an argument, grasping details is very important in reading comprehension. Moreover, Carnine (2004) states:

Literal reading involves teaching students to retrieve information stated in a passage but several variables affect the

difficulty of the passage-related items: (1) the degree to which the items are literal, (2) the length of the passage, (3) the order in which questions are asked, (4) the complexity of the instruction, and (5) the use of pronouns (p. 221).

Moreover, readers understand and analyze reading and writing at three levels (Goatly, 2000). At the first level, readers decode and describe the surface forms and meaning of a text. This decoding answers the question “What does the text mean?” At the second level, readers interpret and inference what they have decoded. This interpretation of intention answers the question “what does the writer mean by this text?” The last level relates to the explanation and the ways of thinking which explain the ideology behind the above parts. According to Huijie (2010), literal and critical reading has some commonalities, but they are different in purposes and process. The relationship can be illustrated by Figure 3. Readers need to develop both critical and literal reading. A literal reading is fundamental, and the development of the literal level of reading comprehension should be clearly taught in secondary school. So that learners can apply critical skills such as analyzing, interpreting, evaluating, and creating meanings at a higher level.

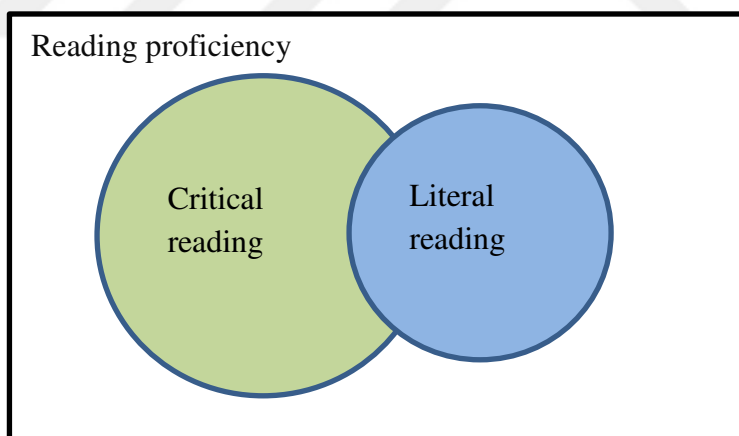


Figure 3. The relationship between critical reading and literal reading (Li Huijie, 2010, pp.40- 54).

2.3.2 Critical Reading Strategies

A role of critical reading in the English language is important for language learners. Furthermore, the academic reading material presents complex issues and arguable claims. Students are required to advance conclusion, synthesize new ideas

with previous knowledge, determine their agreement or disagreement with writer's position and prepare for academic debate and make their own evaluation of how much they are willing to accept what they read. Students need to apply successful critical strategies to achieve the aforementioned objectives. Recently a number of researchers (Kratwohl, 2002; Wallance, 1992) have sought to determine various critical reading strategies, activities, and suggestions. Especially, in order to develop critical perspectives of the texts, researchers made some suggestions about critical questions which can be asked during the practice of critical reading. Clarke & Silberstein (1979) suggested the kind of critical reading questions which can be built into reading materials:

- For what purpose and for what audience is this intended?
- What knowledge and attitudes does the author presume of the audience?
- Are you convinced by the evidence presented by the author to support the claims made?
- Does your own experience support the conclusions reached by the author?
- Do you share the authors' point of view?

Recently, Wallance (1992) has suggested a framework of questions for critical reading based on Kress (1985), which enables students to identify and undertake a more detailed analysis, and resist the value underlying text:

- Why is this topic being written about?
- How is the topic being written about?
- What other ways of writing about the topic are there?
- Who is the text's model reader?

These questions would certainly help readers to challenge the ideology of the text and the sequence of these critical questions provides a structure for ordering critical thoughts in response to any text. Wallance (2003) states that "critical questions can be incorporated into the writing of a critical summary of a text, whether as a short review or as part of a more extensive piece of work" (p.45).

These entire developed instruments (critical reading questions) are devoted for purpose of reading. Rivers and Temperly (1978), for example, made the point that reading activities should have purposes. They list the following purposes: to get

information, to respond curiously about a topic, to follow instructions to perform a task, and to know what is happening in the worlds. As English is being part of their environment, some of these purposes may be real-life one for language learners.

Furthermore, everyone writes for a reason or a purpose. An author expects readers to respond in certain ways what readers read. In order to determine the purpose, students may consider the beginning of the article or chapters and main ideas, details, and sources. More importantly, one text may be read in a variety of styles, and that readers will have different purposes at each stage of the reading and they will apply the appropriate strategies.

As mentioned before, there are many strategies that help students read with a better understanding of the material. Benjamin Bloom, the educational psychologist, made a prominent contribution to the field of critical thinking. The taxonomy established the sequential stages of learning from elementary to complex. The original Bloom Taxonomy was categorized in six major levels of thinking hierarchy: knowledge, comprehension, application, analysis, synthesis and evaluation. The taxonomy has been used in various ways in education such as teaching language, learning activities, and assessment items. The revised version of taxonomy was developed by Krathwohl in 2002 which emphasizes the consideration of Bloom's own concern and criticisms of original taxonomy. Krathwohl (2002) states that adaptation of original taxonomy is a two-dimensional framework which involves knowledge and cognitive processes. They are arranged in a hierarchical order. Elements of this framework emphasize an expressive teaching and learning process using taxonomy. Hierarchical stages of taxonomy range from the lowest level of cognition to the highest level of cognition. It is considered as an important framework for teaching-learning and monitoring learner's academic performance (Bonaci et al. 2013). To support these statements, Bloom taxonomy is a useful tool for teaching and analyzing students' critical thinking skills in the reading class. As being an interactive process, critical reading uses several levels of thought simultaneously. For example, making observations, producing inferences and forming hypotheses are the parts of critical reading. In addition, a range of

procedures used for analyzing and evaluating reading material is commonly involved in critical reading strategies.

Critical readers do not accept information easily. They employ critical reading strategies before they decide if they want to accept or ignore the given information in the texts. Critical Reading Committee at Winston-Salem State University (WSSU 2013) presents some critical reading strategies in order to discern constructing, reflecting, evaluating, questioning, contextualizing the reading materials. (Table 2)

Such strategies in Table 2 are used to engage with the text, involve in a reasoned argument, make a comparison and evaluate information. In addition, text materials and lectures contain both factual information and opinions. Lewis (2002) stated that:

As a critical reader or listener, they recognize ideas that are accurate, logical, and worthy of serious consideration, as well as those that you must question because they are unsupported, illogical, or inaccurate. Furthermore, the reader will be aware of whether the judgments about ideas of others are grounded in fact or opinion or in a combination (p.208).

From related readings, a summary of many current lists of critical reading strategies would include the following suggestions and it is useful for students to polish their reading skills and prepare them for various reading assignments.

- Making effective choices
- Using textbook's features
- Reading with purposes
- Working out structures of the texts
- Identifying main ideas
- Pre-reading and reading strategies
- Analyzing denotations and connotations of words
- Looking out for instances of irrelevant or distracting materials
- Reading graphics with understanding
- Making one's own graphics
- Summarizing information

- Building inference skills
- Predicting outcomes
- Evaluating ideas

Table 2
Critical Reading Strategies

Critical reading strategies	Explanations
Monitoring reading comprehension	The critical reader monitors his comprehension to construct an accurate meaning from the given text.
Making connections	The critical reader uses the connections between texts to self-connection, text to text connection, and text to world connection to understand and build deep meaning of the text.
Questioning	Questioning supports the students' ability to analyze texts in many ways such as clarifying information, identifying different issues, etc.
Creating mental images	Images help the reader to monitor his comprehension. It also improves reader's engagement and thinking level.
Inferring	It refers to one's ability to draw a deep conclusion based on background knowledge and textual evidence.
Determining importance	Determining central ideas in the text is important to make sense of reading.
Using structure	This awareness supports students ability to construct an accurate meaning and analyze the text

From *Critical reading manual*, WSSU, 2013

2.3.3 Enhancing Critical Reading

Reading is probably the most widely used skill of four English language skills by EFL and ESL students in an academic context and it has been studied extensively within language research, but a few studies on critical reading have been investigated in EFL context. İçmez (2009) explored the ways of critical reading practices in EFL reading class in order to increase students' motivation to learn English.

There is a tendency that reading is considered as a social and critical process (Halliday, 1994; Wallance, 2003). Readers do not need to accept all words on the page as given, but they need to pay careful analysis for recognizing the ideology of a text. According to Wallance (1992), readers' reading skills, such as synthesizing new ideas, identifying relationships, agreeing or disagreeing the writer's messages, have a powerful influence on reading comprehension. Similarly, Halliday (1994) also sees the text as an interactive process. From this perspective, texts are constructed in certain ways by writers in order to shape the perceptions of readers toward acceptance of the understanding ideology of the text. It is not only about getting the meaning from the text as it is given. It is an interactive process that goes on between the reader and the text.

According to Paul and Elder (2002), critical reading relates to an active and intellectually engaged process. Active reading tasks have some useful advantages such as enabling students to interact with the text and each other and seeing the text as a part of a broader social context. Paul also mentions that, if people do not read critically, they may miss some parts of the author's intended message. Flynn (1989) studied the instructional model that concerns with analysis, synthesis, and evaluation of ideas. Flynn (1989) suggested readers need to learn to analyze, synthesize and evaluate ideas through cooperative problem solving. Such cognitive skills are absolutely involved in critical reading and even crucial skills for reading many kinds of materials: research articles, essays, reports, analysis, and literature. Students are

often demanded to read critically, make solid inferences, analyze and evaluate what they read, draw comparisons and react to assigned reading.

Furthermore, some of the definitions of critical thinking and critical reading are generally related to each other. As Thistlethwaite (1990) noted some critical thinking skills designed for students are similar to those listed in reading texts described as critical reading skills (p.587). In particular, critical thinking skills make critical distinctions and judgments rather than accepting the printed words. Before confirming or disconfirming message, critical thinkers use their background knowledge, evidence and variety of skills such as questioning, being flexible, inferring, predicting outcomes, recognizing bias. Such skills can also be found in critical reading textbooks. Vasegh (2012) states that “teaching students to think while reading is referred as critical reading. Critical reading encourages the reader to evaluate, predict, and organize ideas which support the value of judgment, draw inferences, and arrive at conclusion based on evidence” (pp.406-407). According to Vasegh (2012), the critical reader is “an investigative reader” (p.202). Lewis (2002) suggests that critical readers are aware that a single subject or event can be discussed from many viewpoints.

As mentioned above, critical reading plays a crucial role in one’s personal and professional development and various attempts have been explained in the literature review to explain and define what critical reading is. However, students generally face problems when trying to read and think critically. There are still many questions about how to improve student’s performance and competence in this field. In addition, Ministry of Education, Culture, and Science of Mongolia considers critical analysis and creative and independent thinking as essential skills for all graduates. Furthermore, we have faced the need of such high skilled specialists where English knowledge is enough to operate in the field of educational sectors.

Critical reading requires critical thinking. For example, when instructors ask students’ opinions, instructors expect students to think critically about what they have learned or read. So developing critical reading strategies would help students

read and think critically not only in college but throughout one's lives. Throughout the experience of English lecturers at Mongolian University of Science and Technology, university or college students do not have enough understanding and preparations in critical reading or high order thinking skills. Many students are puzzled when they are asked to explain their own ideas, and their response does not show enough evidence of problem solving or global reading strategies. In addition, university or college students are required to read and critically think about a lot of information from limitless sources. It is important, therefore, that students not only learn to read critically but also efficiently.

There has been a strong effort toward improving critical reading and its strategies and a good amount of work has been investigated to improve effective strategies to support reading critically. According to Flynn (1989), problem solving strategies are one of the good ways to improve critical reading that gives a good framework for the teachers and a useful tool for students. Correia (2006) mentioned active reading tasks have the fundamental advantages that make an opportunity for the students to make a discussion between reader and materials. In other words, active reading involves questioning, analyzing, and developing the ideas of texts. Therefore, it encourages readers to express and share their own opinions about the text and discuss their opinions with other readers. Correia (2006) investigated a case study to improve critical reading and thinking skills. The lesson is based on class discussion and a major benefit of this lesson on critical reading was the high level of enthusiastic student participation. Knott (2005) suggested the following five steps to read critically:

1. Determine and distinguish the central claims or purpose in an assigned reading. As setting one's own purpose, the reader can focus and comprehend well if the central claims are developed or argued.
2. Establish and determine the context of the text. It is another key to identify the text and it can help the reader to evaluate material, writer's attitude toward a subject matter.
3. Recognize reasoning in the text. By observing one's own process readers understand the organization of the text, concepts, and different disciplines.

4. Examine the evidence that text holds.
5. Evaluate reading materials. Instead of accepting given ideas and information in the text, the critical reader makes some judgments about how text is argued (p. 1).

Critical evaluation of arguments and proposals is the most important skill. Carnine (et.al 2004) suggested four component skills in teaching critical reading.

1. Identify the author's conclusion.
2. Determine what evidence is presented.
3. Determine the trustworthiness of the author.
4. Determine if the conclusion derives from the evidence (p. 240).

According to them, students should be taught to identify the author's main idea and details that support a conclusion. Then the students should decide if the author's conclusion is based on opinion or evidence. After discriminating evidence from opinion, instruction in determining the reliability of evidence and the validity of arguments should be introduced. In other words, students have to consider the following two questions: (a) does the evidence come from a qualified person? (b) does the person have a bias? Moreover, Carnine et al. (2004) mentioned:

After carefully monitoring students' performance on several exercises, the teacher should allow students to work independently. After students can successfully work items independently, the teacher can omit the first four item, and only present the question, "Do you agree with the author's conclusion?" In explaining their answers, students should discuss the reliability of the author's opinion, the evidence, and any faulty arguments (p. 241).

Critical reading requires active engagement from the readers and students. They recognize not only what the text is about, but they are asked to recognize in various ways to comprehend and assess the reading material. Working exercises on critical reading is difficult and require extensive practice.

2.3.4 Assessment of Critical Reading

In academic situations, particularly those college and university students are required to read a variety of authentic English materials such as textbooks,

magazines, newspapers, journals, papers and so on. Students are also asked to read electronic books and other online materials from the Internet in order to gather information and broaden their knowledge.

Assessing student reading is a vital component of the teaching process. Recently, varieties of reading assessments have been emphasized. There are some standardized tests and rubrics designed to identify and assess specific reading skills. Besides, many studies and research projects have been conducted to examine validity and reliability of these tests (Flippo & Schumm, 2009). Olson (2003) states “the keen interest of teachers in the dilemmas of testing has given rise to a movement toward exploring new forms of assessment, evaluation, grading, and reporting student progress, particularly in the areas of reading” (p.323). According to Olson (2003), the term “assessment” refers to the deliberate use of many methods to gather evidence that the reader or writer is meeting his learning goals. As assessment is an ongoing part of instruction, it goes beyond response to offer feedback to both students and teachers about how reading is transmuting or how the learner is progressing. Similarly, Valencia (1990) defined assessment as a continuous and ongoing process. By observing and collecting information continuously, teachers can send a message to students, parents, and administrators that learning is never completed; instead, it is developing, and changing. According to McMillan (2004), assessment refers to the entire process of measurement, evaluation, and finally, use of the information by teachers and students. Regarding this definition, assessment is a process that teachers engage in to determine what students know and are able to know and its rich data can inform and provide feedback about how to improve achievement and can be used to construct the criteria or benchmark for evaluation.

There is a wide variety of options available for assessment and a wide variety of users of educational assessment. McMillan (2004) classified the educational assessments in the following two ways.

1. The distinction between cognitive and noncognitive measures.
2. The distinction between commercially developed or locally developed instruments (p. 170).

Cognitive measures focus on what a person knows or is able to do mentally (McMillan 2004, p. 170). According to him, achievement and aptitude tests, and measures of critical and creative thinking can be included in cognitive measures whereas noncognitive measures focus on emotional and affective intuitions including personality, attitude, and personal interest. Moreover, most commercially prepared instruments have a more extensive use, information on reliability and validity, and specific directions for administration and scoring. Locally developed instruments are often better suited to applied research (McMillan 2004, p. 170).

Lewis (2002) stated that it is important to provide criteria or rubrics that clearly delineate for what students are necessary to achieve success. Those criteria should be used not only for assessment or evaluation but also as a teaching tool. In addition, in order to design curriculum, instruction, and assessment based on students what students need to know and able to do, it is necessary to determine what standards are being worked toward and assess where students are currently as learners. According to Afflerbach et al. (2015), the instructor can assess students' basic thinking through multiple choice items. However, critical and analytical reading should be assessed through performance-based assessment task.

Tierney, Carter, and Desai (1991) point out that current standardized testing procedure reflects a limited view of reading and writing. These reading tests are based on snippets of texts that often lack a story line. Instructors use a variety of assessments tools such as tests, interviews, teacher observations, and portfolios. According to Serafini (2010), Think Aloud can be used to help teachers the process that readers employ during the act of reading. It is an important component of comprehensive assessment framework when joined with observation, oral reading analysis, and reader response. In other words, readers are able to focus on comprehension during the reading by asking what they are thinking. Think-aloud provides an opportunity on-the-spot guidance (Gunning, 2002, p. 393). According to Gunning (2002),

“If the student admits to being confused by a passage and does not seem to know what to do about it, the teacher can lead the student to some possible repair strategies, asking such

questions as: what do you understand? What is blocking your understanding? What do you need to know? What might you do to make it clear? Would rereading the sentence help?" (p. 393).

Richard and Vacca (2002) explain Think-aloud helps readers clarify their understanding of reading. They suggested five important points during the Think-aloud:

1. Develop hypotheses by making prediction
2. Develop images by describing pictures forming in students' heads
3. Share analogies
4. Monitor comprehension by verbalizing confusing points
5. Regulate comprehension by demonstrating strategies (p. 364).

Furthermore, portfolio assessment has been extensively used in educational settings as a way to examine and measure progress of learning or change as it occurs (Selami, 2014). Richard and Vacca (2002) explain:

Through portfolio assessment - a process of collecting authentic evidence of student work over time – both students and teachers gather information to better reflect on, understand, and communicate those factors that affect literacy and learning and characterize an individual's performance (p. 71).

According to Richard and Vacca (2002), the portfolio is an ongoing process. It also examines students' achievement, effort, and improvement.

Teacher's observation is another way to assess students' reading comprehension (Valencia, 1990; Gunning, 2002 ;). According to Valencia (1990), teachers need to consider other important dimensions of reading such as interest and motivation, voluntary reading, and metacognitive knowledge and strategies. Through observing students as they read, write, talk, and listen to others, the teacher can tell who is fully engaged in the class. Similarly, McKenna and Stahl (2003) teachers usually discover the patterns useful in monitoring growth and identifying needs. Observation should be a natural outgrowth of teaching, and it increases teaching efficiency and effectiveness (Richard and Vacca, 2002, p. 78).

Finally, both the format and the type of the assessment is needed to be carefully considered to develop the good assessment. Besides, good assessment should match objectives, students' characteristics, and correct writing and grammar.



CHAPTER III

METHOD

3.1 Introduction

How critical thinking is defined and what it entails and what critical reading is and how it is applied and measured; what critical thinking assessment is and how it is used to improve critical thinking skills are issues that influenced this study. Chapter III lays out the method that the study uses to examine those considerations.

Of all sections, the method section is the most concentrated and specific part of the study (Panacek & Thompson, 1995). This chapter includes study design, and identifies the population in the study and specifies the background information of the participants. It also provides a description of the methods, procedures and provides detailed information about instruments of the study. As an important part of data collection, the chapter describes the validity and reliability of the instruments.

3.2 Research Design

The discussion of the methodology attempts to present some of the specific tools and experiences used to inform the design of the research and the development of an interpretation. The research design is a basic plan for setting up and testing a specific hypothesis (Panacek & Thompson 1995).

This study uses the correlational research design to address the research questions. It is one of the prevalent designs in social science studies in order to understand the nature of various relationships of two or more variables. The correlational design is used to show the relationships between important variables (Panacek & Thompson, 1995). Researchers use correlational statistics to measure degree and association between two or more variables or set of scores in techniques of hierarchical liner modeling, and logistic regression (Creswell, 2014). One of the

strengths of correlational design is that it assesses the strength of relationship as they occur or have occurred without experimental manipulation (Fitzgerald, 2004). Our study attempts to study the relationships between critical thinking skills, reading strategy, reading comprehension, and gender difference in critical thinking of the participants. Based on the observed relationships, statistical significant tests are applied to determine the prediction of relationships under the study. But researchers need to be aware of some important limitations about correlation. Even if there is a strong association between two variables, it is impossible to determine which factor influences the other. It cannot be taken to imply causation (Panacek & Thompson 1995).

3.3 Study Group

The population is a totality of all the subjects or members that conform to a set of specification (Cresswell, 2002). This study was conducted among English pre-service teachers from the Department of English Language Teaching at Dokuz Eylül University (DEU) and Mongolian University of Science and Technology (MUST). According to the students affairs, there are total 548 students (1st grade 120, 2nd grade 132, 3rd grade 118, and 4th 178) in the Department of English Language Teaching, DEU whereas MUST has 207 students in the Department of English Language Teaching (1st grade 42, 2nd grade 51, 3rd grade 64, and 4th 50) in the academic year 2015-2016. (Table 3)

Table 3
Study Group of the Main Study

	1 st grade	2 nd grade	3 rd grade	4 th grade	Total
DEU	120	132	118	178	548
MUST	42	51	64	50	207
Total	162	183	182	228	756

3.4 Participants of the Study

Usually, it is too costly and time-consuming to collect data for all members of an actual population of interest, and therefore researchers usually collect data for a relatively small sample and use the result from that sample to make inferences about attitudes in a larger population (Warner, 2008, p. 3). In order to choose the participants for the main study, the researcher used convenience sampling. A convenience sampling consists of participants who are readily available to the researcher (Warner, 2008). From each university 87 students, who studied in the academic year 2015-2016, were chosen as participants of this study. According to the curriculum of both universities, reading class starts from the second and third year of the university so that all the participants were 3rd and 4th grade students in the Department of English Language Teaching at DEU and MUST.

In total 174 students participated in the study from the Department of English Language Teaching, at DEU and MUST. Based on the Background Information Questionnaire researcher gathered the information about the characteristic of the participants. The students ranged in the age from 19-30. The mean age of the participants was 21 years old. As noted in Table 4, the majority of participants were female. Of all 174 students, 127 participants were female and 47 participants were male (Table 4). Students' English learning experience and their average year of studying English was 6.8 years, which reflect that they learned English as a required subject from high school to university.

Table 4
Background Information of the Participants

	N	Age		Gender		Years of studying English	
		Mean	SD	Male	Female	Mean	SD
Turkish participants	87	21.2	2.8	25	62	8.01	2.8
Mongolian participants	87	21.6	2.1	22	65	5.74	2.5
Total	174	21.4	3.8	47	127	6.8	2.6

3.5 Setting

The study was conducted at two universities in Turkey and Mongolia. One of two universities, Dokuz Eylül University, is located in Izmir, Turkey, and Mongolian University of Science and Technology is located in Ulaanbaatar, Mongolia.

3.5.1 Dokuz Eylül University (DEÜ)

DEÜ is one of the preeminent state universities in Izmir, Turkey. It has 14 faculties, 10 institutes, 4 schools, 7 vocational schools, 56 research centers. It has over 3.300 academic staff and 70694 undergraduate, graduate and postgraduate students. DEÜ gives priority to continue improvement and acknowledge the importance of education, research, innovation and knowledge transfer. DEÜ has conducted academic and international cooperation with many universities from various countries. Buca Faculty of Education, Foreign Language Department has been offering 4-year bachelor degree. It has 2 professors, 1 associate professor, 5 assistant professors, 3 lecturers, 1 research assistant, and more than 500 undergraduate students.

3.5.2 Mongolian University of Science and Technology (MUST)

MUST is one of the leading state universities of Mongolia. It was established in 1969 as a part of National University of Mongolia as a result of the increased demand for engineers in the national economy of Mongolia and separated from National University to become an independent university in 1982. It is also one of the largest centers for scientific and cultural exchanges in Mongolia. Currently, the university has over 30435 undergraduate, graduate and postgraduate students and 1140 faculty members and staff. MUST prepare competent personnel through 139 undergraduate programs, 145-morning and evening master's programs and 26 doctoral programs at 10 affiliated schools, 2 institutes and 1 high school. English

Language Department has 3 professors, 1 assistant professor, 10 lecturers, and 1 research assistant.

3.6 Instruments

This study used four instruments named “Survey of Reading Strategy” “Background Information Questionnaire”, “Reading Comprehension Test”, and “Cornell Critical Thinking Test” in order to collect the data. Researcher asked the authors’ permission to use their scales for the study. All permissions were introduced to the Ethics Committee at the Institute of Educational Science, DEU before the application of the study. To assess the reliability of the instruments, researcher used relatively simple statistical methods. Cronbach Alpha was considered to check the reliability of these instruments. Cronbach alpha is the most popular form of reliability assessment for multiple-item scale. Cronbach alpha uses the mean of all the inter-item correlations to assess the stability or consistency of measurement (Warner, 2008, p. 854).

1. Reading part of Cambridge Preliminary English Test (PET) was administered to determine the students’ reading comprehension level. The PET reading test was prepared by Cambridge ESOL Examination. PET is an English exam at intermediate level and the reading texts are prepared for the level at B1 in the Common European Framework of Reference for Languages (CEFR). It consists of 3 parts which include in total 20 questions. CEFR guideline was used to describe achievements of the participants. Before the administration of the test for the main study, a pilot study was conducted to check the reliability scores of reading comprehension test (PET). A good measure should be reasonably reliable and it should yield consistent results. Reliability is defined as “consistency of measurement results” (Warner, 2008, p. 830). The pilot study was conducted among the 2nd and the 4th grade English pre-service teachers in the department of English Language Teaching at DEU. 49 students participated in this pilot study who studied in the academic year of 2015-2016. The reading comprehension test was administered after the lesson with the permission of the classroom teacher. Each item was analyzed in

terms of item difficulty and item discrimination. As a result, the average difficulty was 80 %. (The detailed item analysis of reading comprehension test is attached in Appendix C). For our test, the reliability was computed in Kuder and Richardson Formula 20, and Cronbach's alpha. As a result of the pilot study, the quality of the test as a whole indicates a reliable value Kuder-Richardson 20 (KR20) value of 0.71 and reliability analysis revealed a Cronbach's alpha score $\alpha = 0.70$. After analyzing the result of the pilot study, the reading comprehension test was considered appropriate in the term of difficulty, length, and content. In preliminary or exploratory research, modest measurement reliability (about. 70) may be sufficient (Warner, 2008, p.831). (Appendix D)

2. Survey of Reading Strategy (Mokhtari & Sheorey, 2002) was used to collect information about students' use of reading strategies when they read academic materials in English. This survey is based on Metacognitive Awareness of Reading Strategies Inventory (MARSI) which was first cultivated by Mokhtari (2000) to measure native English speakers' use of reading strategies. The survey of reading strategy (SORS) is designed to assess non-native English speakers', especially for college and university learners, perceived use of reading strategies (Mokhtari & Sheorey, 2002). SORS is a comprehensible and effective instrument for helping teachers to assess the ESL students' better awareness of reading strategies (Mokhtari & Sheorey, 2002). The SORS consists of 30 items and each item uses a 5 point Likert scale ranging from 1-5.

1 means that "I never or almost never do this".

2 means that "I do this only occasionally".

3 means that "I sometimes do this".

4 means that "I usually do this".

5 mean that "I always or almost always do this".

Students are asked to read statements and circle the number that applies to them. Therefore this instrument measures 3 categories of reading strategies: namely, global reading strategy, problem solving strategies, and support strategies. Global strategies include 13 items, which relate to strategies for monitoring one's reading and intentionally planned techniques such as setting purpose and previewing text. The

second category of this survey is problem-solving strategies, which include 8 items. Problem solving strategies relate to the actions and procedures that readers use while working directly with the text. The last category, support strategies have 9 items. Support strategies are those that are intended to help readers in understanding the text such as highlighting, taking notes, underlining, and using dictionaries (Mokhtari & Sheorey, 2002). The reliability coefficient (as determined by Cronbach's alpha) for this instrument was (.89). Furthermore, İyitoglu and Aydin (2015) administered SORS among 60 Turkish students to discover students' reading strategies. The reliability coefficients for its subscales were as follows: Global Reading Strategy (.72), Problem Solving Strategies (.85) and Support Strategies (.73). The reliability of the whole inventory was $\alpha = 0.88$. Similarly, Mendi (2009) conducted a study among Turkish EFL students. According to Mendi (2009), the reliability of the overall strategy was .87. Cronbach alpha estimated for global strategy was .79, problem solving strategy was .69, and support strategy was .61. A reliability of SORS provides an acceptable coefficient for the study. (Appendix E)

3. Based on Oxford's (1990) *Background Questionnaire for Language Learner*, researcher modified this questionnaire to collect the individuals' background information. First, the researcher prepared the draft of the background information questionnaire. Afterwards, the supervisor recommended to include some necessary adjustments. The modified version of this questionnaire (Background Information Questionnaire) was used to gather the information about individual' background information. The Background Information Questionnaire has two parts: general information and experience in learning English. The general information has items of gender, age, and nationality. The second part is asked about the experience in learning English. (Appendix F)

4. The Cornell Critical Thinking Test (Z level), by Robert H. Ennis and Jason Millman, was administered to determine the critical thinking skills of students that measures some of the important skills involved in critical thinking. This measurement was developed as a part of Cornell Critical Thinking Project and Illinois Rational Thinking project. Level Z includes 52 multiple-choice questions covering

induction, deduction, observation and credibility of sources, identification of assumptions, meaning and fallacies respectively. There are 18 items for induction; 24 items for deduction; 4 items for observation and credibility; 10 items for assumption, and 15 items for meaning. Each aspect is measured in a separate section in the test. In addition, cultural elements and linguistic challenge were discussed by instructors in Bahçe's study (2012). The test items are appropriate in the term of language for the participants and do not hinder their understanding depending on cultural elements (Bahçe, 2012, p. 85). Level Z is suitable for undergraduate students and median scores for this level are 30 out of 52 (Norris, 1985). Reliability of Cornell Critical Thinking Test analyze was reported split-half reliabilities between $r = 0.49$ and 0.80 . Moreover, as a result of reliability statistics of Cornell Critical Thinking Test (Z level), Bahçe (2012) reported that the reliability coefficients for its subtests were as follows: Induction (.62); Deduction (.72); Observation- credibility (.63); Assumption (.71); and Meaning (.75). The reliability of the whole test was $\alpha = 0.71$. (Appendix G)

3.7 Procedures

After receiving the permission from the Ethics Committee (Appendix H) from DEU, data for this study was collected from 174 students during fall and spring semester of the 2015-2016 academic year. All instruments were administered after the lesson with the permission of classroom teacher.

Due to the constraints of time and budget, Cornell Critical Thinking Test and Background Information Questionnaire were conducted among Mongolian participants in the middle of fall semester. Reading Comprehension Test and Survey of Reading Strategy were conducted among Turkish and Mongolian participants in the spring semester of the academic year. Table 5 shows the detailed information about the implementation of the main study.

Table 5
Overview of the Procedure for Administering the Instruments

	Academic year	Date	Implementation
MUST	2015-2016	11-15 November	Cornell Critical Thinking Test
	2015-2016	11-15 November	Background Information Questionnaire
	2015-2016	23-27 March	Survey of Reading Strategy
	2015-2016	23-27 March	Reading Comprehension Test
DEU	2015-2016	07-17 March	Cornell Critical Thinking Test
	2015-2016	07-17 March	Background Information Questionnaire
	2015-2016	22-24 March	Reading Comprehension Test
	2015-2016	22-24 March	Survey of Reading Strategy

Before beginning the data collection, the researcher introduced herself to the students and presented briefly about the purpose of study and general instructions about the instruments including the duration of the test, number of sections and number of questions in each instrument. The following parts were guided for the application. On the 1st day, the researcher administered the Background Information Questionnaire and Cornell Critical Thinking Test for the participants. On the 2nd day, SORS and Reading Comprehension test (PET) were conducted among the participants.

1. The participants were asked to complete Background Information Questionnaire, which consists of two parts about general personal information and experience in learning English. They were asked to provide information about their age, gender, nationality, and the years of studying English. Students spent about 10 minutes on this questionnaire.

2. Cornell Critical Thinking Test was applied for the students, which intended to assess their critical thinking skills. Students spent about 40 minutes on this questionnaire.

3. Survey of Reading Strategy was conducted among the participants. They were asked to complete the SORS to measure their general reading strategy use in English reading. Students were asked to read each statement and circle the appropriate item that applied to them. Students spent about 15 minutes on this questionnaire.

4. At the last step, in order to determine students' reading comprehension level, multiple choice PET was conducted. They were asked to read each statement and mark the correct answer. Students spent about 30 minutes on this questionnaire.

3.8 Data Analysis

This section provides a roadmap to the analysis that researcher conducted. Having collected the completed questionnaires and tests, the researcher analyzed the data using the Statistical Package for Social Sciences (SPSS 23). Since the study aimed to find out the relationship between critical thinking skills, reading comprehension and reading strategy use, Pearson product-moment correlation was used. In the case of quantifying the strength and linear association between two variables, Pearson product-moment is a useful measurement (Norusis, 2002). Two research questions are designed to identify the relationship between two variables. They are:

Research question 1: Is there a significant relationship between the critical thinking skill of Turkish and Mongolian English pre-service teachers and their level of reading comprehension?

Research question 2: Is there a significant relationship between the use of reading strategy and successful reading comprehension for Turkish and Mongolian English pre-service teachers?

Besides, Independent *t*-test was employed to explore the difference between male and female students' critical thinking skills. It was also used to explore the difference between Turkish and Mongolian students' critical thinking skill. Independent *t*-tests are used extensively in social science research to compare and

see the mean number of two groups if there is a significant difference between two groups (Norusis, 2002). The *t*-test can be statistically calculated with independent samples or dependent samples in two groups. It is a useful technique to decide whether the average score of two groups are significantly different or if the difference could be due merely to random coincidence.

The following research questions are designed to explore the differences between two groups.

1. What is the level of critical thinking skill for Turkish and Mongolian English pre-service teachers?
2. Is there a significant difference between the critical thinking skill of male and female Turkish and Mongolian English pre-service teachers?

CHAPTER IV

RESULTS

4.1 Introduction

This chapter presents the results of data analyses and summary of the findings, including the results of statistical analyses. The data for each outcome were subjected to series of statistical tests using analysis of variance, descriptive statistics, t-test statistics and p value to examine:

- regularly used categories of the reading strategies of participants
- the level of critical thinking skills
- the relationship between the critical thinking skills and their level of reading comprehension
- the difference between the critical thinking skills of male and female participants
- relationship between the use of reading strategy and reading comprehension

The following instruments were used in the study in order to gather the data. (See Chapter 3 for a detailed description of the instruments). The results of the Cornell Critical Thinking Test, Reading Comprehension Test, and Survey of Reading Strategy were analyzed quantitatively using Statistical Package for Social Science (SPSS 23). In addition, the data gathered from the survey of reading strategy and reading comprehension test were analyzed through frequencies, means and standard deviations. The data gathered from critical thinking test were analyzed through percentage, means, standard deviations, t-test and Pearson correlation.

In the result chapter, we follow the convention of including explanation and brief comments focused on the statistical analyses. More general comments will be discussed for a later section. The results were discussed according to the order research questions mentioned in Introduction section.

4.2 The reported categories of the reading strategies of Turkish and Mongolian English pre-service teachers

The first research question aimed to collect the information about the students' use of reading strategies when they read academic materials in English. In order to determine the students' use of reading strategies, SORS was administered at the beginning of the class period by the researcher. The students were asked to circle the appropriate answers for them on a 1-5 scale with 1= never do, 2= only occasionally, 3= sometimes, 4= usually, 5= always. To analyze the data from SORS, descriptive statistics of participants' performance on SORS (both Turkish and Mongolian students) were analyzed. Means and standard deviations for SORS are in Table 6.

Table 6
Overall Reading Strategy Use of Turkish and Mongolian Participants

	N	Global Strategy		Support Strategy		Problem Solving		Overall average	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD
Turkish participants	87	3.65	0.05	3.36	0.06	3.74	0.05	3.5	.05
Mongolian participants	87	3.30	1.05	3.34	1.06	3.67	1.05	3.4	1.02
Total	174	5.3	1.02	5.03	1.13	5.5	1.02	3.4	.06

As shown in Table 6, the results of the overall reading strategy use of both Turkish and Mongolian participants were different from each other. Turkish participants had high use of reading strategy than Mongolians. The average score of the reading strategies of Turkish students was 3.5, which indicates the *high* according to Mokhtari and Sheorey's (2002) interpretation key whereas Mongolian students' average was 3.4 which indicates the *medium* use of reading strategy. Using the Mokhtari and Sheorey's (2002) scoring scale, the mean score above 3.5 on the SORS reflects the high use of strategy, 2.5-3.4 indicates medium use, and below 2.4 shows the low use of reading strategy. For the strategy use by categories, Turkish participants' results were as follows: global strategy (M = 3.65, SD = .050); support

strategy ($M = 3.36$, $SD = 0.06$); and problem solving strategy ($M = 3.74$, $SD = 0.05$) whereas the mean of each category for Mongolian participants as follows: global strategy ($M = 3.30$, $SD = 1.05$); support strategy ($M = 3.34$, $SD = 1.06$); and problem solving strategy ($M = 3.67$, $SD = 1.05$).

In Table 7, the overall mean scores and frequency of strategy use of Turkish and Mongolian participants are presented. As shown in Table 7, 51 Turkish students (58%), and 35 students (40%), reported high and medium use of reading strategies respectively that indicate fairly frequent reading strategy use in reading. For Mongolian students, 41 participants (47%) high, and 42 participants (48%) medium, 4 participants (5%) reported medium use of reading strategies in reading.

Table 7
Differences in Overall Means of Reported Reading Strategy Use

	N	Usage		
		High ($M \geq 3.5$)	Medium ($2.5 \leq M \leq 3.4$)	Low ($M \leq 2.4$)
Turkish participants	87	51	35	1
Mongolian participants	87	41	42	4
Total	174	92	77	5

Besides that, item analysis of SORS was employed, in the terms of average and variance of the test scores, in order to analyze the participants' the most and the least frequently used reading strategies (Table 8 & Table 9). The item analysis of SORS was ranked in descending order by their average mean scores in Table 8 and Table 9.

As shown in Table 8, the mean of each strategy ranged from a high of 4.02 ($SD = 0.84$) to a low of 3 ($SD = 1.18$) for Turkish participants. For Turkish participants, 22 strategies were reported as high usage, 8 strategies were reported as medium and no strategy was reported as low usage.

Table 8
Item Analysis of SORS for Turkish Students (N = 87)

Rank	Strategies	Mean	SD
1.	To pay closer attention to reading	4.02	0.84
2.	To use prior knowledge	3.96	0.82
3.	Re-read to increase understanding	3.90	0.95
4.	To adjust reading speed	3.87	0.81
5.	To try to guess what the content of the text	3.86	1.07
6.	To preview review text before reading	3.78	0.99
7.	To set purpose	3.77	0.89
8.	To underline or circle information to remember	3.77	0.96
9.	To visualize information read	3.73	1.04
10.	To read slowly and carefully	3.71	1.00
11.	To check understanding when new information presents	3.70	0.88
12.	To try to stay focused on reading	3.69	1.02
13.	To use context clues	3.69	0.92
14.	To go back and forth in text	3.69	0.89
15.	To use reference materials	3.68	1.09
16.	To use typographical features	3.67	0.94
17.	To determine what to read	3.64	0.83
18.	To guess meaning of unknown words	3.62	0.97
19.	To check content fits purpose	3.61	0.98
20.	To critically analyze and evaluate the information	3.59	0.98
21.	To think about reading	3.57	1.04
22.	To confirm predictions	3.55	1.07
23.	To paraphrase for better understanding	3.45	1.13
24.	To note text characteristics	3.41	1.01
25.	To use text features (e.g., tables, figures)	3.31	1.06
26.	To ask oneself questions	3.31	1.04
27.	To think about information both in English and mother tongue	3.29	1.17
28.	To read loud	3.18	1.35
29.	To take notes	3.06	1.07
30.	To translate into native language	3	1.18

As mentioned before, similarly, the item analysis of SORS was employed in the term of average test scores in order to see the Mongolian participants most and least used reading strategies. The item analysis of SORS was presented in descending order by their average mean scores in Table 9.

Table 9
Item Analysis of SORS for Mongolian Students (N = 87)

Rank	Strategies	Mean	SD
1.	To read slowly and carefully	4.21	0.91
2.	Re-read to increase understanding	3.93	1.28
3.	To pay closer attention to reading	3.90	1.02
4.	To use reference materials	3.81	1.17
5.	To underline or circle information to remember	3.68	1.27
6.	To set purpose	3.64	1.01
7.	To try to stay focused on reading	3.63	1.05
8.	To adjust reading speed	3.58	1.15
9.	To visualize information read	3.58	1.11
10.	To preview review text before reading	3.52	1.09
11.	To use prior knowledge	3.51	0.90
12.	To guess meaning of unknown words	3.51	1.26
13.	To think about information both in English and mother tongue	3.43	1.31
14.	To check content fits purpose	3.41	1.1
15.	To use text features (e.g., tables, figures)	3.40	1.20
16.	To confirm predictions	3.37	1.27
17.	To check understanding when new information presents	3.32	1.16
18.	To translate into native language	3.31	1.29
19.	To paraphrase for better understanding	3.29	1.31
20.	To try to guess what the content of the text	3.26	1.22
21.	To reading loud	3.19	1.21
22.	To determine what to read	3.19	1.1
23.	To go back and forth in text	3.18	1.12
24.	To take notes	3.16	0.95
25.	To use context clues	3.15	1.21
26.	To note text characteristics	3.11	1.05
27.	To use typographical features	3.09	1.13
28.	To critically analyze and evaluate the information	3.06	1.14
29.	To think about reading	3	1.17
30.	To ask oneself questions	2.97	1.24

As shown in Table 9, the mean of individual items ranged from a high of 4.21 (SD= 0.91) to a low of 2.97 (SD=1.24) for Mongolian participants. For Mongolian participants, 12 strategies were reported as high usage, 18 strategies were reported as medium and no strategy was reported as low usage (Table 9). It implies that they were moderate to high users of reading strategies. In addition, 6 strategies such as reading carefully, paying closer attention to reading, using reference materials, setting purpose for reading, adjusting reading speed, guessing meaning from the

unknown word, related to the categories of Global reading strategies among the list of highly used 12 strategies. Rest of 6 strategies were in the categories of both Problem Solving and Support reading strategies, respectively.

After the item analysis, students' most and least frequently used 10 reading strategies were ranged. The results of Turkish and Mongolian participants' most used reading strategies are presented in Table 10.

Table 10
Five Most Frequently Used Reading Strategies for Turkish and Mongolian Participants

	Categories	Strategies	Mean	SD
Turkish	Problem solving 14	Pay closer attention to reading	4.02	0.84
	Global 3	Use prior knowledge	3.96	0.82
	Problem solving 25	Re-read to increase understanding	3.90	0.95
	Problem solving 11	Adjust reading speed	3.87	0.81
	Global 24	Try to guess what the content of the text	3.86	1.07
Mongolian	Problem solving 7	Read slowly and carefully	4.21	0.91
	Problem solving 25	Re-read to increase understanding	3.93	1.28
	Problem solving 14	Pay closer attention to reading	3.90	1.02
	Support 13	Use reference materials	3.81	1.17
	Support 10	Underline or circle information to remember	3.68	1.27

Five most frequently used strategies of Turkish students are related to the Global and Problem Solving categories of reading strategies. As shown in Table 10, the most frequently used strategies were “When the text becomes difficult, I pay closer attention to what I am reading” (M= 4.02, SD= 0.84); “I think about what I know to help me understand what I read” (M= 3.96, SD= 0.82); “When the text

becomes difficult, I re-read it to increase my understanding” (M= 3.90, SD= 0.95) ; “I adjust my reading speed according to what I am reading” (M= 3.87, SD= 0.81); “I try to guess what the content of the text is about when I read” (M= 3.86, SD= 1.07).

Table 10 also summarizes the results of most used reading strategies for Mongolian participants. Five most frequently used reading strategies were the Support and Problem Solving categories of reading strategies. These strategies were “I read slowly and carefully to make sure I understand what I am reading” (M= 4.21, SD= 0.91); “When text becomes difficult, I re-read it to increase my understanding” (M= 3.93, SD= 1.28); “When the text becomes difficult, I pay closer attention to what I am reading” (M= 3.90, SD= 1.02); “I use reference material to help me understand what I read” (M= 3.81, SD= 1.17); “I underline or circle information in the text to help me remember it” (M= 3.68, SD= 1.27). Generally, Mongolian participants tended to underline information to remember, use reference materials, read carefully, and re-read to increase the understanding.

Turkish and Mongolian participants’ least used reading strategies are presented in Table 11. Five least frequently used reading strategies of Turkish students were related to the Support categories of reading strategies whereas Mongolian students’ ones were Global, Support, and Problem solving categories of reading strategies. As shown in Table 11, Turkish participants’ least frequently used reading strategies were “When reading, I translate from English into my native language” (M= 3, SD= 1.18); “I take notes while reading to help me understand what I read” (M= 3.06, SD= 1.07); “When the text becomes difficult, I read aloud to help me understand what I read” (M= 3.18, SD= 1.35); “When reading, I think about information in both English and my mother tongue” (M= 3.29, SD= 1.17); and “I ask myself questions I like to have answered in the text” (M= 3.31, SD= 1.04).

On the contrary, five least frequently used strategies of Mongolian participants were Global, Support, and Problem solving categories of reading strategies. As shown in Table 11, the least frequently used reading strategies were “I ask myself questions I like to have answered in the text” (M= 2.97, SD= 1.24); “I stop from time to time and think about what I am reading” (M= 3, SD= 1.17); “I critically analyze and evaluate the information presented in the text” (M= 3.06, SD=

1.14); “I use typographical features like bold face and italics to identify key information” (M= 3.09, SD= 1.13); and “I review the text first by noting its characteristics like length and organization” (M= 3.11, SD= 1.05). In general, Mongolian students do not pay more attention to think and analyze the information while reading.

Table 11
Five Least Frequently Used Reading Strategies for Turkish and Mongolian Participants

	Categories	Strategies	Mean	SD
Turkish	Support 29	Translating into native language	3	1.18
	Support 2	Taking notes	3.06	1.07
	Support 5	Reading loud	3.18	1.35
	Support 30	Thinking about information both in English and native language	3.29	1.17
	Support 26	To ask oneself question	3.31	1.04
Mongolian	Support 26	Asking oneself questions	2.97	1.24
	Problem solving 16	Think about reading	3	1.17
	Global 21	Critically analyze and evaluate the information	3.06	1.14
	Global 20	Use typographical features	3.09	1.13
	Global 8	Review text first by noting its characteristics	3.11	1.05

4.3 The Level of Critical Thinking Skills for Turkish and Mongolian English Pre-service Teachers

The second research question investigated to determine the Turkish and Mongolian participants' critical thinking skills that measures some of the important skills involved in critical thinking. In order to answer this question, the researcher conducted Cornell Critical Thinking Test among the participants. Total 174 students were asked to read each section and mark the appropriate item that applies to them.

Table 12 summarizes the mean percentile scores on the five subcategories of critical thinking skills and an overall percentile of critical thinking test for Turkish and Mongolian students. Five subcategories of critical thinking skills are divided into induction, deduction, observation, assumption, and meaning. Turkish students performed better than Mongolian students on critical thinking test. According to the result of the study, Turkish students scored at the 38th percentile, while Mongolian students scored at the 33.9th for the whole test. For the percentile score of each five subcategory, Turkish students' results were as follow: Induction (M= 40.4, SD= 12.4); Deduction (M= 41.4, SD= 11.5); Observation (M= 35.6, SD= 26); Assumption (M= 37.1, SD= 19.4); Meaning (M= 31.1, SD= 12.3) whereas the mean score of Mongolian students' results were as follow: Induction (M= 35.1, SD= 14.2); Deduction (M= 36.3, SD= 11.1); Observation (M= 29.8, SD= 21.5); Assumption (M= 31.7, SD= 14.8); Meaning (M= 29.1, SD= 11.2).

Table 12**Comparisons of the Critical Thinking Test of Turkish and Mongolian Participants**

	N	Induction %		Deduction %		Observation and credibility %		Assumption %		Meaning and fallacies %		Critical Thinking Skills %	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Turkish	87	40.4	12.4	41.4	11.5	35.6	26	37.1	19.4	31.1	12.3	38.5	8.3
Mongolian	87	35.1	14.2	36.3	11.1	29.8	21.5	31.7	14.8	29.1	11.2	33.9	7.4
Total	174	37.8	13.6	38.8	11.6	32.7	23.9	34.4	17.4	30.1	11.8	36.2	8.3

Furthermore, the minimum and maximum mean percentile scores of critical thinking skill and median were calculated. Median is a more useful measures of central tendency (Norusis 2002, p.78). The researcher calculated the median by finding the middle value when values for all cases were ordered from smallest to largest. These summary statistics are shown in Table 13. The result indicated that Turkish participants' critical thinking percentile scores varied between 32.6 and 44.2 and median was $M=, 36.5$ whereas as Mongolians range from a minimum of 28.8 % to a maximum of 38.4 % out of 100 %. The median was 32.6.

Table 13
Minimum and Maximum Scores for Critical Thinking Test

	N	Min (%)	Max (%)	M
Turkish participants	87	32.6	44.2	36.5
Mongolian participants	87	28.8	38.4	32.6

Using an alpha level of .05, an independent t test was ran to assess the significance of the difference of critical thinking skills for Turkish versus Mongolian participants. The output of from the independent t test contains two tables. The results are shown in Table 14 and Table 15. The first table, titled "Group statistics," presents the basic descriptive statistics for each group. From the Table 13, we can see that 87 Turkish and 87 Mongolian students are included in the test. The average of critical thinking test for Turkish participants is $M= 38.5$ with a standard deviation of the 8.3. The average of critical thinking test for Mongolians is $M= 33.9$ with standard deviation of 7.4.

Table 14
Group statistics

	Group	N	Mean	SD
Critical thinking	Turkish	87	38.5	8.3
	Mongolian	87	33.9	7.4

Table 15 presents the results of the Levene test (the test of the homogeneity of variance assumption) and the main test statistics. The assumption of homogeneity of variance was assessed by the Levene test, $F= 2.21$, $p= .138$; this indicated no significant violation of the equal variance assumption. Therefore, the pooled variances version of the t test was used.

As shown in Table 15, the difference in mean critical thinking skill for Turkish participants ($M= 38.5$) and Mongolians ($M= 33.9$) was statistically significant, $t(172) = -3.82$, $p < .05$. The mean critical thinking test for Mongolians was about -4.59 lower than the mean critical thinking test for Turkish. The 95% confidence interval for the critical thinking skill test ranged from -6.96 to -2.22. The observed two- tailed significance level is less than .05. Since this is less than 5 %, Turkish and Mongolian participants did not show the same average of critical thinking test. In other words, an examination of the group means indicates that Turkish participants performed significantly higher on the critical thinking test than did Mongolians.

Table 15
Differences in Critical Thinking Test for Mongolian and Turkish Participants

		Levene's Test for Equality of Variances		t-test for equality of means						
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
Percentage of critical thinking skill	Equal variances assumed	2.21	.138	-3.82	172	.000	-4.59	1.20	-6.96	-2.22
	Equal variances not assumed			-3.82	167	.000	-4.59	1.20	-6.96	-2.22

4.4 The relationship between the critical thinking skills of Turkish and Mongolian English Pre-service Teachers and Their Level of Reading Comprehension

Pearson product-moment correlation coefficient (Pearson r) at .05 level of significance was used to explore the relationship between critical thinking skill and reading comprehension. A total of 174 students' data were analyzed in critical thinking and reading comprehension test. Turkish and Mongolian groups had 87 and 87 participants, respectively. Table 16 summarizes an overall percentile of critical thinking and reading comprehension test for Turkish and Mongolian students. As a result of critical thinking test, Turkish students scored at the 38.5th percentile with a standard deviation of 8.3, while Mongolian students scored at the 33.9th with standard deviation of 7.4. The mean of reading comprehension test for Turkish participants is $M = 80.0$ with a standard deviation of the 10.8. The mean of reading comprehension test for Mongolians is $M = 70.0$ with standard deviation of 22.8.

Table 16
Descriptive Statistics for Critical Thinking and Reading Comprehension Test

	Critical thinking			Reading comprehension	
	N	Mean %	SD	Mean %	SD
Turkish participants	87	38.5	8.3	80.0	10.8
Mongolian participants	87	34	7.4	70.0	22.8

In order to explore the relationship between these two variables, reading comprehension and critical thinking skill scores were obtained by summing items on Cambridge Preliminary English Test and Cornell Critical Thinking Test. Table 17 provides a correlation coefficient for two variables. Underneath each correlation coefficient both the significance value of the correlation and the number of cases (N) are displayed. For the Turkish participants, the following table shows the value of the Pearson correlation ($r = .070$), the p value ($p > .05$, two-tailed), and the N of data pairs the correlation was based on ($N = 87$). According to this result, no significant

correlation was found between critical thinking and reading comprehension with the observed value of Pearson ($r = .070$) with the significant level of ($p = .517$).

For Mongolian participants, critical thinking skill was not also significantly related to reading comprehension with a Pearson correlation coefficient of $r = -.022$ and $p > .05$.

Table 17
Correlations between Critical Thinking and Reading Comprehension for Turkish and Mongolian Participants

Variables		Reading comprehension	Critical thinking
Turkish	Reading comprehension	Pearson Correlation	1
		Sig. (2- tailed)	.070
	Critical thinking	Pearson Correlation	.070
		Sig. (2-tailed)	.517
Mongolian	Reading comprehension	Pearson Correlation	1
		Sig. (2- tailed)	-.022
	Critical thinking	Pearson Correlation	-.022
		Sig. (2-tailed)	.846

4.5 The Difference between Critical Thinking Skills of Male and Female Turkish and Mongolian participants

In order to assess whether there was a significant difference between the mean critical thinking skill of male and female, an independent samples t test was performed. The output from the independent t test contains two tables; Summary statistics for gender and the main test statistics. The results are shown in Table 18 and Table 19.

Table 18 shows the summary statistics for the gender. As displayed in Table 18, a total of 87 students' data were analyzed in critical thinking test. The male and female groups had 61 and 26 participants, respectively. Mean and standard deviation for gender are in the table below.

Table 18**Gender Statistics of Turkish Participants in Critical Thinking Test**

	Gender	N	Mean	SD
Critical thinking skill	Female	61	37.7	7.1
	Male	26	40.4	10.6

Table 19**Gender Differences in Critical Thinking Test for Turkish Participants**

		Levene's Test for Equality of Variances		T-test for equality of means						
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
Percentage of critical thinking skill	Equal variances assumed	6.68	.011	-1.36	85	.176	-2.65	1.95	-6.53	1.21
	Equal variances not assumed			-1.16	35.0	.251	-2.65	2.27	-7.28	1.96

Table 19 shows the mean differences between critical thinking skill scores for gender. An independent *t* test was conducted to assess whether there was a gender difference in critical thinking. Briefly, it reports the *t* test statistics, the degrees of freedom and the significance value. Also, it reports the means and their standard errors. The Levene's *F* test for equality of the variances was used to test the assumption of the homogeneity of variance. The *F* value for Levene's test is 6.68 with a Sig. (*p*) value of .011 ($p < .05$). Since the Sig. value is less than alpha of .05 ($p < .05$), we used the data results associated with the "Equal variances not assumed". The difference in mean critical thinking skill for male ($M = 40.4$, $SD = 10.6$) and female ($M = 37.7$, $SD = 7.1$) was found to be statistically non-significant. As the Table

19 indicates, the mean difference of the participants' critical thinking is -2.65 and it is not significant $t(35) = -1.16, p > .05$. In other words, the value of .251 indicates that there is no significant difference between male and female students in critical thinking skill. This output provided a 95% confidence interval for the mean differences. The 95% CI around the difference between these sample means ranged from -7.28 to 1.96.

Table 20

Gender Statistics of Mongolian Participants in Critical Thinking Test

	Gender	N	Mean	SD
Critical thinking skill	Female	65	33.9	7.9
	Male	22	34.2	6.0

Table 20 shows the summary statistics of Mongolian students for the gender. As displayed in Table 20, a total of 87 students' data were analyzed in critical thinking test. From all participants, 65 students were female and 22 students were male from Mongolia. Mean and standard deviation for gender are in the table above.

Table 21

Gender Differences in Critical Thinking Test for Mongolian Participants

		Levene's Test for Equality of Variances		T-test for equality of means						
Percentage of critical thinking skill		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Percentage of critical thinking skill	Equal variances assumed	1.55	.216	-.195	85	.846	-.360	1.84	-4.03	3.31
	Equal variances not assumed			-.223	47.4	.824	-.360	1.61	-3.60	2.88

Table 21 shows the mean differences between critical thinking skill scores for gender. It reports the *t*-test statistics, the degrees of freedom and significance value. Also, it reports the means and their corresponding standard error difference. Similarly, an independent *t* test was conducted to assess whether there was a gender difference in critical thinking for Mongolian students. The Levene's *F* test for equality of the variances was used to test the assumption of the homogeneity of variance. For this data, Levene's test was non-significant ($p = .216$) and so researcher read the test statistics in the row labelled "Equal variances assumed". The difference in mean critical thinking skill for male ($M = 34.2$, $SD = 6.0$) and female ($M = 33.9$, $SD = 7.9$) was found to be statistically non-significant. As the Table 21 indicates, the mean difference of the participants' critical thinking is $-.360$ and it is not significant $t(85) = -1.95$, $p > .05$. The value of $.846$ indicates that there is no significant difference between male and female students in critical thinking skill. This output provides a 95% confidence interval for the mean differences. The 95% CI around the difference between these sample means ranged from -4.03 to 3.31 .

4.6 Relationship Between the Use of Reading Strategy and Reading Comprehension for Turkish and Mongolian English Pre-service Teachers

Pearson product-moment correlation coefficient (Pearson r) at .05 level of significance was used to explore the relationship between reading comprehension and reading strategy. A total of 174 students' data were analyzed in reading comprehension test and reading strategy questionnaire. The results are presented in Table 22 and Table 23.

Table 22 provides a correlation coefficient for two variables, significance of each corresponding correlation, and the number of participants involved in each correlation. The diagonal 1.00s shows that a variable is perfectly correlated with itself. According to the table 22, for Turkish participants, no significant correlation was found between reading comprehension and reading strategy with the observed value of Pearson ($r = .142$) with the significant level of ($p = .191$).

Table 22
Correlations between Reading Strategy and Reading Comprehension for Turkish Participants

Variables		Reading comprehension	SORS
Reading comprehension	Pearson Correlation	1	.142
	Sig. (2- tailed)		.191
	N	87	87
SORS	Pearson Correlation	.142	1
	Sig. (2-tailed)	.191	
	N	87	87

Table 23 present the result for Mongolian participants. Table 23 shows the value of the Pearson correlation ($r=.126$), the p value ($p > .05$, two-tailed), and the N of data pairs the correlation was based on ($N= 87$). According to this result, no significant correlation was found between reading strategy and reading comprehension with the observed value of Pearson ($r = .126$) with the significant level of ($p= .263$). Reading strategy was not significantly related to reading comprehension with a Pearson correlation coefficient of $r = .126$ and $p > .05$.

Table 23
Correlations between Reading Strategy and Reading Comprehension for Mongolian Participants

Variables		Reading comprehension	SORS
Reading comprehension	Pearson Correlation	1	.126
	Sig. (2- tailed)		.263
	N	87	87
SORS	Pearson Correlation	.126	1.
	Sig. (2-tailed)		.263
	N	87	87

CHAPTER V

DISCUSSIONS

It is widely accepted that reading is one of the most crucial skills for students. The main objectives of this study were, first, to explore the level of Turkish and Mongolian English pre-service teachers' critical thinking skills, reading comprehension and their use of reading strategies. Second, this study attempted to examine the relationship between critical thinking skills and reading comprehension. In this section, the results of the study are discussed under the two heading; the findings of the overall strategy use of Turkish and Mongolian participants and findings of the critical thinking skills in reading.

First, Turkish and Mongolian English pre-service teachers showed high and medium uses of reading strategies respectively in reading and they used Problem Solving Strategies more frequently than Global and Support Strategies. Second, the overall use of the reading strategies was not significantly related to their reading comprehension. Third, the findings reveal that there was not a significant relationship between Turkish and Mongolian English pre-service teachers' critical thinking skills and reading comprehension. These results are discussed in detail below.

5.1 The overall strategy use of Turkish and Mongolian English pre-service teachers.

Examining the overall strategy use in reading, Turkish students' average score was 3.5 on the 5- point Likert scale whereas Mongolian students' average score was 3.4 on the 5-point Likert scale. According to the established strategy usage criteria, as described previously, this finding indicates that Turkish students show "high" usage of the reading strategies when they read authentic texts in English. Whereas Mongolian students' average score was 3.4 on the 5-points Likert scale which indicates a medium use of reading strategy. In terms of frequency of reading strategy use, these results were consistent with the finding reported in the study

carried out by Poole (2009), which concluded that EFL learners use a wide range of reading strategies when reading academic texts. Poole (2009) found that EFL showed high use of reading strategies in reading. Hong-Nam & Page, (2014) investigated reading strategy use in reading general English texts among 430 Korean EFL students and reported that 92% of students reported “medium to high” use of reading strategies in reading. Similarly, Shikano (2013) conducted a study among 60 students to explore the Japanese students’ use of reading strategies and their reading comprehension and found that student showed high use of reading strategies.

Wu (2005) investigated the use of reading strategies among 204 Taiwanese EFL college students and reported moderate usage of the reading strategies ($M = 3.08$, on 5 points Likert scale). According to these results, reading is considered essential for learners and they use reading strategies frequently while reading a passage. It, also, can be seen that students receive the strategy instruction regularly in English class. Demiröz (2008) stated that student, who are instructed how to use and when to use a particular strategy, commonly use reading strategies in reading.

Both Turkish and Mongolian students actively use some types of reading strategies to enhance and support their reading comprehension. Regarding each category of the reading strategies, the most frequently used categories of the reading strategies were Problem Solving Strategies for both Turkish and Mongolian students. That is, the participants in this study showed a greater use of the Problem Solving strategies. This result is comprehensible by understanding the features of the Problem Solving Strategies as Mokhtari and Sheorey (2002) described them as follows: “problem solving strategies are the actions and procedures that readers use while working directly with the text. These are localized focused techniques...” (p. 4). This result is consistent with Iyitoglu and Aydin’ s study (2015) which concluded that EFL learners use more problem solving strategies when reading English text. Similarly, Shikano (2013) reported that Japanese students used problem solving strategies as general preferences. In other words, students use problem solving strategies (for example: monitoring their reading process, re-reading to increase understanding, adjusting reading speed), more often than global and support reading

strategies (Shikano, 2013). Mendi's (2009) study reported that students, who spend more time for reading outside the class, showed a high use of problem solving strategies. According to Mendi (2009), students' voluntary reading process outside the class may develop their problem solving strategies. In addition, for Turkish students, compared to the use of the Problem Solving Strategies and Global Strategies, the use of Support Strategies was much less frequently used even though they still showed the medium use of the Support Strategy. Whereas Mongolian students, also, showed high use of Problem Solving Strategies and medium use of Support and Global Strategies. As the data in Table 6 show, both Mongolian and Turkish students show the medium use of Support Reading Strategy while reading a passage. Some strategies, for example, "taking notes", "reading aloud", "underlining or circling textual information", "using reference materials", "paraphrasing for better understanding", "asking oneself questions" and "thinking about the information in both native language and English" are moderately used in reading. For examples, notes can be used to paraphrase, summarize, react critically, question, or respond personally to what is read. Richard and Vacca (2002) suggested that making notes help students what they read, and students should become aware of the different types of notes that can be written. Strategies such as paraphrasing the explanation, asking herself questions, and making comparisons between things are useful strategies for monitoring one's reading comprehension. Students can improve their reading comprehension by practicing paraphrasing, or restating the author's ideas in their own words (Lewis, 2002). Paraphrasing the key point in reading is an important strategy which gives students an opportunity to rehearse key ideas for class discussion. Students use the above support strategies as the basis for comprehending the passage. Such findings would seem to indicate that students tend to possess necessary and basic support mechanism for efficient comprehension (Mokhtari and Sheory, 2002). Moreover, Turkish students reported a high use of Global Strategies compared to Mongolians. Some global strategies, for example, "setting purpose in mind", "using prior knowledge", "previewing text before reading" and "using context clues" are highly used both Turkish and Mongolian students in reading. These results suggest that such global strategies activate thought about the text before reading. Students must rely on what they know through previous study and

experience to make educated guesses about the material to be read (Richard and Vacca, 2002, p.78).

This study also identified five most and five least frequently used reading strategies by the Turkish and Mongolian participants. For Turkish students, five most frequently used strategies were the category of Problem Solving and Global strategies: “using prior knowledge” (GLOB, M = 3.96), “trying to guess what the content of the text” (GLOB, M=3.86), ‘adjusting reading speed’ (PROB, M = 3.87), ‘paying close attention to reading’ (PROB, M = 4.02), and “re-reading to increase understanding” (PROB, M = 3.90). It seems that prior knowledge also called “background knowledge” is the existing store of knowledge that students possess. Students actively search for and construct meaning by connecting background knowledge to all information in a text for successful reading. Comprehension problems occur if readers lack or fail to access background knowledge, if they have faulty or incompatible background knowledge (Armbruster & Osborn, 2002, p. 84). These findings may result from pre-reading activities (activating background knowledge, building background knowledge, building vocabulary, setting purpose) they have attended during their academic year. Moreover, as a result of our study, students are able to adjust their reading speed as the material becomes difficult. This situation is especially true of the students who regularly read stories and materials in school that requiring considerable concentration. These strategies are considered vital for successful academic reading in English.

For Mongolian students, they tended to use Problem Solving and Support categories of reading strategies: “underlining or circling information to remember” (SUP, M = 3.68), “using reference materials” (SUP, M = 3.81), “reading slowly and carefully” (PROB, M = 4.21), “paying closer attention to reading” (PROB, M = 3.90), and “re-reading to increase understanding” (PROB, M = 3.93). Probably, Mongolian students are very familiar with these two support strategies and also they seem to be well aware of how to implement those strategies. Mongolian students use a bilingual dictionary (i.e., the English- Mongolian dictionary) or even a monolingual dictionary (i.e., the English-English dictionary) through their formal instructions in

English classes. A good dictionary and intelligent use of a dictionary is still an essential tool for academic success. Students use a dictionary in order to define the words, check pronunciation, check spelling, and check the word usage (Lewis, 2002). Furthermore, they are encouraged to search another source, reference book, additional information, or teacher's help that might support comprehension. Depending on the purpose for reading, student's reading speed should be different (Lewis, 2002). In other words, students' reason for reading affect their speed, and concentration as well as the ability to recall the material at a later time. Furthermore, among the lists of Global Strategies, both Turkish and Mongolian students reread the text, use context clues, and assess their use of time in the act of reading. These strategies may be natural for the learners to apply consciously or unconsciously in order to comprehend texts. This might be the reason that university students use these strategies very frequently when they read texts in English.

As for all participants least frequently used strategies, students showed medium performance on the strategies such as translating into the native language, reading aloud, critically analyzing and evaluating, asking oneself questions, thinking about reading, and using typographical features. These are sometimes the hardest strategies to apply because such strategies require a well-established study habit as well. Asking oneself questions and thinking about reading is as important as pre-reading activities. Because it makes students more aware of how well students comprehend the given text (Lewis, 2002). Analyzing and evaluating text material requires that students analyze what they read, and simply identify main ideas and details. Moreover, good readers examine the source of the visual aids as well as the relationship between what is on the graphic and the idea under discussion. As mentioned above, students showed medium performance on these strategies. It may relate that students do not have sufficient practice to master these strategies. By working items independently and discussing the reliability of the author's opinion, and the evidence, students perform well on analyzing strategies. This kind of exercise requires an extensive practice.

For Turkish students, five least used strategies were in the category of support reading strategy. Some support strategies such as translating into the native language, reading aloud, thinking about information in English and native language, are moderately used by Turkish students. This result is consistent with Hong-Nam and Page's study (2014) which reported that support strategies were least used by Korean EFL students. Above strategies may require extra time or effort to utilize (Hong-Nam & Page, 2014). Moreover, students do not have much chance for explicit instruction to apply these strategies in reading class.

5.2 Critical Thinking Skills in Reading

This study examined various approaches and theories in critical thinking and reading comprehension. It is evident that critical thinking is necessary for all aspects of daily and academic lives. One of the important educational goals is that all students get to use critical thinking skills in their educational pursuits. As mentioned before, we aimed to assess Turkish and Mongolian students' critical thinking skill and examine the relationship between critical thinking and reading comprehension. Assessing the students' critical thinking skill is not only determine their level and achievement of critical thinking skill. It also gives a feedback to the teacher about how to improve achievement (Hang-sang, 2014).

Examining the critical thinking skills in reading, the students' performance on this scale was poor. Turkish students' average score was 38.5 percentage out of 100 whereas Mongolian students' average score for critical thinking was 33.9 out of 100. According to the results of five subcategories, *Induction* was the highest subskill followed by deduction, observation and credibility, assumption, and meaning. In contrast, Mongolians outperformed on *Deduction* skill followed by induction, observation and credibility, assumption, and meaning. This result is consistent with Ruba and Lamma's study (2006) which reported that deduction skill (induction, assumption, meaning, and observation and credibility) is most used by EFL students.

As a result of examining the difference in mean critical thinking skill, Turkish and Mongolian participants did not show the same average of critical thinking test. These results indicated that Turkish students showed a higher level of critical thinking skills than Mongolian students when they read authentic texts in English.

It may indicate that first, students' perceptions and applications of critical thinking skill is not sufficient for those selected participants. Second, items of Cornell Critical Thinking Test are quite difficult for participants. Providing a good conception of critical thinking and explicit instruction in critical thinking need be accomplished in teaching critical thinking (Bailin et al, 1999; Ruba & Lamma, 2006). Even it is appropriate to teach critical thinking skills at university level rather than secondary education (Gibbs 1985). Furthermore, teachers, who have a great deal of knowledge of critical thinking and awareness of strategies, may do a better job regarding teaching critical thinking skills (Kanik, 2010). As a result of qualitative research, Kanik, (2010) stated that most students tended to accept the information passively. Developing specific strategies for improving critical reading, furthermore, writing, speaking, listening is crucial for students.

Tufan (2008) conducted a qualitative research to investigate how critical thinking is handled at educational institutes and what is the perception of English pre-service teachers' critical thinking. As a result of his study, 88.35 % of the pre-service teachers reported that they did not attend an instructional activity or courses to enhance critical thinking skills. The students' concept of critical thinking was referred to only Literature lesson, Method lesson offered by their own department. From this point of view, methodological concern, instructional materials, and teacher training have a significant role in critical thinking and critical reading (Aslan & Yıldız, 2012). Besides, learning to think critically takes a long time, regular practice and condition for practicing critical thinking.

Based on the result, it seems that educational policy makers and the stakeholders need to pay attention to the development of critical thinking not only theoretically, but practically through curriculum, national and international projects,

and good practices in order to apply critical thinking skills for students. Furthermore, in order to implement the concept of critical thinking successfully and efficiently, certain necessary conditions such as a long-term plan for improvement, institutional mission, outcomes assessments need to be considered. In doing so, instructors and educators may examine more closely how to use it as a central organizer in the design of instruction. With a substantive concept of critical thinking, instructors and researchers can collect and conduct an experiment with a range of classroom teaching strategies that foster students' mastery of content and development of disciplined reasoning (Paul & Elder, p.35, 2002).

To investigate the relationship between critical thinking skills and reading comprehension the Pearson Product correlation coefficient was run. As examining the relationship between critical thinking skills and reading comprehension, the findings indicated that there was not a significant relationship between critical thinking and reading comprehension for Turkish and Mongolian students.

Our study also examined gender as a predictor for the achievement of critical thinking. Gender should be considered as a predictor variable to investigate critical thinking (Ricketts & Rudd, 2005). When the mean scores were compared, it was observed that there was no significant difference exist based upon gender among the participants. Males and females in this study possess a similar level of critical thinking skills. The value of .176 indicates that students' critical thinking skills do not differ according to the variable of gender. The mean scores for Turkish participants on Cornell Critical Thinking Test were 37.7 (female) and 40.4 (male) respectively whereas the mean scores for Mongolian participants on Cornell Critical Thinking Test were 33.9 (female) and 34.2 (male) respectively. These findings may indicate that Cornell Critical Thinking Test is not a gender – biased assessment tool. These results are consistent with Facione's (1990) study. According to the findings of his study, the data indicated that Cornell Critical Thinking Test did not differentiate among females and males. Also, our findings concur with the findings of Myer & Dyer's study (2006) as well. As reported in their study, the mean scores for all participants on Cornell Critical Thinking Test were 28.77 (female) and 26.78

(male) respectively. These scores are slightly lower than the mean critical thinking scores of Turkish and Mongolian participants. But our study contradicts Ruba and Lamma's work (2006) in which male students showed better performance than female students. According to their findings, 50 percent of the male students scored below 10, whereas 50 percent of the female students scored below 5.5. The highest score on this test was 22 (male).

From these different findings, participants in those studies have different academic backgrounds and culture. English is an international language for global communication, culture element should be considered in EFL classroom. Especially in reading class, teachers reinforce the cross-cultural skills in order to get students to communicate effectively and think critically (Lung & Boeru, 2008). Furthermore, more supports from different sources such as parents, university administration, Ministry of Education, and research centers get involved in the development of students' critical thinking and planning process (Dağlı, 2008). Working collaboratively in the development of critical thinking in higher education is worthwhile.

CHAPTER VI

CONCLUSION AND RECOMMENDATIONS

The purpose of this study was to investigate the level of Turkish and Mongolian English pre-service teachers' critical thinking skills, the level of reading comprehension and their use of reading strategies. Second, to examine the relationship between critical thinking skills and reading comprehension and to what extent critical thinking skills affect the level of reading comprehension and to what extent reading strategies affect the successful reading comprehension. This chapter provides the conclusion that can be drawn from the results and recommendation for the further research and practice.

The research was carried out as a correlational research among 3rd and 4th grade English pre-service teachers in two universities in Turkey and Mongolia. In the review of the literature, it was determined that having critical thinking skill is a necessity in this modern and globalized world because changes occur very fast and we need to have critical thinking skills to make a decision and adapt ourselves. The importance of critical thinking in education cannot be ignored. In this study, we attempted to determine the level of participants' critical thinking skills and identify the relationship between the critical thinking skills with the reading comprehension.

Based on the findings of the study, the present study may be summarized by pointing out that curriculum designers, syllabus designers and material developers of reading course book should consider the critical thinking as one of the effective elements in learning a language. Integrating the critical thinking and reasoning skills in course books makes the conception of critical thinking more comprehensive and complex.

As mentioned before, helping our students to become a good disciplined critical thinker is one of the main goals in education. Educators and instructors demand students to read critically, interpret implied meaning, evaluate ideas, and

react to assigned readings. To see these expectations, of course, there are many ways for approaching the critical thinking such as formulating questions, gathering information, applying information, considering implication, and exploring point of view. From this perspective, we need to consider how to apply these skills effectively in reading class with developmental sequences. The literature on critical thinking provides a rich source of the importance of critical thinking and some sources of classroom ideas from a theoretical perspective and may help teachers think about instruction in their classes. As critical thinking is an ongoing and progressive process it is difficult to measure students' critical thinking skills in reading.

Thus, findings suggest that SORS provides teachers with a good means to discover students' reading strategy use and make students' reading strategy strengths and weaknesses visible. The students' awareness about when, where, and how to apply appropriate strategy makes them a strategic and active reader. Furthermore, the development of strategic reader is a slow process, long-term training and practice is required to apply them independently (Grabe & Stoller, 2002). Besides that, we need to consider the match of students' background knowledge and reading text with relevant techniques and activities.

Although educational institutes appear to value critical thinking, more attention needs be paid how these forms of thinking are explicitly developed, how they are integrated into curriculum, teaching methods, teacher training and teacher education institution.

Recommendations

By considering the results of the study, we recommend the following suggestions for the further research and further practice.

We recommend that instructors may need to customize the instructional activities for students of different ages, experiences, cultures, and abilities in order to improve their critical thinking skills. In other words, it is important for the instructors

to consider the students' background knowledge, experience, and texts with relevant techniques and activities.

The findings from the research showed that students' critical thinking level was poor. This result may suggest that students' awareness of critical thinking should be raised through a training program which presents critical thinking skills such as identifying the key issues, recognizing assumptions, drawing the inference, making judgement etc. Educational Institutes and their departments should conduct projects with internationally acclaimed experts to deepen the current understanding of the critical thinking so that students engage in this field.

We recommend that researchers investigate how the teachers integrate the critical thinking skills into their teaching. Integration of critical thinking into teachers' planning stage is crucial.

Further studies, also, could investigate the relationship between reading comprehension and learning styles.

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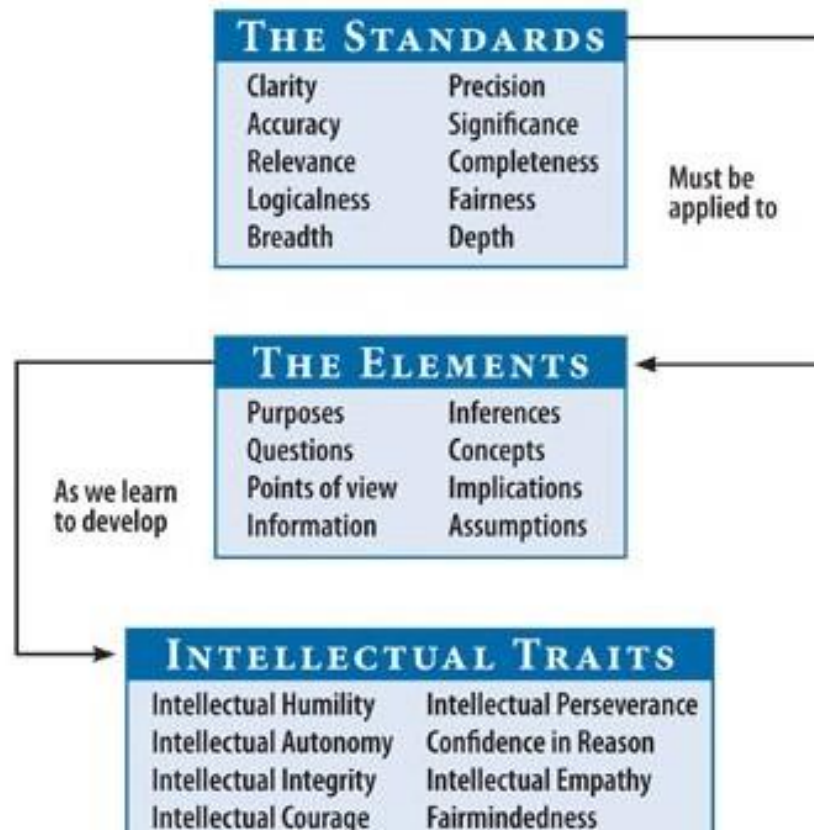
APPENDIX A

The Detailed Structure of the Original and Revised Taxonomy

Structure of the original taxonomy	Structure of the revised taxonomy
1. Knowledge	1. Remember
1.1 Knowledge of specifics	1.1 Recognizing
1.2 Knowledge of ways and means of dealing with specifics	1.2 Recalling
1.3 Knowledge of universal and abstractions in a field	2. Understand
2. Comprehension	2.1 Interpreting
2.1 Translation	2.2 Exemplifying
2.2 Interpretation	2.3 Classifying
2.3 Extrapolation	2.4 Summarizing
3. Application	2.5 Inferring
4. Analysis	2.6 Comparing
4.1 Analysis of elements	2.7 Explaining
4.2 Analysis of relationships	3. Apply
4.3 Analysis of organizational principles	3.1 Executing
5. Synthesis	3.2 Implementing
5.1 Production of a unique communication	4. Analyze
5.2 Production of plan	4.1 Differentiating
6. Evaluation	4.2 Organizing
6.1 Evaluation in terms of internal evidence	4.3 Attributing
6.2 Judgments in terms of external; criteria	5. Evaluate
	5.1 Checking
	5.2 Critiquing
	6. Create
	6.1 Generating
	6.2 Planning
	6.3 Producing

APPENDIX B

Framework for Critical Thinking



From: Paul and Elder, 2002, p. 19

APPENDIX C

The Detailed Item Analysis of Reading Comprehension Test

Items	(p) Item Difficulty	(r) Item Discrimination
Item 1	1	0.00
Item 2	87	0.31
Item 3	0.93	0.15
Item 4	1	0.00
Item 5	0.61	0.08
Item 6	0.77	0.54
Item 7	0.63	0.54
Item 8	0.79	0.46
Item 9	0.87	0.38
Item 10	0.75	0.38
Item 11	0.87	0.46
Item 12	0.83	0.31
Item 13	0.81	0.38
Item 14	0.81	0.46
Item 15	0.46	0.69
Item 16	0.69	0.54
Item 17	0.87	0.15
Item 18	0.71	0.54
Item 19	0.85	0.38
Item 20	0.91	0.31
Total	0.80	0.32

Reliability Statistics for Reading Comprehension Test

		N of items
Kuder-Richardson 20	.71	20
Cronbach alpha	.70	20

APPENDIX D

Cambridge Preliminary English Test
Reading

Part 1
Questions 1-5

Times: 20 min

- Look at the text in each question. What does it say?
- Circle the letter next to the correct explanation – A, B or C.

1.

**UNIVERSITY
LIBRARY**

Please wait here while
we check your books

- A. Do not go away until we have checked your books.
- B. Check you have all your books before you leave the library.
- C. Do not leave books here for checking without telling us.

2.

To: Sally From: Kim
Feeling any better? When
you are back at college,
remember to register for the
film course. Email me if you
want any information about
it.

Why has Kim emailed Sally?

- A. To give her some details.
- B. To let her know that he's ill.
- C. To remind her to do something.

3.

**HOSPITAL
WAITING ROOM**

Please put all
children's toys back in
this room before you

- A. We leave some toys at the back of this room for children.
- B. Please don't leave any toys outside this room when you go.
- C. Remember to take your children's toys with you when you leave.

4.

Ed,
Dennis rang: DON'T take the
main road to Madingley-
there's been an accident and
you won't get the match on
time. Go through Drayton
instead.

Lynn

- A. To arrive punctually, Ed should use a different route.
- B. Dennis suggest that it's quicker to go on the main road.
- C. If there's enough time, Lynn would like to see the match.

5.

Not as big city as we expected, but that's okay. Limited nightlife, though there's plenty to see every day and traveling around is painless!

According to Martina, the city's disadvantage is

- A. Its actual size.
- B. Its transport system.
- C. Its evening entertainment.

Part 2

Questions 6-10

- Read the text and questions below.
- For each questions, circle the letter next to the correct answer – **A, B, C or D.**

John Fisher, a builder, and his wife Elizabeth wanted more living space, so they left their small flat for an old 40-metre-high castle tower. They have spent five years turning it into a beautiful home with six floors, winning three architectural prizes.

"I love the space, and being private", Elizabeth says. "You feel separated from the world. If I am in the kitchen, which is 25 metres above the ground floor, and doorbell rings, I don't have to answer it because visitors can't see I'm in!"

"There are 142 steps to the top, so if I go up and down five or six times a day, it's very good exercise! But having to carry heavy things to the top is terrible, so I never buy more than two bags of shopping from the supermarket at a time. Apart from that, it's a brilliant place to live. "

"When we first saw the place, I asked my father's advice about buying it, because we couldn't decide. After paying for it, we were a bit worried because it looked awful. But we really loved it, and knew how we wanted it to look. "

"Living here can be difficult- yesterday I climbed a four- metre ladder to clean the windows. But when you stand on the roof you can see all the way out to sea on a clear day, and that's a wonderful experience. I'm really glad we moved."

6. What is the writer trying to do in the text?
 - A. Describe how to turn an old tower into a house
 - B. Recommend a particular builder
 - C. Describe what is like to live in a tower
 - D. Explain how to win prizes for building
7. From this text, a reader can find out,
 - A. Why visitors are not welcome at John and Elizabeth's house.
 - B. Why Elizabeth exercises every day.
 - C. Why Elizabeth asked her father to buy the tower.
 - D. Why John and Elizabeth left their flat.

8. Which of the following best describes Elizabeth's feeling about the tower?
- She wanted it as soon as she saw it.
 - She likes things about it.
 - She has been worried since they paid for it.
 - She finds it unsuitable to live in.
9. What problem does Elizabeth have with living in such a tall building?
- Her visitors find it difficult to see if she is at home.
 - She feels separated from other people.
 - She cannot bring home lots of shopping at once.
 - It is impossible to clean any of the windows.
10. How will John and Elizabeth advertise their tower if they sell it?

- | | |
|--|--|
| <p>A.</p> <p style="text-align: center;">FOR SALE</p> <p>Tall building, formerly a castle. High windows give a good view. Needs some improvement.</p> | <p>B.</p> <p style="text-align: center;">FOR SALE</p> <p>A house with a difference – a castle tower, turned into a lovely home. Wonderful view.</p> |
| <p>C.</p> <p style="text-align: center;">FOR SALE</p> <p>Prize-winning home, five years old. Six rooms, all with sea views.</p> | <p>D.</p> <p style="text-align: center;">FOR SALE</p> <p>Castle tower, turned into six small flats, close to supermarket.</p> |

Part 3

Questions 11-20

- Read the text below and choose the correct word for each space.

Although some groups of people have always lived outdoors in tents, camping as we know it today only began to be (11)..... about 50 years ago. The increase in the use of cars and improvement in camping (12)..... have allowed more people to travel longer (13)..... into the countryside and stay there in greater comfort. Many campers like to be (14)..... themselves in quiet areas, so they (15)..... their tent and food and walk or cycle into the forests or the mountains. Others, preferring to be near people, drive to a public or privately-owned campsite (16) has up-to-date facilities, (17)..... hot showers and swimming pools. Whether campers are (18)..... in the mountains or on a busy site, they should remember to (19)..... the area clean and tidy. In the forests, they must put out any fires and keep food hidden to avoid attracting (20)..... animals.

11. A. famous B. popular C. favorite D. current

- | | | | | |
|-----|-----------|---------------|--------------|--------------|
| 12. | A. tools | B. baggage | C. equipment | D. property |
| 13. | A. ways | B. directions | C. voyages | D. distances |
| 14. | A. on | B. by | C. at | D. of |
| 15. | A. take | B. make | C. pick | D. do |
| 16. | A. where | B. who | C. which | D. when |
| 17. | A. such | B. like | C. as | D. just |
| 18. | A. lonely | B. single | C. separate | D. alone |
| 19. | A. remain | B. stay | C. leave | D. let |
| 20. | A. wild | B. natural | C. loose | D. free |

Thank you for your co-operation in completing this test.

APPENDIX E

Survey of Reading Strategy (SORS)

The purpose of this survey is to collect information about the various strategies you use when you read **school-related academic materials in ENGLISH** (e.g., reading textbooks for homework or examinations; reading journal articles, etc.). Each statement is followed by five numbers, 1, 2, 3, 4, and 5, and each number means the following:

‘1’ means that ‘I **never or almost never** do this’.

‘2’ means that ‘I do this **only occasionally**’.

‘3’ means that ‘I **sometimes** do this’. (About **50%** of the time.)

‘4’ means that ‘I **usually** do this’.

‘5’ means that ‘I **always or almost always** do this’.

After reading each statement, *please mark the number* (1, 2, 3, 4, or 5) which applies to you. Note that there is **no right or wrong responses** to any of the items on this survey.

Statement	Never Always
1. I have a purpose in mind when I read.	① ② ③ ④ ⑤
2. I take notes while reading to help me understand what I read.	① ② ③ ④ ⑤
3. I think about what I know to help me understand what I read.	① ② ③ ④ ⑤
4. I take an overall view of the text to see what it is about before reading it.	① ② ③ ④ ⑤
5. When text becomes difficult, I read aloud to help me understand what I read.	① ② ③ ④ ⑤
6. I think about whether the content of the text fits my reading purpose.	① ② ③ ④ ⑤
7. I read slowly and carefully to make sure I understand what I am reading.	① ② ③ ④ ⑤
8. I review the text first by noting its characteristics like length and organization.	① ② ③ ④ ⑤
9. I try to get back on track when I lose concentration.	① ② ③ ④ ⑤
10. I underline or circle information in the text to help me remember it.	① ② ③ ④ ⑤
11. I adjust my reading speed according to what I am reading.	① ② ③ ④ ⑤
12. When reading, I decide what to read closely and what to ignore.	① ② ③ ④ ⑤
13. I use reference materials (e.g. a dictionary) to help me understand what I read.	① ② ③ ④ ⑤

14. When text becomes difficult, I pay closer attention to what I am reading. (1)(2)(3)(4)(5)
15. I use tables, figures, and pictures in text to increase my understanding. (1)(2)(3)(4)(5)
16. I stop from time to time and think about what I am reading. (1)(2)(3)(4)(5)
17. I use context clues to help me better understand what I am reading. (1)(2)(3)(4)(5)
18. I paraphrase (restate ideas in my own words) to better understand what I read. (1)(2)(3)(4)(5)
19. I try to picture or visualize information to help remember what I read. (1)(2)(3)(4)(5)
20. I use typographical features like bold face and italics to identify key information. (1)(2)(3)(4)(5)
21. I critically analyze and evaluate the information presented in the text. (1)(2)(3)(4)(5)
22. I go back and forth in the text to find relationships among ideas in it. (1)(2)(3)(4)(5)
23. I check my understanding when I come across new information. (1)(2)(3)(4)(5)
24. I try to guess what the content of the text is about when I read. (1)(2)(3)(4)(5)
25. When text becomes difficult, I re-read it to increase my understanding. (1)(2)(3)(4)(5)
26. I ask myself questions I like to have answered in the text. (1)(2)(3)(4)(5)
27. I check to see if my guesses about the text are right or wrong. (1)(2)(3)(4)(5)
28. When I read, I guess the meaning of unknown words or phrases. (1)(2)(3)(4)(5)
29. When reading, I translate from English into my native language. (1)(2)(3)(4)(5)
30. When reading, I think about information in both English and my mother tongue. (1)(2)(3)(4)(5)

Thank you for your co-operation in completing this questionnaire.

APPENDIX F

Background Information Questionnaire (BIQ)

This questionnaire refers to personal background information. The questionnaire is to be completed by students for the purpose of conducting research.

Your answers will be combined with others to make totals and averages in which no individual can be identified. All your answers will be kept confidential.

Part A

Please write your answer in the space provided.

1. Student Code: 2. Gender
3. Age 4. Nationality:
5. Country of permanent residence (*The country in which you have been normally resident, except for periods of temporary absence*).....
6. Mother tongue.....

Part B

Please answer the following questions by writing down your answer in the space provided or circling the one.

7. Name of University.....
8. Field of your study
9. Education (degree obtained or school level attending):
.....
10. How long have you been studying English? years.
11. Have you taken TOEIC or TOEFL, (PBT, CBT, or IBT) and IELTS? (Circle one)
YES/NO
If yes, please write your total score. (*If you have more than one, write the latest one*)
12. Other standardized English test: Score:
13. How do you rate your English proficiency?
a. excellent b. good c. fair d. poor
14. How important is it for you to become proficient in English?
a. very important b. important c. not important
15. What were the best methods and activities to learn English you have had?
.....
16. What were the worst methods and activities to learn English you have had?
.....

Thank you for your co-operation in completing this questionnaire.

APPENDIX G
Cornell Critical Thinking Test

Instructions:

This is a test to see how clearly and carefully you think.

There are 52 items. You should be able to finish in the 50 minutes given, but be careful not to waste your time. Avoid wild guessing, although it is all right to make shrewd guesses when you have good clues.

There is one best answer to each item.

Mark your answers with soft pencil on the answer sheet. Do not make any marks on this booklet. **If you finish within the given time, go back and check your answers.**

Due to the copyright restriction, we attached only the first 3 pages of Cornell Critical Thinking Test.

SECTION IA

In the first items, two men are debating about voting by eighteen years old. Mr. Pinder is the speaker in the first three items, Mr. Wilsting in the last two. Each item presents a set of statements and a conclusion. In each item, the conclusion is underlined. Do not be concerned with whether or not the conclusion or statements are true.

Mark items 1 through 5 according to the following system:

If the conclusion **follows necessary** from the statements given, mark A.

If the conclusion **contradicts** the statements given, mark B.

If the conclusion **neither** follows necessary nor contradicts the statements given, mark C.

If a conclusion follows necessarily, a person who accepts the statements is unavoidably committed to accepting the conclusion. When two things are contradictory, they cannot both be correct.

CONSIDER EACH ITEM INDEPENDENTLY OF THE OTHERS.

1. “Mr. Wilsting says that eighteen years olds haven’t faced the problems of the world, and that anyone who hasn’t faced these problems should not be able to vote. What he says is correct, but eighteen- years- olds still should be able to vote. They are mature human beings, aren’t they?”
2. “Furthermore, eighteen- years -olds should be allowed to vote because anyone who will suffer or gain from decision made by voter ought to be permitted to vote. It is clear that eighteen years olds will suffer or gain from the decision of the voter ”
3. “Many eighteen year olds are serving their country. Now there can be no doubt that many people serving their country ought to be allowed the vote. From this you can see that many eighteen years olds ought to be allowed to vote.”
4. “I agree with Mr. Pinder that anyone who will suffer or gain from a decision made by the voters ought to be permitted to vote. And it is true that eighteen years olds will suffer or gain from these decisions. But so will ten-years- olds. Therefore, eighteen year olds should not be allowed to vote”.

5. “Most eighteen year olds don’t know the difference between right and wrong. The right to vote should not be possessed by the members of a group if most of them don’t know this difference”. It is obvious then that eighteen- year - olds should not have the right to vote.

SECTION IB

In the next five items, the two men are debating about immigration. Mr. Pinder is speaking in the first three items, Mr. Wilstings in the last two.

Use the same systems to mark items 6 through 10.

- A. Conclusion **follows necessary** from the statements given.
- B. Conclusion **contradicts** the statements given.
- C. Neither.

CONSIDER EACH ITEM INDEPENDENTLY OF THE OTHERS.

6. “Mr. Wilstings has proposed that we open our door to all the foreigners who want to enter our beloved country. But foreigner always have made trouble and they always will. Most of them can’t even speak English. Since anybody that makes trouble is bad, it follows that foreigners are bad”.
7. “You may not know it, but for the past ten years the Communists in our country have been supporting a policy of unrestricted immigration. It is obvious why they support this policy of opening our doors to foreigners. Now I have to say this, but Mr. Wilstings’ support of this policy leaves us one conclusion. Mr. Wilstings is a Communists.”
8. “Mr. Wilstings has said that most foeginers have made positive contribution to our country. This is true. I will also admit that a group is not bad if most of its members do make positive contributions. But don’t be deceived by Mr. Wilstings’ fine sounding language. Foreigners are a bad group and shouldn’t be admitted”.
9. “I am sorry that Mr. Pinder feels that way about it. Sure, foreigners make trouble and most of them can’t speak English. But even though it is true that

people make trouble ought not to be admitted, we still ought to admit foreigners to our country. You don't want to be selfish, do you? ”

10. “All of you think it was all right to open our doors to all people from distant lands in the nineteenth century. Any person who thinks it was all right to do so at that time ought also to be in favor of doing so now. Thus, you ought to be in favor of opening our doors now to those from distant lands who are seeking admission to our country.

SECTION B

The discussion that follows I divided into parts to correspond to items 11 through 21. There is faulty thinking going on in each part. Your jobs for each item is to **pick the one best reason why the thinking is faulty.**

To take this part of the test, you need not know anything about the chlorination of water supplies.

11. DOBERT: I hear that you and some others crackpots are trying to get Gallton to chlorinate its water supply. You seem to think that this will do some good. There can be no doubt that either we should chlorinate or we shouldn't. Only a fool would be in favor of chlorinating the water, so we ought not to do it.

ALGAN: You are correct at least in saying that we are trying to get the water chlorinated.

Pick the one best reason why some of this thinking is faulty.

- A. Dobert is mistakenly assuming that there are only two alternatives.
- B. Dobert is using a word in two ways.
- C. Dobert is using emotional language that doesn't help to make his arguments reasonable.

APPENDIX H

Approval from Ethics Committee



T.C
DOKUZ EYLÜL ÜNİVERSİTESİ
EĞİTİM BİLİMLERİ ENSTİTÜSÜ MÜDÜRLÜĞÜ
Yabancı Diller Eğitimi Ana Bilim Dalı Başkanlığı



Sayı: 58032125-302/ 332
Konu: Tez Uygulaması Hk.

28.12. 2015

DOKUZ EYLÜL ÜNİVERSİTESİ EĞİTİM BİLİMLERİ ENSTİTÜSÜ MÜDÜRLÜĞÜNE

İLGİ: Enstitü Müdürlüğü'nün 22.12.2015 tarih ve 2330 sayılı yazısı.

Üniversitemiz Eğitim Bilimler Enstitüsü İngiliz Dili Eğitimi Anabilim Dalı İngilizce Öğretmenliği Doktora Programı öğrencisi Chimedlkham ERDENEBAATAR'ın tez çalışması kapsamında Bölümümüz İngiliz Dili Eğitimi Anabilim Dalımızda tez uygulaması yapma isteği çalışmayı kendilerinin yapması şartıyla uygun görülmüştür.

Bilgilerinizi ve gereğini arz ederim.


Prof. Dr. Talat AKASLAN
Yabancı Diller Eğt.Anabilim Dalı Başkanı