HIGH SCHOOL STUDENTS' CRITICAL READING LEVELS AND THE RELATIONSHIP BETWEEN CRITICAL READING LEVEL AND CRITICAL THINKING DISPOSITIONS AND READING FREQUENCY

Huriye IŞIK

(MA THESIS)

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Huriye IŞIK

MA THESIS

Foreign Language Teaching Program

Advisor: Assistant Professor Dr. Aysel BAHÇE

Eskişehir

Anadolu University

Institute of Educational Sciences

June, 2010

To my beloved husband and my parents..

MA THESIS ABSTRACT

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Huriye IŞIK

Foreign Language Teaching Program
Anadolu University
Institute of Educational Sciences
Advisor: Asst. Prof. Dr. Aysel BAHÇE

The century we live in is mentioned as "information age". The reason for this name is the information density changing and improving from day to day. This density of information necessitates people to select the data through thinking critically. Needless to say that, "critical thinking" has been one of the most repeated and stressed concepts in educational life. Running parallel to "critical thinking", the concept of "critical reading" has been introduced in teaching programs of many countries. In the Turkish educational system, the instructions supporting "critical reading" are displayed in the many course teaching programs of almost all grades, and the activities encouraging "critical reading" are provided in the course books. In high schools the English course is one in which "critical reading" is forwarded by both the teaching program and the course books. Within this context, could our students genuinely acquire critical reading skills?

The purpose of this study is firstly to measure the students' level of critical reading skills; and furthermore to identify whether there is a relationship between students' critical reading levels and critical thinking dispositions and reading frequency in both English and Turkish.

The participants of this study, which was conducted in the spring term of 2008-2009 academic year, comprised 147 students in Bilecik Osmaneli 75. Yıl Anadolu High School.

Data were gathered through two scales, namely, “Critical Reading Scale”, and “California Critical Thinking Dispositions Inventory”.

For the statistical analysis of data received from the Critical Reading Scale, mean score and standard deviation were calculated to determine the levels of students’ critical reading. The mean score calculated for critical reading skills was separated into three clusters -low, medium, high- through K-means Cluster technique. Additionally, to find out whether there is a difference among the grades (9^{th}, 10^{th}, and 11^{th}), ANOVA and then LSD test were computed. Thirdly, to find out whether there is a relationship between the students’ critical reading levels and critical thinking dispositions, data taken from the two scales were compared through correlation analysis (Pearson correlation). Finally, to find out whether there is a relationship between the students’ critical reading levels and reading frequency, chi-square value was calculated.

The results of the study indicated that 32.4% of the students were at low level, 46.2% of the students were at medium level and 21.4% of the students were at high level. As it is seen majority of the students were at medium level. For the students’ level of critical reading, there is a significant difference between the 9^{th} and 11^{th} grades in favor of the 9^{th} grades. For the relationship between the students’ critical reading levels and their critical thinking dispositions the findings indicated a positive and direct correlation; however, this relation is not significant. For the relationship between the students’ critical reading levels and reading frequency the findings showed that there is no relationship between these two variables.

The findings of the study revealed that critical thinking dispositions have a triggering effect for the development of critical reading skills. However, it cannot be said that reading frequency effects critical reading.

KEY WORDS: Critical Reading, Critical Thinking Dispositions, Reading Frequency

YÜKSEK LİSANS TEZ ÖZÜ

LİSE ÖĞRENCİLERİNİN ELEŞTİREL OKUMA SEVİYELERİ VE ELEŞTİREL OKUMA SEVİYELERİ İLE ELEŞTİREL DÜŞÜNME EĞİLİMLERİ VE OKUMA SIKLIKLARI ARASINDAKİ İLİŞKİ

Huriye IŞIK

İngiliz Dili Eğitimi Anabilim Dalı
Anadolu Üniversitesi
Eğitim Bilimler Enstitüsü
Danışman: Yardımcı Doçent Dr. Aysel BAHÇE

Yaşadığımız yüzyıl "bilgi çağı" adı ile anılmaktadır. Bu adı almasının en önemli sebebi ise her saniye gelişen ve değişen bilgi yoğunluğudur. Bu yoğunluk insanları maruz kaldkıları bilgiyi eleştirel düşünmeyle ayıklamaya itmektedir. Bu gereksinimle beraber "Eleştirel düşünme" kavramı hayatın birçok alanında olduğu gibi eğitim alanında da tekrarlanan ve vurgulanan kavramlardan biri haline gelmiştir. "Eleştirel düşünme" kavramı ile birlikte "eleştirel okuma" kavramı da birçok ülkenin eğitim-öğretim programlarında yer almıştır. Türk eğitim sistemimizin neredeyse bütün kademelerinin çoğu ders müfredatında eleştirel okumayı destekleyecek yönergelere, ders kitaplarında da eleştirel okumayı geliştirecek etkinliklere rastlanmaktadır. Liselerde İngilizce dersi eleştirel okumanın hem müfredat hem de ders kitapları ile teşvik edildiği derstir. Peki, öğrencilerimiz eleştirel okuma becerisini kazanabilmişler midir?

Bu çalışmanın amacı lise öğrencilerinin eleştirel okuma düzeylerine ilişkin bir sonuca varmak ve eleştirel okuma seviyeleri ile eleştirel düşünme eğilimleri ve okuma alışkanlıkları arasında anlamlı bir ilişkinin var olup olmadığını bulmaktır.

2008-2009 öğretim yılının bahar döneminde yapılan bu çalışmaya Bilecik Osmaneli 75. Yıl Anadolu Lisesinde öğrenim gören 147 öğrenci katılmıştır.

Veriler iki ölçek aracılığı ile toplanmıştır. Ölçeklerden biri Eleştirel Okuma Beceri Ölçeği, diğeri California Eleştirel Düşünme Eğilimleri Ölçeğidir.

Eleştirel okuma beceri ölçeğinden elde edilen verilerin analizinde öğrencilerin eleştirel okuma seviyelerini belirlemek için aritmetik ortalama ve standart sapma hesaplanmıştır. Hesaplanan aritmetik ortalama K-means kümeleme tekniği ile düşük, orta ve yüksek olarak üç seviyeye ayrılmıştır. Bu hesaplamalayla birlikte sınıfların (9, 10, 11.) eleştirel okuma becerileri arasında bir farklılık olup olmadığını bulmak için tek- yönlü Varyans (one- way ANOVA) analizi ve LSD testi yapılmıştır. Öğrencilerin eleştirel okuma seviyeleri ile eleştirel düşünme eğilimleri arasında bir ilişkinin var olup olmadığını bulmak için eleştirel okuma ölçeğinden elde edilen veriler ile eleştirel düşünme eğilimleri ölçeğinden elde edilen veriler korelasyon analizi yöntemi ile karşılaştırılmıştır (Pearson correlation). Öğrencilerin eleştirel okuma seviyeleri ile okuma sıklığı arasında bir ilişkinin var olup olmadığını bulmak için ki-kare değeri (chi-square value) hesaplanmıştır.

Çalışmanın sonuçları öğrencilerin %32.4'ünün düşük seviyede, %46.2'sinin orta seviyede, 21.4'ünün yüksek seviyede olduğunu göstermiştir. Görüldüğü gibi öğrencilerin çoğunluğunun eleştirel okuma becerileri orta seviyededir. Eleştirel okuma becerileri için sınıflar arasındaki farklılığa bakıldığında 9. sınıflar ile 11. sınıflar arasında 9. sınıfların lehine bir sonuç bulunmuştur. Öğrencilerin eleştirel okuma seviyeleri ile eleştirel düşünme eğilimleri arasındaki ilişki için olumlu yönde doğrusal bir ilişkinin olduğu fakat bu ilişkinin anlamlı olmadığı belirlenmiştir. Öğrencilerin eleştirel okuma seviyeleri ile okuma sıklıkları arasında bir ilişki bulunmamıştır.

Bu çalışmanın sonuçları, eleştirel düşünme eğilimlerinin eleştirel okumanın gelişimi için tetikleyici bir etki olduğunu ortaya çıkarmıştır. Fakat, okuma sıklığının eleştirel düşünmeyi etkilediği söylenemez.

ANAHTAR KELİMELER: Eleştirel Okuma, Eleştirel Düşünme Eğilimleri, Okuma Sıklığı

JÜRİ VE ENSTİTÜ ONAYI

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CHAPTER 1
INTRODUCTION

1.1 Background to the Study

Critical thinking, which has seen an upsurge within the framework of the information age throughout the world, is an issue that has been studied in Turkey since 1980's (Demir, 2008). In order to challenge innovations, society needs individuals who can question, think, and criticize. This need has been complemented by education. For individuals to be more questioning and evaluative, changes have been made in education systems. In Turkey, educational innovations were made by the Ministry of Education in 2005. As such, high schools' English and foreign language teaching programs have endorsed a reform. Indeed, the concepts of "critical thinking" and "critical reading" have been placed in the teaching curricula.

The reason why these two concepts are used in tandem is that critical reading leads to critical thinking or critical thinking leads to critical reading. Most students who read critically can become critical thinkers as they question, judge, and evaluate the text they are reading. In order to become critical thinkers, students have to learn to value their own thinking, to compare their thinking and interpretations with others, to re-examine or to reject the parts of the process, in which they value their thinking and interpretations and compare them with others, when it is necessary (Collins, 1993).

Harris and Hodges (1981) define critical reading as the process in which readers analyze and make judgments about the relevancy and adequacy of the text (cited in Köse, 2007, p. 12). Critical reading skills are also defined as one's ability to analyze, evaluate, and synthesize what he or she reads (Halvarson, 1992). Darch and Kammenui (1987) have defined critical reading as the ability to make predictions, to recognize the differences between events and ideas and to understand the view and belief of the writer, and to ratiocinate what is read. When these definitions are analyzed, there seems a similarity between Harris and Hodges' (1981; cited in Köse) and Halvarson's (1992) definitions. This similarity which is analyzing and evaluating what is read might be accepted as post- reading activities. However, Darch and Kammenui's (1987) might be said to be different from the other two in the way that in Darch and Kammenui's (1987) both pre- reading and post- reading skills are included.

Being endowed with critical reading skills enables individuals to be qualified critical thinkers. Hence, individuals should be provided with the right education in appropriate environments such as schooling. Newly implemented education curriculum allows room for critical thinking and critical reading. The current curriculum aims to have students with critical thinking abilities who can make reason- result relations, make decisions and solve problems. One of the ways to reach this aim is to develop students' critical reading skills such as making predictions, surveying, finding the main idea and supporting ideas, transferring the ideas, evaluating and making comments about what is read, comparing and note taking (LeMaster, 2009; Kelly& Hokanson, 2009; Halvorsan, 2009) as presented in the English language curriculum(MEB, 2007).

In the literature, it is claimed that there are some factors affecting the development of critical reading directly or indirectly. Critical thinking dispositions and reading habit are two of the factors. A thinking disposition is defined as a tendency to think in a certain way under certain circumstances (Norris, 2003). Dewey defines thinking dispositions as one's characteristics (cited in Facione, Facione &Giancarlo, 2000). Another factor "reading habit" is defined as a skill which is necessary for people to get pleasure from reading (Gönen, Öncü& Işıtan, 2004). In another definition, reading habit is accepted as a process following a child's basic reading skills. This process is transformation of a person's reading into a habit based on his/her condition and motivation (Gürcan, 1999).

1.2 Statement of the Problem

The significance of critical reading has been introduced in the earlier section. A reflection of this significance is its inclusion in the English Language Curriculum of High Schools in Turkey. When the curriculum is analyzed, the reading skills aimed to be taught are seen as steps to develop students' critical reading (MEB, The English Curriculum of High Schools, 2007).

The materials and teaching are assumed to be planned according to this objective. However, to researcher' knowledge, whether this objective has been achieved or not is unknown as there is no study in Turkey on high school students' level of critical reading skills. Therefore, this study is designed as a modest step to find out the critical reading levels of Anadolu High School students and also to investigate if there is a difference

among different grades. Also the relationship between critical reading level and critical thinking dispositions and reading frequency in both English and Turkish will be studied. The findings will shed a light on the curriculum and inform teachers, curriculum developers and material writers.

1.3 Aim of the Study

This study mainly aims to investigate whether critical reading that has been promoted as part of the foreign language teaching program in Anadolu High Schools has an effect on the improvement of these high school students' critical reading levels. To reach this aim, the study explores high school students' level of critical reading skills and investigates if there are differences among the 9^{th}, 10^{th} and 11^{th} grades. A further aim is to find out the relationship between critical reading level and critical thinking dispositions and reading frequency in both English and Turkish.

1.4 Research Questions

1) What are the critical reading levels of the students in English?
2) Is there a difference among the critical reading levels of the 9^{th}, 10^{th}, and 11^{th} grade students?
3) Is there a relationship between critical reading levels and critical thinking dispositions?
4) Is there a relationship between critical reading levels and reading frequency both in Turkish and in English?

CHAPTER 2
REVIEW OF LITERATURE

2.1 What is reading?

In the most general terms, reading can be described as a process including the reader, the text and the interaction between the reader and the text (Richards, 1997).

In the traditional view of reading, firstly, reading was seen as a passive process, in which readers are just the observers of writers, and secondly to discover the meaning hidden in the text (Arieta 2001; cited in Köse, 2006, p. 19). In other words, the text carries a meaning by itself and this meaning occurs in the text independently from the reader (Carell, Devine& Eskey, 1993)

However, Goodman (1967) introduced an opposing view which sees reading as a "psycholinguistic guessing game." In a reading process, the reader combines cognitive and linguistic abilities to guess words and does not use many graphophonic cues. In other words, the reader uses his/ her knowledge and language to predict the meaning of words, using a few letter- sound cues. The psycholinguistic view of reading views reading as an active thinking process not as a passive activity. Indeed, when it comes to active thinking the coordination of three distinct systems: the graphophonemic, the syntactic, and the semantic systems rise to the fore. In the graphophonemic system, the print provides readers with the graphic symbols, namely, letters to decode the word. The syntactic system is linked to grammatical knowledge about how language works. Lastly, the semantic system includes background knowledge, experience, values, and attitudes transferred by the reader to a text (Vacca, Vacca, Gove, Lenhart, Burkey& McKeon, 2003).

Dechant (1991) defines reading in two separate categories. In the first category, reading is defined as the interpretation of experience; and in the second category, as an interpretation of graphic symbols. In the first category, the reading is defined as interpretation of pictures, weather or faces, in other words reading is interpretation of sense stimuli. In the second category, reading is defined as the process involving the comprehension and interpretation of the symbols occurring on a page.

In addition to the definition of reading comprehension, three cognitive processes need to be considered to understand the reading engagement fully. These three models are widely referred to as the bottom-up, top-down and interactive models.

2.1.1 Models of reading

2.1.1.1 Bottom-up processing

From the psychologists' view of reading, bottom- up processing occurs when the linguistic data taken from letters and words is matched with the reader's background knowledge with little recourse (Treiman, 2001). Bottom- up models include two lower-level processes; word- recognition and syntactic parsing (Grabe& Stoller, 2002). However, Stanovich (2000) considers bottom-up processing of words as a critical component of a certain degree of early reading instruction and that word- recognition runs parallel with high- order thinking levels and comprehension processes. Bottom- up processing is also known as "data driven" process where readers use the "incoming data" to shape meanings (Silberstein, 1994:7). To sum up, it can be said that according to those, who support bottom- up processing, the emphasis is to the text (Abraham, 2000).

2.1.1.2 Top-down processing

Top- down processing occurs when readers use background knowledge to make predictions about the data they will find in the text (Treiman, 2001). Theories giving emphasis to top-down processing claim that readers first make hypotheses about the words they will see in the text and then check their hypothesis in order to register if it is accurate or not by using visuals (Goodman, 1967; Smith, 1971). Top- down model is also referred as "knowledge- based or conceptually driven information processing." (Silberstein, 1994:7). In summary, according to theorists supporting top- down processing, the focus is on the reader (Abraham, 2000)

Background knowledge which is a basic component of top- down processing is also cited as "schemata." In fact, schemata -the plural form of schema- is defined as the structures of previously acquired knowledge (Bartlett, 1932; Adams& Collins 1979; Rumelhart, 1975; cited in Carell, Devine & Eskey, 1993). There are two types of schemata: content schemata and formal schemata. Content schemata refer to people's

knowledge about world, environment, societies etc.; formal schemata refer to knowledge about discourse structure; such as, vocabulary and grammar (Brown, 2001). Categories of schemata classified by Richards (1997) have also been mentioned in different lights by Housel and Acker (1979), and Mavrogenes (1983). Housel (1979) et al. described the types of schemata as content schema including knowledge about events and objects; and relational schema referring to the various ways in which the reader relates to events (cited in Cheek, Flippo& Lindsey., 1989). The other types of schemata determined by Mavrogenes (1983) are called as contextual schema and textual schema: A contextual schema is related to the knowledge of actual or imaginary events; on the other hand, a textual schema includes the reader's knowledge of written forms of expression (cited in Cheek et.al, 1989).

With good reason, we can easily argue that without background knowledge, it is inconceivable to comprehend a reading text fully.

2.1.1.3 Interactive model

The interactive model supports the view that both the text and the reader are important components in reading comprehension (Abraham, 2000). Stanovich (2000) points out that the interactive model of reading provides better conceptualization of reading performance than top- down or bottom- up processing does. Throughout this discussion, in the definition of the reading comprehension, it has been underlined that the reading process is an active one. Walker (1989) supports this definition via four aspects of interactive process; "1) readers use both what they know and information from the text to construct meaning; 2) readers elaborate what and how they read; 3) readers continually monitor their understanding to see if it makes sense; and 4) readers use the situational context to focus their purposes and frame their attitude toward the literacy event" (p.1).

It is clear that reading comprehension is neither explained with nor based on only one model. This is compounded by the fact that there are many models enabling us to understand how reading occurs.

After understanding what reading is, "reading habit" that is accepted as a step towards critical reading by different researchers will be explained in the following part (Keleş, 2006; Yılmaz, 1990).

2.2 Reading Habit

Reading habit is defined as a skill which is necessary for people to get pleasure from reading (Gönen, Öncü& Işıtan, 2004).

In another definition, reading habit is accepted as a process following a child's basic reading skills. This process is transformation of a person's reading into a habit based on his/her condition and motivation (Gürcan, 1999).

According to another definition, "reading habit" is a second step of the reading event. In this definition, the reading event is explained with three steps. The first step is "basic literacy" which is considered as a skill for decoding the various passwords and combinations among the letters. The second step is "reading habit" which means a result of transformation of the basic literacy into a constant and regular habit existing during one's life. The third step is "critical reading" through which the reading habit acquires a feature of developing the thought and sensitivity (Yılmaz, 1990).

Reading habit, which is accepted as the step acquired after the basic reading-writing skill, means an individual's constant reading in a critical manner as a result of his/ her perceiving the reading event both as a need and a pleasure (Keleş, 2006).

The followings are also used to define the reading habit:

- The publication types read by the person
- The reading frequency
- How much he/ she can read at a given moment
- What time of the year, week or the day the person prefers to read
- The ways —buying, borrowing, reading at library— the person prefers and gets the reading source
- The reading strategies used by the person (Dökmen, 2004)

In definitions above, reading habit is a process coming after the basic literacy has been emphasized. However, literature suggests that people can engage in this process in different periods of their life.

The three periods of life in which reading habit is acquired are childhood, adolescence, and adulthood; the three social institutions are family, school and environment; and the three individuals are parents, teachers, and friends. According to different experts, childhood and adolescence are the critic periods to transform the reading into a habit. Bamberger (1990) states two reasons for childhood is a critic

period because he first reason is reading's satisfying the needs and interests of children; and the second reason is reading's being related to school demands and activities. For individuals to continue their reading habits thorough their lives, they should be provided with sources associated with their interests and needs (Bamberger, 1990).

2.2.1 Factors affecting reading habit

There are some factors that let the reading habit be continued or not.

Personal Factors: The individual might continue his/her reading habit as he/she conditions himself/herself to improve himself/herself on the needed subjects; however, when this need is removed, the individual's reading habit also disappears.

Another personal reason might be the individual's willingness to change or improve his/ her personality, thinking, behaviors and emotional aspect (Balcı, 2009; Bınarbaşı, 2006).

Age factor can be accepted as another personal factor. As mentioned before, childhood and adolescence are critic periods to acquire reading habits. Those who have not gained reading habits at earlier ages of his/her life might have difficulty in acquiring reading habit at older ages (Balcı, 2009; Shapiro& Whitney, 1997; Bınarbaşı, 2006).

Family Factor: In the families with low socio-economic level, individuals might not have a chance to meet with any publication types. Also, the family members are not interested in reading have a negative impact on children's reading (Balcı, 2009; Shapiro& Whitney, 1997; Bınarbaşı, 2006).

Parents following up any publication types such as newspaper, journals or books can make children willing to read. Also, a library at home might motivate children to read.

School Factor: A rich library in a school and teachers' directing the students to the library by giving them homework might be a strong motive for students to acquire the reading habit. Teachers are another factor affecting students' reading habits (Balcı, 2009; Bınarbaşı, 2006).

Friend Factor: The children might think that they have to read the books those read by their friends, and so they will be familiar with the subjects discussed by their friends (Balcı, 2009; Bınarbaşı, 2006).

2.3 What is critical reading?

In today's information age, we are exposed to a flow of information in many ways. To dispose of unnecessary information and to filter the necessary information, we should know what, why and how to read and listen. In other words, to benefit of the information at a maximum rate and in a reasonable way, we should read critically. Then, what is critical reading?

Critical reading is one of the primary skills which should be possessed by the students.

Thistlewhaite (1990) considers critical reading as a process in which readers assess what they read and come a decision. This outcome can be tied with agreeing with what the writer says, disagreeing with it, or realizing that additional information is essential before an informed judgment can be made (cited in Köse, 2007, p.26).

Darch and Kammenui (1987) has defined critical reading as the ability to make predictions, to recognize the differences between events and ideas and to understand the view and belief of the writer, and to ratiocinate what is read.

Critical reading has also been explained through comparison with reading to extract information (Wheeler, 2009). Reading to extract information is defined as readers' taking all the raw information in the text as quickly as possible (Wheeler, 2009).

Wheeler (2009) distinguishes reading to extract information from reading critically on the basis of the features below:

- Their aims are different from each other. In reading to extract information, students search for the facts and suppose those facts are true. However, in critical reading, they try to determine the quality of the ideas and arguments in the text. Readers should be open-minded and skeptical to be able to change their personal opinions in the light of the quality of the arguments in the text.

- They require different disciplines. If students read to learn the raw data, the best way to learn is repetition. However, if a student reads critically, the best ways are to

divide the information into sub-categories rationally, analyze the arguments, and state the arguments with different words, then to develop the statements, and question the conclusions.

- They require different cognitive skills. If students read to gain information, they have to absorb, and memorize the raw information; additionally they have to be passive. On the other hand, if students read critically, they have to be active. The critical reader should be ready to pre-read the text, read it closely, and reread the text if she or he does not understand how the author reaches the conclusion. Also, he or she should have time to analyze the text from different angles.

- They produce different results. Passive readers read so many books that they get scattered facts in their mind. However, critical readers experience innovative and original reading. They read with the "habit of reflection, intellectual honesty, perceptivity to the text, subtlety in thought, and originality in insight" (p. 2).

- The degree of understanding they require is different from each other. Reading to extract information is basic and fundamental, because if the reader does not know the meaning of individual words, it is ridiculous to evaluate what is important. On the other hand, critical reading is more advanced, "because only critical reading equates with full understanding." (p.2)

In a different style, Kurland (www.criticalreading.com) defines critical reading referring to critical thinking. According to him, although the emphasis on decision-making is common in both critical reading and critical thinking, there are differences between them:

"- critical reading is a technique for *discovering* information and ideas within a text

- critical thinking is a technique for *evaluating* information and ideas, for deciding what to accept and believe." (p. 1)

Based on the two steps above; reading the text analytically, reflectively, actively and carefully comes first; and secondly, reflecting on the validity of what is read in the light of background knowledge comes. Briefly, critical reading seems to come before critical thinking: the text can be truly evaluated after the text is fully understood. The reason why Kurland makes a distinction between these two concepts is to remind that

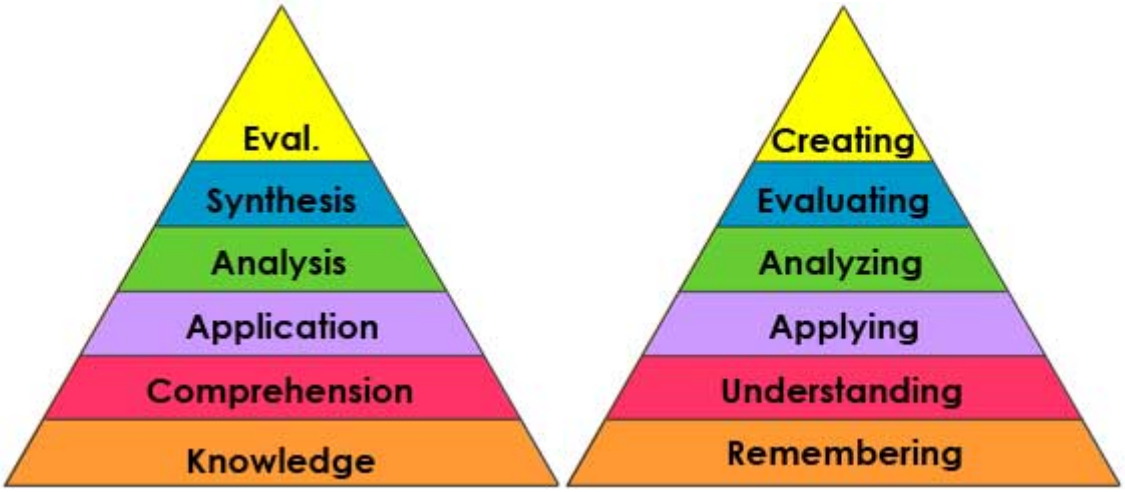
we should perform critical reading and critical thinking separately. In other words, we should read a text on its own merits to see whether it is coherent or consistent, then we can learn new things. When it comes to accepting the information as true or rejecting, we must go outside the text and bring the background knowledge to the text which is thinking critically. Nevertheless, both of them run parallel.
(http://www.criticalreading.com/critical_reading_thinking.htm).

Facione (2007) reveals that the improvements experienced in critical thinking are paralleled with the improvements in reading comprehension which means that there is a correlation between these two.

Needless to say that one should have critical reading skills as well as critical thinking skills in order to be a commendable critical thinker.

2.3.1 Critical Reading Skills

During the reading process, people confront two layers of reality, namely, the visible layer and the invisible layer, while they are reading. However, people see only one layer which is the visible one. Therefore, if people want to read critically, they have to generate the invisible layer clearly. Briefly, what critical reading necessitates is making the invisible layer visible (Köse, 2006). According to Köse (2006), this is possible with Bloom's Revised Taxonomy:



Old Version New Version

(http://www.odu.edu/educ/roverbau/Bloom/blooms_taxonomy.htm)

The reason for showing and comparing two versions of Bloom's taxonomy is to display how and why the words changed from nouns to verbs. This change was made by Anderson and Krathwohl (2001) to show that thinking is observed as an active process.

Below, Tankersley (2005) explained the six revised category in relation with the reading skills. Moreover, some additional data (http://www.odu.edu/educ/roverbau/Bloom/blooms_taxonomy.htm) is presented in relation with Tankersley's explanation.

Remembering is regarded as finding out the answers to factual questions or recalling the text. The question for *remembering* might be "Can the students recall or remember the information?". Moreover, the verbs used for the skill "remembering" can be sequenced as: *define, duplicate, list, memorize, recall, repeat, reproduce,* and *state.*

Understanding includes summarizing the text, classification, or explaining the text. Moreover, the question suitable for the skill of *understanding* might be "Can the students explain ideas or concepts?". *Discuss, explain, identify, locate, recognize, report, select, translate, paraphrase* are the possible verbs used for the skill "understanding".

Applying is the ability to apply, chose, dramatize, explain or generalize a text. The suitable question might be "Can the students use the information in a new way?" . *Choosing, demonstrating, dramatizing, employing, illustrating, interpreting, operating, scheduling, sketching, solving, using, writing* are the skills that might be used to apply activities.

Analyzing is the ability to break the text into parts and compare the text and background knowledge of the reader. "Can the students distinguish between the different parts?" might be a question suitable for addressing the skill of "analyzing". The following verbs might apply to analyzing activities: *Appraise, compare, contrast, criticize, differentiate, discriminate, distinguish, examine, experiment, question* and *test.*

Evaluating requires students to make differences between the essential knowledge and the knowledge that is only interesting. The question "Can the students justify a stand or decision?" might be used to address the skill of "evaluating". *Appraise, argue, defend, judge, select, support, value, evaluate* are the possible verbs used for evaluating activities.

Creating is regarded as synthesizing since it is the prime skill of the old taxonomy. The meaning of synthesizing is linking new information with the prior knowledge and creating a new product. The question that might be used for creating activities can be “Can the students create a new product or point of view?”. *Assemble, construct, create, design, develop, formulate, write* seem to be the verbs applied to creating activities.

According to the categories above, a critical reader is a person who can deal with both the higher order skills, which are applying, analyzing, evaluating and creating, and the lower order skills: remembering and understanding (Köse, 2006). Similarly, Halvarson (1992) regards critical reading skills as one’s ability to analyze, evaluate, and synthesize what he or she reads. Some examples of critical reading skills are listed as follows:

- Seeing questions and expecting answers
- Seeing cause and effect
- Seeing steps in a process
- Seeing comparisons
- Seeing generalization and itemization (Halvarson, 1992).

Alternatively to the examples above some questions to ask during the reading process are introduced as follows (Kelly and Hokanson, 2009):

“-What is the topic of the book or reading? What issues are addressed?

- What conclusion (s) does the author reach about the issue(s)?

- What are the author’s reasons for his or her statements or belief? Is the author using facts, theory, or faith?

A person’s movement towards being a good critical reader necessitates that he/ she is exposed to such critical skills mentioned. Then, how can a person be imposed critical reading skills? The answer lays in the concepts of teaching programs, teachers, learning settings and so forth.

2.3.2 How to teach critical reading?

Creating appropriate classroom atmosphere in which students are encouraged to question, make predictions and organize their thoughts in order to create new ideas is necessary for promoting critical reading (Collins, 1993).

Critical strategies are also listed by some researchers. The common strategies included in Peirce' (2006) list and Wheeler's (2009) list are as follows:

- Previewing the reading assignment
- Having students write something in response to the text; making notes in the margin and making notes to bring to class
- Designing a focused, informal writing-to-learn task based on the reading
- Monitoring compliance

The additional critical reading strategies suggested by Wheeler (2009) are as follows:

- Talking back to the text —author—
- Asking questions to the text
- Asking questions about yourself —your attitudes, prejudgments, feelings—
- Asking questions about context —social, economic, geographical, political factors—
- Asking questions about broader implications
- Searching for relevant connections

Also, teachers encouraging pre-reading discussions in reading classes and providing students with variable learning materials and learning ways enable students to start to head towards being critical thinkers (Küçükoğlu, 2008).

Moreover, since critical thinking is necessary to be successful in critical reading performance, strategies and skills that advance critical thinking could support and improve critical reading performance (Gray, 2006). Hence, as critical reading and critical thinking are accepted as complementary processes, critical thinking should be considered as a "must", and gaining critical thinking skills should be regarded as "obligatory" for people to live intellectually and in a reasonable way.

2.4 What is critical thinking?

The word "critical" derives from two Greek words "criticos" and "criterion." "Criticos" means discerning judgments and "criterion" means standards. In broad outline, the word means development of "discerning judgment based on standards" (Özmen, 2006).

However, the concept “critical thinking” has seen an upsurge in the literature over the last 30 to 50 years. Many researchers tried to define critical thinking in their own ways. Variable definitions were made because of different approaches to critical thinking. Hence, it seems impossible to give an exact definition of critical thinking.

For this reason, some of the definitions of critical thinking will be presented as follows:

Critical thinking has been interpreted on the basis of three disciplines; philosophy, psychology and critical pedagogy. Philosophical view approaches “critical thinking” as the standard of acceptable thinking, rational aspect of human thought, and intellectual characteristics necessary to be fair in understanding the world (Gibson 1995; cited in Dam& Volman, 2004, p.361). Psychological approaches assess critical thinking as high-order skills of thinking and focus on appropriate teaching and learning processes (Halpern, 1998; Kuhn, 1999; cited in Dam& Volman, 2004, p.362). Lastly, from the “critical pedagogy” point of view, critical thinking is evaluated as the capacity to see and overcome social unfairness (McLaren 1994; cited in Dam& Volman, 2004).

Dewey, who is seen as the father of modern “critical thinking,” defined critical thinking as “reflective thinking”. Reflective thinking is an active, careful, and permanent thinking process of a belief, which is based on the reasons and implications of our belief (cited in Fisher, 2001, p.2). Following in the steps of Dewey’s definition, scholars have attempted to define critical thinking in different ways.

Glaser defines critical thinking as, 1) an attitude of being disposed to think of problems and subjects in depth, 2) knowledge of logical questioning and reasoning methods, 3) some skill in applying these methods (www.wikipedia.com).

Ennis (1989; cited in Fisher, 2001, p.4) defines critical thinking as “sensible” and “reflective” thinking which is based on determining what to believe or do. The concepts “sensible” and “reflective” are also used in the definitions cited by Fisher (2001). However, in his definition, what is different from others is the focus on decision-making process (Fisher, 2001).

Huitt (1998) defines critical thinking as a “disciplined mental activity of evaluating arguments or propositions and making judgments that can guide the development of beliefs and taking action” (p.3).

Facione (2007) defines critical thinking as a rationale which has a purpose such as solving a problem, interpreting what something means etc. He also introduces an important aspect of critical thinking. That is to say that “critical thinking” is not a competitive but a collaborative effort (Facione, 2007).

Apart from his own definition, Facione (2007) declares the definition of an international group of experts (APA) forming a consensus on critical thinking. In this consensus, when experts started to assess critical thinking, they first asked themselves who are the best critical thinkers and what factors made them think why these individuals are the best critical thinkers. To pursue further engagement, critical thinking is defined as “a purposeful and self-regulatory judgment which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, criteriological, or contextual considerations upon which that judgment is based” by the experts (Facione, 2007, p 22).

Özmen (2006) defines “critical thinking” as an art of taking charge of our own mind.

Running in different directions, “Critical thinking” is defined as a subset of three types of thinking: reasoning, making judgments and decisions, and problem solving (Willingham, 2007). The reason why critical thinking is called as a “subset” is that we always use the three thinking types above in our lives; however, we rarely think critically. Besides the definition, Willingham (2007) introduces three features of critical thinking: effectiveness, novelty, and self- direction. Critical thinking is effective because we do not repeat the common mistakes such as seeing one side of the coin. Critical thinking is novel because we do not use a solution that has been a guide to us before. For example, solving a mathematic problem by using a known equation is not critical thinking; however, to devise a new equation for the same problem is critical thinking. Critical thinking is self-directed in that the thinker guesses and decides which step to take before others tell him to do so (Willingham, 2007).

Scriven and Paul (1987) define critical thinking as “…the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication as a guide to belief and action” (Scriven& Paul, 1987, p.1). To add extra dimension, they introduce two components of critical thinking;

a) a set of information and belief producing and processing skills, b) the habit of using these skills lead behavior. Scriven and Paul (1987) focus attention on a different side of critical thinking. The mode of critical thinking changes according to the motivation underlying it. When a person bases it on selfish motives, he / she can process critical thinking in a skillful way. However, if there should be impartiality and intellectual integrity, one can use high- order intellectual thinking.

Schafersman (1991) defines critical thinking as a high- order thinking rather than low- order thinking. Low- order thinking is highly linked to everyday needs for example, just to stop at the red lights (which is needed and controlled by individuals to live). However, high- order thinking enables a person, for instance, to evaluate conclusions of global warming, to compare political candidates and judge them, and assess reasons of need for nuclear power sources.

Conversely, we can meet some misconceptions about critical thinking. For instance, critical thinking sometimes can be thought of as “good thinking” by some. However, what experts say is that critical thinking is just one of the parts forming “good thinking”. Other parts of “good thinking” are creative and innovative thinking; purposive, kinetic thinking; meditative thinking; hyper- alert, instinctive thinking (Facione, 2007).

Another misconception tied with critical thinking stems from the negative meaning of the word “critical”. A more suitable and accurate word could be “evaluative thinking” instead of “critical thinking” as critical thinking is an evaluation process (www.asa3.org).

To overcome the misconception above, a new concept “critico creative thinking” is introduced (Fisher, 2001). However, although this concept has been used by some writers, it is no longer widely endorsed. As such, the expression “critical thinking” has persevered.

Even though the definitions of critical thinking include the varied aspects of thinking, none of them mentions about a particular component of critical thinking that is critical thinking dispositions. However, the researchers contributing to the development of critical thinking believe that critical thinking has dispositional and skill dimension (Ricketts& Rudd, 2004).

2.4.1 Critical thinking dispositions

Thinking disposition is defined as a tendency to perform an intellectual behavior (Tishman& Andrade, 2009). Disposition means a body's reaction to anything in any way and enabling someone to learn something more easily (Termbank, 2007). Dewey defines thinking dispositions as one's characteristics (cited in Facione, Facione &Giancarlo, 2000)

Based on Dewey's definition of disposition, Facione, Facione and Giancarlo (2000) suggest that thinking disposition should be used to refer characteristics of people. People possess different characteristics such as being aggressive, or calm. Some of them are optimistic, some are pessimistic. These characteristics can be considered as dispositions if they are dominant. Also, Facione (1998) regards dispositions as approaches to life which characterize critical thinking. They are as follows:

> inquisitiveness with regard to a wide range of ideas, concern to become and remain well-informed, alertness to opportunities to use critical thinking, trust in the process of reasoned inquiry, self-confidence in one's own abilities to reason, open-mindedness regarding divergent world views, flexibility in considering alternatives and opinions, understanding of the opinions of other people, fair-mindedness in appraising reasoning, honesty in facing one's own biases, prejudices, stereotypes, or egocentric tendencies, prudence in suspending, making, or altering judgments, willingness to reconsider and revise views where hones reflection suggests that change is warranted (p. 13).

The thinking dispositions which are explained in detail above are listed as determined by American Physiological Association (APA) are as follows (Kökdemir, 2003):

a. truth- seeking
b. open-mindedness
c. analyticity
d. sistematicity
e. self- confidence
f. inquisitiveness
g. maturity

A person having these thinking dispositions can be accepted as a good critical thinker (Facione, 1998).

The necessity and priority of critical thinking dispositions for critical thinking have been emphasized by different researchers. Norris (2003) suggests that critical thinking dispositions are required for critical thinking because individuals should have formed habits to use or to choose to use certain abilities. Facione (1998) sees critical thinking dispositions as motives the use of critical thinking skills. In other words, the individuals improving thinking tendencies are much more potential to utilize their critical thinking skills suitably in their lives better than the ones who have mastered the skills but are not disposed to use them. Moreover, if individuals possess critical thinking skills with the lack of the motivation to use them, this reduces the value of those skills (Stupnisky, Renaud, Daniels, Haynes, & Perry, 2008). At this point, whether these dispositions can be acquired for individuals who do not possess them is considered. Dispositions are acquired only after considerable practice in different contexts (Norris, 2003).

Based on the explanations about the significance of critical thinking dispositions, that necessity to acquire these dispositions should be emphasized and they should be taught. By the help of good thinking tools, a person's thinking tendencies can definitely be developed. Based on the view that a nation's future is based on its educating individuals who can think, evaluate and go beyond the limits of standards, the target of education should not only include the knowledge transfer but the development of high-dispositions thinking strategies (Çubukçu, 2006).

At this stage, we should seek how we can learn critical thinking. The critical thinking skills below will hopefully bring them into focus.

2.4.2 Critical thinking skills

In the literature of critical thinking, there seem to be a number of lists of critical thinking skills produced by different scholars.

Facione (2007) introduces critical thinking skills as interpretation, analysis, evaluation, inference, explanation, and self-regulation. In the consensus statement of experts these critical thinking skills are defined as follows:

Interpretation: "to comprehend and express the meaning of significance of a wide variety of experiences, situations, data, events, judgments, conventions, beliefs, rules,

procedures or criteria" (Facione, 2007, p.5). In short, interpretation is understanding and clarifying a meaning of any situation.

Analysis: "to identify the intended and actual inferential relationships among statements, questions, concepts, descriptions, or other forms of representation intended to express belief, judgment, experiences, reasons, information, or opinions" (Facione, 2007, p.5). Briefly, analysis is recognizing the relationship between or among the situations.

Evaluation: "to assess the credibility of statements or other representations which are accounts or descriptions of a person's perception, experience, situation, judgment, belief, or opinion; and to assess the logical strength of the actual or intended inferential relationships among statements, descriptions, questions or other forms of representations" (Facione, 2007, p.5). In short, evaluation is assessing credibility of one's statement, and relationship between or among situations.

Inference: "to identify and secure elements needed to draw reasonable conclusions; to form conjectures and hypotheses; to consider relevant information and to deduce the consequences flowing from data, statement, principles, evidence, judgments, beliefs, opinions, concepts, descriptions, questions, or other forms of representation" (Facione, 2007, p.6). In brief, inference is recognizing and securing elements necessary for sensible conclusions.

Explanation: "to state and to justify that reasoning in terms of the evidential, conceptual, methodological, criteriological, and contextual considerations upon which one's results were based; and to present one's reasoning in the form of cogent arguments" (Facione, 2007, p.6). Shortly, explanation is presenting and defending one's reasons and conclusions of his/ her reasoning in a consistent way.

Self-regulation: "self- consciously to monitor one's cognitive activities, the elements used in those activities, and the results educed, particularly by applying skills in analysis, and evaluation to one's own inferential judgments with a view toward questioning, confirming, validating, or correcting either one's reasoning or one's result" (Facione, 2007, p.7). Facione (2007) considers this skill as the most remarkable one among others as this skill enables good thinkers to develop their own critical thinking ability. Briefly, self-regulation is one's monitoring, evaluating, and correcting his/ her cognitive process.

To sum up, a student competent in the critical thinking skill of Interpretation can understand and express the meaning of any event, procedure etc. Students excelling at the skill of Analysis can identify the relationship between statements, questions, concepts or descriptions to express beliefs, judgments or reasons in an effective manner. Students competent in the skill of Evaluation can effectively assess the credibility of statements and representations of others. Students competent at Inference consistently demonstrate the ability to draw reasonable conclusions based on referred data. Students excelling at the skill of Explanation can justify one's reasoning and state the result of this reasoning. Students competent at Self- Regulation can monitor and approach himself/ herself in a questioning, confirming and correcting manner.

Critical thinking skills are not innate skills; they are taught and learned abilities. However, these skills cannot be taught by peers or parents; educated instructors should teach these skills to students (Schafersman, 1991).

Glaser (1941; cited in Fisher, 2001) sequences the skills as; to identify the problems; to find relative ways to deal with these problems; to collect sensible and related information; to discover potential assumptions; to understand and produce language in a an accurate and clear way; to interpret data and assess statements; to see the logical relationships between events or beliefs; to come to sensible conclusions; to test the conclusions; to reconstruct our beliefs in the light of conclusions; to make correct judgments about life.

Possessing critical thinking skills is important and necessary to live satisfactory. However, people's achieving these skills in their everyday life is not always possible. Indeed, to be good critical thinkers, people should learn and internalize these skills. At this point, the necessity of teaching critical thinking is arises.

2.4.3 Why to teach critical thinking is important?

The most fundamental reason to teach critical thinking might be to help students to be successful in life.

There are different views related to whether critical thinking is taught as a course (Parker 1999; cited in Küçükoğlu, 2008). According to Walsh and Paul (1988; cited in Küçükoğlu, 2008), critical thinking is an innate ability and can not be taught. On the

other hand, Ruland- Parker opposed this claim and studied on techniques and strategies supporting critical thinking (1999; cited in Küçükoğlu, 2008).

The purpose of teaching critical thinking in any discipline is to improve students' critical thinking skills and prepare them for the real world (Schafersman, 1991)

According to Scriven and Paul (1987), our life's quality depends on the quality of our thought. Ideally, to be successful in our lives, we should internalize critical thinking and use them in our everyday life and academic life. Another reason stated by Scriven and Paul (1987) is that critical thinking is not a universal episode in any individual. That is to say that critical thinking is not peculiar to the people all over the world. For this reason, events met everyday might be misunderstood and accepted as insensible and inappropriate by people. To overcome such instances, we should develop our critical thinking abilities, but this is only possible with a life-long effort.

Daly introduces a different point as a reason of teaching critical skills in education institutions, namely, economic pressure. He claims that to be able to compete in a global economy, the business community has needed work force of which critical thinking skills are developed. As a result, how to think critically would be taught to work force. As teaching critical thinking outside educational institutions do not seem to be possible, it would be taught in educational institutions. Needless to say that economic pressure on educational institutions to teach critical thinking has occurred. However, critical thinking is still rarely taught in educational contexts (cited in Schafersman, 1991).

Another reason stated by Huitt (1998) is the evolution of the information age. This evolution has provided the right fertile ground where good thinking is seen as one of the most valuable factors of life successes. Hence, the current education systems hasn't ignored this trend and integrated it into their programs.

Critical thinking is important because it enables us to analyze and evaluate our thinking without thinking with a false belief (www.wikipedia.com). However, sometimes a thinker can make mistakes even though he/ she knows the inquiry and reasoning methods because of his/her inability to apply the methods (www.wikipedia.com).

Facione (2007) states that as critical thinking is pervasive, we should learn how to think critically. We should know that critical thinking will be necessary so long as we have purposes and assess the way to reach our purposes; and as long as we know what

to believe and what not to believe. That is why we should develop our critical thinking skills (Facione, 2007).

When considered that possessing critical thinking affects every part of life, the effect of critical thinking on language learning is observed as inevitable. Hence critical thinking is significant in language learning, as language learning necessitates high-order thinking skills (Yücel, 2008). Based on this need, the methods and techniques to improve critical thinking have been prepared and used. Some of these are explained under the following sub- heading.

2.4.4 How to teach critical thinking?

In recent years, critical thinking has made in roads in education. Critical thinking is not only important for any problem solving stage (Türnüklü & Yeşildere, 2005). It is also an essential skill which should be achieved by students in primary schools (Demir, 2008).

Teachers are seen as another factor in the development of students' critical thinking skills. According to Sönmez (1993), teachers should provide a teaching and learning atmosphere in which critical thinking is promoted.

Schafersman (1991) claims that education consists of teaching two different things; "what to think" and "how to think" Educators are good at teaching "what to think" which refers to "knowledge"; however, they fail in teaching "how to think", which refers to "critical thinking". Educators are successful in teaching "what to think" because students and instructors may spend effort and time on achieving "knowledge" which is more obvious. However, both students and instructors ignore the "how to think" factor as it is quite subtle (Schafersman, 1991).

In education, critical thinking should be taught through appropriate learning areas such as lesson plans and learning practices. If sensible and appropriate learning areas -in which students can understand the subjects-, are not provided for students, students' thinking abilities would not develop; and only if students process critical thinking skills in real life situations, they would be able to contribute to themselves and life (Brown 1997; cited in Koray, Ozdemir, Koksal& Presley, 2007).

İpşiroğlu (1989) emphasizes two factors for development of critical thinking:

1. To get students achieve positive attitude towards reading and to enable them to possess reading habit.
2. To design a teaching program giving emphasis on the development of thinking

(İpşiroğlu, 1989)

There are other ways suggested by scholars to teach critical thinking.

Schafersman (1991) introduces two ways to teach critical thinking in the classroom. The first way is just adapting one's teaching and testing methods partly to improve critical thinking skills among the students. The second way is using formal programs and materials prepared by experts. These materials can be made available by teachers or instructors.

Apart from the ways mentioned above, Schafersman (1991) suggests more specific and applicable ways in which critical thinking can be taught and promoted. These ways are introduced as course areas. These course areas are sequenced as lectures, laboratories, homework, quantitative exercises, term papers, and exams. In lectures, the teacher can ask the students in a way that requires them to understand and analyze the subject matter, and to adapt what they have experienced into new situations. In laboratories, as students learn science subjects in scientific methods, they inevitably experience critical thinking. With regard to homework, through reading comprehension homework and with targeted questions, critical thinking can be promoted. For the fourth area, through quantitative works and mathematical problems, students can perform problem solving strategies which will enhance critical thinking. Through term papers, students use writing skills which include focusing on the topic, organizing thoughts, analyzing information and presenting conclusions. As it is seen, writing enhances critical thinking too. Finally, exam questions can be prepared to promote critical thinking (Schafersman, 1991).

Program designers should be aware of the role of critical thinking in education. If the case is so, instructors can raise good critical thinkers possessing the characteristics below.

2.4.5 Characteristics of a critical thinker

Critical thinking includes many processes. A person who can think critically can evaluate the events and people from different perspectives, he/ she is open to new thoughts, and so he/she is respectful to others' opinions, is peaceful with himself/ herself and the society. To possess these skills enable a person to challenge with the problems faced with in his/ her life in a realistic and sensible way.

In this part, the behaviors of a person who has achieved critical thinking skills will be presented.

To be a capable critical thinker one has to have the characteristics below:

- to be clear in presenting the question
- to be tidy while working with complex things
- to make an effort and to be hardworking in searching for information
- to be sensible in choosing and applying criteria
- to be careful in immediately giving attention to the concern
- to be determined even if difficulties occur
- to be sensitive toward the limits determined by the subject or circumstances (Facione, 2007).

Schafersman (1991) states that a person who is thinking critically can ask appropriate and sensible questions; collect relevant information; reason the information logically, and draw sensible and related conclusions about the world.

Raymond specifies characteristics of a critical thinker as follows:

"A critical thinker:

- uses evidence skillfully and impartially
- organizes thoughts and articulates them concisely and coherently
- distinguishes between logically valid and invalid inferences
- suspends judgment in the absence of sufficient evidence to support a decision
- understands the difference between reasoning and rationalizing
- attempts to anticipate the probable consequences of alternative actions
- understands the idea of degrees of belief
- sees similarities and analogies that are not superficially apparent
- can learn independently and has an abiding interest in doing so
- applies problem-solving techniques in domains other than those in which learner
- can structure informally represented problems in such a way that formal techniques, such as mathematics, can be used to solve them
- can strip a verbal argument of irrelevancies and phrase it in its essential terms
- habitually questions one's own views and attempts to understand both the assumptions that are critical to those views and the implications of the views
- is sensitive to the difference between the validity of a belief and the intensity with which it is held

- is aware of the fact that one's understanding is always limited, often much more so than would be apparent to one with a noninquiring attitude
- recognizes the fallibility of one's own opinions, the probability of bias in those opinions, and the danger of weighting evidence according to personal preferences"

(cited in Schafersman, 1991: 4)

Fisher (2001) states that people could acquire cognitive skills; however, they do not choose to use these skills. A person indicates that he/ she has critical thinking skills by asking accurate credible questions in an examination but it is interesting to note that a person may not always use the same skill in everyday life. He also adds that to routinize the use of critical thinking skills increases one's comprehension in many contexts. Moreover, not only to acquire the skills but also to value and use them is necessary to become a critical thinker.

Scriven and Paul (1987) claim that people thinking critically try to live in a reasonable, rational, and emphatic way.

On the contrary, passive and non-critical thinkers see the world in a simplistic way. In other words, they see the things in black and white; they do not recognize other possibilities; and they can not notice relative and logical relationships between things. Also they take an egotistical view of the world. For instance, they consider their facts, perspectives, and goals as the only sensible and valid ones (www.criticalthinking.net)

2.5 Studies on critical reading, critical thinking and reading habits

Much of the research on critical reading or critical thinking reviewed in the literature was conducted in L1 contexts. There are a few studies on critical reading in FL settings. There is no study searching critical reading and critical thinking in tandem in neither L1 nor FL settings. Hence, studies on critical reading and studies on critical thinking in both L1 and FL settings will be presented in two sub- parts.

2.5.1 Studies on critical reading

In the study conducted in an FL setting by Köse (2006), the effects of portfolio assessment on critical reading and learner autonomy of preparatory students of a university were explored. In order to reach the aim of the study, students' belief about

critical reading were determined through critical reading checklist at the beginning of the implementation and at the end. The findings showed that students' level of critical reading which was determined at the beginning of the implementation through a story, was at a lower order skill level. In the Critical Reading Scale prepared by Köse, items were sub- categorized as "lower-order" and "higher-order" skills. Data analysis of the scales given at the end of the implementation was made according to these two sub-categories, whereas the findings of the scales given at the beginning of the implementation were not presented in the study. Hence; the findings of the data analysis of the scales given at the end of the implementation will be mentioned in this paper. Indeed, the findings showed that a high percentage of the students complied with the items used to determine the lower order skills. For higher order skills, although a high percentage of students agreed with those which include applying and analyzing skills, the percentage of the students who agreed with the items involving evaluating and creating skills decreased. However, this finding was regarded as being acceptable. That is to say that, they led towards achieving the high order skills which necessitates process.

In Çam's (2006) study, the relationship between 5th grades students' levels of visual reading and reading comprehension skill, critical reading skill, and the academic success in a Turkish lesson were explored. Data was collected through "individual information form", "visual reading test", "reading understanding test," and "Critical Reading Scale." A significant difference was found between students' levels of visual reading and reading comprehension skill, critical reading skill, and the academic success in Turkish lesson. In other words, applying critical reading and thinking skills increase the effectiveness in visual reading.

Similar to the study above, Ünal (2006) has investigated the relationship between 5th grades students' levels of critical reading skills; and attitudes towards reading and students' level of reading comprehension. Data were collected through a Critical Reading Scale, an attitude scale and reading comprehension test. The results of the analysis accept a significant relationship between students' critical reading skills and their attitudes towards reading. Furthermore, a significant relationship between students' reading comprehension level and their level of critical reading skills emerged.

In the study conducted in an FL setting by Küçükoğlu (2008), the critical reading level of pre-service teachers of English has been explored. Through the scale used for data collection, students' self- sufficiency level and critical reading level were revealed. The results of data analysis indicated that students experience a positive attitude towards critical reading and they find themselves considerably sufficient. In this area, this signifies that pre-service teachers are capable at using critical reading skills.

2.5.2 Studies on critical thinking

In the study conducted by Çubukçu (2006), the critical thinking dispositions of teacher candidates enrolling in Osmangazi University were determined. The findings indicated that the critical thinking dispositions which got the highest score were open-mindedness and analyticity; and the dispositions which got the lowest score were inquisitiveness and systematicity.

Another study conducted with first-year college students examined the reciprocal-effects between critical thinking dispositions and perceived academic control, and their comparative influences on academic achievement. The findings of data analysis indicated a reciprocal relationship between students' perceived academic control and their critical thinking dispositions (Stupnisky, R. H., Renaud, R. D., Daniels, L. M., Haynes, T. L., & Perry, R. P.; 2008). To examine the combined effect of critical thinking dispositions and perceived academic control on academic achievement, students' high school academic performance was analyzed. The findings showed that the perceived academic control was much more likely to affect academic achievement than critical thinking dispositions.

In the experimental study conducted with 9th grades students (Bağdat, 2009), the effect of critical thinking on reading skills was examined in an FL setting. According to the findings of data analysis, students possessing reading skills gained by studying critical thinking indicated that they could fully endorse reading skills when it comes in dealing with the text from different points of view, commenting, accepting or refusing the suggested idea; were curious about the details related to the author; could make analysis, synthesis and evaluation on the basis of their prior knowledge and furthermore were not shy at expressing their views. Also, their creativity and productivity increased. However, students in the control group having superficial reading skills accepted every

piece of information as true; ignored the details about the author and tried to find direct answers to questions from the text.

Kaloç (2005) searched the critical thinking level of 9th grade students enrolled in four types of high school and the factors affecting the skills which constitute their critical thinking level. The results of the data analysis showed that critical thinking level showed significant differences regarding to four types of high schools. Reading a book or a newspaper was determined as one of the factors determining the critical thinking. It was observed that age, sex, education statue of parents, the type of primary schools graduated from had neither positive nor negative effect on critical thinking.

Another study on teachers working in high schools was conducted by Karadeniz (2006). The study aimed to search teachers' attitudes towards critical thinking and the effectiveness of teaching programs in developing critical thinking. The results of the data analysis pinpointed that teachers have positive attitudes towards critical thinking however they can't apply the skills to teach critical thinking in the classroom as the teaching programs do not allow them to do so. Another finding revealed the relationship between the teaching programs and teachers' attitudes. Also, the effect of teaching program on students' critical thinking skills was approved.

Aybek (2006) investigated the effect of content and skill based critical thinking teaching on prospective teachers' disposition and level in critical thinking. The study was conducted in L1 setting. There were two experimental groups of which one was skill-based and the other was a content-based teaching group; and one control group. Groups were equalized through the results of California Critical Thinking Disposition Inventory, Ennis- Weir Critical Thinking Essay Test, and Personal Informatin Forms. The data analysis of California Critical Thinking Disposition Inventory and Ennis- Weir Critical Thinking Essay Test applied after the implementation showed significant results among experimental groups and control group in favor of experimental groups. The skill- based teaching group was significantly better than the content- based group for the two tests. It was also observed that most of the students in the skill-based teaching group had a positive attitude towards critical thinking skill. Most of the students in the second experimental group did not like the teaching method they were exposed to since it left then with many responsibilities to students.

Bilgin and Eldeklioğlu (2009) investigated the critical thinking skills of university students of Uludağ University, Faculty of Education. The study was conducted in L1 setting. The instrument was students' discussions on specific subjects. The data was collected through recording. The recordings were analyzed in four categories: "emotional" category, "making rational speech" category, "indicating a document as proof" category, and "indicating a person/ people as reference" category. The results of the analysis showed that 148 of a total of 342 sentences belonged to the first category; 107 sentences were tied to the second category; 68 sentences were relevant to the third category; and 19 sentences were related to the last category. These results revealed that most students' critical thinking skills did not develop properly. Bilgin and Eldeklioğlu (200?) pinpoint at the current educational system as a negative cause. Its shortcoming is tied to the traditional approach which is currently in place.

Güven and Kürüm (2008) searched the relationship between the learning styles and critical thinking dispositions of teacher candidates enrolling in Anadolu University Education Faculty. The study was conducted in L1 setting. The data were collected through "Kolb Learning Style Inventory" and "California Critical Thinking Disposition Scale." The results showed a certain degree of relationship between the learning styles and the critical thinking dispositions which teacher candidates have. However, this relationship is true for only certain learning styles and critical thinking dispositions.

Yücel (2008) studied on the effect of task-based learning on the development of critical thinking in her thesis. 10 6th grade students participated in the study which lasted four months. For the implementation, critical thinking was placed in English teaching curriculum through the lessons plans prepared on the basis of language content and topics determined by the Ministry of Education. During the implementation, students joined in lessons based on the tasks requiring them to use critical thinking skills. The findings of data analysis showed that task- based learning effects critical thinking positively; however, it helps only the devilment of several critical thinking skills.

Another study on university students' critical thinking skills and the factors affecting the level of critical thinking skills was conducted in Anadolu University Education Faculty by Kürüm (2002). The findings of the data analysis showed that students' critical thinking level was at mid-level; and furthermore, the factors affecting the level of critical thinking were: age, high school types graduated, score type and

level in university entrance exam, program being studied, education and income level of the family, and activities held for development of critical thinking.

2.5.3 Studies on reading habit

In the study conducted by Balcı (2009), the elementary 8th grade students' reading habits, reading interests and the relationship between reading interests and reading comprehension were investigated. The findings of data analysis showed that students' attitude level towards reading habit was high. However, students spend less time to read for pleasure than the time they spent television viewing. Other reason not to spend much more time for reading was examination (schools exam and high school entrance exam). For the relationship between students' attitudes towards reading and reading comprehension, the findings indicated a low relationship.

Kendall (2008) conducted a study with 16- 19- year- old- students to determine their reading habits in terms of the text types preferred. According to the findings, newspapers and magazines are the most popular group for reading. This finding commented as reading habits' being reflections of students' purposeful choices and decision-making about the issues which are at the centre of life.

Another study conducted with adolescents (Hopper, 2005) examined the adolescent reading choices, influences on these choices, and the importance of validating all reading experience. The findings indicated that the percentage of 10-year-old reading a book at home is less than the percentage of 7, 8, and 9 year-old students reading a book at home. This finding might support that because of the examination students find less time for independent reading. As for the text types, students preferred newspaper, magazines and internet. The findings also showed the factors effective on the book preferences. Prior knowledge of an author and/or enjoyment of a particular author's style were found as the most common factor. The appearance of a book, recommendation, television/ film, and genre were determined as other factors affecting students' choice for reading.

In the study conducted by Shapiro and Whitney (1997), the factors influencing the leisure reading habit of upper- elementary students were investigated. The factors were grouped as home and personal factors. The home factors included parental factors and television viewing. According to the results, encouragement for reading

by parents as a factor which differed between avid and non-avid readers. However, the habit of television viewing as a factor did not differ between avid and non-avid readers. For the personal factors, gender and motivation were investigated. Gender and motivation were found to be the overriding factor on the reading act.

CHAPTER 3
METHODOLOGY

3.1 Introduction

The purpose of this study was to explore students' critical reading level and to determine if there are differences among the 9th, 10th and 11th grades at Osmaneli 75. Yıl Anadolu High School. This study also aims to find out whether there was a relation between students' critical reading level and critical thinking dispositions and reading frequency. In the following parts the subjects, the data collection procedure, the instruments and data analysis procedure will be explained in detail.

The purpose of Anadolu High Schools is to prepare students for the university according to their abilities, interests and success; and to enable students to learn foreign languages to follow up the scientific and technologic developments. Students are accepted according to results of the high school entrance exam (LGS). The 9th grades have 10 hours of English course per week. For the 10th and 11th grades the English course is 4 hours per week.

3.2 Participants

The population of the school was 200 students. To determine the level of critical reading skills of high school students, this study would have been conducted with 200 students including 9th, 10th, 11th, and 12th grades. However, as 12th grade students left earlier to prepare for the university entrance exam, the study was conducted with 147 students. The number of students in 9th grade was 52, in 10th grade was 56, and in 11th grade was 39.

All the students present in the class on the days data was collected participated in the study.

3.3 Data Collection

3.3.1 Data Collection Procedure

The study was conducted in the spring term of 2008- 2009 academic year. Firstly, Critical Reading Scales, and a week later, CCTDI scales were distributed to 147 students by the class teachers. For scales to be completed 40- minutes was given to the students, but the time students used to complete the scales ranged from fifteen to twenty

minutes. Implementation was done by each class' teacher and students were required to read the instructions carefully and respond to all the statements in the scales. Students were also informed that these scales aimed at determining their critical reading level, critical thinking disposition level and reading frequency.

3.3.2 Instruments

In this study, two scales; Critical Reading Scale and California Critical Thinking Dispositions Inventory were used. Both of these were administered in Turkish in order to make sure that students understand the statements clearly.

The Critical Reading Scale was developed by Ünal (2006) to determine the level of students' critical reading skills. This scale included 22 statements and was designed as 5 points: "always", "usually", "sometimes", "rarely", and "never". The negative statements were graded as 1,2,3,4,5; and the positive statements were graded as 5,4,3,2,1. The reliability coefficient of this scale was .88. Also, in the current study, Cronbach's Alpha value of 22 statements was calculated and found as .873. As mentioned before one of the aims of the study was to find out whether there is a relation between critical reading level and reading frequency. Based on this aim, to get demographic data of the students about their reading frequency and reading habits, one section (Section A) was added to the original scale by the researcher. The scale's new format was presented to an expert's view (see Appendix A).

California Critical Thinking Dispositions Inventory (CCTDI) was used to determine students' critical thinking dispositions. California Critical Thinking Dispositions Inventory including 75 statements and 7 sub-categories developed on the basis of the expert consensus characterization of the "ideal critical thinker" and reported in American Psychological Association (APA) Delphi Report (retrieved from http://www.insightassessment.com/9test-cctdi.html). All the statements measure whether respondents have tendency toward critical thinking. High scores received from the CCTDI correlate with a strong desire to use critical thinking skills which are used in decision-making and problem solving process and leadership. The high scores also correlate with the capacity to get benefit from educational and psychological guidance. However, the CCTDI which was used in this study is the version translated into Turkish and simplified to 51 statement and 6 sub- categories by Kökdemir (2003). The sub-

categories are: analyticity with 10 statements, truth- seeking with 7 statements, open-mindedness with 12 statements, systematicity with 6 statements, self confidence with 7 statements, inquisitiveness with 9 statements. The inventory includes 6 ratings as: “extremely satisfied”, “very satisfied”, “somewhat satisfied”, “somewhat dissatisfied”, “very dissatisfied”, “extremely dissatisfied”. For each statement, 6 points were given to “extremely satisfied”, 5 points to “very satisfied”, 4 points to “somewhat satisfied”, 3 points to “somewhat dissatisfied”, 2 points to “very dissatisfied”, and 1 point was given to “extremely dissatisfied”. The reliability coefficients of sub-categories of the inventory simplified by Kökdemir (2003) were as follows; .75 in analyticity, .75 in open-mindedness, .78 in inquisitiveness, .77 in self- confidence, .61 in truth- seeking, and .63 in sistematicity. The reliability coefficient of the inventory as a whole is .88. Also, for the current study, Cronbach’s Alpha value of 51 statements was calculated and found as .799 (see Appendix B).

In the previous studies, to calculate the points of CCTDI, points were determined for each sub- category. If the total point in one sub- category are below 40, the individuals’ level of critical thinking dispositions is low, whereas if the point is higher than 50, the level of individuals’ critical thinking dispositions is high. Moreover, if the total score of the inventory as a whole is lower than 240 (40x6), the individuals’ level of critical thinking dispositions is low, whereas if the total score is higher than 300 (50x6), the level of individuals’ critical thinking dispositions is high. Although the points of sub-categories were explained in details, in the study conducted by Kökdemir (2003), the whole scale, not sub-categories, was used to determine the critical thinking disposition level. To compute the data analysis, *240-300* criterion was determined. According to 240- 300 criterion, the ones who get 240 and/ under 240 points are at low level and those who get 300 and/ above 300 are at high level. Participants of the study conducted by Kökdemir (2003) were grouped as two clusters—low and high—. There was no medium level group.

However, in this study mean score and standard deviation of the scores taken from the scale was used for the analysis of CCTDI in order to reveal students’ critical thinking disposition level.

3.3.3 Data Analysis

To answer the first research question: “What is the level of high school students’ critical reading skills?”, first, arithmetic averages and standard deviation was calculated. The mean score calculated for critical reading skills was separated into three clusters - low, medium, high- through K-means Cluster technique. In K-means cluster technique, firstly, a desired number of clusters are determined by the researcher. Then, clusters starting points to be used as initial estimates of the cluster centroids are chosen. These starting points are called as initial starting values. At the third step, each point is assigned to the cluster whose centroid is nearest to it. The procedure is completed until all points are assigned to the clusters (Apon, Brewer, Dowdy, Hoffman, Lu, & Robinson, 2010). In this study, students’ level of critical reading was determined according to this tecnique.

In order to answer the second research question which explores the differences among 9^{th} 10^{th} and 11^{th} grades’ level of critical reading, firstly variance equality was searched through Levene’s test. The results showed that covariance matrices were equal across the three grades. Then, the points of three grades were compared by ANOVA test.

To answer the third research question: “Is there a relationship between students’ critical reading levels and critical thinking dispositions?”, firstly, variance equality was investigated through Levene’s test. The results showed equal variance across the two variables. Secondly, chi- square value was calculated.

For the data analysis for 4^{th} research question: “Is there a relationship between students’ critical reading levels and reading frequency in Turkish and in English?” firstly, variance equality was searched through Levene’s test. The results showed equal variance across the two variables. Secondly, chi- square value was calculated.

CHAPTER 4
RESULTS AND DISCUSSIONS

In this chapter, the results of the study will be presented as separate titles which end with the discussion of the results. In section 4.1, the levels of high schools students' critical reading are presented and discussed. In 4.2, the research question 2 is answered based on the comparison of 9th, 10th, and 11th grades' level of critical reading skills. In 4.3, the relationship between students' level of critical reading and critical thinking dispositions will be presented. In 4.4 and 4.5 the relationship between students' critical reading levels and reading frequency in both Turkish and English is presented. Part 4.6 presents the summary of the results.

4.1 The level of high school students' critical reading skills

In this study, 147 respondents were asked to decide to what extent they agreed with the statements related to critical reading skills in the questionnaire. To determine the students' critical reading levels K-means Cluster technique was employed. In this data-driven technique, firstly each student's mean score was calculated and these mean scores were divided into three clusters as low, medium and high. For each level, initial cluster centers and final cluster centers were calculated (Table 4.1). In order to test the accuracy of these clusters ANOVA was run and the findings indicated significant difference among the levels (see Appendix C).

Table 4.1.
K-means cluster for critical reading levels

	Critical Reading Clusters					
	Low		Medium		High	
	ICC*	FCC*	ICC	FCC	ICC	FCC
mean	2,14	3,01	3,41	3,70	4,68	4,32

*ICC= Initial Cluster Centers
*FCC= Final Cluster Centers

Table 4.1 indicates that the students whose mean scores were at or around 2.14 and 3.01 were at low level. The mean scores of students who were accepted at medium

level were at or around 3.41 and 3.70. The mean scores students being at high level possessed were 4.68, 4.32 and/or around 4.68 and 4.32.

After the three clusters—low, medium, high—were identified according to the students' scores received from Critical Reading Scale, ANOVA was run in order to test the accuracy of these clusters. According to ANOVA test, there was a significant difference among the three groups (p= 0,0001) (see Appendix C)

In Table 4.2, the number of students at each level, the minimum and maximum mean scores of each level are presented. As stated before, according to their mean scores, students were grouped as three clusters: low, medium, and high. The number of students at low level was 48; the lowest mean score received was 2.14 and the highest mean score was 3.36. The number of students who were at medium level was 67; the lowest mean score in this cluster was 3.41 and the highest mean score was 4.00. The number of students of high level group was 32; the lowest mean score received was 4.05 and the highest mean score was 4.68 (Table 4.2). As it is seen majority of the students were at medium level.

Table 4.2
Critical reading levels of the students

Critical Reading Levels						
Clusters	n	%	mean	SD	min	max
Low	48	32,4	3,00	,31	2,14	3,36
Medium	67	46,2	3,70	,17	3,41	4,00
High	32	21,4	4,31	,17	4,05	4,68

4.2 Comparison of the 9th, 10th, and 11th grades' level of critical reading skills

The second research question of this study aimed at enquiring whether there were any differences among the 9th, the 10th and the 11th grades' level of critical reading skills. Firstly, in order to find out whether the three grades could be compared, the equality of variance was investigated through Levene's test. The result of Levene's test showed that P value was .250>0.05. As P value was suitable, ANOVA test was

computed to compare and to find out differences, if there were any, among the groups. In order to compute ANOVA, firstly, mean scores of the grades were calculated (Table 4.3)

Table 4.3
Mean scores of the grades

Grade	N	Mean	Std. Deviation
9th Grade	52	3,7430	,51794
10th Grade	56	3,5751	,49596
11th Grade	39	3,4802	,58511
Total	147	3,6093	,53549

As seen from Table 4.3, the total number of students was 147. The number of the 9^{th} grades was 52 and the mean score of this grade was 3.74. The number of the 10^{th} grades was 56 and the mean score of this grade was 3.57. The number of the 11^{th} grades was 39 and the mean score was 3.48. These findings indicate the holder of the highest mean score was 9^{th} grades.

After the mean scores of each grade were found out, three grades were compared through ANOVA. The result shows a significant difference among the grades (P= 0,0001) (Table 4.4).

Table 4.4
Comparison of the 9^{th}, 10^{th}, and 11^{th} grades' level of critical reading

ANOVA

CRS*_Mean

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	34,058	2	17,029	314,108	,000
Within Groups	7,807	144	,054		
Total	41,865	146			

CRS*= Critical Reading Skills

After a difference among the grades was found out through ANOVA, LSD test was computed to find out which grades were different from each other (Table 4.5).

Table 4.5
The differences among the critical reading levels of grades

Multiple Comparisons

LSD

Dependent Variable	(I) Grade	(J) Grade	Mean Difference(I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
CRS_Mean	9th Grade	10th Grade	,1679	,10178	,101	-,0332	,3691
		11th Grade	,2628*	,11195	,020	,0415	,4841
dimension1	10th Grade	9th Grade	-,1679	,10178	,101	-,3691	,0332
		11th Grade	,0949	,11022	,391	-,1230	,3128
	11th Grade	9th Grade	-,2628*	,11195	,020	-,4841	-,0415
		10th Grade	-,0949	,11022	,391	-,3128	,1230

The findings of LSD test indicated a significant difference between the 9th and 11th grades in favor of the 9th grades. There were no significant differences between the 9th and 10th grades; and 10th and 11th grades. In other words, the findings indicated that critical reading level of 11th grades were significantly lower than the 9th grades (Table 4.5).

The result of the current study seems to be inconsistent with the result of a previous study (Köse, 2006). In the study (Köse, 2006), university students' level of critical reading was found to be at lower order skills—applying, understanding, remembering—. One possible reason of students' low critical reading level was students' preparation for the university exam (Köse, 2006). Likewise, when the finding

of the current study was considered, students' preparation for the university entrance exam might reduce students' time spent for critical reading.

4.3 The relationship between students' critical reading levels and critical thinking dispositions

Another aim of the study was to determine the relationship between critical reading and critical thinking dispositions. However, prior to this, Levene's test was employed to find out whether these two could be compared, and the results of this test showed that the error variances of the two groups were equal so that the two groups of points were compared. In the second step, to find out the level of students' critical reading and critical thinking dispositions, the arithmetic average and standard deviation of all the responses to the Critical Reading Scale and Critical Thinking Dispositions Inventory were calculated and the results are presented in Table 4.6.

Table 4.6
The mean scores of critical reading level and critical thinking dispositions

	Mean	Std. Deviation	N
CRS*_Mean	3,6093	,53549	147
CTD*_Mean	4,0834	,40408	147

CRS*= Critical Reading Skills
CTD*= Critical Thinking Dispositions

As presented in Table 4.6, the mean score of all students' responses given for critical reading skills was 3.61; and the standard deviation was ,54. The mean score of the points received from the critical thinking dispositions scale was 4,08; and the standard deviation of these points was ,40.

After the two mean scores were found out, to determine whether there was a relationship between the two groups of points, correlation coefficient was calculated and found to be .097. The finding indicated that although there was no significant relationship between critical reading levels and critical thinking dispositions, there was a positive relationship ($p>0.05$) ($r= .97$) (Table 4.7).

Table 4.7
The relationship between students' critical reading skills and critical thinking dispositions

Correlations			
		CRS_Mean	CTD_Mean
CRS*_Mean	Pearson Correlation	1	,097
	Sig. (2-tailed)		,244
	N	147	147
CTD*_Mean	Pearson Correlation	,097	1
	Sig. (2-tailed)	,244	
	N	147	147

CRS*= Critical Reading Skills
CTD*= Critical Thinking Dispositions

To understand this relationship presented in Table 4.7 better, the relationship between critical reading levels and critical thinking dispositions was investigated on the basis of clusters. For this, subjects were divided into three clusters as low, medium, and high by employing K-means Clusters technique in terms of their critical thinking dispositions. Initial cluster centers and final cluster centers for each level are presented in Table 4.8; also, these clusters centers are explained in detail below.

Table 4.8
K-means cluster for critical thinking dispositions

Critical Thinking Dispositions Clusters						
	Low		Medium		High	
	ICC*	FCC*	ICC	FCC	ICC	FCC
mean	4,08	3,68	3,22	4,18	4,98	4,62

ICC*= Initial Cluster Centers
FCC*= Final Cluster Centers

Table 4.8 indicates that the students whose mean scores were at or around 4.08 and 3.68 were at low level. The mean scores of students who were accepted at medium

level were at or around 3.22 and 4.18. The mean scores that students being at high level possessed were 4.98, 4.62 and/or around 4.98 and 4.62.

After the three clusters—low, medium, high—were identified according to the students' scores received from California Critical Thinking Dispositions Inventory, ANOVA was run in order to test the accuracy of these clusters. According to ANOVA test, there was a significant difference among the three groups (p= 0,0001) (see Appendix D)

After the clusters' being at three different levels—low, high, medium—was verified through ANOVA, the relationship between critical reading and critical thinking dispositions was analyzed in detail through the comparison of the clusters of critical reading and clusters of critical thinking dispositions.

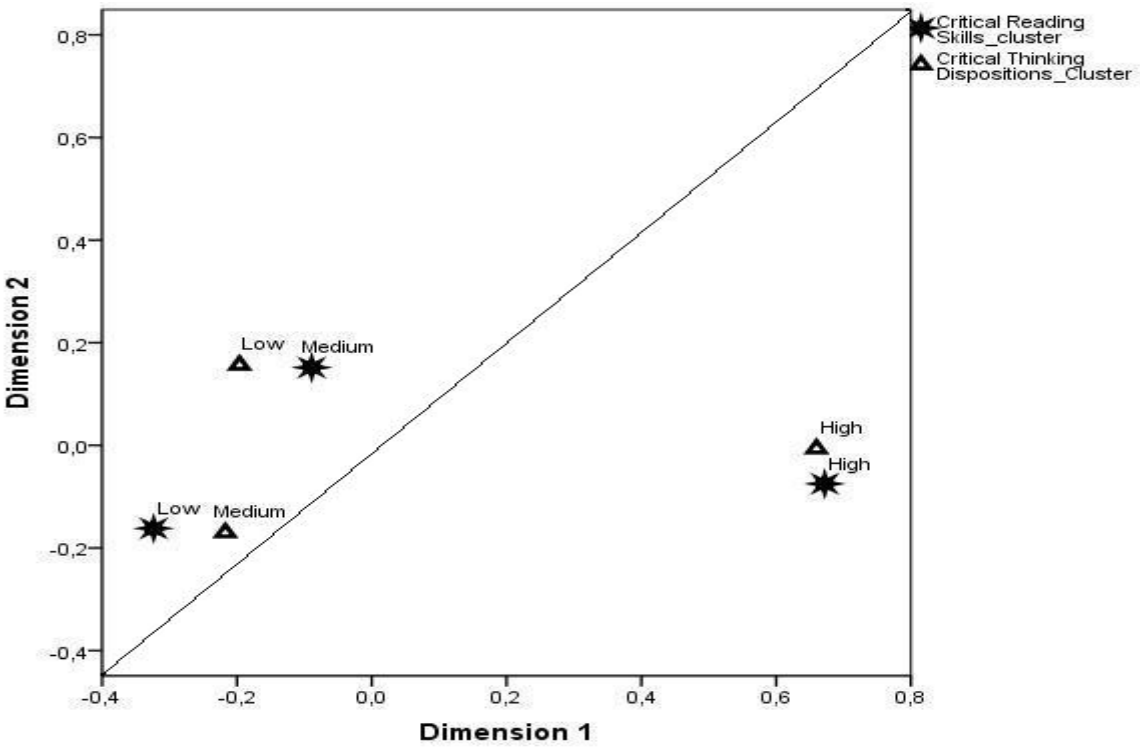


Figure 4.1. The relationship between the critical reading skills and critical thinking dispositions on the basis of the clusters

The relationship between critical reading levels and critical thinking dispositions was explained in two dimensions as shown in the figure 1. Low and medium levels are

seen in dimension 2, whereas high level is seen in dimension 1. Dimension 1 shows .98% of the relationship between critical reading levels and critical thinking dispositions (see Appendix E). This means that students who had high critical reading levels also had high level critical thinking dispositions. Dimension 2 shows .22% of the relationship between critical reading levels and critical thinking dispositions (see Appendix E). This means that students whose critical reading skills were at low level had critical thinking dispositions at medium level whereas students whose critical reading skills were at medium level had critical thinking dispositions at low level.

That students having high critical reading level possessed high level critical thinking dispositions indicates a relation between these two variables. When "disposition" is accepted as one' characteristic (Facione, Facione& Giancarlo, 2000), and that characteristic' being a factor affecting and determining one's skills, this finding might be interpreted as; that students' having high level of critical thinking dispositions enables them to read critically.

4.4. The relationship between the students' critical reading levels and reading frequency in Turkish and in English

In order to find out whether there is a relationship between students' critical reading levels and reading frequency in Turkish, the chi square value was calculated.

Table 4.9
The relationship between the students' critical reading levels and reading frequency in Turkish

		Crosstab							
		Low		Medium		High		Total	
		n	%	n	%	n	%	n	%
How often do you follow up any Turkish publication?	Always	10	33,3	10	33,3	10	33,3	30	20,7
	Very often	14	30,4	20	43,5	12	26,1	46	31,7
	Rarely	20	31,7	34	54,0	9	14,3	63	43,4
	Never	3	50,0	3	50,0	0	,0	6	4,1
				Total				145	100

As seen from Table 4.9, the percentages of students' responses to the question "How often do you follow up any Turkish publication" can be analyzed in two ways; 1- according to the total of students—145—, 2- according to the numbers of students at each level (low level= 47; medium level= 67; high level= 31).

When the students' responses were analyzed according to the total of the students, it is seen that 20.7% of the students marked the choice of "always". The students who marked "very often" constituted 31.7% of all students. 43.4% of all students stated that they "rarely" read Turkish publications. 4.1% of the students marked the choice of "never".

This result of the current study matches with the result of the previous studies conducted with university students. In the studies, most of the students stated that they "rarely" read books in Turkish. The reasons of this were identified as tiredness and less time (Balcı 2009; Bınarbaşı, 2006; Odabaş, Odabaş &Polat, 2008).

When the students' responses were analyzed according to the number of students at each level, it is seen that 33.3% of the students who said "always" were equal among the three groups—low, medium and high. The critical reading level of students constituting 50.0% of those who said "never" was low; the rest of the students who said "never" were at medium level.

For the relationship between reading frequency in Turkish and critical reading levels, the findings of data analysis indicated no significant relationship between students' following up any publication in Turkish and their critical reading level (chi square value: p=,247>0,0).

In order to find out whether there is a relationship between students' critical reading levels and reading frequency in English, the chi square value was calculated.

Table 4.10
The relationship between the students' critical reading levels and reading frequency in English

		Crosstab							
		Low		Medium		High		Total	
		n	%	n	%	n	%	n	%
How often do you follow up any English publication?	Always	1	,7	0	,0	0	,0	1	,7
	Very often	3	2,1	5	3,4	1	,7	9	6,2
	Rarely	17	11,6	27	18,5	16	11,0	60	41,1
	Never	26	17,8	35	24,0	15	10 ,3	76	52,1
				Total				146	100

In order to understand Table 4.10 better, it can be analyzed in two ways: 1- according to the total of students—146—, 2- according to the numbers of students at each level (low level= 47; medium level= 67; high level= 32).

When the students' responses were analyzed according to the total of the students, it is seen that .7% of the students marked the choice of "always". The students who marked "very often" constituted 6.2% of all students. 41.1% of all students stated that they "rarely" read English publications. Lastly, those who marked "never" made up 52.1%.

The result, which showed the low percentage of students reading English, also matches with one of the results of the study conducted by Kuru (2005). When analyses of the current result were explored, personal factors and the reading text, which were determined as factors for reading anxiety by Kuru (2005), might be observed to be the main culprits. Personal factors such as inappropriate strategy use, lack of self-confidence, lack of motivation, fear of comprehension, negative background experiences and high expectations; and the features of the reading text, which are topics, unknown vocabulary, complex linguistic structure, unknown cultural content, and format of the text, are thought to cause the unwillingness and anxiety for reading in a foreign language (Kuru, 2005).

Sellers (2000) pinpoints that reading is a difficult process even if it occurs in any languages as it involves minimally the coordination of attention, perception, memory and comprehension process. Moreover, when there are additional factors such as language ability, learner motivation, cultural background during foreign language learning process, reading becomes more problematic in a foreign language (Sellers, 2000; Lee, 1999)

When the relationship between critical reading levels and reading frequency in English was analyzed on the basis of each level, it is seen that the student who said "always" was at low level. As for the students who said "never", 17.8% were at low level; 24.0% were at medium level; and 10.3% were at high level.

For the relationship between reading frequency in English and critical reading levels, the findings showed that there was no significant relationship between students' following up any publication in English and their critical reading level (chi square value: p=,685>0,05).

4.5 Summary of the Findings

For the analysis of data for the first research question, which aimed at finding out the level of high school students' critical reading level, arithmetic average of points derived from 147 students' Critical Reading Scale was determined. Based on the arithmetic average, which was 3.6, the critical reading level of students was accepted as medium.

In order to be able to answer the research question 2 enquiring whether there were any differences among the 9^{th}, 10^{th} and 11^{th} grades, ANOVA test was computed on the responses of the participants. The finding indicated that there was a significant difference between the 9^{th} and the 11^{th} grades in favor of the 9^{th} grades.

In order to be able to answer the third research question, which is "Is there a relationship between the level of students' critical reading and critical thinking dispositions level?", correlation coefficient was determined. The data analysis showed that the relationship between two groups was direct and positive however this relationship was not significant.

To be able to find an answer to the forth research question, which aimed at finding out whether there is a relationship between students' critical reading levels and reading

frequency in Turkish and in English, chi square value was calculated. According to the chi square value which was p=,247>0,05, there was not a significant relationship between students' critical reading levels and reading frequency in Turkish. For the relationship between students' critical reading level and reading frequency in English, the chi square value was calculated as p=,685>0,05. According to this finding, there was not a significant relationship between students' critical reading levels and reading frequency in English.

CHAPTER 5
CONCLUSION

5.1 Summary of the study

This study was conducted at 75. Yıl Anatolian High School in the spring term of 2008- 2009 academic year. The primary aim of the study was to investigate the students' critical reading levels. The participants were 147 students attending all classes from 9th grades to 11th grades. Additional aims of the study were read follows;

- to find out whether there was a difference among the 9th, 10th and 11th grades students' critical reading levels
- to find out whether there was a relationship between students' critical reading levels and the critical thinking dispositions.
- to find out whether there was a relationship between students' critical reading levels and reading frequency

In order to answer the questions above, two scales were administered. One is Critical Reading Scale developed by Ünal (2006), and the other is Critical Thinking Dispositions Scale (CCTDI) developed by APA. In order to get demographic information about student's reading frequency and reading habits, a section (Section A) was added to Ünal's scale. Then the scale in its new format was offered to the experts' suggestions, after which it was administered. For Section A, participants were required to mark the boxes appropriate for them. For Section B, which includes 22 statements, they had to respond to a 5-Point Likert-Scale to determine to what extend they use or don't use the critical reading skills. In order to investigate students' critical thinking dispositions, CCTDI was administered. For this scale, participants had to respond to 6-Point Likert Scale to determine to what extend they agreed or disagreed with the statements about the critical thinking dispositions.

The responses to the Critical Reading Scale and CCTDI scale were analyzed and discussed in the fourth part of the current study. For the analysis of data received from the Critical Reading Scale, descriptive statistics (percentage and frequency) was employed for both Section A and Section B; however arithmetic average and standard deviation were also computed for Section B.

The first research question focuses on the high school students' level of critical reading skills. In order to determine students' critical reading levels, students were divided into three clusters—low, medium, high—through K-means Cluster Technique. The findings showed that the mean score of points received from students' Critical Reading Scales was 3.60. This mean score—3.60—was at the point interval for medium level. Based on this finding, students' critical reading level was accepted as medium level.

In order to answer the research question 2, which aimed at investigating the differences among the 9^{th}, 10^{th}, and 11^{th} grades, points taken from Section B was analyzed through ANOVA and LSD tests. The findings of the analysis indicated that the only significant difference was between the 9^{th} and the 11^{th} grades and it was in favor of the 9^{th} grades.

The third research question of this study focuses on the relationship between critical reading levels and critical thinking dispositions. For the data analysis, correlation coefficient was calculated and found as .097. The findings of the analysis indicated a positive and direct relationship between these two. To find out the reason of this positive and direct relationship, subjects were divided into three clusters as low, medium, and high through K-means Clusters technique in terms of their critical thinking dispositions. Then, the relationship between critical reading levels and critical thinking dispositions levels were compared. The findings indicated that students whose critical thinking dispositions are at high level have high level critical reading skills.

The forth research question was aimed at exploring the relationship between critical reading levels and reading frequency in Turkish and in English. To answer this question, chi-square values were calculated. For the relation between critical reading levels and reading frequency in Turkish, chi-square value was calculated as $p= .247>0.05$. This finding indicated no significant relationship between them. For the relation between critical reading levels and reading frequency in English, chi- square value was calculated as $p= .685> 0.05$. According to this finding, there was not a significant relation between them.

5.2 Discussion of the findings

The factors which affect the improvement of critical reading have a place in the literature. In this part, these factors will be evaluated as reasons of learners' medium level of critical reading. One of reasons might be teachers' indifferent attitudes. It is radical to say that teachers' positive, encouraging, tolerant, and fair attitudes develop students' critical thinking skills. Indeed, it can be said that teachers' attitudes are effective in development of students' critical reading skills (Ünal, 2006). The results of some studies (Tokyürek, 2001; Gelen, 1999;Ünal, 2006) support this view. Critical reading requires thinking, questioning, evaluating and ideally reaching a conclusion. The reason of students' medium level of critical reading skills might be insufficient facilities, through which these skills can be developed, provided by teachers and administration, too.

Critical reading involves skills such as summarizing, generalizing, comprehension, and deduction. Critical reading necessitates true comprehension and analysis of the text, true comment on the author's message, evaluation of the text, and immersion in the text. Students' lack of these skills and behaviors might be said to be a cause not to read the text critically (Ünal, 2006).

Ünal (2006) introduces the lack of sources about critical reading in the literature as one of the reasons for students' low critical reading level. The inadequate sources, which can serve as a guide for teachers when it comes to methods, activities, and ways to teach critical reading, compel students not to be effective in critical reading (Ünal, 2006).

One of the main factors of critical reading is critical thinking. They are complementary processes. Students, who can think critically, firstly aim at understanding the text. After they understand it, they can make their own criticism (Küçükoğlu, 2008). When the relation between critical reading skills and critical thinking skills is considered, the factors affecting the improvement of critical thinking skills might be accepted as the ones for critical reading skills. In this case, reasons for medium level of critical reading of students will be discussed on the basis of the factors for critical thinking skills. These factors might be classified as five headings: *critical thinking dispositions, teaching programs, teaching and learning settings, factors related to teachers, factors related to students, and family and society.*

These headings will be discussed as separate parts.

Critical thinking dispositions:

As the literature suggests, a critical thinking disposition means a tendency toward thinking critically. Critical thinking dispositions provide a strong basement for the critical reading skills to blossom. However, being a successful critical reader depends on not only tendency but also ability a person needs to read critically. Based on this guidance of the literature and the finding of the current study, the positive relationship between critical thinking dispositions and critical reading skills is accepted; however, this relationship is not very strong.

According to Perkins, improvement of critical thinking disposition is possible with the *learnability* of the thinking dispositions which are reasoning better, being more strategic, being more analytic, being more open- minded and so forth (cited in Tishman and Andrade, 2009).

Tishman (2009) brings a different perspective regarding learnability of critical thinking dispositions. Based on the view that culture in which people live shapes their critical thinking dispositions, an appropriate classroom setting in which the models of good thinking dispositions, the tactics, concepts and rationales of good thinking dispositions, peer interactions including thinking dispositions, and formal and informal feedback on thinking dispositions are explained to students might be an opportunity and solution for the improvement of critical thinking dispositions.

Development of critical thinking skills effects the improvement of critical thinking dispositions. In other words, if students transfer and internalize the critical thinking skills they learn, they will be better critical thinkers. And furthermore, they will have more stable and strong critical thinking dispositions. When regarded in respect of teaching thinking programs, the programs which are successful -at enabling students to achieve critical thinking skills- in the long term can promote the development of critical thinking dispositions indirectly (Tishman and Andrade, 2009).

Teaching programs:

The density in a teaching program is considered as a factor affecting the development of critical thinking skills (McKee, 1988; cited in Karadeniz, 2006). Bilgin

and Eldeklioğlu (2009) emphasizes a different aspect of educational system adhering to the traditional view of teaching in which rote- memorization is the focus.

On the other hand, when teaching curricula of many courses such as English, social science, and Turkish are examined, developing critical thinking skills are observed as stressed aims. Hence, it can be said that even though teaching curricula tries critical thinking skills to be acquired by the students, they are not sufficient to do so. Namely, they might not provide suitable or enough sources to develop critical thinking skills.

The system of examination which is said to depend on rote- memorization can hinder students' critical thinking. Instead of exams questioning the knowledge acquired through rote- memorization, the exams requiring thinking critically, questioning the new information, drawing a line between the true and false knowledge should be prepared. The reason of the necessity of this sort examination is that exams aim to develop analysis, synthesis, and evaluation skills of students

Superficial and wide contents of the subjects and the view that teaching is accepted as only data- transferring process are also considered as the factors hindering critical thinking (Onosko, 1991; cited in Karadeniz, 2006).

Teaching settings:

The classroom settings in which anxiety and fear exist reduce students' self-confidence regarding *thinking.* Prejudice, advocacy, dogmatism and sentimentalism might be regarded as hindrance for the development of critical thinking (Kaloç, 2005)

The absence of some extrinsic factors might be another reason for low level of critical thinking. These extrinsic factors are sequences as follows (Kaloç, 2005):

- Safe settings
- Encouraging thinking
- Focusing on questions rather than answers
- Teaching the relationship between the events and answers
- Enabling students to evaluate the events, thoughts, and people from different perspectives
- To teach students to be sensitive

If these factors are applied by parents and educators, students can take the first step to develop their critical thinking.

Another factor might be teachers' hesitancies to provide a classroom atmosphere in which students can discuss freely but in a disciplined way because of the administration.

Factors related to the teachers:

Teachers' low expectations about their students and teachers' inadequateness in time-planning are regarded as reasons which handicap critical thinking development. (Onosko, 1991; cited in Karadeniz, 2006)

Another reason might be teachers' lack of knowledge and training about the necessity and importance of critical thinking.

Furthermore, teacher's belief regarding taking control all over the teaching and learning process can prevent students from performing critical thinking skills in the classroom. That they view themselves as experts for their teaching subject and do not cooperate with other disciplines are accepted as hindrance for critical thinking development (McKee, 1988; cited in Karadeniz, 2006).

Factors related to students:

Students' negative attitudes towards reading in English and following any kind of English edition might be accepted as a negative factor for the development of critical reading. Küçükoğlu (2008) sequences the reasons of negative attitudes towards eading in English as follows:

- No need for reading in foreign language.

- Reading in foreign language is not fluent, so people do not prefer reading in foreign language.

These two reasons are based on three aims of reading stated by Wallace (1992; cited in Küçükoğlu, 2008, p.21). These aims are:

- Reading is a need in human's life. For instance, reading the road signs, the price lists, the ingredients of a product.

- Reading for learning such as reading scientific articles.

- Reading for pleasure

Family and society:

Kazancı (1989) claims a flexible mind affects thinking positively. In other words, stable minds prevent people from thinking critically (cited in Kaloç, 2005).

Dogmatism which means a statement of an established fact might be another hindrance for the development of critical thinking because dogmatism is imposed to people from the earlier ages in the family and society.

The habit of thinking and deciding instead of somebody else might prevent children to develop their own thinking.

5.3 Conclusion of the study

In this study, critical reading level of high school students; the differences, if there are any, among the 9th, 10th, and 11th grades; the relationship between students' critical reading levels and critical thinking dispositions; and the relationship between students' critical reading levels and reading frequency in Turkish and in English were explored. The findings of this study are listed as follows:

1. In order to answer the 1st research question, firstly, students were divided into three groups—low, medium, high—in terms of their critical reading skills. Then, the mean score of points received from students' Critical Reading Scales and the standard deviation were calculated. Mean score was found out as 3.6 and standard deviation was found out as 0, 53 (Table 4.3). This finding showed that the majority of students have medium level of critical reading skills.

2. The findings of ANOVA test indicated a significant difference only between the 9th and the 11th grades in favor of the 9th grades (Table 4.5 and Table 4.6).

3. The findings of data analysis made for the third research question indicated that relationship between the students' level of critical reading skills and critical thinking dispositions is not significant, however the relationship is positive (r=,097) (Table 4.8). To be able to understand the reason of this positive relationship better, students were divided into three groups—low, medium, high— in terms of their critical thinking

dispositions. The finding indicated that the reason of this positive relationship was students having high critical reading levels had high level of critical thinking dispositions.

4. For the fourth research question, the findings of the data analysis indicated that there is no relationship between students' critical reading levels and reading frequency in Turkish and in English.

5.4 Implications of the study

Based on the findings of the study, the following implications can be made.

The washback effect of the university entrance exam might be the reason of the 11^{th} grade students' lack of critical reading skills. In other words, although students can develop their critical reading skills in the earlier grades, they cannot develop this skill as they prepare for the university entrance exam through the following years. Therefore, the requirements and the system of university entrance exam may be reconsidered.

Teachers' awareness of critical thinking dispositions can be raised as critical reading and critical thinking dispositions feed each other. Therefore educators can affect students' critical thinking dispositions by exposing them to various cultures and experiences through internet, video-tapes and travelling; moreover, the educators should motivate and reward students who bring a different perspective to a discussion in a school context (Ricketts& Rudd, 2004).

The study conducted by Stupnisky et al (2008), indicated critical thinking dispositions' being both a predictor and an outcome of perceived academic control which is related with higher intrinsic motivation, using self- monitoring strategies, and using more effective study strategies. Based on this finding, increasing students' perceived academic control can develop students' critical thinking dispositions which will lead in the development of critical reading later.

Facione (1998) suggests that the significance and cultivation of critical thinking dispositions should be integrated into elementary school education; moreover, instructions on the aspects and applications of critical thinking should be complementary part of all subject areas included in middle and high school education.

When the aforementioned researchers' solutions and suggestions affecting the development of critical thinking dispositions are considered, it might be assumed that the students' low and/or medium level of critical thinking dispositions can be improved. In relation with this assumption, students' critical reading levels can increase.

A seminar on critical reading and how to teach critical reading skills could be organized for teachers. This might produce better understanding and awareness for teachers to learn about the necessity and importance of critical reading and critical reading skills. Moreover, a seminar on the same topics might be held for students. This would hopefully increase the students' awareness of how important and necessary critical reading is. Also, they might be aware of the beneficial results, which they are likely to face in the future, of learning critical reading and using critical reading skills.

Not only course books, but also, different text types, which are not included in the course books, and reading materials such as newspapers, scientific journals should also be used for reading exercises. This might enable students to learn how to approach different types of texts and reading materials.

Using reading portfolios in the classroom might moreover increase students' level of critical reading, as the portfolios help students to read extensively, intensively and critically.

Including critical reading as a separate course in a curriculum might provide opportunities to students to learn about critical reading theoretically and apply critical reading skills through activities.

Practice on critical thinking might be done in classroom settings. Teachers might guide students regarding how to think critically. In order to do this, teachers can benefit from the sources, namely, books, internet and seminars.

When *thinking* is considered as a *process*, critical thinking can be taught to students at each grade of schooling. The methods and techniques used for teaching critical thinking should be developed regarding the appropriateness of students' level of intelligence and abilities. Namely, nursery schools can be the first setting in which students are engaged in critical thinking activities.

5.4 Suggestions for further studies

This study investigated the level of high school students' critical reading; their level of critical thinking dispositions; and the relationship involved. A further study might be on the following subjects:

1. The relationship between students' critical reading level and their level of reading comprehension can be searched.

2. Another further study might investigate the course materials in respect of the effectiveness in developing students' critical reading skills.

3. Teachers' self- sufficiency in respect of developing students' critical reading skills can be the subject of another study.

4. The relationship between students' attitudes towards reading and their level of critical reading in a foreign language can be explored.

5. The factors influencing students' reading habits in English can the research subject of another study.

6. The relationship between students' reading habits in Turkish and English can be explored in a study. An additional aim in the same study might be searching the relationship between the factors influencing the reading habit in Turkish and English.

Appendices

Appendix A

ELEŞTİREL OKUMA ÖLÇEĞİ

Sevgili Öğrenciler,

Bu anket, sizin İngilizce eleştirel okuma beceri düzeyinizi belirlemek için hazırlanmıştır. (Lütfen her bir maddeyi dikkatle okuyunuz ve size en uygun gelen seçeneğe (X) işaretini koyunuz.) Vermiş olduğunuz yanıtlar bu araştırma için kullanılacak ve bilgiler saklı tutulacaktır. Anketi yanıtlamanız çalışmaya katılmayı kabul ettiğiniz anlamına gelmektedir. Ankete göstermiş olduğunuz ilgi için teşekkür ederim.

Saygılarımla,

P.S Görüş ve sorularınız için; huriyegoktepe@hotmail.com

Huriye IŞIK

Anadolu Üniversitesi
Eğitim Bilimleri Enstitüsü
İngilizce Öğretmenliği
Yüksek Lisans Programı

Anket iki bölümden oluşmaktadır (A-B). Yönergeler bölümlerin başında verilmiştir.

A) Aşağıda sizin için uygun olan seçeneği çarpı (x) ile işaretleyiniz.

Herhangi bir Türkçe yayını hangi sıklıkla takip ediyorsunuz:

Her zaman: ☐ Çok sık: ☐ Seyrek olarak: ☐ Hiçbir zaman: ☐

Herhangi bir İngilizce yayını hangi sıklıkla takip ediyorsunuz:

Her zaman: ☐ Çok sık: ☐ Seyrek olarak: ☐ Hiçbir zaman: ☐

Okuduğunuz Türkçe yayınlar:

Kitap: ☐ **Makale:** ☐ **Gazete:** ☐ **Dergi:** ☐

Okuduğunuz <u>İngilizce</u> yayınlar:

Kitap: ☐ **Makale:** ☐ **Gazete:** ☐ **Dergi:** ☐

Okuduğunuz metin türleri:	**<u>İngilizce</u>**	**<u>Türkçe</u>**
Roman	☐	☐
Öykü	☐	☐
Tiyatro	☐	☐
Şiir	☐	☐
Masal ve bilim- kurgu	☐	☐
Fabl	☐	☐
Deneme	☐	☐
Fıkra	☐	☐
Makale	☐	☐
Eleştiri (tenkit)	☐	☐
Sohbet	☐	☐
Röportaj	☐	☐
Gezi yazıları	☐	☐
Anı	☐	☐
Dilekçe	☐	☐
Özgeçmiş	☐	☐
Mektup	☐	☐

Diğer (Lütfen Belirtiniz): ……

B) Aşağıda size uygun gelen seçeneği çarpı (x) ile işaretleyiniz.

SORULAR	**Her zaman**	**Genellikle**	**Ara sıra**	**Nadiren**	**Hiç**
1. Okumaya başlamadan önce okunacak metnin başlıklarını ve alt başlıklarını incelerim.					
2. Okuduğum metinlerin ana fikrini çıkarabilirim.					

3. Okuduğum metinleri zihnimde özetlerim.					
4. Okuduğum metin hakkında tartışabilirim.					
5. Okuduğum metinde geçen yeni bilgileri mutlaka araştırırım.					
6. Okuduğum metni daha önce aynı konuda okuduğum metinlerle karşılaştırırım.					
7. Okuduğum metinlerdeki yanlışları hemen fark ederim.					
8. Okuduğum metnin sonunu merak ederim.					
9. Niçin okuduğumun farkında olarak okurum.					
10. Okuduklarımın doğru olup olmadığını araştırırım.					
11. Okuduklarımı kendi cümlelerimle ifade ederim.					
12. Okuduklarımı arkadaşlarımla tartışırım.					
13. Okuduğum metinle ilgili olarak soru hazırlamak beni sıkıyor.					
14. Metin okurken küçük notlar alırım.					
15. Herhangi bir metni okuduktan sonra bu metin nasıl daha iyi yazılır diye düşünürüm.					
16. Okuduğum metinle resimler arasındaki tutarsızlığı fark ederim.					
17. Bir metni okurken öğretmenime sormak üzere, metinle ilgili notlar alırım.					
18. Okuduğum metinlerin mutlaka konusunu belirlerim.					
19. Okuduğum metinlerin benzer ve farklı yönlerini belirlemek çok hoşuma gider.					
20. Okurken kahramanların yerine kendimi koyarak okurum.					
21. Metni okuduktan sonra "okuduğumdan ne anladım?" diye kendime sorarım.					
22. Okuduklarımın doğruluğunu merak ederim.					

Appendix B

Sevgili Öğrenciler,

Bu anket, sizin eleştirel düşünme eğilimleri düzeyinizi belirlemek için hazırlanmıştır. (Lütfen her bir maddeyi dikkatle okuyunuz ve size en uygun gelen seçeneğe (X) işaretini koyunuz.) Vermiş olduğunuz yanıtlar bu araştırma için kullanılacak ve bilgiler saklı tutulacaktır. Anketi yanıtlamanız çalışmaya katılmayı kabul ettiğiniz anlamına gelmektedir. Ankete göstermiş olduğunuz ilgi için teşekkür ederim.

Saygılarımla,

P.S Görüş ve sorularınız için; huriyegoktepe@hotmail.com

Huriye IŞIK

Anadolu Üniversitesi
Eğitim Bilimleri Enstitüsü
İngilizce Öğretmenliği
Yüksek Lisans Programı

Aşağıdaki ifadelerin sizi ne kadar tanımladığınızı düşünerek, bu ifadelere ne ölçüde katıldığınızı aşağıdaki ölçek üzerinde değerlendiriniz. Değerlendirmelerinizi sizi tam olarak yansıtacak şekilde yapınız.

1	2	3	4	5	6
Hiç katılmıyorum	Katılmıyorum	Kısmen katılmıyorum	Kısmen katılıyorum	Katılıyorum	Tamamen katılıyorum

1. Tüm hayatım boyunca yeni şeyler çalışmak harika olurdu.	1	2	3	4	5	6
2. İnsanların iyi bir düşünceyi savunmak için zayıf fikirlere güvenmeleri beni rahatsız eder.	1	2	3	4	5	6
3. Cevap vermeye kalkışmadan önce her zaman soruya odaklanırım.	1	2	3	4	5	6
4. Büyük bir netlikle düşünebilmekten gurur duyuyorum.	1	2	3	4	5	6
5. Dört lehte, bir aleyhte görüş varsa, lehte olan dört görüşe katılırım.	1	2	3	4	5	6
6. Pek çok üniversite dersi ilginç değildir ve almaya değmez	1	2	3	4	5	6
7. Sadece ezberi değil düşünmeyi gerektiren sınavlar	1	2	3	4	5	6

benim için daha iyidir.						
8. Diğer insanlar entelektüel merakımı ve araştırıcı kişiliğimi takdir ederler.	1	2	3	4	5	6
9. Mantıklıymışım gibi davranıyorum ama değilim.	1	2	3	4	5	6
10. Düşüncelerimi düzenlemek benim için kolaydır.	1	2	3	4	5	6
11. Ben dahil herkes kendi çıkarı için tartışır.	1	2	3	4	5	6
12. Kişisel harcamalarımın dikkatlice kaydını tutmak benim için önemlidir.	1	2	3	4	5	6
13. Büyük bir kararla yüz yüze geldiğimde, ilk önce, toplayabileceğim tüm bilgileri toplarım.	1	2	3	4	5	6
14. Kurallara uygun karar verdiğim için arkadaşlarım karar vermek için bana danışırlar.	1	2	3	4	5	6
15. Açık fikirli olmak neyin doğru olup olmadığını bilmek değildir.	1	2	3	4	5	6
16. Diğer insanların çeşitli konularda neler düşündüklerini anlamak benim için önemlidir.	1	2	3	4	5	6
17. İnandıklarımın tümü için dayanaklarım olmalı.	1	2	3	4	5	6
18. Okumak, mümkün olduğunca kaçtığım bir şeydir.	1	2	3	4	5	6
19. İnsanlar çok acele karar verdiğimi söylerler.	1	2	3	4	5	6
20.Üniversitedeki zorunlu dersler vakit kaybıdır.	1	2	3	4	5	6
21. Gerçekten çok karmaşık bir şeyle uğraşmak zorunda kaldığımda benim için panik zamanıdır.	1	2	3	4	5	6
22. Yabancılar sürekli kendi kültürlerini anlamaya çalışacaklarına, bizim kültürümüze çalışmalılar.	1	2	3	4	5	6
23. İnsanlar benim karar vermeyi oyaladığımı düşünürler.	1	2	3	4	5	6
24.İnsanların, bir başkasını fikrine karşı çıkacaklarsa, nedenlere ihtiyacı vardır.	1	2	3	4	5	6
25. Kendi fikirlerimi tartışırken tarafsız olmam imkansızdır.	1	2	3	4	5	6
26. Ortaya yaratıcı seçenekler koymaktan gurur duyarım.	1	2	3	4	5	6
27. Neye inanmak istersem ona inanırım.	1	2	3	4	5	6
28. Zor problemleri çözmek için uğraşmayı sürdürmek o kadar da önemli değildir.	1	2	3	4	5	6
29. Diğerleri, kararların uygulanmasında mantıklı standartların belirlenmesi için bana başvururlar.	1	2	3	4	5	6
30. Zorlayıcı şeyler öğrenmeye istekliyimdir.	1	2	3	4	5	6
31. Yabancıların ne düşündüğünü anlamaya çalışmak oldukça anlamlıdır.	1	2	3	4	5	6
32. Meraklı olmam en güçlü yanlarımdan birisidir.	1	2	3	4	5	6
33. Görüşlerimi destekleyecek gerçekleri ararım, desteklemeyenleri değil.	1	2	3	4	5	6
34. Karmaşık problemleri çözmeye çalışmak eğlencelidir.	1	2	3	4	5	6
35.Diğerlerinin düşüncelerini anlama yeteneğimden dolayı takdir edilirim.	1	2	3	4	5	6
36. Benzetmeler ve analojiler ancak otoyol üzerindeki tekneler kadar yararlıdır.	1	2	3	4	5	6
37. Beni mantıklı olarak tanımlayabilirisiniz.	1	2	3	4	5	6

38. Her şeyin nasıl işlediğini anlamaya çalışmaktan gerçekten hoşlanırım.	1	2	3	4	5	6
39. İşler zorlaştığında, diğerleri problem üstünde çalışmayı sürdürmemi isterler.	1	2	3	4	5	6
40. Elimizdeki sorun hakkında açık bir fikir edinmek ilk önceliklidir.	1	2	3	4	5	6
41. Çelişkili konulardaki fikrim genellikle en son konuştuğun kişiye bağlıdır.	1	2	3	4	5	6
42. Konu ne hakkında olursa olsun daha fazla öğrenmeye hevesliyimdir.	1	2	3	4	5	6
43. Sorunları çözmenin en iyi yolu cevabı başkasından istemektir.	1	2	3	4	5	6
44. Karmaşık problemlere düzenli yaklaşımımla tanınırım.	1	2	3	4	5	6
45. Farklı dünya görüşlerine karşı açık fikrili olmak insanların düşündüğünden daha az önemlidir.	1	2	3	4	5	6
46. Öğrenebileceğin her şeyi öğren ne zaman işe yarayacağını bilemezsin.	1	2	3	4	5	6
47. Her şey göründüğü gibidir.	1	2	3	4	5	6
48. Diğer insanlar, sorunun ne zaman çözümleneceği kararını bana bırakırlar.	1	2	3	4	5	6
49. Ne düşündüğümü biliyorum, o zaman neden seçenekleri değerlendiriyor gibi davranayım.	1	2	3	4	5	6
50. Diğerleri kendi fikirlerini ortaya koyarlar ama benim onları duymaya ihtiyacım yok.	1	2	3	4	5	6
51. Karmaşık problemlerin çözümüne yönelik düzenli planlar geliştirmede iyiyimdir.	1	2	3	4	5	6

Appendix C

Verification of K-means cluster technique used to determine critical reading levels

ANOVA

	Cluster		Error			
	Mean Square	df	Mean Square	df	F	Sig.
Mean	17,029	2	,054	144	314,108	,000

Appendix D

Verification of K-means cluster technique used to determine critical thinking disposition levels

ANOVA

	Cluster		Error			
	Mean Square	df	Mean Square	df	F	Sig.
Mean	10,085	2	,025	144	395,949	,000

Appendix E

Dimensions of the relationship between critical reading levels and critical thinking dispositions

Dimension	Proportion of Inertia		Confidence Singular Value	
	Accounted for	Cumulative	Standard Deviation	Correlation 2
1	.978	.978	.087	.008
2	.022	1.000	.084	
Total	1.000	1.000		

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