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**THE RELATIONSHIP BETWEEN ENGLISH LANGUAGE TEACHERS'
CRITICAL THINKING DISPOSITIONS LEVELS AND THEIR LEVELS OF
UTILIZING CRITICAL THINKING STRATEGIES**

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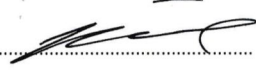
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ÖZET

İNGİLİZCE ÖĞRETMENLERİNİN ELEŞTİREL DÜŞÜNME EĞİLİMLERİ DÜZEYLERİ İLE ELEŞTİREL DÜŞÜNME STRATEJİLERİNİ KULLANMA DÜZEYLERİ ARASINDAKİ İLİŞKİ

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Bu çalışmada orta öğretim kurumlarında görevli İngilizce öğretmenlerinin eleştirel düşünme eğilimleri düzeyleri ile öğrencilerin eleştirel düşünme becerilerini geliştirmeye yönelik strateji kullanma düzeyleri arasındaki ilişki incelenmiştir. Araştırmaya 2013-2014 eğitim öğretim yılında Adıyaman il merkezinde görev yapan toplam 72 öğretmen katılmıştır. Veri toplama araçları olarak Kökdemir (2003) tarafından 51 maddeye indirilen California Eleştirel Düşünme Eğilimleri Ölçeği ve Benjamin Bloom'un taksonomisine dayalı bilişsel alan ölçeği kullanılmıştır. Verilerin çözümlenmesinde SPSS 21.0 programı kullanılmıştır. Değişkenler arasındaki korelasyon analizi sonucunda öğretmenlerin eleştirel düşünme eğilimleri düzeyleri ile eleştirel düşünme stratejilerini kullanma düzeyleri arasında pozitif yönde, anlamlı ancak orta seviyede ilişki bulunmuş olup ($r=,357$) konuyla ilgili başta mesleki gelişim eğitimi olmak üzere çeşitli önerilerde bulunulmuştur.

Anahtar kelimeler: Eleştirel Düşünme, Yabancı Dil Olarak İngilizce Öğretimi, Bloom Taksonomisi, Bilişsel Alan

ABSTRACT

THE RELATIONSHIP BETWEEN ENGLISH LANGUAGE TEACHERS' CRITICAL THINKING DISPOSITIONS LEVELS AND THEIR LEVELS OF UTILIZING CRITICAL THINKING STRATEGIES

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This study investigates the relationship between High School English language teachers' critical thinking dispositions levels and their levels of exploiting strategies to enhance learners' critical thinking skills. Seventy two English language teachers employed in the city centre of Adiyaman in the education year 2013-2014 have participated in the study. In order to determine their critical thinking dispositions levels, California Critical Thinking Dispositions Inventory (CCTDI) whose items had been reduced to 51 by Kökdemir (2003) has been used and in order to determine their level of using strategies, a scale of cognitive domain based on Bloom's taxonomy has been used. SPSS 21.0 has been used for the analysis of the data. The correlational analysis has revealed that there is a positive, significant but medium level of relationship between the two variables ($r=,357$). In accordance with the findings obtained recommendations have been made, including the training on how to incorporate critical thinking skills into subject areas.

Keywords: Critical Thinking, English as a Foreign Language, Bloom's Taxonomy, Cognitive Domain

ABBREVIATIONS

- CT : Critical thinking
- CCTDI : California Critical Thinking Dispositions Inventory
- EFL : English as a foreign language
- TEFL : Teaching English as a foreign language
- SPSS : Statistical Package for the Social Sciences

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CHAPTER I

1. INTRODUCTION

One of the most important goals of education in the 21st century is to educate individuals with higher-order thinking skills. In this context, the only place that comes to mind first is education institutions.

Critical thinking, which is one of the higher-order thinking skills, has recently been one of the most researched and debated topics among educators, academicians, and scientists since it provides individuals with numerous benefits ranging from facilitating the efforts for understanding the world to evaluating the given information from a number of different aspects and criteria. Besides, it improves the quality of thought and the quality of human life by getting one to move away from lies, fallacies, dogmas, false beliefs, and ungrounded arguments (Source: critical thinking foundation).

Although critical thinking is seemingly a new concept and its significance is widely recognized, it has a deep-rooted background that dates back to the times of ancient Greek (Facione, et al 1995).

Determining critical thinking (Henceforth CT) as the main outcome of educational curriculum and the systematic efforts to include it in courses taught at schools started first in the U.S.A. in the 1990s (Facione, et al 1995).

In today's world information is disseminated rapidly and people are exposed to information explosion each passing day. On one hand the importance of information is emphasized for individuals to be able to adapt to society and keep up with the latest developments, on the other hand, as Demir & Uluçınar (2012) explain that individuals are confused with separating the right information from the wrong, the relevant information from the irrelevant, the useful information from the useless information. The main cause of this problem seems to be the increasing number of sources of information such as the internet technologies, and printed and visual media. In addition to this, problems faced in real life are being multiplied day by day. And they sometimes get too much complicated to cope with. It is certain that the most vulnerable circles of society such as the oppressed, the disabled, children, women, and students will suffer from this problem most if they are not taught how to think critically.

Every individual has the right to lead a respectful and honourable life (Universal Declaration of Human Rights). It is possible to realize this principle through transferring higher order thinking types to subject areas at schools.

As it is known, the main function of schools is traditionally perceived as transferring information to individuals and political principles to social life as well as transmitting beliefs, traditions, customs, values, and opinions of society to new generations. However, this is not seen enough, and today all educators do agree that societies with non-critical thinkers are condemned to be behind the times and that they cannot make progress at all (Aybek, 2006). Therefore, the responsibilities of schools are continually increasing so that they can lead the changes in every field of life. Within this framework, one of the responsibilities of schools is inevitably to educate individuals as critical thinkers in all academic subjects.

Since English as a foreign language is too one of the academic subjects at all levels of education in Turkey, critical thinking skills should be integrated into EFL classes as well. The ones who will do this are English language teachers. Therefore, they should know how to use strategies and activities by adapting them to subject areas to train students in such a way that they can learn to think critically. In spite of this, there is not much awareness about the significance of critical thinking in language classrooms (Malmir & Shoorcheh, 2012). This problem must be overcome basically for three reasons: a) to facilitate language learning, b) to teach students to reason well, c) to make contribution to the development of society by educating students with critical thinking abilities.

Of course, this mission falls to teachers who must be critical thinkers themselves. In other words, educating young learners as critical thinkers is possible via teachers who are disposed to think critically. For this reason, it is important to reveal how much English language teachers of High schools have tendencies to think critically and find out whether they make use of strategies and activities to improve learners' C.T. skills or not.

1.1.Statement of the Problem

The teaching of English as a foreign language (TEFL) is compulsory at all levels of education in Turkey. The national curriculum of secondary education institutions for the English language teaching aims at training students as individuals who can develop knowledge, skills, and attitudes, who can apply the learning to real-life, who read, write, listen, and speak, who assume responsibilities for themselves and others, who constantly advance by learning how to learn, who are able to build cause and effect relationship, make decisions, and solve problems by using their power of thinking. There is no doubt that these skills can be realized through critical thinking. However, the outcomes of language teaching do not fully coincide with the objectives set in the curriculum. On top of that, lots of efforts, time, and money are spent for helping students to learn the language. In spite of this, the desired goals have yet to be achieved (Demirel, 1999). This is quite obvious when it is seen that nearly all university students begin to take English courses at elementary level as if they had not learnt even the ABCs of the language before. To address to this problem, there have recently been invaluable studies to find out the causes of failure. We think that one of the causes of failure is not to include or not to know how to include critical thinking skills in lessons. So we need to raise awareness about the importance of critical thinking in the context of EFL and about how to implement it. The need to do this has emerged from the fact that empirical studies done before on the relevant subject have revealed that there is a strong and positive relationship between the teaching of critical thinking strategies and successful learning (Barjesteh & Vaseghi, 2012; Mirioğlu, 2002; Keihaniyan, 2013).

The Turkish education system is constantly being criticized due to the fact that it transmits a plenty of knowledge to learners' brain and calls them on to recall the information when required instead of teaching individuals how to reason well. This methodology is completely against the objectives of the national curriculum and causes most students to fail in central examinations that they take several times a year. As is known to all, in all central examinations both in Turkish and in English, most students fail to answer questions that require them to use their higher-order thinking skills.

The same problem is being observed in teaching English as a foreign language. The traditional approach to the contents of lessons in EFL classes has not been given up yet. In other words, students and even some teachers still perceive the contents of

lessons as a pile of information based on the mechanisms and lexical structure of the language. This narrow point of view causes students to have a negative attitude toward the teaching of the language. Based on the results of the empirical studies done before, we believe that one of the problems with ineffective learning is a direct consequence of unawareness and lack of critical thinking skills.

Another problem with EFL is that very few studies have been carried out on critical thinking in the context of teaching English as a foreign language. Although critical thinking is an old concept, it is very new in the settings of EFL. Nonetheless, it is expected that various studies on critical thinking in EFL contexts will increasingly continue.

Last but not least, teachers are basically responsible for developing individuals with CT skills in educational environments (Aybek, 2006). So they are to be highly disposed to think critically to be able to do this. So it is crucial to reveal their level of critical thinking dispositions to find a clue to know their level of using critical thinking strategies in their classes.

1.2. Significance of the Study

There are lots of justifiable reasons for promoting CT skills in educational environments. Not only English language teachers but every educationalist needs to raise individuals with CT skills as well. In today's world where science and technology is advancing at an unprecedented pace the aim of all contemporary educational systems is to educate individuals who are able to generate information rather than consume it, who can interpret and reconstruct knowledge, who have the ability to search for evidence for the information obtained, who examine, question, and criticize the information from various aspects. Critical thinking strategies must be incorporated into the education curriculum in order to be able to achieve this goal.

When reading through the literature on the effectiveness of critical thinking in teaching English as a foreign language (EFL), it is seen that critical thinking is one of the new concepts in EFL contexts. As such, little research has been carried out in the field of incorporating critical thinking with EFL instruction (Davidson, and Dundham, 1997). So, English language teachers will inevitably encounter the problem of how to incorporate and implement critical thinking skills for better teaching and learning.

A handful of studies done so far on the effectiveness of critical thinking strategies have revealed positive correlation between the ability to think critically and foreign language learning.

Needless to say, it is a challenging job for individuals to improve their critical thinking skills by themselves. Today it is the main responsibility of schools to help individuals to gain skills to think critically. Within this framework, it can be said that individuals with high CT levels are considered to be one of the expected results of education (Semerci, 2000).

The national curriculum of secondary education institutions for the English language teaching aims at educating individuals who can think critically, creatively, and reflectively. This mission falls to teachers who have the key roles to implement the curriculum successfully.

Critical thinking is important for academic success. It is certain that students who do not have the ability to think critically, or who are denied the opportunities to develop their intellectual skills will inevitably see schools as meaningless and unbearable places, or fail and abort their studies.

Developing critical thinking skills is necessary not only for academic achievement and achieving curricular goals, but also understanding people of different races, cultures, regions as well. Teaching a foreign language in education institutions can help realize this objective. As Allen (2002, p.32) states “developing critical thinking skills and learning a foreign language can be complementary activities because communication and understanding others’ perspectives are important to both foreign language study and critical thinking.” Chaffees (1988) points out that the more individuals master and dominate the foreign language they learn, the more they become proficient in critical thinking. In this sense, we can deduce from this fact that there is a direct link between language acquisition/learning and the ability to think critically.

First of all, teachers who are expected to improve their students’ CT skills must set good examples for them, be open to new ideas, need to create a fair and democratic educational environment, and most importantly create an atmosphere in the classroom where all thoughts are expressed freely (Chamot, 1995).

Critical thinking is essential in every field of life as well. People of every walk of life need to have the ability to think critically. First of all, it is necessary for the consciousness of citizenship, because contemporary democratic systems need

individuals who are sensitive to social problems, who have social responsibilities, who stay away from all kinds of dogmatic thinking and fanaticism, who can create their own ideas, who can question and evaluate the ideas of others, who can show empathy, and who have the culture of debate (Gürkaynak, Üstel & Gülgöz, 2008).

Critical thinking is important for the business world. Many a time, we see that most businesses seek and employ staffs who have higher order thinking skills for a variety of reasons ranging from meeting increasingly demands of consumers to sustainable development, innovation, and effective communication. Since the one of the main reasons for the existence of schools is to help the business world grow, develop, and cope with the increasing competition, their demand for the need to recruit personnel with CT skills must be met.

Critical thinking is also important for the personnel of organizations as well. If they cannot overcome perplex problems that they are likely to encounter at any time, they will lose their jobs or reduce the efficiency of their businesses. Critical thinking is also of vital importance for human rights education for tolerance. As it is known, The Declaration of Principles on Tolerance states that “education for tolerance should aim at countering influences that lead to fear and exclusion of others, and should help young people to develop capacities for independent judgement, critical thinking and ethical reasoning” (Source: Declaration of Principles on Tolerance, Article 4:3.).

No matter what their academic fields are, teachers who carry the weight of schools on their shoulders are expected to improve learners’ CT skills so that learners can cope with the challenges encountered in academic environments and social life. This is also among their main responsibilities. In line with this idea, as all teachers, English language teachers should have a high level of CT disposition too.

1.3.Limitations to the Study

This research is limited to:

- a) High School English language teachers who work in the schools of Ministry of National Education in the 2013-2014 education year in the city centre of Adiyaman.
- b) Critical Thinking Dispositions Inventory (CCTDI)
- c) The use of the scale based on the cognitive domain of educational objectives known as Bloom’s taxonomy.

1.4. Aim of the Study

This study aims at identifying the relationship between high school English language teachers' critical thinking dispositions levels and their levels of employing strategies and activities for enhancing critical thinking skills in learners. The research also aims at making contributions to raising awareness about the importance of CT in all areas of life.

In line with this objective, answers have been sought to the following research questions:

- a) What are English language teachers' critical thinking dispositions levels?
- b) At what level of Cognitive domain do English language teachers mostly use strategies?
- c) Is there a relationship between English language teachers' critical thinking dispositions levels and their levels of using strategies for improving CT skills?

CHAPTER II

2. LITERATURE REVIEW

This chapter deals with the nature of critical thinking, critical thinking skills and dispositions, the transferability of critical thinking skills to the context of teaching English as a foreign language. It also discusses different levels of the cognitive domain and how they can be incorporated into the contents of EFL instruction.

2.1. The Concept of Thinking and Critical Thinking

The ability to think is one of the most significant traits of human beings. Thinking is in the nature of human beings. Everyone thinks. The researcher is thinking at this moment as he is writing down these words. Of all the living creatures, humans are the most superior, complex, and advanced ones. Many actions of humans are not instinctive. They need to maintain their lives consciously. They without doubt make this possible via thinking. It is only the power of thinking that makes human life valuable. Like everything else in the universe, human thinking is going through evolution process as well. But it does not go through certain phases by nature. When human thinking is not nurtured, it cannot develop and make progress (Elder, 2005). This is one of the reasons why the development level of societies greatly differs.

When reading through the related literature, we see lots of definitions about the concept of thinking. Collins English Dictionary defines it “as the activity of using one’s brain by considering a problem or possibility or creating an idea.”

Thinking is an active process of making the sense of the world in which humans live, of distinguishing right from wrong, good from bad, of judging and questioning the reason for their existence, of seeking the truth to make their lives easier and to maintain their dignity. Since it is a broad concept, physiologists, educators, and those who are interested in this field have always been seeking appropriate definitions for thinking. Although lots of definitions have been made so far, numerous studies are still being done in this field.

The dictionary published by the Turkish Language Institution has made a broad definition of thinking. Thinking is defined as “examining the information in order to reach a conclusion, reasoning, remembering, evaluating, examining details thoroughly, comparing and contrasting and to produce opinions by making use of the relationship

between two things, and forming mental abilities.” Cüceloğlu (1999) defines it as the name given to the organized mental process aimed for an active purpose in order to understand the current situation.

In the past, it was believed that the ability to think was the only factor that makes human beings superior to other living creatures. However, today most scholars definitely agree that just thinking is not enough to have a broad vision and to look at something in perspective. Besides, much of the human thinking is biased and ungrounded. This may be one of the reasons why different types of thinking have emerged to differentiate normal thinking from higher-order thinking types which are known as critical thinking, creative thinking, reflective thinking, analytical thinking, and scientific thinking. Due to this separation, we become more aware of the differences between normal thinking and higher-order thinking.

Literally the word ‘critical’ derives etymologically from two Greek roots: ‘Kritikos’ (meaning discerning judgment) and ‘kriterion’ (meaning standards). Etymologically, then, the word implies the development of “discerning judgment based on standards” (source: www.criticalthinking.org). Oxford University Dictionary defines the word ‘critical’ “as involving making fair, careful judgments about the good and bad qualities of somebody/something.” Being critical does not mean being argumentative or continuously finding fault with somebody/something. However, in everyday life the word ‘critical’ is sometimes used in the meaning of expressing disapproval of somebody/something and saying what one thinks is bad about them. For example, when we say that John is highly critical of the current education system, we mean that he does not have positive views about it. However, when the word is used together with ‘thinking’, it comes to mean that it is a mental process such as logical reasoning, analyzing, and evaluating. It is a very complex, higher order thinking which allows for multiple responses, room for discussion, and unspecified answers. This kind of thinking offers a lot of opportunities to individuals who are in quest for deep understanding (Hill, 2013).

In the related literature, definitions with respect to the concept of critical thinking vary. A plenty of definitions have been made about CT in domestic and foreign sources. Even if different writers have made different definitions, we do not see much difference among them. Elder and Paul (1994; cited by Shirkhani and Fahim, 2011) state that critical thinking refers to the ability of individuals to take charge of their own

thinking and develop appropriate criteria and standards for analyzing their own thinking. “Critical thinking is an active and organized mental process that aims at understanding ourselves and the events around us by being aware of our own thought processes, by keeping in mind the thought processes of others and by applying what we have learnt” (Cüceloğlu:1993, p.255). “It is reasonable, reflective thinking focused on deciding what to believe or do” (Ennis, 1989, p.3). Critical thinking is “the intellectually disciplined process of actively and skilfully 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,1992).

As it is seen, starting from the beginning of the 20th century, distinguished writers and researchers have shown a great interest in seeking the most suitable definition of critical thinking. One of them is an American educator, philosopher, and psychologist John Dewey. Although he does not explicitly use the term critical thinking, it is understood that he equates it to ‘reflective thinking.’ In his definition (1993; cited by Fisher, 2011, p.2) it is “active, persistent, and careful consideration of a belief or supposed form of knowledge in the light of the grounds which support it and the further conclusions to which it tends.” Although some researchers and educationalists in Turkey claim that the term critical thinking must not be confused with reflective thinking and that they are totally different concepts, the definition above includes nearly all components of critical thinking.

Since this thesis focuses on critical thinking which requires one to examine and judge something carefully, it would be better to explain Dewey’s remarks a little bit. In his definition he implies it is not a passive process. Most people receive ideas and information passively from someone else. In the form of critical thinking, the readers or listeners actively get engaged in analyzing the information received, rather than accepting it blindly. For example, they raise questions to be sure of the accuracy and validity of the information. Dewey compares critical thinking to reflective thinking because he uses the words ‘careful and persistent.’ He indirectly contrasts it with unreflective thinking in which we sometimes make a judgment quickly and without thinking about the context to which it relates. Thus, he implies that a person thinking critically makes objective judgment and reasonable decisions (Fisher, 2011).

According to Fisher, when Dewey uses the word ‘ground’ he means that people need to have logical reasons and strong evidence to believe and defend something. He implies that a critical thinking person is capable of identifying fallacies, dogmas, distortions and he/she would definitely reject them. Lastly Dewey mentions ‘further conclusions to which it tends.’ He means that someone who tends to think critically is conscious of the implications of their or others’ beliefs and ideas, and they take them into account. Let us review this definition again in the light of this example which we can encounter in real life:

Mehmet graduated from university two years ago. Now he is married, and has a good job with a phone company. He, then, decides to buy a new flat because he wants to get rid of high rental costs as soon as possible. He has enough money together with some credits from a bank to buy a flat. He goes to an estate agent and talks to him about the flat that he wants to buy. The estate agent shows him a flat which is in the city centre. It was completed three years ago. He praises the flat to persuade him to buy it. He assures him that it is a flat of good quality, luxury, worth buying it, and so forth. After listening to him attentively, Mehmet thinks about some important factors such as comparing its price with the ones nearby, calling for an expert to test its durability against earthquake, seeing the photographs when its foundation was laid, knowing about the neighbours in that apartment, identifying its location to shopping centres, government offices, his workplace, parks, and the school to which he wants his children to go, checking whether it gets enough sunlight or not, and its balconies are suitable for sitting in the summer, looking at the decorations and the size of the rooms, checking whether it has necessary equipment like cupboard, natural gas, elevator, and determining whether there is parking problem or not.

After he makes sure that the flat is compatible with his interests and desires, he decides to buy it. According to the definition, Mehmet is active, persistent, and careful when he makes his decision to buy the flat. When he has received the information that the flat is luxury and of good quality, a number of questions have been raised in his mind. He then has tested the validity and reliability of the information in the light of the expert opinion. Finally, he has considered some possible outcomes when he starts to live in the apartment. He has wondered whether he will get along with the neighbours or not, whether he will make extra expenses while going to work, and sending his children to school, etc. So Mehmet can be said to be a critical thinker in this case. If someone

else buys the flat at first glance, we can infer that he/she is not a critical thinker and does not have the characteristics in the definition above.

Critical thinking is different from ordinary thinking. Lipman (1988, p.38-43) manifested the differences as follows:

<u>ordinary thinking</u>	<u>critical thinking</u>
guessing	estimating
preferring	evaluating
grouping	classifying
believing	assuming
inferring	inferring logically
associating concepts	grasping principles
noting relationships	noting relationships among other relationships
supposing	hypothesizing
offering opinions without reasons	offering opinions with reasons
making judgments without criteria	making judgments with criteria

Huitt (1998, p.5) outlines the attributes of critical thinking as follows:

- Critical thinking is important attribute for success in the 21st century.
- We need to carefully define the concept of "critical" thinking and delineate it from similar concepts such as "creative" thinking or "good" thinking.
- We need to identify expected behaviours and subtasks associated with critical thinking and develop operational definitions.
- We need to complete task analyses, define intermediate goals, and develop evaluation methods.
- We need to identify "best" methods of instruction for each aspect of the critical thinking process.

Norris (1985, p.44) puts forward nine highlights from research on critical thinking:

- Critical thinking is a complex of many considerations: just assessing one's own views is not enough. Individuals must take the views of others into account as well. CT also requires them to have tendency toward thinking critically.
- Critical thinking is an educational ideal. Being able to think critically is a necessary condition for being educated.

- Critical thinking ability is not widespread. As it is known, most students around the world do well on the tests that require memorization, but they fail making inferences, evaluating arguments, and making logical judgments.
- Critical thinking is sensitive to context. In order for students to make correct inferences, it must be born in mind that their background knowledge, personal experience, and performance are quite important.
- Teachers should look for the reasoning behind students' conclusions. Teachers must have their students take such tests that they exactly reflect their thought process and how skilful they are in thinking critically.
- Simple errors may signal errors in thinking at a deeper level. It takes a lot of time to solve a problem. So students must be given enough time to think about the solution for the problem on which they work. Otherwise, trying to solve complex problems in a short time may cause them to make a lot of mistakes.
- Having a critical spirit is as important as thinking critically. This is closely related to having disposition toward critical thinking.
- To think critically, one must have knowledge. Critical thinking does not naturally develop on its own. Knowledge about a subject is the most important precondition for being able to think critically on it.
- We do not know a great deal about the effects of teaching critical thinking. Although teaching critical thinking provides fruitful outcomes, more studies need to be done to determine how much students improve and in what areas they remain deficient most.

Critical thinking is not a new concept that emerged in the 20th century. It can be traced to ancient Greece. In other words critical thinking, which is also higher-order thinking, has always existed throughout history. People have always felt obliged to think critically since ancient times. The fact that the term 'critical thinking' was not used before the 20th century does not mean that there was no such thing as critical thinking in the past. That educationalists and psychologists began to use the term 'critical thinking' in the last century is a consequence of conceptualizing the intellectual skills such as analyzing, evaluating, explaining, restructuring, etc. in which people around the world have always got engaged.

Critical thinking is not peculiar to the western civilization only, neither CT did emerge in the western world nor is it uniquely western. Some people and researchers

may have claimed that Asian, African, and other societies in the world do not have the ability to think critically and that only westerners have such an ability. If we think deeply about the definition of critical thinking, we will certainly see that such an assumption and bias is rejected by critical thinking itself.

2.1.1. Critical Thinking Skills

Those who have received education on critical thinking or who have been trained to think critically are naturally expected to reflect some certain skills in their behaviour.

Potts (1994, p.2) gives a brief summary on what people with CT skills are expected to do. According to him, they can:

- Find analogies and other kinds of relationships between pieces of information
- Determine the relevance and validity of information that could be used for structuring and solving problems
- Find and evaluate solutions or alternative ways of treating problems.

On the other hand, Ennis (1993, p.180) states that a person who is taught critical thinking skills is expected to do these things:

- Judge the credibility of resources.
- Identify conclusions, reason, and assumptions.
- Judge the quality of an argument, including the acceptability of its reasons, assumptions, and evidence.
- Develop and defend a position on an issue.
- Ask appropriate clarifying questions.
- Plan experiments and judge and experimental designs.
- define terms in a way appropriate for the context.
- Be open-minded.
- Try to be well informed.
- Draw conclusions when warranted, but with caution.

These skills and abilities can also be used as criteria to determine whether a person has CT skills or not.

Vargo and Blass (2013, p.210) outlines critical thinking skills as follows:

- Analyzing: Examining a text in close detail in order to identify key points, similarities, and differences

- Evaluating: Using evidence to decide how relevant, important, or useful something is. This often involves looking at reasons for and against something.
- Inferring: Reading between the lines, in other words, identifying what a writer is saying indirectly, or implicitly, rather than directly, or explicitly.
- Synthesizing: Gathering appropriate information and ideas from more than one source and making a judgment, summary, or conclusion based on the evidence.
- Reflecting: Relating ideas and information in a text to your own personal experience and preconceptions (i.e., the opinions or beliefs you had before reading the text).

2.1.2. Critical Thinking Strategies

Critical thinking is nurtured and developed by some strategies which are also known as skills. According to Paul and Binker (1990), critical thinking strategies are separated into three main groups: affective strategies, cognitive strategies (macro abilities), and cognitive strategies (micro abilities).

a) Affective Strategies

S-1 thinking independently

S-2 developing insight into egocentricity or socio-centricity exercising fair-mindedness

S-3 exploring thoughts underlying feelings and feelings underlying thought

S-4 developing intellectual humility and suspending judgment

S-5 developing intellectual courage

S-6 developing intellectual good faith or integrity

S-7 developing intellectual perseverance

S-8 developing confidence in reason

b) Cognitive Strategies – Macro Abilities

S-9 refining generalizations and avoiding oversimplifications

S-10 comparing analogous situations: transferring insights to new contexts

S-11 developing one's perspective: creating or exploring beliefs, arguments, or theories

S-12 clarifying issues, conclusions, or beliefs

S-13 clarifying and analyzing the meanings of words or phrases

S-14 developing criteria for evaluation: clarifying values and standards

S-15 evaluating the credibility of sources of information

S-16 questioning deeply: raising and pursuing root or significant questions analyzing or evaluating arguments, interpretations, beliefs, or theories generating or assessing solutions

S-17 analyzing or evaluating actions or policies

S-18 reading critically clarifying or critiquing texts

S-19 listening critically: the art of silent dialogue

S-20 making interdisciplinary connections

S-21 practicing Socratic discussion: clarifying and questioning beliefs, theories, or perspectives

S-22 reasoning dialogically: comparing perspectives, interpretations, or theories

S-23 reasoning dialectically: evaluating perspectives, interpretations, or theories

c) Cognitive Strategies-Micro Abilities

S-24 comparing and contrasting ideals with actual practice

S-25 thinking precisely about thinking: using critical vocabulary

S-26 noting significant similarities and differences

S-27 examining or evaluating assumptions

S-28 distinguishing relevant from irrelevant facts

S-29 making plausible inferences, predictions, or interpretations

S-30 giving reasons and evaluating evidence and alleged facts

S-31 recognizing contradictions

S-32 exploring implications and consequences

2.2. The Teaching of Critical Thinking Skills

Today's educational institutions at all levels must aim to teach individuals to reason well instead of teaching them what to think. Dewey (2012) states that learning to think is the central purpose of education. In accordance with this purpose, the training of CT has recently made its way into curriculum. As it is known, learners face many challenges both at school and in everyday life. It does not escape from most people's notice that learners usually seek answers and solutions to complex problems in their studies and that they are exposed to information explosion. So it seems inevitable that they have to make critical choices and reasonable decisions in order not to be misguided and affected by disinformation. As Demir and Uluçmar (2012, p.62) state "in an age of globalization when information is disseminated rapidly, the issue of bringing

information under control has become a serious problem. In advancing network society relevant information, irrelevant information, real information, wrong information has been mixed up, and they are being internalized by society even without being questioned.” This situation constitutes a serious problem in educating future individuals who have reliable and true information. In this regard, an education focused on critical thinking is of great importance in getting rid of this problem.

Much progress has recently been made on “the transferability of critical thinking skills to a wide range of subject areas, and on methods of teaching critical thinking” (Norris, 1985, p.40).

In spite of its importance in ancient Greek, generally in the past someone who had a good memory and who knew a lot of facts used to be considered to be an ideal person. However, in an age of information when societies are changing and science and technology are advancing rapidly, the need to have individuals with critical thinking skills is increasingly being felt day by day because in a rapidly changing world, a person who has stored a lot of information in his/her brain may not be considered a good critical thinker if he/she is not able to make logical inferences from what he/she knows and if he/she does not know how to put information into practice to bring solutions to problems. On the other hand, there are quite justifiable reasons why CT skills must be taught within the current education system. A study conducted by Aşılıoğlu (2008) revealed that although academicians were in favour of asking questions that force students’ higher order thinking skills in their exams, students constantly complained that they were asked questions whose answers could not be found in their textbooks. This situation clearly demonstrates that critical thinking skills must be taught from the years in primary schools, and it must be seen as a life-long process.

For this reason, no matter who we are, and what we do, all of us should be equipped with critical thinking skills and abilities. As a matter of fact, C.T. is one of the most fundamental human rights. As Norris (1985, p.40) states “it is a moral right for learners to learn how to think critically.” Therefore, teachers must “recognize students the right to question, to challenge, and to demand reasons and justifications for what is being taught” (Siegel, 1980, p.14). Although there are different learners getting knowledge at different depths, critical thinking should be taught even to those with learning difficulties, because they are the most vulnerable members of society and they

are more at risk when they are deprived of CT skills (Elder, 2005). Those who constantly emphasize that education is a fundamental right for all individuals, irrespective of age, gender, race, religion, sect, language, political and philosophical view cannot go against this idea. Because in an age of using information effectively and continually advancing technology, while the ones equipped with CT abilities can easily keep up with the latest developments in all fields, the ones who are denied CT skills and abilities will definitely get behind. In fact, it is always stressed that everybody must be given equal treatment and equal opportunity in education. The teaching of critical thinking skills in education can make a contribution to the implementation of this principle and it will considerably eliminate unfairness, injustice, inequalities, and wrong doings.

2.2.1. The Place and Importance of Critical Thinking in the Education Programs

When reading through the general objectives of the national education and the curriculum of the teaching of English in secondary schools, the importance of CT is seen very clearly. The secondary education institutions aim at providing students a common culture, determining individual and social problems, searching for solutions, making contributions to the socio-economic and cultural development of the country, and preparing students for higher education in accordance with their interest, abilities, and skills (MEB, 2011).

It is very obvious that to realize the objectives mentioned above is possible by educating individuals with critical thinking skills.

Apart from that, when we look at the English curriculum of the secondary education institutions, it clearly states that students need to present their critical thinking concerning with the text they read. Activities that encourage students to complete missing sentences in a text by making a prediction, to make evaluations concerning the topics, to explain why they like or dislike the texts by giving logical reasons, to discuss what they would do in similar situations are of vital importance for enhancing critical thinking skills and creating a student-centered educational environment.

The English curriculum of the secondary education institutions also requires teachers to conduct activities in which students can produce knowledge through comprehension, comparison, interpretation, synthesis, and evaluation.

2.2.2. Incorporating Critical Thinking into Subject Matter and Roles of Teachers as Critical Thinkers

Researchers agree that a ‘critical thinking course’ would not help students learn to think critically. They are in the opinion that it has to be learned through a series of educational activities about the subject matter. In other words, it has to be learned in connection with a specific domain of knowledge. There is a consensus among researchers and academicians that it should not be taught as a separate course (Willingham, 2007; Huitt, 1998; Alnofaie, 2013; Scanlan, 2006; Elder, 2005). They suggest that critical thinking skills should not be taught separately but incorporated into the curriculum. Elder states that there is a close relationship between content and thinking. She exemplifies this by stating that “we understand math when we think mathematically, we understand science when we think scientifically, we understand literature when we can think within the logic of literature, and we understand history when we think historically.” As it is understood, content becomes more understandable when it is combined with CT. The implication of this approach in education programs is to get students to be sensitive to subject matters by transferring critical thinking skills to lesson plans (Şahinel, 2002). But how to do this effectively and successfully has still been a matter of debate for about a hundred years among educators. The quest for teaching CT skills better still continues today. That’s why, new research and studies are being done to incorporate critical thinking into subject matters. As an outcome of the studies done so far, a variety of teaching techniques, methodologies, and strategies have emerged to measure and evaluate learners’ critical thinking skills and abilities. The ones that teachers can easily make applicable to most teaching circumstances are problem based learning, project based learning, six thinking hats, choosing appropriate and authentic materials. Since the most suitable place where learners can obtain CT skills is without doubt schools, important missions, duties, and responsibilities fall to teachers. According to Lipman (2003), teachers must feel responsible for enhancing individuals’ critical thinking skills.

Potts (1994, p.2) provides useful tips for teachers so that they can effectively teach critical thinking. These include:

- Promoting interaction among students as they learn - Learning in a group setting often helps each member achieve more.

When students are put in pairs or groups, they feel ease and more comfortable because they collaboratively work to find answers to questions or provide solutions to problems.

- * Asking open-ended questions.

Open-ended questions are not like closed questions as in what year did the Titanic sink? They have no fixed answers. The answer to the question largely depends on the viewpoint of the student. Asking open-ended questions gives them opportunity to answer more creatively. At the same time, they do not fear of giving the wrong answer. Allowing sufficient time for students to reflect on the questions asked or problems posed.

The answer that suddenly comes to mind is not always a good answer to a question. It is better to provide sufficient time for learners to seek logical answers to questions or find satisfactory solutions to problems.

- Teaching for transfer.

Teachers should remind their students that a newly acquired skill can be transferred to other situations and that they can apply their previous experiences to the acquisition of the new skill(s).

2.2.3. Teaching Techniques for Promoting Critical Thinking Skills

As mentioned above, there exists a variety of teaching techniques from which teachers can benefit to equip their students with critical thinking skills. These are:

a) Problem Based Learning

Problem-based learning is one of the most commonly used techniques in school environments. It includes terms such as scientific method, critical thinking, making decision, questioning, and reflective thinking. This method is used to make generalization and synthesis in solving a problem. It is also used to improve the analysis and synthesis levels of the cognitive domain (Demirel, 1999). In this method, students are presented with a real life problem that considerably influences their lives. Here the most important point that teachers must pay attention to is that the problem that the students are going to deal with must be relevant to the subject area.

b) Six Thinking Hats

'Six Thinking Hats' is a powerful teaching technique which looks at a problem and decisions from a number of non-traditional perspectives. Individuals are taught how to think deeply, critically, and creatively. This technique enhances critical and analytical thinking. It also develops individuals' ability to build empathy. Students realize that an event or phenomena has multiple sides. This teaching technique prevents students from looking at a problem superficially.

c) Discussion

Discussion is a debate about a subject on which people have different views. It can take many forms. A topic appropriate to the interests of the students is chosen. students not only interact with the details of a given topic, but with one another as well (Halvorsen, 2013). In classrooms, it gives opportunities to students to think about the multiple sides of an issue. This teaching technique enables students to form their opinions on a given topic and it helps them to obtain the power of analysis, synthesis, and evaluation.

d)Project-Based Learning

Project-based learning has recently received increasing attention in teaching English as foreign language for a number of reasons. Project works basically improve one's analysis, synthesis, and evaluation levels of the cognitive domain. "Learners' use of language as they negotiate plans, analyze and discuss information and ideas is determined by genuine communicative needs. At the school level, project based learning motivates, increases and encourages imagination, creativity, self-discipline, responsibility, collaboration, and research" (Hedge,1993, p.277).

Apart from the techniques mentioned above, there exists a variety of question types which are critical to teach higher-order thinking. It is a well known fact that teachers generally ask questions which require simple recall of information. This type of question is lower level cognitive question which has a fixed answer and it dramatically limits students' thinking deeply. Although this is criticized a lot, the traditional approach still continues today. Teachers should be called on to ask more questions which require higher-order thinking. Feng (2013) proposes to ask open-ended questions

to achieve the goal of training students with CT skills. To him, open-ended questions allow students to think analytically and critically.

There may exist other types of question techniques which promote higher-order forms of thinking. It is better for teachers to be in a continuous search for them to achieve educational objectives.

2.2.4. The Roles of Teachers in the Teaching of Critical Skills

Teachers who are responsible for designing and conducting teaching activities in line with the overall objectives of the national curriculum need to teach the skills for learning to learn and the skills for learning to think clearly and rationally. Therefore, they need to have a deep field knowledge, general culture, and pedagogical formation. But most importantly, their attitude toward critical thinking is of great importance.

Radhakrishnan (cited by Khodabakhshzadeh & Ghaemi, 2011) states that a critical teacher has the following attributes:

- he/she asks questions to evaluate whether they have learnt or not.
- is able to admit a lack of understanding or information.
- has a sense of curiosity.
- is interested in finding new solutions for becoming teaching problems.
- is able to clearly define a set of criteria for analyzing ideas.
- is willing to examine beliefs, assumptions, and opinions and weigh them against facts.
- listens carefully to others and is able to give feedback.
- sees that critical thinking is a lifelong process of self-assessment.
- suspends judgment until all facts have been gathered and considered.
- looks for evidence to support assumption and beliefs.
- is able to adjust opinions when new facts are found.
- looks for proof.
- examines problems closely
- is able to reject information that is incorrect or irrelevant

Haskvitz (2007; cited by Khodabakhshzadeh & Ghaemi, 2011) considers eleven traits for successful ELT instructors. These characteristics are as follows:

- Be unsatisfied: The first trait of a high-quality teacher is that he or she is a good learner.
- High expectations: High expectations are the second trait of excellent teachers. Setting high standards encourages students to do their best. As a result, it brings out the best in students. It also creates a feeling of accomplishment in them. In other words, good teachers encourage risk taking and accept errors.
- Create independence: Highly effective teachers are skilful at monitoring student problems and progress.
- Knowledgeable: They are deeply knowledgeable about the subject matter. Because they are specialized in it. They have the capacity to modify, add, delete, and simplify the contents of the lessons.
- Humour: They have a good sense of humour. They make jokes and accept jokes to make the classes more cheerful. They tell stories, mention silly things, make difficult situations joyful, and are not afraid of laughter. They use humour to create a good connection with their students. In other words, excellent teachers try to keep the students' attention without fear.
- Insightful: The sixth characteristic is to obtain quick and accurate assessment of the students' work. Good teachers evaluate tests and other projects in a timely manner and through suitable feedback, they improve students' achievements.
- Flexible: The best teachers use the community as their resource. For them, education is seen as more than what is done in the classroom. They participate in organizations and use their contacts to enhance student learning.
- Diverse: First-rate teachers provide various techniques for learners to learn. They use several subjects to present the lessons; they use research papers, artwork, poetry and even physical education as part of the learning process.
- Unaccepting: Quality teachers are unaccepting. They do not accept pat answers, first drafts and false excuses. This point can be controversial in the case of EFL learners as they should make a lot of errors during the process of learning.
- Uncomforting: The tenth and perhaps most interesting quality of a teacher is keeping students off balance.
- A communicator: There is not any research paper which outlines good teachers with their tidy rooms, easy marks, ability to write neatly or dress well. All these

are important for a qualified teacher. But good teachers deal with the ability to trigger learning, thus the ability to communicate is the most important trait.

2.3. Teaching Critical Thinking in the Context of EFL.

Critical thinking has recently been on the top of the agenda of those who are interested in teaching English as a foreign language. For this reason, incorporating it into the curriculum of language teaching has recently gained momentum.

Improving students' critical thinking skills has become one of the duties of English language teachers since it enables them to acquire the language effectively (Shirkhani, 2011).

English language teachers generally have to follow particular textbooks to help their students learn the language. However, the textbooks they use may not meet learners' needs to a great extent when they are actually used in the classroom (McDonough & Shaw, 2012). In particular, they may lack critical thinking activities. This does not mean that there is no need to enhance learners' CT skills. In this case, what English language teachers need to do is to adapt and transfer a series of critical thinking activities to subject areas as mentioned before.

CT must be developed in four language skills known as listening, speaking, reading, and writing. Of the four skills, reading helps develop learners' CT skills most. It has also some advantages such as pre-constructed text materials and saving time. Therefore some English language teachers usually make use of reading texts to improve CT skills. Displaying critical thinking skills is mostly needed when reading texts written for different purposes. This also requires one to be an active reader. Since critical reading is mostly developed through reading activities, a reader has to ask some questions to himself/herself while reading no matter what the material is. Hill (2013, p.9) defines the term critical thinking and presents some strategies to improve it. According to him, "Critical thinking is the ability to read between the lines, differentiating between opinion and fact, evaluating the reliability of source material, assessing the relevance of information, identifying the techniques used by an author to persuade the reader, weighing up evidence, etc." Thus, reading activities go beyond just understanding and a more meaningful interaction is built between the reader and writer. Such strategies also help readers enter the author's mind and revise his/her own ideas about the topics read. It is expected that this approach will ward off reading problems in

EFL classes. Critical thinking activities, which systematically improve learners' higher-order thinking skills, require them to go through more complex processes. This usually reminds us of the upper domains of Bloom's Taxonomy.

Another important point is that English language teachers should be aware that they might always see gifted or advanced students in front of them. They naturally tend to be engaged with more complex and advanced thinking skills while doing in-class activities. If most activities take place in the knowledge and comprehension levels, the gifted or advanced students may get bored, lose their interest, and demotivated. So it is teachers' main duty and responsibility to modify the subject area for enhancing CT skills in learners.

The teaching of critical thinking is to the advantage of gifted and talented students. They would feel that their thoughts and ideas are valued. When teachers take students' views into account and give them chance to express themselves, they will naturally tend to use their thinking skills. Since they learn to think critically in the course of time, they become mindful of what they really think.

There is a general misunderstanding about teaching critical thinking skills and strategies. Some people think that only adult learners can be taught CT skills and that they are not appropriate for children. The fact that this idea is very wrong has been confirmed by many researchers. Teachers can design and carry out thinking activities even at analysis, synthesis, and evaluation levels, provided that the activities are age appropriate.

2.3.1. The Effect of Critical Thinking on the Teaching of English as a Foreign Language

It was once believed that language learners could be proficient through the study of the grammar of the target language. So Grammar Translation Method or Classical Method was widely used by language teachers for a long time. When educators noticed that the goals of foreign language teaching were not achieved through this method and that it was not very effective in preparing students to use the target language communicatively, the argument that learners could acquire the language by focusing their energy and concentration on the structure of the target language was demolished by Communicative Approach in the 1950s. Some educators began to observe that students could make grammatically correct sentences but could not

communicate effectively outside of the classroom. Others explained merely mastering linguistic structures may not enable one to communicate well. It was agreed that in order for students to be communicatively competent, they needed to perform functions of the language such as making a phone call, inviting somebody, declining invitations within a social context, asking for and giving permission, etc. Therefore, communicative competence was given more priority than linguistic competence all around the world. Nowadays there is a consensus among foreign language educators and researchers that the goals of the curriculum cannot be achieved just through the implementation of Communicative Approach. In order for learners to be proficient and competent, they need to have creative and critical thinking skills. As a consequence, critical thinking in ELT has found its place in the national curriculum of most countries.

Moreover, various studies have revealed that there is a close relationship between the ability of critical thinking and learners' achievements. Different educators and researchers from the country and abroad have recently emphasized the importance of critical thinking skills in EFL contexts (Chamot, 1995; Tarvin & Al-Arishi, 1991). A study done by Mirioglu (2002) revealed that there was a close relationship between proficiency in a foreign language and critical thinking skills. Şenkaya (2005) studied the effects of using CT skills on developing writing skills in a foreign language. The results showed that there was a significant difference between the success of the class which used CT skills for developing writing skills in a foreign language and the one which used only traditional approach for developing writing skills in a foreign language. Another invaluable study conducted by Liaw (2007) showed that learners with critical thinking abilities were more proficient. Another study carried out by Fahim & Sa'eepour (2011) indicated that teaching critical thinking skills in EFL classrooms made a great contribution to the improvement of students' language proficiency. Vaseghi & Barjesteh (2012) investigated the effects of training CT strategies on EFL learners' reading comprehension performance by using Bloom's taxonomy. The results of their study revealed that using CT strategies provided students with a variety of skills ranging from comprehending the text in which they were engaged to evaluating it from different aspects. As it is clearly seen that since language development is an indispensable part of thinking, the teaching of higher-order thinking skills such as analysis, synthesis, evaluation should be integrated with the teaching of any foreign language. The common ground of the studies done in different educational environments has revealed that

students learn better and more successfully when CT skills are taught as part of subject matters in EFL classes.

2.4. Critical Reading in EFL Classes

Of the four basic skills, reading is one of the most commonly used skills by teachers. Reading is generally defined as drawing out meaning from printed symbols. It is probably this skill that improves learners' CT most. They benefit a lot. Firstly, reading texts are already pre-structured about a wide range of topics. English language teachers do not have to allocate much time for writing texts. Secondly, reading texts save a great deal of time for teachers to design and improve the relevant materials. Thirdly, they allow students to prepare for the themes that they are going to study, and lastly pre- reading questions and after reading questions are already presented for making them prepare well and understand the themes.

Understanding a text material is important for various reasons. However, merely understanding or being able to answer comprehension questions is not enough. A critical approach to it is as important as understanding it. First of all, critical reading with which students are actively engaged is defined as the process of comprehending, interrogating, and evaluating a text so as to judge the reliability of a writer's ideas is important to everyone for academic achievement and coping with real-life problems (Pardede, 2007).

Apart from this, reading a text critically enables one to enhance his/her critical thinking capacities and be a critical reader. As a matter of fact, critical thinking skill and critical reading are interdependent. Critical thinking requires one to read a text critically and reading critically develops one's critical thinking skills. Once somebody becomes a critical reader, they are able to find out bias, fallacies, lies, propaganda, and misinformation or distorted information in a particular context.

Most of us are very familiar with expressions and examples taken from real life:

- come to our hotel, where you can enjoy life to the full
- the most quality product of its own. See the testimonials.
newspaper or TV Channel. The most trusted and reliable source of news
- a decent and honest politician who takes care about his country's interests, rather than his own

As said before, a critical thinker or a critical reader does not make decisions and jump to conclusions based on ungrounded arguments, gossip, the testimonials of unknown or unreliable people, and weak evidence. So approaching such information critically will deter one from falling into traps and accepting the ideas and opinions blindly.

Pardede (2007,p.2) proposes four important features of critical reading:

- it enables students to grasp the message of the writer, and then they question and evaluate it in terms of their own knowledge and experience
- it helps them to read between the lines to see what the writer means by what he/she is saying.
- students make contact with the writer when they receive the message, reflect it, and react to it.
- critical reading requires deep knowledge about the subject matter. The reader will naturally understand that he/she needs to have a great deal of knowledge about what he/she is going to criticize.

As seen above reading, which is generally perceived as a receptive skill, turns out to be both a receptive and productive skill when learners become very active and are engaged with the text by implementing critical thinking skills.

2.5. Bloom's Taxonomy and Critical Thinking

The Taxonomy of Educational Objectives is often called Bloom's Taxonomy in educational circles. Bloom's taxonomy is one of the common skills utilized in educational environments for the purpose of improving the quality of human thought. The taxonomy was developed by the American educationalist Benjamin Bloom and his colleagues to help educators to classify educational objectives (Bloom 1956). It consists of three main domains known as cognitive domain, affective domain, and psychomotor domain.

Cognitive Domain consists of knowledge, comprehension, application, analysis, synthesis, and evaluation.

Level 1. Knowledge: This is the lowest level of the taxonomy. It is regarded as facts or knowledge students must learn. This level is probably the most commonly used one by teachers around the world because some educators traditionally use a textbook

and have their students take exams targeted to its contents. In this category, students try to remember previously learnt information through a series of activities.

Level 2. Comprehension: Students who have successfully moved on to this level demonstrate an understanding of the facts. Answers to questions are generally extracted directly from the text. Some teachers generally pay attention to the fact that the answers given are compatible with the content of the text and that they have a correct usage of grammar and clear pronunciation. Although these levels of the taxonomy do not help enhance critical thinking skills, they constitute the foundation of CT. They are a prerequisite for gaining CT skills later. It is not possible for teachers to approach a topic critically if their students do not have enough knowledge and do not understand enough what they are being taught.

Level 3. Application: Students who have come up to this stage can apply knowledge to actual situations. In other words they can put theoretical knowledge into practice. In EFL classes the main objective of the application level is to help students to use structures and words correctly as they talk.

Level 4. Analysis: In Bloom's Taxonomy of Educational Objectives (1956, p.144) analysis is defined as "the breakdown of material into its constituent parts and detection of the relationships of the parts and the way they are organized." For example, students can find the main idea and supporting information by reading between the lines in a text" (Allen, 2002).

Paul and Elder (2008, p.10) propose to ask the following questions while analyzing a text:

- What is the key question the author is trying to answer?
- What is the author's fundamental purpose?
- What is the author's point of view with respect to the issue?
- What assumptions is the author making in his/her reasoning?
- What are the implications of the author's reasoning?
- What information does the author use in reasoning through this issue?
- What are the most fundamental inferences or conclusions in the article?
- What are the author's most basic concepts?

Level 5. Synthesize: "*Synthesis* is putting together elements and parts so as to form a whole...working with elements, parts, etc., and combining them in such a way as to constitute a pattern or structure not clearly there before" (Bloom, 1956, p.162). For

example, students can make an oral presentation by combining their knowledge of the language system and their knowledge of a topic being presented at school (Allen, 2002).

Level 6. Evaluation: Evaluation is defined as “making judgments, for some purpose, about the value of ideas, works, solutions, methods, material, etc. It involves the use of criteria as well as standards for appraising the extent to which particulars are accurate, effective, economical, or satisfying” (Bloom, 1956, p.185).

Paul and Elder (2008, p.11) propose to use the following questions while evaluating a text in terms of various aspects:

- Is the text significant, or is the subject dealt with in a trivial manner?
- Is the author accurate in what he or she claims?
- Is the author sufficiently precise in providing details and specifics when specifics are relevant?
- Does the author clearly state his or her meaning, or is the text vague, confused, or muddled in some way?
- Does the author introduce irrelevant material, thereby wandering from his/her purpose?
- Does the author display fairness, or does the author take a one-sided, narrow approach?
- Does the author consider other relevant points of view, or is the writing overly narrow in its perspective?
- Is the text internally consistent, or does the text contain unexplained contradictions?

Analysis, synthesis, and evaluation are seen essential levels for improving one’s higher-order thinking skills. These skills are more complex and a bit more difficult to learn. In the classification of the thinking skills, the higher an objective is, the more effort and time we need to achieve it. Karadüz (2010) states that analysis, synthesis, and evaluation which are accepted to be higher-order learning endorse critical thinking skills. Whether a student has critical thinking skills can be determined through his/her ability of analysis, synthesis, and evaluation.

Although cognitive domain is generally emphasized for improving students’ CT skills, some researchers such as Liaw (2007) state that English language learners need to practise critical thinking in all domains. Though it may not be objective to expect English language teachers to conduct educational activities in all domains all the

time, they should be aware of them and know how to implement them. The main principle is the more, the better.

2.6. Critical Thinking Dispositions

The word ‘disposition’ is literally defined as “a person’s usual way of feeling or behaving; the tendency of a person to be happy, friendly, anxious, etc.” (Source: Cambridge English Dictionary).

People’s dispositions to think negatively or positively greatly differ from each other. There are a lot of factors that determine this, including their habits of mind, and the present situation in which they are. It is the hypotheses of theorists that critical thinking disposition and the ability to think critically are closely related to each other. As such, a person’s habitual way of acting is closely related to how he/she is disposed to think. If someone is disposed to think critically, he or she can be said to act consistently with critical thinking skills or vice versa. To know a person’s dispositions is important as it enables one to predict how he/she will probably act in a variety of circumstances (Facione, 2000). How a person is going to act considerably depends on the circumstances at a given moment. Also values, habits of mind, motivation play an important role on how they act. For example, we all know that a lighter is inflammable because it contains gas, so it is disposed to burn. However, it does not catch fire on its own. It catches fire when certain conditions are realized, like when it contacts a spark of light. Similarly people reflect their inner world or how they are inclined to act when certain circumstances are realized. For example, if an employee tends to look down on his colleagues, put a lot pressure on them, act in a more authoritative way, disregard their opinions, that employee will most likely act this way when he/she is promoted to a managerial authority. For this reason, it is of great importance for all organizations to know about people’s dispositions if they are working or are going to work for the organizations. The same thing is true for teachers too. If it is not known whether they are disposed to think critically or not, we may not be sure whether they utilize CT skills in their classes or not.

Measuring how much people are disposed to think critically is possible through some inventories. California Critical Thinking Dispositions Inventory is one of the most widely used scales around the globe. In addition to this, it is possible to observe how much people have a tendency to think critically by looking at habit of acting.

Facione (1998, p.11) gives more examples what critical thinkers would say or how they would act. According to him, someone who is disposed toward critical thinking would probably agree with these statements:

- I hate talk shows where people shout their opinions but never give any reasons at all.
- Figuring out what people really mean by what they say is important to me.
- I always do better in jobs where I'm expected to think things out for myself.
- I hold off making decisions until I have thought through my options.

On the other hand, a person disposed to be averse or hostile toward using critical thinking would probably disagree with the statements above but be likely to agree with these:

- I prefer jobs where the supervisor says exactly what to do and exactly how to do it.
- No matter how complex the problem, you can bet there will be a simple solution.
- I don't waste time looking things up.
- I hate when teachers discuss problems instead of just giving the answers.

Facione (1998, p.3) invites us to think about for a couple of minutes what the consequences of the lack of critical thinking might cause. "It causes formidable results such as patient deaths, lost revenue, ineffective law enforcement, job loss, gullible voters, garbled communications, imprisonment, combat casualties, upside down mortgages, vehicular homicide, bad decisions, unplanned pregnancies, financial mismanagement, heart disease, family violence, repeated suicide attempts, divorce, drug addiction, academic failure, and so forth."

2.7. Who are Critical Thinkers and Who are not?

Considering what has been said and written with respect to the issue of critical thinking, it must not be that difficult to determine who a critical thinker is and who is not. Citizens who vote for a political party just because the party's leader is young and handsome, or the party is praised too much by the media for no apparent reason are non-critical thinkers. But those who, before going to the polls, consider carefully the manifestation of their party and after voting, who call for political leaders to account for

their actions are critical thinkers. Those who have a bias against other cultures, religions, races, and languages are non-critical thinkers. But those who respect for them by thinking that variety is a spice of life are critical thinkers. Those who send their children to a school or university without considering a lot of important factors are non-critical thinkers. But those who do the opposite are critical thinkers. Those who do not think about features of a product when deciding to buy it are non-critical thinkers. But those who are informed about product specifications, its practicability, usefulness, and price are critical thinkers. Those who do not think about the lifestyle, temperament, natural tendencies, morals, values, personal traits, job, income of somebody for whom they are going to be married are non-critical thinkers. But those who do the opposite when deciding to choose a partner for marriage are critical thinkers. Managers who have no visions and missions are non-critical thinkers. But managers who aim to improve the quality and standards of their organizations, and who hire adaptable employees who constantly need the feel to improve themselves in accordance with market conditions are critical thinkers. Television viewers who have a tendency to believe everything they watch or readers of a magazine who tend to accept everything written without question are non-critical thinkers. But those who are skeptical of what is being portrayed in written and visual media, and who tend to reject ungrounded beliefs and ideas are critical thinkers. Those who before buying a new or used car do not consider carefully important factors ranging from price to mileage, maintenance and repair services are non-critical thinkers. But those who do the opposite are critical thinkers.

2.8. The Qualities of Critical Thinkers

Well-cultivated critical thinkers have desirable and admirable characteristics. They are disposed towards moving away from false ideas, ideologies, dogmas, propagandas, fallacies, disinformation, prejudices, rash conclusions, irrationality, biases, and taboos. Even though they are cultivated as critical thinkers, they are constantly in quest for improving their intellectual capacities and reasoning abilities. They are aware of the importance of creating a more rational, fair, democratic, and civilized society.

They prefer to lead a quality life. They know that one of the most important factors that distinguish humans from animals is a quality life. Otherwise we would be

condemned to a primitive life. They recognize the rights and needs of others. They are aware that there are other people who deserve the most fundamental human needs as well. They are open- minded, sincere and consistent in their thoughts and behavior. They are receptive to new ideas and innovations. They have made it one of their major goals to move society up to a higher level. Although they know that it is virtue to be content with what one has, they insist on keeping sustainable development in all fields of life. They take other peoples' views into consideration while seeking solutions to complex problems. Neither they isolate themselves from society nor do they marginalize different circles of society. They have a deep respect for others' feelings opinions, religion, race, gender, language, culture, lifestyle, and their political and philosophical views. At the same time, they have high self-esteem. They attentively listen to others to make objective judgments. They are aware of the fact that every human being has equal value. Although they realize that people who do not or cannot think critically are a potential danger for the entire world, they know that individuals without CT abilities can be educated through a series of educational programs. So they attach a great importance to the educational objectives of schools.

CHAPTER III

3.METHODOLOGY

This chapter deals with methodology of the research, participants, data collection tools, and instrument for the analysis of the data obtained.

3.1. Methodology of the Research

This is a descriptive and correlational research. Correlational research investigates the degree and the direction of the relationship between two or more variables.

A positive correlation coefficient takes values between .00 and +1. “Correlation coefficients below .35 show only a slight relationship between variables. Correlations between .40 and .60 may have theoretical or practical value, depending on the context. Only when a correlation of .65 or higher is obtained can reasonably accurate predictions be made. Correlations over .85 indicate a close relationship between the variables correlated” (Fraenkel, Wallen, and Hyun, 2012, p. 331-340).

Within this context, we try to find an answer if there is a relationship between high school English language teachers’ critical thinking dispositions levels and their levels of utilizing critical thinking strategies.

3.2. Participants

The study group of this research consists of English Language Teachers who are employed in the High Schools of Ministry of National Education in the 2013-2014 Academic year in the city of Adiyaman. The official permission was asked from the local Provincial Directorate of National Education in order to be able to get access to schools where English teachers work (See Appendice B). The number of the participants is 72 out of 82. Although the personal information was not requested, some teachers stated that they did not want to participate in the research for some reasons, and some of them could not be reached as they were on sick leave.

High schools prepare students for universities where they have to force themselves to think more deeply and critically in order to have a broader viewpoint of academic subjects. Therefore, it is important to help them improve this skill in

secondary education institutions. This is the main reason for choosing them as the population of the study. Another reason for including English language teachers working in high schools in our study is that students are more familiar with the basic knowledge of the English language since they had received language education for at least five years in primary education institutions.

3.3. Data Collection Tools.

Data collection tools consist of two scales. The first one is California Critical Thinking Dispositions Inventory (CCTDI). The second one is Cognitive Domain of Educational Objectives known as Bloom's Taxonomy. (See Appendice A).

3.3.1. California Critical Thinking Dispositions Inventory (CCTDI)

CCTDI was developed by the American Philosophy Association in 1990. The original inventory consists of 75 items. It is a six point likert scale and has seven subscales: truth-seeking, open-mindedness, analyticity, systematicity, self-confidence, inquisitiveness, and maturity. CCTDI-T has been used in lots of academic research in Turkey and across the world. During the doctoral study carried out by Kökdemir (2003) 75 items were reduced to 51. As a result of total score correlational analysis, it had been seen that some items were lower than cutting points of the correlational analysis. Totally 25 items were cleared as their total score correlation coefficient were lower than $r.20$. Seven subscales, thus, were reduced to six: Inquisitiveness, systematicity, self-confidence, open-mindedness, analyticity, and truth-seeking. The reliability coefficient of the scale had been found 0.88.

As for the calculation of the scores obtained from the inventory as a whole, raw scores for each item in the sub-scales are calculated, then they are divided by the number of items, after that they are multiplied by 10. Finally, they are turned into a standard score. For each sub-scale, the lowest score is found 6; the highest score is found 60. Facione (1995, p.4) explains that "a score of 30 and below on any of the scales indicates consistent opposition or weakness in relation to the given attribute or characteristic, a score of 40 indicates minimal endorsement on average, and scores above 50 indicate consistent endorsement or strength of the given characteristic." So, those who get a score below 240 (6x40) are said to have a low level of critical thinking disposition. Those who get a score above 300 (6x50) are said to have a high level of

critical thinking disposition. Since the original scale consists of seven sub-scales, these values are said to be between 280 (7x40) and 350 (7x50) (Ködemir, 2003). However, there is not such norm in Turkey. Nonetheless, we have calculated both the mean and total score of each subscale, because the number of items of each subscale does not equate to one another.

In the research, CCTDI has been used to measure critical thinking dispositions levels of English Language teachers. Since all the participants are English language teachers, there is no point in using the translated Turkish scale. So we have preferred to apply the English version of the scale. The subscales are defined as follows:

Truth-seeking: The truth-seeking scale targets the disposition of being eager to seek the best knowledge in a given context, courageous about asking questions, and honest and objective about pursuing inquiry even if the findings do not support one's self interests or one's preconceived opinions.

Open-mindedness: This subscale addresses being tolerant of divergent views and sensitive to the possibility of one's own bias.

Analyticity: The analyticity scale targets prizing the application of reasoning and the use of evidence to resolve problems, anticipating potential conceptual or practical difficulties, and consistently being alert to the need to intervene.

Systematicity: The systematicity subscale measures being organized, orderly, focused, and diligent in inquiry.'

Self-Confidence: Self-confidence scale tests measures the trust one places in one's own reasoning processes.

Inquisitiveness: It measures one's intellectual curiosity and one's desire for learning even when the application of the knowledge is not readily apparent. (Facione, et.al 1995, p.5-10).

3.3.2. Cognitive Domain of Educational Objectives (Bloom's Taxonomy)

In order to determine English language teachers' levels of using strategies for enhancing critical thinking skills in learners, a six point likert scale has been prepared by the researcher after an intensive and careful review of the related literature. The scale is based on Bloom's Taxonomy of cognitive domain which consists of six levels: knowledge, comprehension, application, analysis, synthesis, and evaluation. In the scale, each category consists of several items which are graded as always, usually, often, sometimes, seldom, and never. They are graded from 6 to 1 as in CCTDI. When it comes to the calculation of the scores, the same procedure in the CCTDI has been applied in this scale. In other words the mean (\bar{X}) of each sub-scale has been used as base. In order to receive expert opinion for the content validity, the scale has been presented to academics who are employed in the Faculty of Education at Adıyaman

University. Thus, the scale has been placed on a theoretical base. Final corrections have been made, irrelevant items have been removed in accordance with the experts' opinion, and then it has been submitted to English language teachers.

3.4. Instrument for the Analysis of the Data

The raw data obtained from the participants have been analyzed through the SPSS computer program (version 21).

The Cronbach's Alpha for the reliability coefficient of the first scale has been found 0,776. The second scale based on Bloom's taxonomy consists of 33 items. Before making the descriptive analysis, the validity and reliability of the second scale prepared by the researcher has been tested by making use of principle component analysis (unrotated factor solution). According to the first analysis results on the 33 items, KMO value (Kaiser-Meyer-Olkin Measure of Sampling Adequacy) has been found 0, 816 and Barlett Test has been found 1764,272. The Cronbach Alpha for the reliability coefficient of the scale has been found 0,939 (See Appendice C).

In the analysis of the data, descriptive statistical methods have been used. First, the mean and standard deviation for each sub-scale has been calculated. Then, their level of critical thinking dispositions has been calculated as a whole in order to find answer for the first research question. 22 items on CCTDI scale have negative meanings. They are written in bold to draw attention. They have been recoded in reverse order by the SPSS programme. As for the second part of the scale, English language teachers' levels of using strategies for enhancing students' CT skills in learners has been calculated for each sub-scale to find answer to the second research question. Then, their level of employing strategies at analysis, synthesis, and evaluation has been calculated. The reason for this is that the upper-three levels of the cognitive domain endorse students' CT skills (Karadüz, 2010) and determine how much English language teachers improve students' CT skills. The mean, standard deviation for each sub-scale has been calculated. Then, their level of employing critical thinking strategies has been calculated as a whole. Finally, in the analysis of the data, Pearson correlational coefficient (r) has been used.

It has been calculated to determine whether there is a relationship between the two variables or not. And if there is a relationship between the two variables, to which

degree there is, its direction and significance is the primary aim of the third research question.

CHAPTER IV

4.FINDINGS

This chapter deals with the findings obtained from the research on High School English language teachers' critical thinking dispositions levels, at what levels they use strategies according to Bloom's taxonomy, and their levels of using analysis, synthesis, and evaluation strategies to enhance CT skills in learners.

The participants are all English language teachers appointed by the Ministry of National Education to various high schools both vocational and general high schools. Totally seventy two English language teachers out of 24 high schools have participated in the study. (N=72). The number of participants that we have managed to reach can be considered to be adequate for this study, because the minimum size for a corrolational study is generally considered to be acceptable no less than 30 (Fraenlin, Wallen, and Hyun 2012).

Some variables such as the universities they graduated from, the length of services, the type of schools they work, their gender have not been taken into account, for all teachers irrespective of the variables mentioned are expected to have a high level of critical thinking disposition.

The calculations have been made under the guidance of an associate professor employed at a faculty of Adiyaman University.

4.1. Descriptive Statistics for Subscales of English Language Teachers' Critical Thinking Dispositions Levels

We have submitted California Critical Thinking Dispositions Inventory to English language teachers to seek answer for the first research question '*What are English language teachers' critical thinking dispositions levels?*' In order to reveal their CT dispositions levels, the mean and standard deviation of each subscale has been calculated.

Table 1. English language teachers' critical thinking dispositions levels

	N	Mean	Sum	Sd.
Inquisitiveness	72	4,63	46	,58
Systematicity	72	4,21	42,17	,72
Self-Confidence	72	4,20	42	,61
Open-mindedness	72	3,90	39,09	,69
Analyticity	72	4,84	48,44	,49
Truth-seeking	72	3,45	34,54	,73
Total	72	4,44	252,085	,55

When statistically investigating the subscales of the CCTDI in Table 1, we see that English language teachers 'moderately agree' with the items on the inquisitive, systematicity, self-confidence, and analyticity. The mean of the inquisitiveness is $\bar{X} = 4,63$, the mean of the systematicity is $\bar{X} = 4,21$, the mean of the self-confidence is $\bar{X} = 4,20$, and the mean of the 'analyticity' is $\bar{X} = 4,84$.

English language teachers 'moderately disagree' with the items on the open-mindedness and truth-seeking subscales. The mean of the open-mindedness has measured $\bar{X} = 3,90$, and the mean of the truth-seeking has measured $\bar{X} = 3,45$.

The mean of the analyticity subscale is ranked as the highest one $\bar{X} = 4,84$, while the mean of the truth-seeking subscale is ranked as the lowest one $\bar{X} = 3,45$. The means of the two scales systematicity $\bar{X} = 4,21$ and self-confidence $\bar{X} = 4,20$ have been found nearly the same. The total sums of the inquisitiveness, systematicity, self-confidence, open-mindedness, analyticity, and truth-seeking have been found 46, 42.17, 42, 39.09, 48.44, and 34,54 respectively.

English language teachers have got the highest scores from the analyticity, inquisitiveness, systematicity, self-confidence, open-mindedness, and truth-seeking respectively.

The standard deviation for each subscale seems to be low when it is compared with the mean. This indicates that the data have not been spread out over a wide range farther from the arithmetic mean (Fraenklin, Hyun, and Wallen, 2012). In this regard, English language teachers can be said to be homogeneous in terms of their responses to the items on the CCTDI.

The mean of English language teachers' CT dispositions level as a whole has been found $\bar{X} = 4,44$. Also, the total score that English language teachers have received from the CCTDI is 252,085.

We can infer from this value that English language teachers ‘moderately agree’ with the total items on the CCTDI. Also this value we have obtained shows that English language teachers have narrowly exceeded the minimal limit according to Facione. The standard deviation is seen small compared with the arithmetic mean, which reveals there is not much diversity of views among English language teachers concerning with the total items on the CCTDI.

4.2. Descriptive Statistics for English Language Teachers’ Levels of Using Strategies on the Cognitive Domain of the Bloom’s Taxonomy

In order to find answer to the second research question, we have submitted the scale based on Bloom’s taxonomy to English language teachers. The question is *at what level of Cognitive domain do English language teachers mostly use strategies?* In order to find answer to this research question, the findings obtained are presented below:

Table 2: English language teachers’ levels of using strategies according to the cognitive domain

	N	Mean	Sd.
Knowledge	72	4,42	,97
Comprehension	72	3,99	,78
Application	72	3,77	,96
Analysis	72	3,38	,94
Synthesis	72	2,91	1,12
Evaluation	72	3,12	1,1

As a result of statistical analysis in Table 2, it can be inferred from the data that English language teachers often use strategies at the knowledge level of the cognitive domain. The mean of the knowledge level has been found $\bar{X}=4,42$.

They sometimes use strategies at the comprehension, application, analysis, and evaluation levels. The mean of the comprehension level is $\bar{X}=3,99$, the mean of the application level is $\bar{X}=3,77$, the mean of the analysis level has been found $\bar{X}=3,38$, and the mean of the evaluation level has measured $\bar{X}=3,12$.

They rarely use strategies at the synthesis level. The mean of the ‘synthesis’ level has been found $\bar{X}=2,91$.

When investigating the results, it is seen that the level of the knowledge is ranked as the first while the level of the synthesis is ranked as the last.

We cannot put every English language teacher in the same pot in terms of using strategies at all levels. The size of the standard deviation for each subscale clearly demonstrates that their level of using strategies differs a lot. In other words, some teachers use strategies at an acceptable level, some use them at the medium, and some at a low level. Considering this fact, English language teachers do not show homogeneity with regard to utilizing strategies.

4.2.1. Descriptive Statistics of Using Critical Thinking Strategies at Analysis Level

Since this research mainly focuses on how much English language teachers use critical thinking strategies at the upper levels of the cognitive domain, it is essential to measure the mean and standard deviation of each item. The main reason for analyzing the last three levels with the items one by one is to determine whether they are homogenous in terms of their responses to the items on the scale. So, from this sub-heading onward appear statistical results of English language teachers’ levels of using strategies at analysis, synthesis, and evaluation respectively.

The types of questions that can be asked at analysis, synthesis, and evaluation levels considerably vary. As the same scale has been submitted to English language teachers who have classes for the 9th, 10th, 11th, and 12th grades, we have made great effort to construct the items in the scale in such a way that teachers no matter which class they instruct the English language can commonly reply. For example, to establish cause and effect relationships at the *analysis* level; to relate the relevant subject to real-life by giving examples at *synthesis* level; and to judge whether the information given is based on strong evidence at *evaluation* level can be considered a common point for all the grades in a high school.

Teachers’ replies to the items on the scale have been graded as *always*, *usually*, *often*, *sometimes*, *seldom*, and *never*. Adverbs of frequencies might have relative meanings for some people. For example, if a person, who does not enjoy sports much, is involved in sportive activities like playing basketball once a month, that person may claim that he/she *often* does sport. In fact, doing any kind of activity once a month does

not indicate a high frequency. In the eye of another one, that person actually seldom does sport.

English language teachers may not exploit a particular strategy in all their classes. In order to be able to say I *always* use this or that activity in my EFL classes, it is considered adequate to make use of that strategy once a week. This is the proposal of the researcher. English language teachers, however, might think differently for the determination of the frequency of utilizing a particular strategy.

Table 3. English language teachers’ levels of using critical thinking strategies at analysis level

	Mean	Sd.
Find the main argument and supporting information in a text	3,72	1,17
Establish cause and effect relationships in the text they read	3,51	1,19
Express whether they agree or disagree with the writer’s opinions by making explanations	3,40	1,27
Express what the purpose of the writer is	3,27	1,24
Express what message or lesson can be taken from the story or the text	3,40	1,26
Make inferences from a text by reading between the lines	3,36	1,35
Distinguish facts and opinions	3,13	1,27
Find differences and similarities between two things and comment on them	3,29	1,42

It is seen from table 3 that although the mean of each item at the analysis level seems to be close to one another (the mean equates to ‘sometimes’ in the likert scale), the size of the standard deviation indicates that the application level of English language teachers’ critical thinking strategies considerably varies from one person to another. This finding sheds light on the fact that all of them do not use analysis strategies at the same level.

4.2.2. Descriptive Statistics of Critical Thinking Strategies at Synthesis Level

As a result of statistical findings, English language teachers’ level of using strategies at synthesis level is as follows:

Table 4. English Language teachers' levels of using strategies at synthesis level

	Mean	Sd.
Write a composition about the subject they learn	2,73	1,34
Propose their own solutions to real-life problems about the subject they deal with	2,98	1,48
Add a sentence to the end of a story, a conversation, or a paragraph to reach a strong conclusion	2,75	1,34
Relate the relevant subject to real-life by giving examples	3,19	1,38
Create mind maps about the subject they learn	2,73	1,39
Modify a paragraph, a text, or a conversation for enhancement	2,97	1,35

As shown in Table 4, the mean of each item appears almost the same, except for 'relate the relevant subject to real-life by giving examples' $\bar{X}=3,19$. Nearly everything we have said for the results of the analysis level, the same things seem to be valid for the synthesis level as well. As mentioned before, this domain is by far the lowest one. The possible reasons will be discussed in the next chapter.

4.2.3. Descriptive Statistics of Critical Thinking Strategies at Evaluation Level

The findings we are presented with are as follows:

Table 5. English language teachers' levels of using strategies at evaluation level

	Mean	S.d.
Criticize a text or evaluate its message in terms of different aspects	3,31	1,48
Judge whether the information given is based on strong evidence	2,97	1,35
Reach a consensus about the relevant subject through discussion	3,04	1,31
Decide whether or not their judgements are made according to criteria and evidence	2,76	1,30
Revise the accuracy and appropriateness of what they write	3,54	1,19

English language teachers' level of using strategies at this domain equates to 'sometimes' in the likert scale except for the second item from the beginning $\bar{X}=2,97$, and the penultimate item $\bar{X}=2,76$.

When investigating the statistical results as a whole, the same things about the standard deviations have been repeated here. We do not see homogeneity again among them at the last two levels.

4.2.4. English Language Teachers' Level of Using Critical Thinking Strategies at Analysis, Synthesis, and Evaluation levels.

We have calculated as a whole English language teachers' level of using strategies concerning with the upper levels of the Bloom's taxonomy to get a clear idea of how much they employ strategies to enhance the learners' CT skills.

Table 6. English language teachers' level of using critical thinking strategies at analysis, synthesis, and evaluation

	Mean	S.d.
Critical thinking strategies	3,15	,96

It can be inferred from table 6 that English language teachers utilize CT strategies at medium level $\bar{X}=3,15$. This score is matched with 'sometimes' in the likert scale. However, as the standard deviation seems to be large, we are confronted with the fact that some English language teachers' level of using CT strategies is above this average.

4.3. Findings on the Relationships between High School English Language Teachers' Critical Thinking Dispositions Levels and Their Levels of Using Critical Thinking Strategies

An answer has been sought for the third research question '*Is there a relationship between High School English language teachers' CT Dispositions levels and their levels of using strategies to enhance their students' CT skills?*' Pearson correlation coefficients have been calculated between subscales of the CCTDI and the subscales of Bloom's taxonomy. The first three variables 'knowledge, comprehension, and application' have not been taken into account, for they do not directly improve learners' CT skills. After obtaining data from the scale based on Bloom's Cognitive Domain of Educational Objectives, a correlational analysis has been carried out. The findings obtained are as follows:

Table 7. Correlational analysis between the subscales of the CCTDI and Cognitive Domain

	Analysis	Synthesis	Evaluation
Inquisitiveness	r. ,352** p. ,002	r. ,319** p. ,006	r. ,377** p. ,001
Systematicity	,111 ,351	,137 ,251	-,035 ,767
Self-confidence	,356** ,002	,372** ,001	,337** ,004
Open-mindedness	-,180 ,131	-,293* ,012	-,352** ,002
Analyticity	,308** ,009	,271* ,021	,370** ,001
Truth-seeking	0,14 ,907	-,165 ,166	-,248* ,036
	N=72		

** .Correlation is significant at the 0.01 level (2-tailed)

Table 7 shows that the inquisitive variable has positively been correlated with the analysis, synthesis, and evaluation variables. There has been positive and significant relationship between scores. $p < 0,01$; $p < 0,01$; and $p < 0,01$ respectively. However, the levels of the relationship are medium ($r = ,352$ analysis; $r = ,319$ synthesis, and $r = ,377$ evaluation).

There has been found no relationship between the 'systematicity' subscale and the 'analysis, synthesis, and evaluation' subscales according to the result of the correlational analysis.

A positive, significant correlation has been found between the 'self confidence' subscale and the 'analysis, synthesis, and evaluation' subscales as a result of correlational analysis. $r = ,356$; $r = ,372$; $r = ,337$. The level of relationship between the two variables is medium as seen in the table. The significance level has been found $p < 0,01$ for all.

There has been an inverse relationship between the 'open-mindedness' subscale and the 'analysis, synthesis, and evaluation' subscales. As remembered, open-

mindedness is the subscale from which English language teachers have received a low score.

A positive, significant correlation has been found between the analyticity' subscale and the 'analysis, synthesis, and evaluation' subscales. $r=.308$; $r=.271$, $r=.370$. The level of relationship between analyticity and synthesis is low. The others are medium. The significance level has been found $p<0,05$ for all.

Finally, a positive, significant correlation has not been found between the 'truth-seeking' subscale and the 'analysis, synthesis, and evaluation' subscales as a result of testing the correlational analysis.

4.3.1. The Relationship between English Language Teachers' Critical Thinking Dispositions and Their Levels of Using Critical Thinking Strategies as a Whole

The relationship between English language teachers' critical thinking dispositions levels and their levels of using CT strategies as a whole has been tested by making a correlational analysis between the two variables. Pearson correlation coefficient has been calculated between the CCTDI as a whole and the subscales of the cognitive domain (analysis, synthesis, and evaluation). The statistical result of this analysis is as below:

Table 8. The correlational analysis between critical thinking disposition level and the level of strategy use

		CT disposition	CT strategy use
CT Disposition	Pearson Correlation	1	,357**
	Sig. (2-tailed)		,002
	N	72	
CT Strategy Use	Pearson Correlation	,357**	1
	Sig. (2-tailed)	,002	
	N	72	

** . Correlation is significant at the 0.01 level (2-tailed).

The finding demonstrates that Pearson correlation between the two variables is $r=.357$. When we use Cohen's criteria as base, the effect size of this outcome is said to be medium.

Also a positive significant correlation has been found between the two variables $p < 0,01$.

CHAPTER V

5. RESULTS AND DISCUSSIONS

In this chapter, the findings obtained from the data in the context of research questions have been explained in terms of various aspects. The possible reasons for the findings have been discussed, and some recommendations have been made for a stronger relationship between the variables.

The significance of critical thinking is continually increasing in every field of life. The necessity of this stems from the consequences of the lack of critical thinking, which was exemplified by Facione (1998) like high divorce rate, academic failure, family violence, drug addiction, mismanagement, job loss, etc. Hardly a day passes without receiving and hearing bad news of this kind.

Critical thinking is viewed as the central outcome of all modern and contemporary educational systems. It is seen as a prerequisite for an advanced and democratic society. Apart from that, as it benefits a lot ranging from academic achievement to solving complex problems encountered in every field of life, it has been taking on a new significance in all academic subjects.

This study has revealed the relationship between English language teachers' critical thinking dispositions levels and to what extent they employ critical thinking strategies in their EFL classes. The study has been limited to English language teachers working in the state schools of Ministry of National Education in the city centre of Adiyaman. Therefore, the results cannot be generalized to all English language teachers working in various parts of Turkey. The sample of the research, however, can give us a clue about how much other English language teachers are disposed to think critically and how much they use critical thinking strategies in their classes. This claim can be justified by the fact that the educational programmes in Turkey are to a large extent homogenous. Also, the courses and programmes of all English language teaching departments at universities are much or less the same. When this is the case, the graduates have nearly the same characteristics. Apart from that, English language teachers legally have to follow the same textbooks titled 'Yes, You Can.'

In this study it is seen that English Language Teachers employed in the state schools in the city centre of Adiyaman are more or less disposed to think critically. This situation is appreciated, important and noteworthy. The fact that they are disposed to think somewhat critically is a good indicator that the most important problem in raising critical thinkers has been overcome because it is not possible to educate individuals with CT skills and abilities with teachers who are not critical thinkers. However, their level of utilizing CT strategies has been found at medium level. In this sense, the objectives of the national curriculum which explicitly emphasizes the significance of raising individuals with CT skills are yet to be fully achieved.

The results of this study have shown that the degree of teachers' critical thinking dispositions runs parallel with the degree of their using critical thinking strategies. In other words, the more they tend to think critically, the more critical thinking strategies they use in their classes. If the total sum of English language teachers' critical thinking dispositions were found between 300 and 350 which is said to be a higher score, their level of exploiting critical thinking strategies would probably be in parallel to this, because people are usually prone to reflect their characteristics when the circumstances are suitable.

English language teachers need to come a long way to achieve the goals of the curriculum. Nevertheless, it is a satisfactory situation that some of them are aware of the necessity of educating critical thinkers. So they struggle to improve their students' CT skills. Needless to say, their usage of CT strategies at medium level is not enough. It must be moved up to the desired level. It is naturally expected from English language teachers who are disposed to think critically enough to integrate CT skills into their lesson plans and to implement them as much as possible. This is not only for the benefits of students but for the benefits of teachers as well. Students automatically identify teachers who are well-informed and who appears knowledgeable about the subject (Harmer, 1994). Teachers who reflect their ability to think critically are more favoured and appreciated by students. If teachers completely use CT skills in their classrooms, they will help their students to learn the language at the desired level, they will be regarded as decent teachers by their students, and most importantly they will do their share in creating a fair, criticizing and questioning community.

Below are listed the interpretations of findings for each research question:

5.1. The Interpretations of Findings for the First Research Question

The first research question of our study has been determined as *what is English language teachers' level of critical thinking dispositions?* The total mean of English language teachers' critical thinking dispositions level has been found $\bar{X}=4,44$ with a standard deviation 0,55 as mentioned in the previous chapter, and the total sum is 252,085. This shows that although their level of critical thinking dispositions is not high, they have exceeded the sub-limit which is said to be 240 (40x6).

The descriptive statistics on open-mindedness and truth-seeking subscales have been found lower than expected. The two subscales are seriously important for the creation of a democratic and information society. Under normal circumstances, one would expect a language teacher to be more tolerant to diversities and to be more in quest for knowledge.

The fact that English language teachers are not much open-minded may be an implication of the monolithic structure of the current education system that does not reflect cultural differences much. Also it can be explained as an indicator of self-centeredness or socio-centeredness, which means that some of them still view the life from their own interests and that they do not take much care about the others.

Not to be open-minded enough would seriously hinder the use of CT strategies in education environments. As is known, being open-minded is the most essential prerequisite for creating an atmosphere in which students can freely express themselves.

The descriptive statistics on the truth-seeking subscale is somewhat consistent with the prior research done by Meral and Semerci (2009). Their research revealed that English language teachers stated that they thought critically in general, but in seeking the truth they partially thought critically.

5.2. The Interpretations of Findings for the Second Research Question

The second research question has been determined as *at what level of cognitive domain do English language teachers mostly use strategies?* The findings have revealed that *knowledge* is ranked as the first, *comprehension* as the second, *application* as the third, *analysis* as the fourth, *evaluation* as the fifth, and *synthesis* as the sixth level. According to this, English language teachers use the most strategies at the lower-levels

of the cognitive domain and they use few strategies at the higher-levels of the cognitive domain.

This result that we have reached is not surprising. When we evaluate the textbooks titled ‘Yes, You Can’ in terms of the objectives set at the beginning of each unit in the context of the cognitive domain, we encounter that 35% of the overall objectives has been allocated to comprehension level, 38% to application level, 10% to analysis level, 15% to synthesis level, and 2% to evaluation level. Both the textbooks and teachers give priorities to the *application* level. This may be a consequence of the increasing popularity of ‘communicative approach.’ It is also a well known fact that teachers generally conduct their lesson activities on the knowledge and comprehension levels of the cognitive domain. These findings correspond with the ideas of Paul (1990) on educational systems. According to him, students generally gain lower-order skills in most schools. This inevitably leads to short-term memorization, hinders students’ thinking seriously, and brings about failure.

Despite the fact that textbooks do not aim at improving students’ skills at evaluation level of the cognitive domain much, teachers use more evaluation strategies than the textbooks offer. This shows that they adapt materials to the contents of the lessons.

Teachers use very few strategies at the level of synthesis of the cognitive domain. As is known, *synthesis* requires students to use their productive skills like writing a composition or making an oral presentation in the target language (Allen, 2002). The most important reasons for the low level of exploiting strategies at *synthesis* can be the low level of lingual proficiency of most students, overcrowded classes, insufficient time to give each student feedback, the heavy workload of both teachers and students, excessive emphasis on the central examinations carried out by the state, the lack of rewards, unwillingness to produce opinions, the habit of receiving ready information, and the lack of a criticizing and questioning culture. Nonetheless, if teachers adopt the principle of *the more, the better*, the negative consequence of each factor could be dramatically reduced.

Although the lower-level skills do not guarantee critical thinking on their own, they constitute the foundation of the critical thinking, because in order for students to be able to climb up the pyramid, they must not have many problems at the lower levels of

the pyramid. As a matter of fact, the intensiveness of the strategies at the lower levels demonstrates that teachers still struggle to move their students up to the higher levels.

In conclusion, English language teachers generally act in accordance with the objectives set in the textbooks that do not aim at enhancing students' CT skills at the higher levels of the cognitive domain much. This situation is against the objectives of the national curriculum and causes teachers to use few CT strategies.

5.3. The Interpretations of Findings for the Third Research Question

The third research question has been determined as *Is there a relationship between English language teachers' critical thinking dispositions levels and their levels of using critical thinking strategies?* The correlational analysis has revealed positive and significant relationship ($r=0,357$; $p=0,002$). However, the level of the relationship between the two variables is said to be medium. The reasons for the medium level of the relationship between the two variables can be outlined as follows:

The teaching of CT skills in EFL contexts is relatively a new concept. So it should be seen quite natural to come across the result that English language teachers make use of CT strategies at medium level. However, this level can be increased to a higher level by conducting more academic research and sharing the results with them.

English language teachers usually conduct education activities by heavily depending on textbooks. In fact, they do not have to limit themselves to the objectives set by the textbooks. Though teachers are legally required to use particular textbooks, they must know that no matter how much writers make efforts, textbooks are always subject to adaptation for some reasons (Mc Donough and Shaw, 2012). Incorporating CT skills into the contents of the lessons is actually a process of adapting materials. Therefore, it is thought that adapting materials to the context would help achieve educational objectives at the maximum level.

The second reason for the medium relationship between the two variables might be that English language teachers in Adiyaman have not received training on CT from the Provincial Directorate for National Education as part of professional development in the last three years.

Some teachers might think that CT strategies are not appropriate for their students by assuming that the level, motivation, and knowledge of their students are an obstacle to the improvement of the CT skills. Of course, if students constantly struggle

to comprehend what they are presented, it will naturally be too difficult for the teacher to employ critical thinking strategies. However, this must not be seen as an excuse because critical thinking is not an educational objective that can be achieved in the blink of an eye. It takes time to improve it. One way of enhancing learners' CT skills is to ask them well planned, open-ended questions (Chuska, 1995) in writing and then exploit 'wait-time' technique (Feng, 2013) so that they can provide appropriate answers for the questions. It is thought that the implementation of this technique would help students to revise the accuracy and appropriateness of what they have written. Apart from that, as students are working on a foreign language, providing them enough time is of vital importance.

Teachers generally test their students' knowledge of English by asking low-level questions, like grammar, vocabulary and/or simple comprehension questions. As a matter of fact, there is nothing wrong to ask questions at these levels. The problem is to restrict the teaching of language to grammar and vocabulary. According to Blosser and Patricia (1995), more than 50 percent of questions posed by teachers in all kinds of classrooms require only recall of facts. This old habit must be given up to overcome one of the biggest challenges of teaching and improving CT skills.

The types of schools where teachers work can have an adverse impact on the level of the correlation. As is known, general high schools and vocational high schools do not give equal priorities to TEFL. Vocational high schools usually keep English courses in the background.

The types of universities teachers had graduated from might have had influenced their level of exploiting CT strategies in EFL classes. When we look at the weekly schedules of most English language teaching departments at universities, we see a grim reality that only a handful of universities across Turkey offer critical thinking courses to their students.

And the last reason for the medium level of correlation is probably the traditional approach to reading texts in EFL classes. The level of peoples' reading is low both in the official language and in the foreign. Although the rate of schooling goes up every year, this increase is not in proportion to the reading level of people. In addition to this, there is a general unwillingness to reading in Turkey. As known, people who are not in the habit of reading cannot be critical thinkers at all because the source of most information received in everyday life is printed materials. As in the official

language, critical thinking skills in a foreign language are generally improved through reading materials. The negative attitude toward reading materials in the native language is easily transferred to reading foreign materials. Therefore, it is important that students systematically gain the skill and habit of reading in their first language so that they can positively transfer this skill to foreign language learning. Apart from this, the traditional approach to reading materials in EFL classes must be given up by students. Teachers can raise awareness on this issue by stating that reading is not a passive activity, simply struggling to pronounce words correctly or focusing on the stress and intonation. There is more to it than this. While concentrating on improving learners' grammar and vocabulary knowledge through reading materials, the other function of reading, that's critical thinking, must not be ignored.

5.4. Pedagogical Implications

The most important pedagogical implication of this research is that an education based on critical thinking requires teachers with a high tendency toward critical thinking. If not so, neither the desired goals can be achieved nor can a successful and effective language learning take place. Educational activities are carried out by teachers, so it is basically teachers' responsibilities to enhance critical thinking skills in learners. As such, they must have high level of critical thinking dispositions.

In order for teachers to be able to train young generations with the necessary qualifications required by the age of information, they need to assume obligations and responsibilities. They should see themselves as the ones who are primarily responsible for educating the young generations in accordance with the overall objectives of the programme. They need to know that everybody, including themselves will have to pay the price if they ignore or fail to train critical thinkers of the future.

It is pretty essential to get students to have a positive attitude toward the English language and the teaching of it in educational settings. It is apparent that teachers cannot effectively implement critical thinking skills in EFL classes where the majority of students has a negative mindset toward the language. According to the findings of a research done by Aydoslu (2005), 43.8 per-cent of students study English just to pass the exam. This situation naturally leads them to have negative attitudes toward the language.

Though it is difficult, tiring, and time-consuming for some teachers to enhance their learners' CT skills, teaching critical thinking skills is worth the effort. To be able to accomplish this, as Pardade (2007) implies, teachers can start to get their students to be familiar with the critical thinking sub-skills. Only then can they manage to overcome the challenges of teaching CT skills.

Giving up the traditional approach to language teaching would pave the way for teaching critical thinking skills effectively. According to the traditional approach, it is seen enough when students have a good vocabulary store and a good knowledge of grammar. It is traditionally thought that when they have these skills and know how to make grammatically correct sentences, then everything is said to be OK and both teachers and students have successfully achieved their goals. Contrary to this common belief, students need to be critical thinkers no matter what they are taught within the education system. A language student may be able to make grammatically correct sentences and communicate effectively. However, he or she needs to be able to think critically about the teaching material presented in the class.

The relevant literature clearly shows that teaching critical thinking skills in EFL classrooms guarantee learners to acquire the target language effectively and successfully. Teachers need to be aware that this can be realized on condition that other methods, techniques, and strategies like giving feedback, adapting materials, assuring learner autonomy, using authentic materials have to be given equal priority to achieve success.

The implementation of critical thinking in classes makes learning permanent and meaningful. This is what every teacher wishes to realize. Besides the teaching of critical thinking skills can be seen as a common investment in our future.

As mentioned above, textbooks may not contain CT strategies for some reasons. They may not meet the needs of learners. In this situation it is primarily teachers' duty and responsibility to adapt materials to the contents of their lessons. As it is known, all teachers no matter of what their branches are have to design, adapt, improve, and evaluate materials for a better teaching.

Informing students that the central examinations conducted by the state and international English examinations known as TOFEL, IELTS, etc. prefer to ask more questions would raise awareness about the significance of CT.

It is not known for certain how much English language teachers ask questions in their exams at the upper levels of Bloom's Taxonomy which forces the learners to use their ability to think critically. Whether students take multiple choice tests or classical tests, it must be noted that the questions at the analysis, synthesis, and evaluation levels must have higher scores. In other words, teachers can give more priority to higher-order levels of the taxonomy, rather than simply ask them the questions based on knowledge and rote memorization. Seemingly easy, questions at the lower levels of the cognitive domain might actually be challenging for some students who do not have a powerful memory. Although no empirical studies are available which aim at revealing whether there is a significant difference between students' knowledge of the language (lower-level) and their ability to solve questions at higher-order thinking levels, some of them are usually more capable of giving answers to questions at the higher-levels of the cognitive domain. Because lower-level questions have fixed answers. Either students know their answers or not. Since questions at the lower-levels of the cognitive domain do not leave any room for discussion, even less successful students sometimes fear them. Teachers can make use of this situation and see it as an opportunity to ask questions which require students to utilize their ability to think critically at the optimum level. Contrary to lower-level questions, questions at the upper-levels of the cognitive domain are generally open-ended, which provide students with an opportunity to write or articulate their answers freely and without feeling any anxiety for wrong answers. It can be noted that this is to the advantage of especially gifted or talented students who enjoy brainstorming.

Teachers may not have enough time to receive answers for critical thinking questions from their students. One way of overcoming this problem can be to assign them homework and to fix a particular date for handing them in. Also having enthusiastic and willing students make their presentations might have a positive impact on other students who have formerly shown unwillingness and/or shyness. This kind of instruction is in the interests of both teachers and students. Teachers can get rid of their heavy workload and have sufficient time to give their students feedback. Students can have more self-confidence while making presentations in front of the audience.

English language teachers can try to find a way to access published articles and dissertations with respect to the issue. If they continue to be unaware of scientific

research in their area, they cannot make use of them. So it is important that the relevant articles and dissertations are ready for use.

And lastly, the teaching of critical thinking skills can be endorsed by other in-field- teachers so that students can gradually be conscious of the significance of critical thinking.

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7. APPENDICES

7.1. APPENDICE A: Cognitive Domain based on Bloom's taxonomy

In my classes, students:		always (6)	usually (5)	often (4)	sometimes (3)	seldom (2)	never (1)
KNOWLEDGE	1. complete the sentences using the given words						
	2. put the words in order to make meaningful sentences						
	3. match a variety of words with their opposites						
	4. put the words in brackets into the correct tense						
	5. match the words with the pictures or their meanings						
	6. tell or write the names of the given objects						
COMPREHENSION	7. summarize a text in their own words						
	8. find the main idea of the text they read						
	9. understand and seek answers to questions before, while, and after reading						
	10. restate a sentence(s) in their own words in the same meaning						
	11. do transformational drills						
	12. deduce the meanings of words from the context						
	13. predict the topic of a text through pictures and key words						
APPLICATION	14. apply what they have learnt to real situations (ex: role play, dramatization)						
	15. pay attention to pronunciation, stress, and intonation in their speech						
	16. explain an event through a variety of materials such as illustrations, flashcards, photographs, and so forth						
	17. use grammar rules and spellings correctly.						
ANALYSIS	18. find the main argument and supporting information in a text						
	19. establish cause and effect relationships in the text they read						
	20. express whether they agree or disagree with the writer's opinions, making explanations						
	21. express what the purpose of the writer is						
	22. express what message or lesson can be taken from the story or the text						
	23. make inferences from a text by reading between the lines						
	24. distinguish facts and opinions						
	25. find differences and similarities between two things and comment on them						
	26. write a composition about the subject they learn						
	27. propose their own solutions to real-life problems about the subject they deal with.						
SYNTHESIS	28. add a sentence to the end of a story, a conversation, or a paragraph to reach a strong conclusion						
	29. relate the relevant subject to real-life by giving examples						
	30. create the mind maps about the subject they learn						
EVALUATION	31. modify a paragraph, a text, or a conversation for enhancement						
	32. express what they would do in similar situations to solve a problem that they deal with						
	33. criticize a text or evaluate its message in terms of different aspects						
	34. judge whether the information given is based on strong evidence						
	35. reach a consensus about the relevant subject through discussion						
EVALUATION	36. decide whether or not their judgements are made according to criteria and evidence						
	37. revise the accuracy and appropriateness of what they write						

7.2. APPENDICE B: Official Permission from the Provincial Directorate of National Education



T.C.
ADİYAMAN VALİLİĞİ
İl Millî Eğitim Müdürlüğü

Sayı : 47754795/44/3679118
Konu: Anket Uygulama İzni

04/12/2013

Sayın: Öğr. Göv. Ahmet ŞAHİN
Adıyaman Meslek Yüksekokulu
ADİYAMAN

İlgi: 27.11.2013 tarihli dilekçeniz.

İlimiz Merkez Ortaöğretim Kurumlarında görevli İngilizce öğretmenlerine yönelik eleştirel düşünme eğilimleri ile öğrencilerin eleştirel düşünme becerilerini geliştirmeye yönelik etkinlik ve strateji kullanma düzeyleri arasındaki ilişkiyi inceleyen araştırma çalışmasını yapmanıza ilişkin Valilik Makamının 03/12/2013 tarih ve 47754795/3662393 sayılı onayı ekte gönderilmiştir.

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Aslı ile aynıdır.
03 Aralık 2013

Mehmet TEKER
V.H.K.İ.

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7.3. APPENDICE C: Reliability Analysis of the Scale of Cognitive Domain

Reliability Statistics

Cronbach's Alpha	N of Items
,939	33

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,816
Approx. Chi-Square		1764,272
Bartlett's Test of Sphericity	df	528
	Sig.	,000

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
BT4	110,3889	628,466	,215	,940
BT6	110,8750	621,745	,265	,940
BT7	111,4861	622,281	,240	,941
BT8	110,9722	622,281	,251	,941
BT9	110,7222	620,034	,306	,940
BT10	111,5000	623,155	,250	,940
BT11	111,0278	619,999	,310	,940
BT12	110,9861	615,535	,400	,939
BT13	110,7639	612,070	,483	,938
BT14	111,4861	613,296	,410	,939
BT15	111,2222	595,527	,595	,937
BT16	111,5000	608,366	,459	,938
BT17	110,9167	605,486	,588	,937
BT18	111,3333	607,352	,562	,937
BT19	111,5417	600,195	,676	,936
BT20	111,6528	595,554	,710	,936
BT21	111,7778	601,471	,626	,937
BT22	111,6528	600,765	,630	,937
BT23	111,6944	590,581	,742	,936
BT24	111,9167	607,430	,516	,938
BT25	111,7639	592,662	,671	,936
BT26	112,3194	600,164	,599	,937
BT27	112,0694	584,319	,763	,935
BT28	112,3056	598,497	,626	,937
BT29	111,8611	590,234	,734	,936
BT30	112,3194	592,643	,689	,936
BT31	112,0833	593,880	,692	,936
BT32	112,0000	594,000	,734	,936
BT33	111,7361	589,718	,687	,936
BT34	112,0833	594,331	,685	,936
BT35	112,0139	595,253	,691	,936
BT36	112,2917	592,069	,749	,936
BT37	111,5139	609,605	,512	,938

8. CURRICULUM VITAE

PERSONAL INFORMATION

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