T.C.
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THE CRITICAL THINKING DISPOSITIONS AND TENDENCIES OF TURKISH EFL UNIVERSITY STUDENTS

A THESIS FOR THE DEGREE OF MASTER OF ARTS

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ENSTİTÜSÜ MÜDÜRLÜĞÜ'NE

Murat KARAKOÇ'a ait "THE CRITICAL THINKING DISPOSITIONS AND TENDENCIES OF TURKISH EFL UNIVERSITY STUDENTS" konulu çalışma, jürimiz tarafından Batı Dilleri ve Edebiyatları Anabilim Dalı, Yüksek Lisans tezi olarak kabul edilmiştir.

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Tezi Hazırlayan	Murat KARAKOÇ
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Bu araştırmada Atatürk Üniversitesi K.K.E.F. İngilizce Öğretmenliği Bölümü öğrencilerinin eleştirel düşünme eğilimleri incelenmiştir. Bu çalışma ile eleştirel düşünme eğilimlerinin belirlenerek yabancı dil eğitimi gören öğrencilerin eleştirel yaklaşımları ile ilgili yapılacak çalışmalara katkı sağlaması hedeflenmiştir.

Bu çalışmanın evrenini Atatürk Üniversitesi K.K.E.F. İngilizce Öğretmenliği Bölümünde öğrenim gören 237 öğretmen adayı oluşturmaktadır. Verilerin toplanmasında 2003 yılında Doğan KÖKDEMİR tarafından Türkçeye uyarlanan California Eleştirel Düşünme Eğilim Ölçeği (CEDEÖ) ve Eleştirel Düşünce Eğilim Anketi (EDEA) kullanılmıştır. Çalışma sonuçları öğretmen adaylarının eleştirel düşünme eğilimlerinin orta ve düşük düzeylerde olduğunu göstermiş ve bu bağlamda onların meslekteki verimlilik açısından henüz tam yeterli olmadıklarını göstermiştir. Anket sonuçları tablolar halinde gösterilmiştir.

Anahtar Kelimeler : Eleştirel düşünme, California Eleştirel Düşünme Eğilim Ölçeği, Aday Öğretmen.

ABSTRACT

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This research examined critical thinking (CT) dispositions and tendencies of prospective teachers from Atatürk University K.K.F.E. English Teaching Department. In this way, this study aimed to determine their dispositions and provide a contribution to further studies that are related with CT approaches of students from foreign language department.

In this study 237 students from Atatürk University K.K.F.E. English Teaching Department have been evaluated. Datas were collected with California Critical Thinking Dispositions Inventory (CCTDI) and Critical Thinking Disposition Questionnaire (CTDQ). The results revealed that students' CT dispositions are in middle and low levels and in this sense they have not been sufficient enough for professional productivity. Questionnaires' results have been introduces as tables.

Key words: Critical Thinking, California Critical Thinking Dispositions Inventory, Prospective Teacher.

To my Parents,
to my better half
and
to my son

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ABBREVIATIONS

CCTDI : California Critical Thinking Disposition Inventory

CTD : Critical Thinking Disposition Questionnaire

EFL : English as Foreign Language

ELT : English Language Teaching

CT : Critical Thinking

ESL : English as a Second Language

CHAPTER 1: INTRODUCTION

1.1 Background of the Study

A common goal across all disciplines in higher education is to improve critical thinking. Critical thinking can provide you with a more insightful understanding of yourself. It will offer you an opportunity to be objective, less emotional, and more open-minded as you appreciate others' views and opinions. By thinking ahead, you will gain the confidence to present fresh perspectives and new insights into burdensome concerns. Thinking critically will boost creativity and enhance the way you use and manage your time (Hader,2005) and critical thinking not only describes the ability to think in accordance with the rules of logic and probability, but also the ability to apply these skills to real-life problems, which are not content - independent.

For a long while, the term critical thinking has been a great interest for the researchers, philosophers and scholars. The basis of critical thinking is thought to come from Greek philosophers; particularly Socrates. Known as the creator of "Socratic Questioning", Socrates advanced a method in which he questioned his antagonists by asking questions which were aimed to challenge their "epistemological foundations" (Scanlan, 2006). Socrates left the beaten path to thinking skills and this, perhaps, enlightened the subsequent researchers who are interested in critical thinking. The findings and datas on critical thinking continued by developing and most importantly the contribution of improving thinking skills to education has been intensely taken into account. Many studies proved that students learn better and easier if they learn to think about an issue critically and evaluate an assertion gravely. For this reason improving students' critical thinking skills ought to be taken into attention by instructors and many specialists express the inevitable connection between developing critical thinking skills and education. For instance, John Dewey (1933) pointed out that learning to think is the central purpose of education and by engaging students at a crucial time in their developmental process, we can lay the foundation for good critical thinkers. More recently, at the 1990 education summit, the National Education Goals Panel identified the need for a substantial increase in "the proportion of college graduates who demonstrate an advanced ability to think critically, communicate effectively, and solve problems"

(National Education Goals Panel, 1991). To some scholars, including Michael Scriven(1985), “training in critical thinking should be the primary task of education”. For an education system to give the opportunities to students that would develop their potentials and have active roles in the development of their country, content and methods of teaching must be reorganized according to critical, creative, scientific, relational thinking and reasoning skills (Özden, 2005). Therefore, in the field of education and other fields, there has been a growing awareness that children must be prepared for critical thinking, or higher-order thinking. As Halpern (1998) states "Higher order skills are complex and require judgment, analysis, and synthesis and are not applied in a rote or mechanical manner." Simpler skills in comparison are skills that don't require any concern for extraneous variables that would affect the outcome. And another important factor in terms of critical thinking, is curriculum. Despite widespread expressions of concern about developing critical thinkers, studies have shown that most schools are neither challenging students to think critically about academic subjects nor helping them develop the reasoning abilities needed to deal successfully with the complexities of modern life. Whatever critical thinking teaching strategies are employed, they need to be worked into the curriculum. It is then necessary to monitor the efficiencies of the curricula with regards to the critical thinking enhancements made. This is typically done using a testing instrument designed to test a student's mental ability before and after the student's school term. There have also been several approaches in education about whether to integrate critical thinking into courses or teach it with a separate curriculum in an independent course. In general, this has not been practised sufficiently in Turkey. At this point this study states a brief information about education programs and curriculum in Turkey, especially teacher education.

In this direction, the concern for this study is to examine the critical thinking levels of EFL(English as a Foreign Language) undergraduate English majors and have an idea on their attitude and skills of evaluating critically.

1.2 Statement of the Problem

There are a great number of studies on critical thinking dispositions in language education, particularly in recent years because the need for critical thinking in language education rises due to the needs of the changing world and the individuals’ desire to adapt these changes into their social worlds. As Yağcılar

(2010) states in her study critical thinking has extensively gained importance in various contexts of language teaching like English for Academic Purposes (EAP), English as a Second Language (ESL) and English as a Foreign Language (EFL).

In this study the problem is how much and in what way prospective teachers from English Teaching Department at Atatürk University use their skills of critical thinking and tendencies.

1.3 Purpose of the Study

This study intends to find out critical thinking dispositions or tendencies of undergraduate English majors by measuring their critical thinking levels with inquiries that was specially prepared for the abilities of thinking critically. Since prospective teachers will own the role of applying curricular activities and guide students to gain critical thinking skills, there is a need to investigate the prospective teachers' critical thinking levels and critical thinking conceptions (Tufan,2008). Throughout the study, every precautions will be taken in order to preserve the impartiality of the study and the study will contain every details for achieving the goal. Today is a time where there is an explosion of information and under these circumstances every individual has to catch the era and for this everyone should be equipped with a high critical thinking level. As everywhere it can be possible only with a good education which can be achieved with well-equipped instructors. In this context, we ought to explore how critical thinking is handled in teacher education programs. Similarly a very well language learning is probable with a high critical thinking level, thus Atatürk University, Kazım Karabekir Faculty of Education, English Teaching Department was meticulously chosen. Because the aim of this study is not only exploring critical thinking dispositions of prospective teachers, but also this contribution to learning English as a foreign language(EFL). Based on the statement of the problem, this study sought to answer the following questions:

1. What are the critical thinking levels of undergraduate English majors measured by California Critical Thinking Dispositions Inventory.
2. Ensuring that critical thinking is well defined in the course will help students face crucial decisions in education and in life. Critical thinking skills will help students be more inquisitive, systematic, judicious, analytical, truth seeking, open-minded, and confident in reasoning (Facione, 1998).

3. What functions do the critical thinking questions serve?

4. Does the critical thinking level influence the success of students from foreign language classrooms?

1.4 Limitations of the Study

This study is limited to the data gathered from all degree students (prep., 1st, 2nd, 3rd, 4th) attending to Atatürk University, Kazım Karabekir Faculty of Education, English Teaching Department in the Fall Term of the Academic Year 2010-2011.

In data collection California Critical Thinking Dispositions Inventory (CTDI) and Critical Thinking Disposition Questionnaire (CTDQ) were used and this study is limited to this two disposition tests. Moreover datas of the study are limited with findings that were gathered from measurement tools.

Another limitation in this study is about some groups' questionnaire dates. Because of some instructors' time limitations, some tests coincided to the exam period and pollsters were given little time before or after some exams. Hereby, some students minds were a long way off; particularly busy with exams and possibly this could cause some delusive answers.

CHAPTER 2: REVIEW OF LITERATURE

2.0 INTRODUCTION

Developing the ability to think critically is an important element for modern education approaches and models. The world is getting both more technical and more complex day by day, that's why the necessity for education increases for each growing generation (Halpern, 2003). Due to this fact, countries all over the world search for ways of developing better school systems to be able to answer the high expectations both socially and economically (OECD, 2005). World is rapidly changing and people should keep up with this change and this actually has a relation with the skill of critical thinking. At the same time, people need to have a good evaluation and thinking ability in a changing world. Therefore, critical thinking is crucial economically, socially, and environmentally (Paul, Elder, and Bartell, 1997). The skill of thinking critically is generally accepted as a very vital stage in every field of learning, particularly in the last decades. Moreover, in a variety of courses mainly in social sciences and science, critical thinking is accepted as the "desirable outcome" (Watson and Glaser,1964).

Turkish Ministry of Education introduced new curriculum for primary level in 2005. Furthermore, critical thinking is emphasized to be one of the eight desired outcomes of the new curriculum. There are various and essential pedagogical courses in teacher education programs which aim to develop teaching skills of prospective teachers and to educate qualified teachers. To achieve this aim, these courses should be given effectively and the quality of instruction should be ensured. Hence, for the purpose of raising the quality in teacher education for general, vocational and technical education, the Turkish National Committee in Teacher Education was established in 1997. Teacher education programs in Turkey were reconstructed and the reconstructed programs have started to be carried out since 1998-1999 academic year by the Council of Higher Education (CHE) (CHE, n.d.a). At the same time, attempts toward providing accreditation in teacher education have been started; in this respect, an accreditation program was developed and the teacher education standards and teacher competencies in Turkey were determined. Studies in Turkey are an

example to give a general view about the vitality of critical thinking, particularly in teacher education.

Educational scientists claim that good critical thinking skills are necessary for life-long learning and according to them critical thinking should be informed to academicians, because critical thinking is a vital matter for education. The development of a student will be better if educationists take critical thinking into consideration in every field of education process; even in evaluation because researchers advice teachers to prepare exams within the criterions of critical thinking. Students have to think, analyse, evaluate, understand thoroughly and give feedback about information which was given to him or her. All these needs in education, particularly in ELT, make critical thinking as a must. If you want to see a critical thinker in class, you must know and implement features of critical thinking so you can create critical thinkers. If an instructor is to prepare students for the outside world, he should create critical thinkers. A student who can not surpass orders or bounds is out of developing himself. Critical thinkers are not passive recipients in education, they are all active learners who can think and express feelings easily. This chapter reviews the literature on thinking, creative thinking, thinking in education, critical thinking, characteristics of a critical thinker, teaching critical thinking, Bloom's Taxonomy, assessing critical thinking and the strategies of critical thinking.

2.1 Thinking

Human beings have searched the term of thinking since it was realized. There are various definitions on critical thinking but no definition can be accepted as a certain one. Thinking is one of the features that distinguish humans from other living beings.

Thinking is the manipulation or transformation of some internal representation (Halpern.2003,p.84). She says that when we start thinking, we use our knowledge to achieve some objective. In this sense thinking ability is the basic case of our life because all of us need to achieve an objective; on the other hand humans have relations in society and whereas nobody is alone. Besides living alone can not ignore our necessity to think, for instance a person will actually need to eat or drink and nobody can achieve these without thinking.

Descartes argued that thinking is reasoning, and that reason is a chain of simple ideas linked by applying strict rules of logic (McGregor,2007). His findings

regarding neurological transmissions between receptors and affecters in various vertebrates led him to declare ‘cogito ergo sum’, which translated means ‘ I think therefore I am’ (Gaukroger, 2003). Descartes is known as the father of cognitive science with his numerous ideas and evaluations and as it can be understood from his words -‘ I think therefore I am’- that Descartes consubstantiates presence of human with thinking situations. According to him humans exist as much as they think.

Both learning and thinking are the concepts which support and complete one another. When considered from this point of view, whereas learning style and critical thinking concepts have different qualifications, it can be stated that they can be used jointly. Likewise, when literature is examined, it is seen that there are researches handling learning styles and critical thinking concepts jointly (Güven and Kürüm, 2004). Thinking can be seen as a process, which is the basic process, that implements it. According to views of contemporary psychologists, thinking begins with noticing the problem. Thinking can be defined as the whole of mental behaviours which is attempted in order to eradicate the occurrences that disturb the individual’s psychologic or physical balance (Kazancı, 1989). Also Paul and Elder(2001) suggest that thinking is unique to human beings in the sense that the ability to think makes them the most developed creatures of the world. It serves as the connection between the individual’s cognitive functions and external stimuli and is the integrative part of our behaviour pattern in the world.

Thinking assumptions and patterns are known as mind tunnels (Piattelli-Palmarini, 1994). Yet, such thinking patterns may not lead us to what is true (Bandman and Bandman, 1988). They are not necessarily actual biases, but simple and inexact rules that serve to resolve certain classes of problems. One reason we lean on mind tunnels so much is that the brain can only process a limited amount of information. Its nature is to automate in order to reduce cognitive loads (Perkins, 2002).

Every human has their own way of thinking and this is indeed a special process that should function individually. If anyone faces with an obstacle or a basic restriction in the way of thinking, this may damage a free thinking style. Moreover, when the way we think is challenged, we often feel personally attacked (Levy, 1997) and then most of us tend to dig our heels in and cling even more tightly to our thinking styles (Taleff, 2006). Anyway, scientists suggest instructors to prepare an environment which provides student to think individual and more particularly that

should provides them to think free. The fallowing factor is a very important factor in thinking processes and furthermore fallacies must not prevent a learner from advancing in education because a student may find a solution to avoid specific fallacies. There are some suggestions given by scientists and help learners to overcome this fallacy problem. Without some kind of constant adjustment and tweaking, assumptions can lead to all kinds of errors and distortions in reasoning (Carlson, 1995). So, how does one avoid falling into various fallacy and mind tunnel traps? The first step is to try to identify them. Fallacies are statements, and they rarely if ever hold up well to questions, especially the following questions (Browne and Keeley, 2004):

•What is the proof of a statement?

• Where is the evidence for the statement?

•Why would I want to believe the statement?

•How can I be sure the statement is true?

Once you get into the habit of asking these types of questions you will have a good defence against the many fallacies that follow. Theories emerging from more scientific studies of human thinking and decision-making in recent years propose that thinking is more integrated and less dualistic than the notions in popular culture suggest. We should be cautious about proposals suggesting oversimplified ways of understanding how humans think. We should avoid harsh, rigid dichotomies such as "reason vs. emotion," "intuitive vs. linear," "creativity vs. criticality," "right brained vs. left brained," "as on Mars vs. as on Venus." (Facione, 1992).

2.2 Creative Thinking

The factor of being creative has a very important position and it is the whole process that includes a wide range from daily life to scientific researches and also creative thinking is accepted as a way of life. Creativity is known as a skill which can be seen in every human and in every period of human life. But the continuousness, improvement, grade and appearing of creativity may change human to human. Creativity has various features: flexibility, multiple thinking, sensitivity to environment and humans, to be awake and interested in new situations, rationalism,

thinking and treating easily and quickly, originality, reaching to different results (Mangır and Çağatay; Aral, 1991: cited by Demirci 2004). Creative thinking requires identifying an argument, analysing, evaluating, evidence, making judgements and structuring reasons in a logical way towards a conclusion (Cottrell, 2005). Also such skills are necessary for the contemporary approaches, so creative thinking skills should be taken into consideration in education processes.

The basic difference between humans and animals is accepted as thinking ability, but this is not just a simple feature which is given to human with birth and that must be developed by using it effectively. Thinking creatively should be a life standard for an individual. Your task as a creative thinker is to combine the ideas or elements that already exists: If the result is unlikely but valuable combination of ideas or things then you will be seen as a creative thinker (Adair, 2007).

Critical thinking is sometimes referred to as 'critico-creative thinking. There are two related reasons for this. The first is that the term 'critical thinking' is sometimes thought to sound rather 'negative' as if one's only interest is in adversely criticising other people's arguments and ideas. As the second reason, to be good at evaluating arguments and idea some often has to be very imaginative and creative about other possibilities, alternative considerations, different options and so on (Fisher, 2001). Thinking critically and thinking creatively can be seen as the same but undoubtedly there are basic differences between two thinking styles. *Creativity* masters a process of making or producing, *criticality* a process of assessing or judging. The very definition of the word "creative" implies a critical component. Also in teaching these two terms can come to a relationship. To do so requires that we focus on these terms in practical, everyday contexts, that we keep their central meanings in mind, that we seek insight into how they overlap and interact with one another. When we understand critical and creative thought truly and deeply, we recognize them as inseparable, integrated, and unitary (Paul and Elder, 2008) . In any case, we will see a corded relationship of these terms in this study.

2.3 Thinking in Education

Education, perhaps the most basic need for people, is the process that provides the development of human. While scientists make researches on education, they always point out the importance of 'thinking skills'. According to Meyer (1976) the aim of education is to nurture the individual, to help to realize the full potential that

already exists inside him or her.ere has always been a strand of educational thought that held that the strengthening of the child's thinking should be the chief business so the schools and not just an incidental outcome – if it happened at all (Lipman, 2003). Particularly for the last decades, the importance of understanding students' ability of thinking and generating a strategy or plan according to their levels of thinking has been the main necessity for an effective education period. Furthermore this does not mean classifying students as a standard material, because identifying students' level of thinking is used for giving answers to this question ' How should we teach?'.

Today, many scientists agree that every new organization had better focus on intellectual development. For an education system to give the opportunities to students that would develop their potentials and have active roles in the development of their country, content and methods of teaching must be reorganized according to critical, creative, scientific, relational thinking and reasoning skills (Özden, 2005). For a more qualified education, everything should be organized in this way and qualified education is student-centred and it enables students to reach higher levels than expected, make them think about the subject, increase the power of imagination and make positive critics. Qualified education should show the way to students about what and how to learn. While students evaluate what they learned and their learning methods, they manifest their critical thinking abilities (Emir, 2009). As Cotton indicates(1991) :

> *"If students are to function successfully in a highly technical society, Then they must be equipped with lifelong learning and thinking skills necessary to acquire and process information in an ever changing world".*

Freedom of a person equals with the level of thinking, so this should be taken into consideration in every education environments, even in family which is the first education process of a human. If parents want children to be an independent individual, they should always inspire them to think independently as an individual. One father, for instance, on his daughter's twenty-first birthday, said to her in all honesty as he understood the matter, ' You are of age now, and you are on your own. Do not expect me to do your thinking for you in the future. I want you to be the independent person I have always dreamed you would become. (Hullfish and Smith, 1978).

One of the aims of education should be developing students' thinking skills as well as motor skills, which is basic goal of contemporary approaches in education. According to Elder and Paul (2005) students are not passive but active while they are realizing critical thinking. If students use critical thinking skills, they gain clear and bright views in depth, they are more interested in events, they approach in a more reasonable manner and they become fairer (Connerly, 2006). In educating for the improvement of thinking, in an inquiry-driven society, critical thinking, creative thinking, and caring thinking enable us to identify the primary aspect of its educational process (Lipman, 2003). As Harmer (2007,) claims, "Teachers of young learners need to spend time understanding how their students think and operate''. Such views about thinking in education, can be seen generally in new education systems and educational scientists never ignore this case for the reason that they know traditional methods or particularly rote-learning is useless for a good and effective learning. Therefore, Heidegger also advises us that is we wish to learn thinking, we must radically unlearn the traditional methods of and presuppositions about thinking (Stenstad,2006).

Some years ago author Dorothy Sayers commented, " . . . although we often succeed in teaching our pupils 'subjects,' we fail lamentably on the whole in teaching them how to think: they learn everything except the art of learning" (Harmon 1979). But a teacher educating in any type of school should try to orient students towards thinking and they should find an answer to this question: Are we equipping our students with the skills and habits of thinking?

2.4 Critical Thinking

When the term of 'Critical Thinking' is searched, it is understood that there are meanings of it which are suggested in the frame of philosophy and psychology sciences but in general sense this term has not got a definite meaning. While there is no absolute agreement as to what constitutes critical thinking, several definitions attend to the same subset of skills needed to enhance critical thinking instruction in the classroom. This can be seen as an irreconcilable situation and a concept that may take attention to many various dimensions. As Cuban notes:

'Defining thinking skills, reasoning, critical thought and problem solving is troublesome to both social scientists and practitioners. Troublesome is a polite word; the area is a conceptual swamp' (1984, cited in Lewis and Smith, 1993).

'Critical', derived from the Greek word *kritikos* meaning to judge, arose out of the way analysis and Socratic argument comprised thinking at that time.(McGregor,2007) and then the word *kritikos* passed to Latin as 'Criticus' that is the type of spreading to world languages from it (Hançerlioğlu,1996). The word critical means to understand the people and things around us and analyses our own thinking processes. Unfortunately criticizing ability is used just as limiting the thinking process of a person (Chaffee, 1988). Halpern (1996) defines critical thinking as the use of cognitive skills or strategies that would enhance the probability of desired behaviours. Humans unconsciously think but again humans consciously think critically. Perhaps the basic difference between thinking and critical thinking is this.

Mingers's (2000) review of critical thinking literature provides a good starting point in that he captures four significant elements of critical thinking that are included in most cited definitions of the concept:

• The critique of rhetoric-being able to evaluate the validity or credibility of arguments and/or a general scepticism towards statements and knowledge

• The critique of tradition-being sceptical of conventional wisdom, "common sense", long standing practices and traditional ways of doing things

• The critique of authority-being sceptical of one dominant view and being open to a plurality of views

• The critique of knowledge-recognizing that knowledge is never value free and its subjective and contextualized nature.

These items takes attention to complexity of the term 'critique' which is defined as very complex and intricate situation. Lewis and Smith (1993) trace back the origins of critical thinking and problem solving in philosophy and psychology respectively. According to them critical thinking is higher order thinking occurs when a person takes new information and information stored in memory and interrelates and/or rearranges and extends this information to achieve a purpose or find possible answers in perplexing situations.

In 1990, a panel was organized by American Philosophical Association and in this panel there was a consensus about the definition of critical thinking. Here is this definition:

> *'We understand critical thinking to be purposeful, self-regulatory judgement which results in interpretation, analysis, evaluation and inference, as well as, explanation of the evidential, conceptual, methodological, criteriological, or contextual considerations upon which that judgement is based... Critical thinking is essential as a tool of inquiry. As such, critical thinking is a liberating force in education and a powerful resource in one's personal and civic life... While not synonymous with good thinking,, critical thinking is a pervasive and self-rectifying human phenomenon.'(American Philosophical Association. 1990).*

As it is pointed out above, critical thinking is a cognitive case by which humans interpret the information and data; this process includes problem-solving, having rational judgements, criticism etc. Making comments about situations or deciding about what we will do demands a proper critical thinking ability, the ability that everybody need in society, just because humans live in a community in which they have relations and face with so many cases.

Decades ago, Watson and Glaser (1964) declared that critical thinking is more specific one than we think; it is also a composite set of skills knowledge and attitudes. The authors list components of critical thinking as:

> *'(1)attitudes of inquiry that involve an ability to recognize the existence of problems and acceptance of the general need for evidence in support of what is asserted to be true; (2) knowledge of the nature of valid inferences, abstractions and generalizations in which the weight or accuracy of different kinds of evidence are logically determined; (3) skills in employing and applying thee above attitudes and knowledge.' (Watson and Glaser 1964, p.10).*

Keating(1980) describes the four components of critical thinking : (1)content knowledge – thorough familiarity with an accumulated base of knowledge / experience: (2) divergent thinking- the ability to entertain or generate new ideas easily from the knowledge base: (3) critical analysis – the ability to separate promising from unpromising avenues and to consider alternatives: and (4) communication skills – the ability to develop a product to be evaluated in a social content, outside the individual.

This is an accepted process by researchers of critical thinking; even everyone who has got a little information about cognitive skills, nevertheless there are a few vital points in Keating's suggestion. The most significant one is 3rd component: In this compononent Keating is bringing up alternatives, which is contrasting from general views of other specialists; because many of them may in an expectation of new-extremely new- information. According to Critical Thinking Cooperation (2006) critical thinking is an ability which is beyond memorization. When students think critically, they are encouraged to think for themselves, to question hypotheses, to analyze and synthesize the events, to go one step further by developing new hypotheses and test them against the facts. Also, students learn better if they develop their reasoning and understanding skills, and in this respect critical thinking skills help students in expressing themselves. Everyone has had the experience of having their words misunderstood by others. And we all use words not merely to express our thoughts, but also to shape them. Developing our critical thinking skills, therefore, requires an understanding of the ways in which words can (and can fail to) express our thoughts (Hughes and Lavery, 2004).

Critical thinking is more than applying simple thought to a topic or issue; it is disciplined, reflective thinking. Critical thinking directs the habits of mind particular to a discipline, such as geography, to the issue or problem at hand, raising questions and using evidence in ways that reflect the perspectives of the discipline or domain that defines the issue (Sharma and Elbow, 2000) . Traditional approaches can not be accepted as enough in developing students' critical thinking. "Traditional textbooks are fact rather than process-oriented. They stress 'what' instead of 'how' and 'why.'...when teachers allow textbooks to dominate instruction they are unlikely to meet today's educational demands for critical thinking, problem-solving, skill-building, and inquiry about the real world" (Hill, 1994). Such experiences contribute to a belief that answers are either right or wrong, textbooks are always right, and knowledge, as defined by the teacher and the textbook, is complete. Also such approaches may come to a result for student as powerlessness and an inclination to confuse learning with memorization of facts. In order to deal with new situations for a student, he or she can strengthen critical thinking abilities, otherwise ineffective ways of teaching can leave students ill-equipped to deal with new and sometimes contradictory information. Instructors must direct students to questioning; perhaps this is the most vital factor for critical thinking process.

According to Connelly (2006) it is important to consider the differences between critical and uncritical thinking while dealing with objective and selfish critical thinking. Paul et al (1990); state that there are three thinkers: The one who does not criticizes, who selfishly criticizes and who objectively criticizes. The people who do not criticizes do not pay attention on other peoples' thoughts and they are generally calm. People who selfishly criticizes can not be objective even they are good at thinking. Objective criticizers are both good at thinking and they treat fairly to people. In order to be objective criticizers students must use the standards about mind in an effective manner (Connelly, 2006).

Questioning is the cornerstone of critical thinking which in turn is the source of knowledge formation and as such should be taught as a framework for all learning. Students are frequently conditioned in their approach to learning by experiences in teacher-centered, textbook-driven classrooms (Sharma and Elbow 2000). This situation is a disturbing case for contemporary educators, and for this reason they would rather choose the latest models and methods which are more effective in directing students to thinking.

Critical thinking is purposeful, self-regulatory judgment which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, criteriological, or contextual considerations upon which that judgment is based. The ideal critical thinker is habitually inquisitive, well-informed, trustful of reason, open-minded, flexible, fair-minded in evaluation, honest in facing personal biases, prudent in making judgments, willing to reconsider, clear about issues, orderly in complex matters, diligent in seeking relevant information, reasonable in the selection of criteria, focused in inquiry, and persistent in seeking results, which are as precise as the subject and the circumstances of inquiry permit (Facione, 1990). And as Wood (2002) suggests We also need to be aware of our own paradigms. Each of us has them; they are the assumptions we make about the world; our world views. And they colour all the inferences we make, and all our inductive reasoning. We cannot avoid them, and we don't necessarily have to change them (although it's healthy to do so if our reasoning shows that they were faulty.) But we do need to be aware of what they are.

2.5 Characteristics of a Critical Thinker

When we take a look to the definitions about critical thinking, approximately we can infer a general idea about the features of the individual who thinks critically. Critical thinking individuals are people who research, question, refuse the informations as it is, active, think analytically and synthesis, evaluate the information and explain with true basis, treat open-minded and aware of thinking processes. An individual who gets these features will be better in solving problems that they faced with as long as their life. Because critical thinking is a cognitive process which contains creative thinking, analyzing, problem solving, making decision. Individual can get the skill of critical thinking with many-sided education programme. Of course there are several differences between individuals who have critical thinking ability and who have not got yet. On the other hand, a person can ask this question: Why should we become critical thinkers? This is a very important question and when characteristics of a critical thinker is read in this part, anyone will definitely find the answer and this answer is not only a scientific case but also a daily routine because even in daily life, developing critical thinking skills will be useful. If you develop the ability to analyse people's attempts to persuade so that you can accurately interpret what they are saying or writing and evaluate whether or not they are giving a good argument then you can begin to liberate yourself from accepting what others try to persuade you without knowing whether you actually have a good reason to be persuaded (Bowell and Kemp, 2002). Anyway this part is a very explanatory and descriptive one in emphasizing both the importance of critical thinking and characteristics of critical learners. Ennis (1985) lists the characteristics of a critical thinker as:

- Seek a clear statement of the thesis or question
- Seek reasons
- Try to be well- informed
- Use credible sources and mention them
- Take into account the total situation
- Try to remain relevant to the main point
- Keep in mind the original and/or basic concern
- Look for alternatives
- Are open-minded

• Consider seriously other point of views than one's own
• Reason from premises with which one disagrees- without letting the disagreement interfere with one's reasoning
• Withhold judgment when the evidence and reasons are insufficient
• Take a position (and change a position) when the evidence and reasons are insufficient
• Seek as much precision as the subject permits
• Deal in an orderly manner with the parts of a complex whole
• Are sensitive to the feelings, level of knowledge, and degree of sophistication of others.

(as cited in Paul, Elder, and Bartell, 1997, p. 13)

Ennis pointed out a general view about characteristics of critical thinker during a period in which studies about critical thinking began to increase but later Paul and Elder (2005) revealed a more detailed list. They list the characteristics of critical thinkers as:

- Raises vital questions and problems, formulating them clearly and precisely;
- Gathers and assesses relevant information, using abstract ideas to interpret it effectively;
- Comes to well-reasoned conclusions and solutions, testing them against relevant criteria and standards;
- Thinks open-mindedly within alternative systems of thought, recognizing and assessing as need be, their assumptions, implications, and practical consequences;
- Communicates effectively with others in figuring out solutions to complex problems. (p. xxiii)

Moreover, James Williams indicates characteristics of a critical thinker in his website. According to him a critical thinker is someone who explores and considers as many possibilities as he can. His thinking is not bound by rules or doctrines, and he tries his best not to use emotions to justify his ideas. A critical thinker knows that he often has to follow rules, but he knows how to think outside of them. He does not

take anything at face value because he knows that many commonly accepted things and ideas might, in fact, be wrong. Throughout history, there have been many intellectuals who have been critical thinkers. Some are scientists who discover things not from formal experiments or painstaking research but from thinking in a new and unique way. And the critical thinker himself always keeps in mind that his own ideas might be wrong. Williams expressed these statements in his website in order to draw attention to the importance of critical thinking. His view about the rules or doctrines of critical thinkers is a remarkable statement because if a person lights on orders of a society, unquestionably he or she cannot improve ideas.

Kurland (2000) explains characteristics of critical thinkers in his website in detailed. To him, critical thinking includes a complex combination of skills. Characteristics of people who think critically are the following:

- ***Rationality :*** We are thinking critically when we

→ rely on reasons rather than emotion

→ require evidence, ignore no known evidence, and follow evidence where it leads, and

→ are concerned more with finding the best explanation than being right analyzing apparent confusion and asking questions.

- ***Self-awareness :*** We are thinking critically when we

→ weigh the influences of motives and bias, and

→ recognize our own assumptions, prejudices, biases, or point of view.

- ***Honesty :*** We are thinking critically when we recognize emotional impulses, selfish motives, nefarious purposes, or other modes of self-deception.

- ***Open-mindedness :*** We are thinking critically when we

→ evaluate all reasonable inferences,

→ consider a variety of possible viewpoints or perspectives,

→ remain open to alternative interpretations,

→ accept a new explanation, model, or paradigm because it explains the evidence better, is simpler, or has fewer inconsistencies or covers more data,

→ accept new priorities in response to a revaluation of the evidence or reassessment of our real interests, and

→ do not reject unpopular views out of hand.

- ***Discipine :*** We are thinking critically when we

→ are precise, meticulous, comprehensive, and exhaustive

→ resist manipulation and irrational appeals, and

→ avoid snap judgments.

- ***Judgment :*** We are thinking critically when we

→ recognize the relevance and/or merit of alternative assumptions and perspectives,

→ recognize the extent and weight of evidence. (p. 28)

Features above are very important in the way of developing thinking critically with particular instructions. Academicians should not ignore Daniel Kurland's statements about characteristics of a critical thinker if they want to teach students who have their own perspectives and open-minded intelligence.

According to Paul and Elder (2005), strong critical thinkers embody the following characteristics: they are able to raise vital questions and formulate them clearly and precisely; they can gather and assess relevant information by using abstract ideas; they draw well-reasoned conclusions and solutions by testing them against relevant criteria and standards; they think open-mindedly within alternative systems of thoughts, recognizing and assessing their assumptions, implications, and practical consequences; and they can communicate effectively with others in figuring out solutions to complex problems.

2.6 Teaching Critical Thinking

In the former parts of review literature of the thesis, the concepts and necessity of critical thinking has been explained. And the vitality of critical thinking in education can be seen obviously because critical thinking enables students to recognize a wide range of subjective analyses of otherwise objective data, and to evaluate how well each analysis might meet our needs (Kurland, 2000). Every pupils should have an effective skill of critical thinking, and they must not accept anything for granted but how can an instructor teach thinking critically to students?

There are several ways of organizing for instruction in critical thinking: We can teach a separate course or unit, we can infuse critical thinking into all that we teach, or we can use a mixed approach. The first approach of a separate course or unit requires materials that teach specifically for critical thinking dispositions, skills, and knowledge. The downside is that there may be little transfer from what the program

or materials teach to the rest of the curriculum. Infusion, the second possible approach, requires that critical thinking be taught as an integral part of all subject areas. (Wright, 2002). Furthermore, Brahler (2002) inform that the development of critical thinking skills of students depends on some variables such as; learning environment, the social structure of learning environment and the teaching style of the teacher. Morino Institute (2001) emphasizes that to engage the interaction between the teacher and the students teachers should be good at questioning skill, which is accepted as an effective factor in this process. What's more teachers' questions are important for students' cognitive and meta cognitive improvement in language classes (Açıkgöz, 2002; Myhill and Dunkin, 2002). The importance of teaching critical thinking skills in any classroom environment is emphasized recently because it is pointed out that not only for students' school life success but also for their lifelong success that skill needs to be taught.

Hirose (1992) mentions that teaching thinking skills are not only essential for students' success in their educational life but also it is necessary for their success in the workforce. According to Hirose (1992) employers complain about employees' lack of reasoning and critical thinking abilities. Those abilities are essential because compared with the jobs in the past the modern work environment requires more thinking and problem solving abilities. In order to be successful in life, people should think critically, and it is vital that this process be the focus of schooling in every area of the education system (Huitt, 1993; Thomas and Smoot, 1994, cited in Huitt, 1998). Regarding the importance of critical thinking, teaching that skill should be started since childhood and should be continued consciously at schools.

Halliday (2000) argues that critical thinking is to be used in the context of specific disciplines. Critical thinking is best developed through an engagement with different areas of knowledge rather than as an autonomous skill to be taught in itself. It is through cutting its teeth on actual topics, themes, an issues and problems as these arise within diverse content domains that thinking can acquire the kind of differentiation subtlety and sense of relevance that help to make it truly critical. (Dunne and Morgan, 1995).

Critical thinking does not mean intelligence, it is a skill which can be taught and developed. It is not having data but much more than it; having knowledge, thinking about its benefits and disadvantages and using it in different fields and situations and interpreting in different circumstances and getting outcome from it. In

today's world, where everything and everybody changes and things getting more and more complex, it is much more important to understand the cases and evaluate them for humankind and yourself correctly and effectively. So, governments are now aware of the importance of critical thinking in our daily life and try to impose it to our young generation through education system.

In the process of teaching critical thinking, both learner and teacher contribute to learning actively and pupils do not feel embarrassed theirself while expressing their feelings or feel shy of making mistakes. The non-linear, dynamic process in which many foreseen and unforeseen factors related to environment and organization, curriculum and 12 resources and pupil characteristics interplay to create dilemmas both for teaching and thus for planning (Yinger, 1982). Just like in recent views of learning, instructor is a counsellor and he have to try to help pupils' perceiving the information that they already have since their birth. Moreover, as it can be estimated, the atmosphere of class must be designed well for a good teaching of critical thinking. The actual operationalization of planned lessons that are also influenced by teacher's practical reasoning at the time as a response to the unforeseen factors related to environment.

Critical thinking is not equal with intelligence and shouldn't be misunderstood with it. Critical thinking is skill which can be developed(Walsh and Paul, 1988). As well as critical thinking can be developed, it can be searched and analyzed with it's different dimensions, so this shows that many scientists or experts hypothesize about critical thinking, because the vitality of critical thinking has been realized by many people recently. Educators are aware of the fact that critical thinking can be thought.

2.7 Bloom's Taxonomy

Any study that studies on critical thinking should contain and explain the objectives of Bloom's Taxonomy. Benjamin Bloom is a scientist who has many researches on critical thinking and ways of measuring it. Bloom published this taxonomy in 1956 and since then his taxonomy has been widely accepted and taught. Benjamin S. Bloom is a recognised name in educational research of the twentieth century. Together with his colleagues, he undertook the challenging task of creating a taxonomy of educational objectives. Instead of examining how to teach, what to teach, or when to teach it, Bloom focused his research on outcomes. Thus, Bloom's research 'focused educators on students' learning outcomes… what students should

know and be able to do' (Woo, 1999). The taxonomy provided a six-tiered framework of educational learning outcomes, which each learning level clearly defined. These learning levels form a hierarchy that is organised by cognitive complexity, in that the lower level abilities are also needed for proficiency at each successive level.

Bloom lists objectives in a conceptual enumerating way:

Table 1. Bloom's Taxonomy

Questioning Category	Bloom's Category	Student Activity	Questions (Stem Words for Directions)
Lower Level	Knowledge	Memorizing facts, terms, definitions, concepts, principles	What…?, list…, name…, define…., describe…
Lower Level	Comprehension	Understanding the meaning of material beyond factual recall	Explain, interpret, summarize, give examples, predict,translate
Lower Level	Application	Selecting a concept or skill and using it to solve a problem	Compute, solve, apply, modify, construct
Higher Level	Analysis	Breaking down material into its parts and explaining the hierarchical relations	How does… apply? How does… work? How does… relate to… What can we infer from / about… What distinctions can be made about …and…
Higher Level	Synthesis	Creating / producing something original after having broken down the material into its components	How do the data support… How would you Design an experiment that investigates… What predictions can you make based on the data?
Higher Level	Evaluation	Making a judgment based on a preestablished set of criteria	What judgements can you make about …? Compare and contrast… criteria for…

(From Grabler and Schroeder, 2003)

Teachers who take this taxonomy into consideration can improve students' higher-level thinking skills by using questions that they formed from this taxonomy in teaching situations. Critical thinking requires not only thinking but also self-development.

According to Bloom (1956), an acceptable response at a particular level assumes that one can exhibit the cognitive processes at all of the lower levels. For

instance, being asked to design a study to determine how much student learning is caused by teacher enthusiasm would be a synthesis level item. This would require a student to know about each aspect of the study such as research design and data collection (knowledge), know what each aspect of the study means, such as why an "case study" would be an appropriate research method for a specific hypothesis (comprehension); apply these abstract concepts to a particular situation (application); and tie in each of these separate concepts together such that each component becomes an integral part of the newly created product (synthesis). Appendix 1 lists this skills.

Some other researchers claim about some limitations of Bloom's taxonomy. Ennis (1993) points out the problem of Bloom's taxonomy by saying that "This conception (addressing Bloom's model) is a good beginning, but it has some problems… the levels are not really hierarchical, as suggested by the theory, but rather interdependent" To give an example, the evaluation phase of Bloom's taxonomy can be displayed unless all the stages such as analysis, synthesis are fulfilled. However, it is a fact that one need to monitor his/her own thinking process at any level, whether that thinking level is synthesis or application, high order thinking skills or not. The importance of monitoring self-thinking process was accentuated in Facione's study (1990), namely, "self-regulation" including the sub skills "self-correction" and "self-evaluation".

2.8 Assessment of Critical Thinking

Evaluating students' critical thinking is a critical thinking activity in itself. Assessment remains a major concern in developing programs to enhance students' critical thinking skills. Instructors have to determine purposes for evaluation and the criteria used to judge performances, and decide on what is to be assessed and how. Three main approaches to assessing critical thinking have commonly been used: (a) commercially available general knowledge standardized tests, (b) researcher or instructor designed assessments that attempt to capture aspects of critical thinking more directly related to the purposes of the research project or subject of instruction, and (c) teaching students to assess their own thinking. The existing instrumentations will be given below in a table with their testing purposes and appropriate audiences in this study.

Table 2. Existing Instrumentation

Instrument	Testing Purpose	Appropriate Audience
CCTDI or The California Critical Thinking Disposition Inventory	Measures the attributes of truthseeking, openmindedness, analyticity, systematicity, inquisitiveness, confidence in reasoning, and cognitive maturity	Community college students, college and university undergraduate students, graduate and Professional school students, adults, and working professionals
CCTST or The California Critical Thinking Skills Test	To assess an individual's or group's critical thinking and reasoning skills To gather data for program evaluation and research on critical thinking skills development	For use with adults at community college, undergraduate, graduate, and professional school levels.
CRA or California Reasoning Appraisal	An intellectually challenging and highly reliable test specifically designed to measure those reasoning skills that are essential to success at the professional and managerial levels	Individuals who are expected to have advanced reasoning skills, that is, those in the top 20% of the general population.
Cornell Critical Thinking Test, Level X	Focuses primarily on the evaluative aspects of critical thinking, such as judging the reliability of reports of observations that other people make	Appropriate for students in Grade 4 through college
Cornell Critical Thinking Test, Level Z	Focuses primarily on the evaluative aspects of critical thinking, such as judging the reliability of reports of observations that other people make	Appropriate for advanced high school students, college students, and adults
DCAT or Developing Cognitive Abilities Test	Measures learning characteristics and abilities that contribute to academic performance	Designed for students in grades 2-12
Ennis-Weir Critical Thinking Essay Test	A diagnostic and research tool for analyzing the effects of a specific curriculum	Designed for secondary and college students
HCTSR or Holistic Critical Thinking Scoring Rubric	Supports multi-modal assessment, for it provides evaluators with descriptors of four levels – two positive and	People who are using reasoned judgment to problem solve and

	two negative -- where in they can categorize the critical thinking evident to them in projects, portfolios, presentations, essays, etc. and the like	to make decisions about what to do or what to believe
New Jersey Test of Reasoning Skills	Majority of the items dealing with deduction	5th grade to college level
TER or Test of Everyday Reasoning	To assess an individual's or group's basic reasoning skills To secure essential information as an element in a comprehensive employment application process To gather program evaluation on reasoning and critical thinking skills.	General population Everyone with a sixth grade or higher reading level
Quant-Q	Measures reasoning skills in relation to quantitatively oriented problems	Technologically and scientifically oriented persons orprograms
Watson-Glaser Critical Thinking Appraisal	The WGCTA produces a single score based upon the assessment of five critical thinking skills: Inference, Recognition of Assumptions, Deduction, Interpretation, and Evaluation of Arguments	9th grade and above
EMI: Critical Thinking Disposition Inventory	The CTD was developed from the Delphi Report.	High school, college, and adult audiences.

This table explains all valid and deemed measurement tools used in evaluating critical thinking. When asked most frequently used ones, Watson-Glaser Critical Thinking Appraisal, The California Critical Thinking Dispositions Inventory, The California Critical Thinking Skills Test, Ennis-Ware Critical Thinking Essay Test, and The Cornell Skill Tests are the first that come to mind.

Siegel (1988) agrees with McPeck to a certain extent, i.e., some specific knowledge might be needed to exercise critical thinking but there are already serious studies for assessing critical thinking. Some researchers try to assess critical thinking by observing students. Wright (2002) suggests a checklist in this sense. When using an overall sort of approach to assessing critical thinking, Wright can keep a checklist to record his observations. Copies of the checklist can be made to note each learner's use of critical thinking tools in a particular task:

Table 3. Wright's Checklist

Tools For Critical Thought	**Examples**
Background knowledge Has adequate knowledge Understands the information	
Criteria Applies relevant and adequate criteria	
Vocabulary Understands the vocabulary	
Strategies Chooses and applies an appropriate strategy for the task	
Habits of mind Displays the appropriate dispositions and attitudes	

(Wright, 2002)

With this checklist, Wright and his friends want to observe and take notes on the processes of critical thinking of pupils. First he list the critical thinking tools which are available to the frame of the lesson.

Critical thinking is a cognitive process and this enables you interpret and evaluate the events. And this is the desired thing in our world to have a new, fresh and alternative ideas. As for critical thinking, counsellors can design interventions aiming to improve the critical thinking disposition of the clients. Enhancing the critical thinking dispositions of partners may positively contribute to their relationships. It can be taught so it has to have steps to learn and this will give you the opportunity to reach something you want from different and alternative ways. Also measuring a type of thinking is a specific process. Approximately thirty or forty years before than this, there was an accepted view about measuring of thinking: It is impossible to scale thinking. But now, as it is stated, there are so many inventories on scaling thinking and consequently estimating one's critical thinking dispositions and skills is more coherent and easy. With the demand of considering critical thinking in education, the vitality of assessing it went up. If we do not have an effective measuring tool, there can not be thought an effective critical thinking environment in learning.

Consequently, an assessment of the effectiveness of institutional critical thinking and teaching methodologies is an essential element to the continuous improvement efforts that most institutions practice.

2.9 The Strategies of Critical Thinking

If we consider that critical thinking is a case which can be learned, undoubtedly there are important and systematic steps to which we should fallow and practice or there are a route with which we have to get the skill of critical thinking. It can be directly said that the one who doesn't know 'where' he will go, at the same time he doesn't know 'how' he will go.

In this field Paul and Richard vd. has divided the strategies of critical thinking in two group(1990) : 1- Cognitive strategies, 2- Affective strategies. And then they listed these strategies in thirty three different dimension and explained the principles which are related to each strategy. Here, these principles of critical thinking strategies will be useful in describing 'What is critical thinking.' and in the processes of getting critical thinking and teaching critical thinking.

A. Affective strategies

1. Thinking independently
2. Realizing the self-centred mentality
3. Thinking objectively: respecting to other ideas
4. Understanding the relation between emotion and idea
5. Not having prejudgement: delaying the judgement
6. Developing the courage of questioning
7. Thinking in good-intention and honestly
8. Developing the determination of thinking
9. Trusting the skill of thinking

B. Cognitive strategies

10. Realizing the valid and invalid generalizations
11. Transferring everything learned
12. Developing opinion
13. Thinking clearly

14. Developing criterion for evaluation
15. Questioning reliability of the source of information
16. Researching thoroughly,
17. Analyzing and evaluating the views
18. Making and evaluating solution
19. Analyzing and evaluating applications
20. Critical reading
21. Critical listening
22. Making relations with inter-principles
23. Questioning
24. Comparing different views
25. Recognizing the aim and real
26. Evaluating the own process of thinking (p. 113)

If anyone get accustomed to the inactivity of thinking in an education process which is based on information, qualified thinkings don't be possible. The systems of rote learnings don't give a contribution to learners for that reason recently experts intensely began to study on new and modern methods of learning which are mostly include critical thinking.

2.9.1 The Importance and Effectiveness of Critical Thinking Strategies in Education Systems

A methodology which includes critical thinking dispositions is a very more effective methodology than other ones which are based on rote learning. Improving student thinking is important not only for mastering a given subject matter but also for coping with demands of the current challenging century(Beyer, 1988;Burden, 1998;Halpern,1999;Maclure, 1991;McTighe and Schollenberger,1991). Especially in the last decades, the vitality of critical or creative thinking skills has been a case for scientists and researchers who understand the effective factor of these subjects. In addition, teaching thinking has gained more importance along with a transition from subject –centered instruction to learner-centered instruction focuses on enhancing the learning process by requiring students to struggle with ideas, facts, opinions instead of memorizing (Halonen, Brown-Anderson and McKeachie, 2002;Raths, Jonas,

Rothstein and Wassermann, 1967). Furthermore, McKendree, Small, Conlon and Stenning stated the influence of critical thinking with these words(2002):

> *'Curriculum design throughout school programmes reflects the growing belief in the importance of learners' developing thinking skills, not only as a tool with which to maximise potential in individual subjects but also as a generic skill to be learned in classes and transferred from one to the other in all directions.'(p.57).*

Such statements points out the importance of strategies of critical thinking clearly, anyway this case is fairly interesting and popular among recent researchers of education systems. Fasko (2003) adds that in order to create a classroom environment to develop students' critical thinking, teachers can challenge their students' thinking by posing problems, having discussions, and raising questions. These questions are defined as High- Order questions by Todd (1997) and this term is accepted to name the critical thinking type of questions in this study. These strategies have a crucial role in every area of education and language teaching classes are one of these areas.

2.10. Studies Conducted on 'Critical Thinking'

Initial studies conducted on critical thinking began in the years of 1960s. Researchers have intended to explain critical thinking with two main disciplines thorough these studies. Philosophical approach has dwelled on norms of good thinking, the concept and motive of human thought and cognitive skills necessary for an objective world view; while psychological approach have dwelled on thinking and experimental studies thinking, individual differences in learning thinking and the concept of problem solving which is a piece of critical thinking. Studies related with critical thinking have been the target of social works concerning the field of education. The importance of critical thinking has been repeatedly mentioned in the documents being carried out in order to describe criterias in social fields (Deniz, 2003). Studies on critical thinking have been implemented as systematically thorough various stages and those have tried to get datas on types of skill or thinking variations on a specific field. Related researches and publications were viewed under two headlines as 'Studies in the Country' and as 'Studies Abroad' and findings in this research have been given compendious.

2.10.1. Studies in the Country

Kürüm (2002) put forward a study at Anadolu University Education Faculty. The goal of Kürüm's study was to identify critical thinking abilities and the levels of thinking abilities that constitute this ability and the factors which influenced critical thinking of teacher trainees studying at Anadolu University Education Faculty. The results of the study showed that teacher trainees' critical thinking abilities and all levels of thinking abilities were at mid- level and that these abilities were affected by different factors such as age, high school types graduated, score type and level in university entrance exam, program being studied, education and income level of the family, and activities held for developing themselves.

In the study made by Arslan (1995), there was decided three school's 493 students of 4th and 5th grades in accordance with their socio-economic levels (low-middle-upper) and research's target was to evaluate their scientific skills. With the test made by researcher, students' observing, expressing, questioning, communicating, researching, planning skills were measured. Eventually a significant difference in favour of 5th grade pupils was determined. The difference according to gender or socio-economic factors was not significant.

In another work, Aybek (2006) conducted a doctoral study in which she examined the effects of teaching with Edward De Bono's skill based thinking program in social studies subject on prospective teachers' critical thinking disposition and level. In her experimental study, she employed content based critical thinking program. As a result she reported significant results in favour of experimental groups in terms of critical thinking levels. In addition she reposted no significant relationship between grade point average and critical thinking levels of prospective teacher.

Özdemir (2005) tried to find out the variability of university students' critical thinking skills according to their socio-economic differences. The Cronbach Alpha reliability coefficient of attitude scale built up by the researcher was found as 78 and the scale consists 30 items. In the study students from Gazi Faculty of Education were evaluated and 128 students contributed to research as sample. As a result of the research, students are in the middle level in terms of critical thinking and there is no significant contact between their critical thinking level and their gender, birthplace, parents' education level and income.

Evcen (2002) conducted a study with a view to implement the relevance of Watson-Glaser Critical Thinking Appraisal Test – S form in Turkey terms. To this

end the relevance of the test to 9th – 11th grade students and 1st grades at university was evaluated and in the study the psychometric features of test was evaluated for these groups. Thorough the research, it was found out that Watson-Glaser Critical Thinking Appraisal Test – S form is a middle-level test for sample groups according to all item points analysis and tests. However the test gives valid and reliable coefficients for 9th – 11th grade students and 1st grades at university, the obtained validity and reliability coefficients are lower than the original form of the test.

In a study conducted by Kökdemir (2003), the solutions of teens in uncertainty situations were researched. In the study, 193 first grade students in Baskent University Faculty of Economics and Administration Faculty of Sciences were used as the sample. For the research, The California Critical Thinking Disposition Inventory and a test that is 10 item scale measuring achievement and determining were used. As a result of the research, the groups whose critical thinking points are low and high show different determination, samples whose critical thinking disposition is high make more rational decisions and groups whose points are low generally make a beeline.

Öztürk and Ulusoy (2008) used The California Critical Thinking Disposition Inventory in the study they research nursing students' critical thinking levels. The sample of the study was 312 undergraduate and 22 master students from Cumhuriyet University Nursing Department. The critical thinking levels of undergraduate students were 'low' but master students' critical thinking level was 'middle'. Moreover the study put forward that some demographic features and master education influence the level of critical thinking.

2.10.2. Studies Conducted Abroad

Critical thinking is a very important case for education that contributes to it directly and on account of this numerous studies have been conducted, particularly recently. But the panel held by 46 experts in 1990 is a vital study for critical thinking. These experts completed a two year Delphi project under the sponsorship of the Committee on Pre-College Philosophy of the American Philosophical Association (American Philosophical Association, 1990) to understand the nature of critical thinking. The Delphi Report identified critical thinking as "one among a family of closely related forms of higher-order thinking, along with, for example, problem solving, decision making, and creative thinking" (Facione, 1990). Although this

project yielded a valuable conceptualization of critical thinking in the field of instruction and educational assessment, the experts in the Delphi project maintained that focusing on only critical thinking skills is not adequate for instructional purposes and proposed a wider concept of critical thinking disposition. This can be taken considerable study for critical thinking because with this study researchers began to think that education is not sufficient without critical thinking.

Paul (1989) conducted a study touching upon the adaptation of critical thinking dispositions in learning environment. In this study Paul suggests dispositions to be disciplined and self-directed thinking could be taught. He maintained that critical thinking was constructed from skills, such as spotting conclusions, examining premises, forming conclusions and diagnosing fallacies. Thus he proposed that critical thinking be constructed as 'disciplined, self-directed thinking which exemplifies perfection of thinking appropriate to a particular mode or domain of thinking. Critical thinking conceptualised in this way must be taught with a focus on developing fair-minded, critical thinkers, who were willing to take into account the interests of diverse persons or groups regardless of self-interest. Paul called it the dialogical or dialectical thinking model.

Hager, Sleet, and Kaye (1992) examined the critical thinking abilities of vocational teachers using the Cornell Critical Thinking Test Level X. They pointed out that being a good thinker was a major component of being an effective teacher. Obviously the importance of this study is it's examining critical thinking abilities in terms of teachers since critical thinking is necessary not only for students but also for teachers.

As relevant to critical thinking, Porter (1991) showed a possible multidimensional framework for the general education model. He indicated that students bring a set of knowledge content, a variety of thinking skills, and attitudes toward critical thinking into the classroom environment. These student characteristics were modified through learning activities and their experiences, students' practises and pedagogy, and curriculum. He concluded that the final product was the students' outcomes, one of which could be the critical thinking skill.

Also Aretz, Bolen, Devereux (1997) presented a multidimensional framework for the assessment of critical thinking in college students. They collected data from 53 senior students who attended the United States Air Force Academy. The sample of participant included 44 males and 9 females between the age 21 and 23. Thorough the

study, a multimethod approach focused on the assessment of three major components of critical thinking including knowledge, thinking skills and attitudes. This multidimensional assessment framework was a viable solution to the problem of using a single instrument to assess critical thinking in college students.

In terms of using technology in learning environments, some studies also have been designed. In Maor and Fraser's (1996) research, conducted in a secondary school, used a computer in the context of the inquiry approach to science teaching and they wondered critical thinking results thorough science. The results showed that students had a significantly more positive attitude toward their computer-based classroom learning environment. Consequently learning was demonstrated to have improved in a number of science skills, such as reading data, interpreting graphs, manipulating variables, constructing hypotheses, ability to conduct experiments, to raise creative questions, to draw conclusion and to think critically.

Profetto, Grath, Smith, Rene, and Younge (2004) also conducted a study which explored, described and compared the types and levels of questions asked by 30 randomly selected tutors and their 314 students in context- based learning tutorial seminars in a Canadian baccalaureate nursing program. The results of the study indicated that the majority of questions asked by tutors and students were framed at the low level (knowledge, comprehension, and application) and were aimed at seeking yes/no responses and factual information more than probing. This study recommends the tutors and the students to be taught how to question, to create a supportive environment for questioning and using appropriate strategies to teach the use of higher order questions since those questions require analysis, synthesis, and evaluation which are believed to activate and facilitate critical thinking.

Moritoshi (2002) also carried out a study based on questioning, modification and feedback behaviours of teachers and their implications for learner production. The study was conducted in a Japanese junior school class of 35 students (19 male, 16 female), aged 14-15 years and their female Japanese teacher of English as a foreign language, aged 31, with 9 years of teaching experience. In his study the researcher found out that the teacher asked more display questions (40.58%) over referential questions (7.25%). Other question types included for the classification were rhetorical, procedural, and interaction types. The findings of this study are parallel to the findings of other researchers.

Oberli (2003) conducted another study on questioning and feedback in the interactive classroom at the Institute of Yonsei, a university in Seoul. The class35 observed consisted of seven upper- intermediate adult learners, who shared the same first language and educational background at university level. The teacher has been with Yonsei for six years, is highly qualified and is a figure of stature not only in his Institute but also within the local EFL community. What Oberli found in the study is that the participant teacher asked 6.7% Divergent questions, 87.6% Convergent questions, and 33.7% of the Convergent questions included Yes/No answer questions.

Giancarlo, Blohm, and Urdan (2004) were interested in the measurement of critical thinking disposition in adolescents as illustrated with four successive studies. The results of their studies provide support for the California Measure of Mental Motivation (abbreviated as CM3). The CM3 consisted of four dimensions which were learning orientation, creative problem solving, mental focus and cognitive integrity. This study was based on the assumption that critical thinking is a disposition and provided not only evidence that critical thinking disposition exists in adolescents but also a valuable tool for assessing this construct. In this study, dimensions of CM3 were correlated with well known measures of students' motivation and academic achievement. For example, learning orientation and creative problem solving dimensions of CM3 were found to be positively correlated with desire to develop one's abilities through learning and mastery, a strong sense of self-worth and academic ability and sense of flexibility in terms of modifying behaviours. The authors concluded that "CM3 assess the extent to which individuals perceive themselves as willing and inclined to approach challenging problems in a systematic, innovative, open-minded, and inquisitive way.".

Zhang (2003) investigated the contribution of thinking style to critical thinking disposition. This study was based on Sternberg's (1988, 1997; cited in Zhang, 2003) theory of mental self-government which was one of the many theories of intellectual styles. Thinking style within this conceptualization intends to describe how one prefers to think about the information as one is learning it or after one already knows it. Although, the theory describes 13 different thinking styles along with five dimensions, these styles fall into mainly two groups. Type 1 thinking styles generate creativity and require higher levels of cognitive complexity such as legislation, judicial, hierarchical, global and liberal thinking styles. Type 2 thinking styles include norm confirming tendencies in thinking and require lower levels of

cognitive complexity such as executive, local, monarchic and conservative thinking styles. The California Critical Thinking Inventory was used to measure critical thinking disposition in study. As the researcher hypothesized, multiple regression analyses indicated that thinking styles have significant contributions to critical thinking disposition. The author suggested that thinking styles are important variables that contribute to critical thinking and should be considered noteworthy in curriculum development and in non-academic program development.

2. 11. Conclusion

It is certain that critical thinking is necessary for a better education but critical thinking is not only necessary for intellectual growth, but also for making sense of our world. This case should be argued in this way. Educational institutions, especially colleges and universities, have a key role in developing critical thinking skills. Critical thinking skills are in high demand by instructors and even by business and industry. Even though students are not necessarily conscious of their critical thinking skills development and instructors may have differing approaches to critical thinking teaching methodologies, critical thinking in general will always be an essential cognitive prerequisite for a student to be successful in his or her career.

The need to develop creative and critical thinkers is growing progressively. Technological changes have improved communication, health management, and lifestyle. Unfortunately, rapid change comes with a cost as future citizens will be required to make even greater moral and ethical decisions for themselves, for others, and for the planet. If future citizens can not be equipped with high critical thinking style, they stay so away from this rapid change and face with considerable difficulties; just like some of us have today.

In a democratic life style, the most important developmental task of the individuals is to strengthen their egos. Ego (as used by Freud) is a kind of social reasoning that tries to find new ways to satisfy the needs of individuals without breaking the social rules and without hurting anybody. These individuals with strong egos are expected to value viewpoints of others, to evaluate the situation without being prejudiced, and to try to obtain evidences before making a decision (Kuzgun 2001). These will also qualify them with the power of empathy. Therefore, it is necessary to raise our children to become individuals who know how to reach knowledge, then analyze and organize it objectively and finally to transfer it into new

situations. And in the light of these the importance of critical thinking in education is an indispensable subject. The need for learning and applying ways of developing critical thinking and reading skills is growing in teacher education programs simply because future teachers must learn what and how to apply the concepts learned in their future teaching contexts. However, it is recommended, as any other educational application that pre-service teachers learn the ways how students can develop their critical and reading skills through meaningful language based activities.

Critical thinking is no doubt necessary in every field of life, but especially for professions that occupy with people. Finkelman (2001) took the attention and emphasized the importance that the people who work in the field of human health, especially the people who directly intervene to the person's life like psychologists, counsellors and educationalists have to be critical thinkers in both practice and management. In order for teachers and counsellors to be able to implement critical thinking into their classrooms they must first be committed to critical thinking and its philosophy.

CHAPTER 3: METHODOLOGY

3.0 Introduction

Former chapters' have been related with scope and concepts of the study. This chapter contains method of the study within three main sections. The first section explain subjects of the study, the second section gives information on the procedure of the study and finally the last section informs about the instruments that have been used in this study.

3.1 Subjects of the study

This research was conducted at Atatürk University K.K.F.E. English Teaching Department and the participants of the study were 237 undergraduate students including all levels and both day and night groups. There was not a special time for applying the instruments to implementers and all instruments were answered during students' regular times of lessons. All participants of the study were from the same department, English Teaching Department, and the same university. The main scope of the study covers prospective teachers and in this sense students only from Faculty of Education practised instruments. The students CT skills are beyond reasonable levels because all of them attended to this department after they passed a number of exams. The participants of the research include both males and females.

3.2 Procedure of the study

There is an indispensable factor in studies: voluntariness. At the beginning of the research, necessary permissions were gained from implementers and afterward the research began in classes. Prospective teachers were informed about the research and the time of the research was announced to all groups. The time for the administration of the survey was determined in coordination with the classroom teachers. Instruments were copied at the sufficient number and also there were ten more papers just in case we face with students more than expected. It was ensured to all implementers that the only aim of the study was to collect data for a serious research that is related with undergraduate majors' critical thinking levels. The implementers also were informed about the privacy and ethical factors of the study and announced that these datas was to only be used for academic researches. It was declared that they were not required to write their names on the questionarries. Furthermore, before

administration of the questionnaires, the participants were informed about the aim and scope of the study and reassured that the results would not affect their grades in order to prevent possible constraints in answering the questions. The implementers were encouraged about being in confident and the possibility about their asking any questions they want to ask. They had no time limit to answer the items in each questionnaire and it took each participant less than forty minutes to complete them.

3.3 Instruments of the Study

In this study two questionnaires and a personal information form were used in the aim of examining CT levels of undergraduate English majors. The original California Critical Thinking Disposition Inventory (CCTDI) includes 75 items loaded on seven constructs. These are inquisitiveness, open-mindedness, systematicity, analyticity, truth-seeking, critical thinking self-confidence, and maturity. In general ways, the *inquisitiveness* construct including 10 items that measures one's intellectual curiosity and one's desire for learning without considering any profit. The *open-mindedness* construct contains 12 items that measures being tolerant of divergent views and sensitive to the possibility of one's own bias. The *systematicity* construct comprised of 11 items, and it measures how a person is organized, orderly, focused, and diligent in inquiry. The *analyticity* construct involving 11 items addresses the application of reasoning and the use of evidence to resolve problems. The *truth-seeking* construct including 12 items measures the disposition of being eager to seek the best knowledge in a given context, courageous about asking questions, and honest and objective about following inquiry. The *critical thinking self-confidence* construct consisting of 10 items measures the trust the soundness of one's own reasoning processes. Finally, the *maturity* construct involving 10 items measures cognitive maturity and the disposition to be judicious in one's decision-making (Facione, Sánchez (Giancarlo), Facione and Gainen, 1995; Kökdemir, 2003;). Kökdemir (2003) made a study on CCTDI in order to adopt it into Turkish in the light of cultural affairs. After he carried a study on this questionnaire's Turkish translation, he applied it around one thousand students. Within a scientific process, he eliminated several items and finally he kept 51 items with six constructs in the scale. The scale was conducted in Turkish version because it could take much time and cause some misunderstandings while applying it. The original version of scale consists 75 items and culturally it is a bit far from our general views. However the next scale, Critical

Thinking Disposition (CTD) questionnaire, was conducted in original (English) version for it does not include as much item as CCTDI. CTD consists 20 items; it is a short scale but scopes effective items in examining critical thinking levels. This scale was used in a complementary way to former one, so that the research could get a better result. CTD test used in this research is a 20 item survey, to which students respond to each item using a five-point likert scale ranging from "strongly agree" to "strongly disagree." These 20 questions prepared for the questionnaire are based on the dispositions of Critical thinking identified and accepted among the experts of CT such as open-mindedness, seeking the truth and fair-mindedness and so on. As well as these scales, a Personal Information Form was used in the study. It was designed to gather data in order to identify the demographic features of the students involved in this study.

3.4 Data Collection

The datas were collected thorough the tests that are internationally accepted as major inquiries in examining critical thinking level. The questionnaires were administered to students by their instructors on different days. One of the inquiries is California Critical Thinking Disposition Inventory (CCTDI) and the other is Critical Thinking Disposition Inventory (CTD). CCTDI is an American origin test. In 1990, with sponsorship from the American Philosophical Association, a group of scholars from several disciplines developed a definition of critical thinking that had a skills dimension and a dispositional dimension. The CCTDI has 75 items. Each respondent can choose from six responses, ranging from "strongly agree" to "strongly disagree." The instrument uses seven sub-scales to capture different aspects of the disposition to think critically: truth-seeking, open-mindedness, critical thinking self-confidence, inquisitiveness, cognitive maturity, and the inclination to analyze and systematize. The scores of the scale are from 1 to 6 points (from ‘Strongly Disagree’, as 1 points to ‘Strongly Agree’, as 6 points) and the total scores below 240 points are accepted as ‘low critical thinking skill’ and total scores more than 300 are accepted as ‘high critical thinking skill’ (Dirimeşe and Dicle, 2006). The CTD was developed from the Delphi Report. It is used for measuring critical thinking dispositions of high school, college, and adult audiences.

CHAPTER 4: DATA ANALYSIS

4.0 Introduction

This chapter presents the statistical analyses carried out on the data and the findings which aim to find out critical thinking dispositions and tendencies of prospective teachers attending English Teaching Department at K.K.F.E. of Atatürk University. In this chapter tables will be introduced and each table will display critical thinking dispositions of students with frequencies, percentages, average scores etc. and both scales and information form will be introduced in different chapters.

The data obtained were processed through SPSS 11.5 and the most of the statistical results will be given in SPSS format.

4.1 Findings from Information Form and demographic features

Demographic features will be given in this chapter in series and particularly questions about individual features are significant in terms of Critical Thinking (CT).

Table 4. ***Total Numbers And Percentages Of Participants In Terms Of Their Classes***

	N	**%**
1st class	89	37,6
2nd class	42	17,7
3rd class	40	16,9
4th class	33	13,9
Prep. Cl.	33	13,9
Total	237	100,0

In this table it is shown that all questionnaires are valid and there is a density in the frequency of 1st classes. 89 students from 1st class participated to research and it's percentage is % 37,6 and the minimum participations are from both 4th and prep classes with %13,9.

Table 5. ***The Distribution Of Gender Of The Participants***

	N	%
Female	199	84,0
Male	38	16,0
Total	237	100,0

According to this table the frequency of female is 199 (%84) and the frequency of male is 38 (%16).

Table 6. ***Education Types Of Participants Within Genders***

	Type of Education	
Gender	First education	Second education
Female	165	34
Male	29	9
Total	194	43

This item shows that 194 participants are attending first education and 43 participants are attending second education. 165 participants of first education group are female and 29 participants are male. Again 34 participants of second education group are female and 9 participants are male in this group.

Table 7. ***The Distribution Of The Participants In Terms Of High School Types***

	N	%
High School	7	3,0
Anatolian High School	84	35,4
Super High School	107	45,1
Private School	2	,8
Anatolian Teacher High School	35	14,8
Anatolian Technical/Vocational High School	1	04
Other	1	04
Total	237	100,0

In this item, school types of participants where they graduated from and got the opportunity to attend English Teaching Department. The frequency of students graduated from a state high school is 7 (%3) and the frequency of graduates from Anatolian High School is 84 (%35,4). Super High School graduates are 107 (%45,1) and Private School graduates number is 2 (%0,8). The number of participants graduated from Anatolian Teacher High School is 35 (%14,8) and the frequency of graduates from Anatolian Technical/Vocational High School is 1 (%0,4) just like other graduates' number 1 (%0,4).

Table 8. ***The Distribution Of Participants' Locations***

	N	**%**
Village	21	8,9
Town	11	4,6
District	68	28,7
Province	137	57,8
Total	237	100,0

This item contains datas about participants' place of settlement. As it can be seen above 21 (%8,9) of implementers' location is village. The frequency of participants living in town is 11 (%4,6) and the frequency of district settlements is 68 (% 28,7). Finally the remaining participants' location is province and the number is 137 (% 57,8).

Table 9. ***Participants' Mother Profession Distribution***

	N	**%**
Teacher	3	1,3
Worker	4	1,7
Officer	10	4,2
Housewife	215	90,7
Farmer	2	,8
Self-employed	3	1,3
Total	237	100,0

Table 10. ***Participants' Father Profession Distribution***

	N	%
Teacher	24	10,1
Worker	62	26,2
Officer	56	23,6
Farmer	18	7,6
Self-employed	77	32,5
Total	237	100,0

These two items contain datas about implementers' mother and father professions. The frequency of implementers whose mother's profession is teacher is 3 (%1,3) and fathers' number is 24 (%10,1). The number of implementers whose mothers' profession is worker is 4 (%1,7) and fathers' number is 62 (%26,2). Officer mothers are 10 (%4,2) and officer fathers are 56 (%23,6). The top frequency for mothers is housewife number and it is 215 (%90,7). Farmer mother number is 2 (%0,8) and farmer father frequency is 18 (%7,6). Lastly self-employed mother number is 3 (%1,3) and fathers' number is 77 (%32,5).

Table 11. ***The Distribution Of Participants' Mother Education Level***

	N	%
Illiterate	19	8,0
Literate	21	8,9
Primary	130	54,9
Secondary	24	10,1
High School	37	15,6
University	5	2,1
Master	1	,4
Total	237	100,0

Table 12. ***The Distribution Of Participants' Father Education Level***

	N	%
Illiterate	4	1,7
Literate	5	2,1
Primary	68	28,7
Secondary	44	18,6
High School	68	28,7
University	47	19,8
Master	1	,4
Total	237	100,0

Both tables show education levels of participants' parents. Illiterate mothers' number is 19 (%8,0) and illiterate fathers' frequency is 4 (%1,7). Literate fathers' number is 5 (%2,1) and literate mothers' number is 21 (%8,9). Primary school graduates of mothers' are 130 (%54,9) and fathers are 68 (%28,7). Secondary school graduates of mothers' are 24 (%10,1) and fathers are 44 (%18,6). High School graduates frequency of participants' mothers is 37 (%15,6) and fathers' number is 68 (%28,7). Participants' mothers' whose education level is university frequency is 5 (2,1) and fathers' number is 47 (%19,8). Both mothers' and fathers' who are a master graduate numbers and percentages are same: 1 (%0,4).

Table 13. ***The Distribution Of Family Types***

	N	%
Authoritarian	20	8,4
Democratic	88	37,1
Unrelated	4	1,7
Related	35	14,8
Foster	90	38,0
Total	237	100,0

This item gives datas about implementers' family types. Authoritarian type of family percentage is %8,4 and it's number is 20. Democratic type of family percentage is %37,1 with the number of 88. Unrelated families' number is 4 and it's percentage is %1,7. Related type of family percentage is %14,8 and it's number is 35.

Finally foster type of family percentage is the top percentage : %38,0, and it's frequency is 90.

Table 14. ***Types Of The Activities That Participants Prefer***

	N	%
Scientific	10	4,2
Cultural	162	68,4
Sporting	65	27,4
Total	237	100,0

10 (%4,2) students prefer scientific activities and the top percentage belongs to cultural activities with 162 (%68,4) frequency. Frequency of majors who prefer sporting activities is 65 (%24,4).

Table 15. ***Individual Features Of Participants***

	N	%
Researcher	21	8,9
Responsible	30	12,7
Confident	28	11,8
Questioning	23	9,7
Socially	24	10,1
Humanist	37	15,6
Open-minded	20	8,4
Can take risk	14	5,9
Emphasis on thinking	26	11,0
Creative	14	5,9
Total	237	100,0

This item contains datas about individual features of implementers. Researcher participants' frequency is 21 (%8,9), responsible participants' frequency is 30 (%12,7), confident participants are 28 (%11,8), questioning ones' frequency is 23 (%9,7), socially participants are 24 (%10,1), humanist participants' frequency is 37 (%15,6), open-minded participants' frequency is 20 (%8,4), participants' who are emphasis on thinking frequency is 26 (%11,0), and lastly creative participants' frequency is 14 (5,9).

4.2 The analysis of California Critical Thinking Disposition Inventory

The frequencies, percentages, arithmetic averages and the mean averages have been listed in the tables below and all these datas were got from California Critical Thinking Dispositions Inquiry. The total internal coherence of the scale is 0,88.

Table 16. ***The Distribution Of Analyticition Thinking Frequency Sub-Scale***

Options / Item Num.	Strongly Disagree		Disagree		Partly Disagree		Partly Agree		Agree		Strongly Agree		Total		X I
	f	%	f	%	f	%	f	%	f	%	f	%	f	%	
I2	9	3,8	8	3,4	5	2,1	27	11,4	107	45,1	81	34,2	237	100	5,12
I3	3	1,3	3	1,3	9	3,8	37	15,6	124	52,3	61	25,7	237	100	4,94
I12	17	7,2	35	14,8	23	9,7	56	23,6	67	28,3	39	16,5	237	100	4,00
I13	1	0,4	9	3,8	6	2,5	38	16,0	127	53,6	56	23,6	237	100	4,89
I16	2	0,8	8	3,4	6	2,5	36	15,2	123	51,9	62	26,2	237	100	4,92
I17	4	1,7	5	2,1	8	3,4	42	17,7	103	43,5	75	31,6	237	100	4,94
I24	1	0,4	6	2,5	6	2,5	14	5,9	103	43,5	107	45,1	237	100	5,25
I26	2	0,8	4	1,7	5	2,1	30	12,7	104	43,9	92	38,8	237	100	5,14
I37	4	1,7	13	5,5	11	4,6	68	28,7	97	40,9	44	18,6	237	100	4,57
I40	2	0,8	3	1,3	9	3,8	33	13,9	127	53,6	63	26,6	237	100	4,98
Mean Average															4,87

According to Table 4.2.1, prospective teachers marked ‘Agree’ (I2=%45,1, I3=%52,3, I12=%28,3, I13=%53,6, I16=%51,9, I17=%43,5, I26=%43,9, I37=%40,9, I40=%53,6) except the item 24; in this item they marked ‘Strongly Agree’(I24=%43,5). The mean average of the analyticition frequency sub-scale was calculated as 4,87 and this is equal with ‘Agree’ average. The situation of prospective teachers’ marking the option ‘Agree’ shows that they have a disposition on analytictical thinking. However this value is not around high values. Also in the item 12, the values show that there is a variety in the answers. The answers are not far from each other (Strongly Disagree = %7,2, Disagree = %14,8, Partly Disagree = %9,7, Partly Agree = % 23,6, Agree = % 28,3, Strongly Agree = % 16,5). Maybe this

can be seen as a result of the particular and materiality of the scale's 12th item. The internal coherence of the sub-scale is 0,75 and the cronbach alpha value is 0,72.

Table 17. ***The Distribution Of Truth-Seeking Frequency Sub-Scale***

Options / Item Num.	Strongly Disagree		Disagree		Partly Disagree		Partly Agree		Agree		Strongly Agree		Total		x I
	f	%	f	%	f	%	f	%	f	%	f	%	f	%	
I6	19	8,0	47	19,8	24	10,1	70	29,5	32	13,5	45	19,0	237	100	3,78
I11	18	7,6	48	20,3	30	12,7	61	25,7	52	21,9	28	11,8	237	100	3,70
I20	42	17,7	64	27,0	35	14,8	57	24,1	17	7,2	22	9,3	237	100	3,04
I25	24	10,1	28	11,8	28	11,8	80	33,8	52	21,9	25	10,5	237	100	3,77
I27	8	3,4	20	8,4	15	6,3	45	19,0	73	30,8	76	32,1	237	100	4,62
I28	50	21,1	99	41,8	29	12,2	35	14,8	15	6,3	9	3,8	237	100	2,55
I49	24	10,1	56	23,6	31	13,1	65	27,4	37	15,6	24	10,1	237	100	3,45
Mean Average															3,55

This table includes values of the distribution of truth-seeking frequency with the items being related with it. According to table 4.2.2 prospective teachers chose the option 'Disagree' in the item 20 (I20 = %27,0) item 28 (I28 = %41,8), nevertheless in the item 20 the option 'Partly Agree' has also got a high value (I20=%24,1). In the item 6 (I6=%29,5), item 11 (I11=%25,7), item 25 (I25=%33,8), and item 49 (I49=%27,4) students marked the option 'Partly Agree'. The undergraduate EFL students only chose the option 'Strongly Agree' in the item 27 (I27=%32,1) but when looking at 'Agree' option for this item, it is also in a high value (I27=%30,8). As it can be inferred from this analyse, university students at K.K.F.E English Teaching Department have got a high tendency on truth-seeking. This is a clear approach because as it can be seen, the density of Strongly agree-Agree is only in 27th item because only in this item those options is much more available for the truth-seeking skill that is flexibility in considering alternatives and opinions. The internal coherence of the sub-scale is 0,61 and the cronbach alpha value is 0,54.

Table 18. ***The Distribution Of Open-Mindedness Frequency Sub-Scale***

Options / Item Num.	Strongly Disagree		Disagree		Partly Disagree		Partly Agree		Agree		Strongly Agree		Total		X I
	f	%	f	%	f	%	f	%	f	%	f	%	f	%	
I5	26	11,0	51	21,5	34	14,3	60	25,3	45	19,0	21	8,9	237	100	3,46
I7	4	1,7	2	0,8	5	2,1	26	11,0	79	33,3	121	51,1	237	100	5,27
I15	69	29,1	76	32,1	30	12,7	21	8,9	27	11,4	14	5,9	237	100	2,59
I18	95	40,1	66	27,8	19	8,0	29	12,2	15	6,3	13	5,5	237	100	2,33
I22	31	13,1	59	24,9	26	11,0	63	26,6	37	15,6	21	8,9	237	100	3,33
I33	12	5,1	40	16,9	26	11,0	54	22,8	73	30,8	32	13,5	237	100	3,98
I36	54	22,8	79	33,3	36	15,2	33	13,9	22	9,3	13	5,5	237	100	2,70
I41	44	18,6	85	35,9	34	14,3	38	16,0	28	11,8	8	3,4	237	100	2,77
I43	89	37,6	87	36,7	19	8,0	26	11,0	9	3,8	7	3,0	237	100	2,16
I45	66	27,8	98	41,4	33	13,9	20	8,4	15	6,3	5	2,1	237	100	2,30
I47	126	53,2	64	27,0	23	9,7	11	4,6	7	3,0	6	2,5	237	100	1,85
I50	91	38,4	83	35,0	28	11,8	23	9,7	6	2,5	6	2,5	237	100	2,11
Mean Average															2,90

The parameters in table 4.2.3 show that participants chose ‘Strongly Disagree’ for the item 47 (I47=%53,2), item 18 (I18=%40,1), item 43 (I43=%37,6) and item 50 (I50=%38,4). For the item 15 (I15=%32,1), item 36 (I36=%33,3), item 41 (I41=%35,9) and item 45 (I45=%41,4), the prospective teachers chose the option ‘Disagree’. They marked ‘Partly Agree’ option for the item 5 (I5=%25,3), item 22 (I22=%26,6). For the item 33 (I33=%30,8), they chose ‘Agree’ option. Undergraduate EFL students only chose the option ‘Strongly Agree’ for the item 7 (I7=%51,1). Particularly the heavy value of item 47 show that university students prefer evaluating everything for they chose ‘Strongly Disagree’ for the judgement ‘Everything is as it seems. In terms of open-mindedness prospective teachers are willing to understanding the opinions of others. The internal coherence of the sub-scale is 0,75 and the cronbach alpha value is 0,75.

Table 19. ***The Distribution Of Inquisitiveness Frequency Sub-Scale***

Options / Item Num.	Strongly Disagree		Disagree		Partly Disagree		Partly Agree		Agree		Strongly Agree		Total		X I
	f	%	f	%	f	%	f	%	f	%	f	%	f	%	
I1	5	2,1	9	3,8	11	4,6	56	23,6	91	38,4	65	27,4	237	100	4,75
I8	9	3,8	38	16,0	32	13,5	86	36,3	55	23,2	17	7,2	237	100	3,81
I30	8	3,4	20	8,4	30	12,7	69	29,1	70	29,5	40	16,9	237	100	4,24
I31	9	3,8	17	7,2	19	8,0	68	28,7	89	37,6	35	14,8	237	100	4,33
I32	2	0,8	13	5,5	16	6,8	64	27,0	92	38,8	50	21,1	237	100	4,61
I34	16	6,8	23	9,7	24	10,1	60	25,3	87	36,7	27	11,4	237	100	4,10
I38	4	1,7	6	2,5	10	4,2	51	21,5	107	45,1	59	24,9	237	100	4,81
I42	6	2,5	13	5,5	15	6,3	79	33,3	84	35,4	40	16,9	237	100	4,44
I46	4	1,7	9	3,8	7	3,0	20	8,4	63	26,6	134	56,5	237	100	5,24
Mean Average															4,48

This is the table including the values about items that contain inquisitiveness skills of participants. According to table 4.2.4 the option ‘Strongly Disagree’ was not marked by students as a top option. Again the option ‘Disagree’ did not be a top one and again the option ‘Partly Disagree’ is similar. For the item 8 (I8=%36,3), the implementers chose the option of ‘Partly Agree’. They marked highly ‘Agree’ option according to this table (I1=%38,4, I30=%29,5, I31=%37,6, I32=%38,8, I34=%36,7, I38=%45,1, I42=%35,4). They chose ‘Strongly Agree’ for the item 46 (I46=%56,5). But when looking at the item 30, the difference between ‘Partly Agree’ and ‘Agree’ options is only %0,4. There is a significant density in the item 46 (I46=%56,5) and according to this item many of the students have dispositions on learning everything they can do and as a general view prospective teachers are concern to become and remain generally well-informed. The internal coherence of the sub-scale is 0,78 and the cronbach alpha value is 0,77.

Table 20: ***The Distribution Of Confidence Frequency Sub-Scale***

Options / Item Num.	Strongly Disagree		Disagree		Partly Disagree		Partly Agree		Agree		Strongly Agree		Total		X I
	f	%	f	%	f	%	f	%	f	%	f	%	f	%	
I14	6	2,5	17	7,2	24	10,1	99	41,8	78	32,9	13	5,5	237	100	4,12
I29	9	3,8	32	13,5	34	14,3	102	43,0	51	21,5	9	3,8	237	100	3,76
I35	4	1,7	15	6,3	25	10,5	84	35,4	71	30,0	38	16,0	237	100	4,34
I39	8	3,4	27	11,4	36	15,2	81	34,2	70	29,5	15	6,3	237	100	3,94
I44	8	3,4	34	14,3	34	14,3	95	40,1	58	24,5	8	3,4	237	100	3,78
I48	13	5,5	62	26,2	48	20,3	80	33,8	28	11,8	6	2,5	237	100	3,28
I51	4	1,7	21	8,9	25	10,5	94	39,7	71	30,0	22	9,3	237	100	4,15
Mean Average															3,91

When the scores in table 4.2.5 are examined, it is seen that there is a real consistency in the inquiry in terms of confidence because prospective teachers chose the option 'Partly Agree' option of the test (I14=%41,8, I29=%43,0, I35=%35,4, I39=34,2, I44=%40,1, I48=%33,8, I51=%39,7). The existing items of the inquiry covers questions of anyone's concern to become and remain generally well-informed. In general they have self confidence but we can not say that this situation is an absolute result for all of the values are not in high levels. For instance, 'Partly Disagree' option is %33,8 for the item 48 but 'Disagree' option is % 26,2 so there can not be indicated about an accurate judgement. The internal coherence of the sub-scale is 0,77 and the cronbach alpha value is 0,71.

Table 21. ***The Distribution Of Systematicity Frequency Sub-Scale***

Options / Item Num.	Strongly Disagree		Disagree		Partly Disagree		Partly Agree		Agree		Strongly Agree		Total		X I
	f	%	f	%	f	%	f	%	f	%	f	%	f	%	
I4	3	1,3	11	4,6	14	5,9	61	25,7	100	42,2	48	20,3	237	100	4,64
I9	83	35,0	87	36,7	18	7,6	33	13,9	14	5,9	2	0,8	237	100	2,22
I10	4	1,7	12	5,1	19	8,0	74	31,2	102	43,0	26	11,0	237	100	4,42
I19	45	19,0	76	32,1	30	12,7	41	17,3	26	11,0	19	8,0	237	100	2,93
I21	18	7,6	37	15,6	27	11,4	59	24,9	56	23,6	40	16,9	237	100	3,92
I23	71	30	101	42,6	25	10,5	21	8,9	14	5,9	5	2,1	237	100	2,24
Mean Average															3,39

The calculations in table 4.2.6 indicate the distribution of sistematicity frequency sub-scale. As can be seen in this table, EFL undergraduate majors chose ‘Disagree’ option in the item 9, item 19 and item 23 (I9=%36,7, I19=%32,1, I23=%42,6). According to table 4.2.6 the options ‘Strongly Disagree’, ‘Partly Disagree’ and ‘Strongly Agree’ were not marked by students as a top option. Prospective teachers chose ‘Agree’ option in the item 4 (I4=%42,2) and item 10 (I10=%43,0). ‘Partly Agree’ was chosen by students in the item 21 (I21=%24,9) but the option ‘Agree’ is so close to this option with the value %23,6. In this table there are not significant differences and this variety shows that prospective teachers may not have available levels in terms of diligence in seeking relevant information. The internal coherence of the sub-scale is 0,63 and the cronbach alpha value is 0,56.

4.3 Findings from Critical Thinking Disposition Questionnaire

Table 22. ***I do not consider the ideas supporting the opinions that l am opposed to.***

	N	%
Completely Disagree	58	24,5
Disagree	121	51,1
Not Sure	30	12,7
Agree	19	8,0
Completely Agree	9	3,8
Total	237	100,0

When we take a look the results of item 3 (I do not consider the ideas supporting the opinions that l am opposed to) % 24,5 (f = 58) of students chose 'Completely Disagree', % 51,1 (f = 121) 'Disagree', % 12,7 (f = 30) 'Not Sure', %8,0 (f = 19) 'Agree' and %3,8 (f = 9) scored 'Completely Agree'.

Table 23. ***Learning is a source of excitement and joy for me.***

	N	%
Completely Disagree	5	2,1
Disagree	10	4,2
Not Sure	32	13,5
Agree	109	46,0
Completely Agree	81	34,2
Total	237	100,0

When we look the results of item 9 (Learning is a source of excitement and joy for me) % 2,1 (f = 5) of students chose 'Completely Disagree', % 4,2 (f = 10) 'Disagree', % 13,5 (f = 32) 'Not Sure', %46,0 (f = 109) 'Agree' and %34,2 (f = 81) scored 'Completely Agree'.

Table 24. ***I can not think effectively when I am stressed and depressed.***

	N	%
Completely Disagree	12	5,1
Disagree	26	11,0
Not Sure	41	17,3
Agree	81	34,2
Completely Agree	77	32,5
Total	237	100,0

The parameters in table 4.3.3 show the item 13 (I can not think effectively when I am stressed and depressed.). % 5,1 (f = 12) of students chose 'Completely Disagree', % 11,0 (f = 26) 'Disagree', % 17,3 (f = 41) 'Not Sure', %34,2 (f = 81) 'Agree' and %32,5 (f = 77) scored 'Completely Agree'.

Table 25. ***Thinking critically may help me get rid of my prejudices.***

	N	**%**
Completely Disagree	4	1,7
Disagree	16	6,8
Not Sure	35	14,8
Agree	125	52,7
Completely Agree	57	24,1
Total	237	100,0

When we take a look the results of item 16 (Thinking critically may help me get rid of my prejudices) % 1,7 (f = 4) of students chose 'Completely Disagree', % 6,8 (f = 16) 'Disagree', % 14,8 (f = 35) 'Not Sure', %52,7 (f = 125) 'Agree' and % 24,1 (f = 57) scored 'Completely Agree'.

CHAPTER 5: DISCUSSIONS AND CONCLUSIONS

5.0 Introduction

The present study examined critical thinking dispositions and tendencies of EFL (English as Foreign Language) undergraduate students at Atatürk University K.K.F.E. English Teaching Department. In this sense, two academic questionnaires were applied to prospective teachers. Moreover the participants of the study were examined in terms of demographic characteristics. The researches were expected to predict a university students perspectives, thinking processes, comprehension and evaluation situations. Scales being implemented to 237 students were evaluated and analyzed meticulously. The findings of the datas exist in chapter four with detailed tables. In this section results of the study were discussed in the light of previous findings and current literature.

5.1 Findings and Pedagogical Implications

The findings above give a correlation and an evaluation of findings of California Critical Thinking Disposition Inventory (CCTDI) and Critical Thinking Disposition Questionnaire (CTD).

5.1 Discussions Regarding Analyticity Responses of CCTDI

Results showed that prospective teachers attach a serious importance to being alert to potentially problematic situations. Moreover there can be inferred a result on that they have tendencies on evaluating, questioning and doing arrangements when they face with a new event. Also when we look at the answers of 16th item in the inquiry, empathic understandings of students is in a significant level because whereas all the participants show respect for others thoughts. Again prizing the reason is an important factor for EFL undergraduate majors, they want to have reasons before opposing anything and they value the use of evidence even if the problem turns out to be challenging or difficult. The density in the item 40(It is the first priority having a clear idea about the problem) is giving an idea about prospective teachers' wish of predicting possible results or consequences for they request clear ides about their problems they face with and they are willing of being in search for the problem. The

exact phrase of analyticity was found out in the preparation and data collection before beginning to solve a problem because %97 (around 220) of the majors chose 'Agree' part in 13th item of the inventory. In general prospective EFL teachers are alert to both conceptual and behavioural problems and continuously look out for anticipatory interventions. Reason-giving and fact-finding are important components of being analytical in terms of critical thinking disposition and when looking at the table of results about analyticity, students attending to English Teaching Department where this study was applied are good at such analyticity skills.

5.1.2 Discussions Regarding Truth-Seeking Responses of CCTDI

The items being used in the scale about truth seeking aims to measure being motivated to seek the truth, asking questions and to be honest and objective about inquiry even if the evidences do not support one's interests or preconceived opinions. The most unstable results were found out in this part in the study because students seem woozy in the questions about truth-seeking so there came out variable answers from implementers. Actually when discussing about the honesty there can not be seen a problem on it but the significant deficiency in seeking the alternatives % 37 of the students is not willing to overcome the difficulties in the way of reaching the truth because about % 49 of the prospective teachers agree or partly disagree the opinion of exerting effort for overcoming the difficulties. The wooziest situation with truth-seeking is about the question of evaluating options of the problem because the question gave extremely variable results. Whereas %55 (f = 126) of the students choosed the answers in 'Agree' part and the remaining students choosed the answers in 'Disagree' part. But there is a general view on students' belief situation because mostly the item 27 (I believe whatever I want to believe) was answered by scholars as 'Agree' option (about %83). Generally it is not easy to decide between competing points of view for the prospective teachers and in the situations they face with difficulties, they may not prefer the way overcoming with problem and seek for the alternatives in solving those problems. In terms of critical thinking truth-seeking is a very significant factor and is their critical thinking dispositions are not around the desired level, the truth-seeking deficiency may be a serious reason in this way.

5.1.3 Discussions Regarding Open-mindedness Responses of CCTDI

A crucial judgement can not be seen in terms of accepting the idea of majority but perhaps this can not be expressed as a weakness. Open-mindedness parts of the scale targets finding out the dispositions of being open-minded and tolerant of different views by considering the possibility of one's own biases. In this sense there is a variable prefer by students because half of them doesn't care the idea of majority while this is substantial for remaining students. But when it comes to opposing to memorizing, there is a clear unity of choice because % 84,4 (f = 200) of the prospective teachers strongly agree or agree the significance of interpretation or evaluating than memorizing. On the other hand we can find out a positive approach in terms of reading book because %75,9 (f = 180) of EFL undergraduate students think reading book is a critical case. Again they strongly disagree or disagree (%74,3, f = 176) the idea of stocking ready information by others. Within the framework of open-mindedness people should show respect to rights of others to hold differing opinions but stocking ready information is a handicap in developing oneself's critical thinking skills.

5.1.4 Discussions Regarding Inquisitiveness Responses of CCTDI

The inquisitiveness part of the California Critical Thinking Disposition Inventory aims to measure one's own intellectual curiosity and in terms of curiosity, there is a significant and positive choice by students. For instance % 89,4 (f = 212) of prospective teachers chose options of agree inclined in the item that they prefer willing to learn new information in their life. The inquisitive person values being informed, wants to know things work and values learning even if the immediate payoffs are not directly observable and in this sense according to item 46 (learn everything as much as possible) % 91,5 (f = 217) of the participants partly agree, agree or strongly agree to the view of being predisposed to learn new things. However it is not as clear as the item 46, they indicate their wish in learning new things in the item 42 because % 86,6 (f = 203) prefer showing willing to learn new thing whatever the subject is about. As can be seen clearly ELT students attending K.K.F.E. at Atatürk University are curious and eager to learn new things in general.

5.1.5 Discussions Regarding Confidence Responses of CCTDI

Self-confidence is a significant case in the process of critical thinking because self-confidence refers to the level of trust one places in one's reasoning process. When we have a look at that they show a self-confidence tendency even if there can not be said a very crucial determination and 'Partly Agree' option is the most frequently repeated one; for this reason it can not be meaningful to put a crucial judgement. In the item 14 % 41,8 (f = 99) of implementers show an impose theirself for they think that their friends take advice from them. Again % 43,0 (f = 102) of the students state that others consult them for advice while % 27,6 (f = 66) disagree or partly disagree to it. This is also a evidence for the variety of the answers given by participants. Critical thinking self-confidence persons trust themselves to make good judgements and believe that others trust them as well because they believe others look up to them to resolve problems, decide what to do and bring a reasonable approach to inquiry being applied. In this way the item 35 (My skill of understanding others thoughts is appreciated) may give a revealing opinion. When we look at this item, % 81,4 (f = 193) of the participants chose the sections 'Agree'. The same impression is also valid for the item 51 (I am good at arranging regular development problems in solving complex problems), but this item contains an assessment of evaluating one's self. According to results % 79 (f = 189) of the participants chose the sections 'Agree'. Self-confidence is an indispensable case for beginning thinking critically and according to results this features of implementers are in a good way but not at the desired level.

5.1.6 Discussions Regarding Systematicity Responses of CCTDI

Just like the results of open-mindedness, there also can not be seen a crucial judgement when we take a look on the results of systematicity. For instance, the item 21 (Indeed if I have to deal with a very complex thing, it is time for me to panic) shows a variable result because % 65,4 of the implementers prefer 'Disagree' part while the remaining participants (% 34,6) prefer 'Agree' part. The systematicity item of the scale aims to measure the disposition toward organized orderly and focused inquiry. Perhaps the most significant deficiency of undergraduate prospective teachers is faced with their systematicity skills. Particularly the item 19 (People say I give a very hasty decision) gives a clear result in this way. When we take a look at it, % 37,2 (f = 86) chose 'Agree' options which is a critical situation for systematicity.

Again the item 21 mentioned above, is a clear evident for this because % 65,4 (f = 155) of the implementers chose ‘Agree’ options that mean they are usually ready to panic and fail. The systematic person wants to approach specific issues, questions or problems in an orderly, focused and organized manner. Panic or any other negative approaches negatively influence the critical thinking process and when we look at the results of systematicity EFL undergraduate majors have deficiency in this way.

5.1.7 Discussions and correlations of CTD

The findings and results of CTD are extremely parallel to CCTDI. For instance the item 13 of the CTD is related with behavioural states of prospective teachers and similarly the 21st item of the CCTDI do it and results are very close to each other. According to both results undergraduate students in ELT can get easily stressed in difficult conditions.

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APPENDIX 1

TURKISH QUESTIONNAIRE

CALIFORNIA CRITICAL THINKING DISPOSITION INVENTORY

(CCTDI)

TURKISH VERSION

Sevgili öğrenciler,

Bu ölçek, sizlerin eleştirel düşünme eğiliminizi ölçmek amacıyla geliştirilmiş bir ölçektir. Bu ölçekte 51 ifade bulunmaktadır. Aşağıdaki ifadelerin sizi ne kadar tanımladığını düşünerek, bu ifadelere ne ölçüde katıldığınızı aşağıdaki ölçek üzerinde değerlendiriniz. Değerlendirmelerinizi sizi tam olarak yansıtacak şekilde yapınız.

Katkılarınızdan dolayı teşekkür ederim.

MURAT KARAKOÇ

ADI ve SOYADI : **NUMARASI :**

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

	Hiç katılmıyorum	**Katılmıyorum**	**Kısmen katılmıyorum**	**Kısmen katılıyorum**	**Katılıyorum**	**Tamamen katılıyorum**
1. Tüm hayatım boyunca yeni şeyler çalışmak harika olurdu.	1	2	3	4	5	6
2. İnsanların iyi bir düşünceyi savunmak için zayıf fikirlere güvenmeleri beni rahatsız eder.	1	2	3	4	5	6
3. Cevap vermeye kalkışmadan önce, her zaman soruya odaklanırım.	1	2	3	4	5	6
4. Büyük bir netlikle düşünebilmekten gurur duyuyorum	1	2	3	4	5	6

	Hiç katılmıyorum	Katılmıyorum	Kısmen katılmıyorum	Kısmen katılıyorum	Katılıyorum	Tamamen katılıyorum
5. Dört lehte, bir aleyhte görüş varsa, lehte olan dört görüşe katılırım.	1	2	3	4	5	6
6. Pek çok üniversite dersi ilginç değildir ve almaya değmez.	1	2	3	4	5	6
7. Sadece ezberi değil düşünmeyi gerektiren sınavlar benim için daha iyidir.	1	2	3	4	5	6
8. Diğer insanlar entelektüel merakımı ve araştırıcı kişiliğimi takdir ederler.	1	2	3	4	5	6
9. Mantıklıymış gibi davranıyorum, ama değilim.	1	2	3	4	5	6
10. Düşüncelerimi düzenlemek benim için kolaydır.	1	2	3	4	5	6
11. Ben dahil herkes kendi çıkarı için tartışır.	1	2	3	4	5	6
12. Kişisel harcamalarımın dikkatlice kaydını tutmak benim için önemlidir.	1	2	3	4	5	6
13. Büyük bir kararla yüz yüze geldiğimde, ilk önce, toplayabileceğim tüm bilgileri toplarım.	1	2	3	4	5	6
14. Kurallara uygun bir biçimde karar verdiğim için, arkadaşlarım karar vermek için bana danışırlar.	1	2	3	4	5	6
15. Açık fikirli olmak neyin doğru olup olmadığını bilmemek demektir.	1	2	3	4	5	6
16. Diğer insanları çeşitli konularda neler düşündüklerini anlamak benim için önemlidir.	1	2	3	4	5	6
17. İnandıklarımın tümü için dayanaklarım olmalı.	1	2	3	4	5	6
18. Okumak, mümkün olduğunca, kaçtığım bir şeydir.	1	2	3	4	5	6
19. İnsanlar çok acele karar verdiğimi söylerler.	1	2	3	4	5	6
20. Üniversitedeki zorunlu dersler vakit kaybıdır.	1	2	3	4	5	6
21. Gerçekten çok karmaşık bir şeyle uğraşmak zorunda kaldığımda benim için panik zamanıdır.	1	2	3	4	5	6
22. Yabancılar sürekli kendi kültürlerini anlamaya uğraşacaklarına, bizim kültürümüzü çalışmalılar.	1	2	3	4	5	6

	Hiç katılmıyorum	Katılmıyorum	Kısmen katılmıyorum	Kısmen katılıyorum	Katılıyorum	Tamamen katılıyorum
23. İnsanlar benim karar vermeyi oyaladığımı düşünürler.	1	2	3	4	5	6
24. İnsanların, bir başkasının fikirlerine karsı çıkacaklarsa, nedenlere ihtiyacı vardır.	1	2	3	4	5	6
25. Kendi fikirlerimi tartışırken tarafsız olmam imkânsızdır.	1	2	3	4	5	6
26. Ortaya yaratıcı seçenekler koyabilmekten gurur duyarım.	1	2	3	4	5	6
27. Neye inanmak istiyorsam ona inanırım.	1	2	3	4	5	6
28. Zor problemleri çözmek için uğraşmayı sürdürmek o kadar da önemli değildir.	1	2	3	4	5	6
29. Diğerleri, kararların uygulanmasında mantıklı standartların belirlenmesi için bana başvururlar.	1	2	3	4	5	6
30. Zorlayıcı şeyler öğrenmeye istekliyimdir.	1	2	3	4	5	6
31. Yabancıların ne düşündüklerini anlamaya çalışmak oldukça anlamlıdır.	1	2	3	4	5	6
32. Meraklı olmam en güçlü yanlarımdan birisidir.	1	2	3	4	5	6
33. Görüşlerimi destekleyecek gerçekleri ararım, desteklemeyenleri değil.	1	2	3	4	5	6
34. Karmaşık problemleri çözmeye çalışmak eğlencelidir.	1	2	3	4	5	6
35. Diğerlerinin düşüncelerini anlama yeteneğimden dolayı takdir edilirim.	1	2	3	4	5	6
36. Benzetmeler ve analojiler ancak otoyol üzerindeki tekneler kadar yararlıdır.	1	2	3	4	5	6
37. Beni mantıklı olarak tanımlayabilirsiniz.	1	2	3	4	5	6
38. Her şeyin nasıl işlediğini anlamaya çalışmaktan gerçekten hoşlanırım.	1	2	3	4	5	6
39. İşler zorlaştığında, diğerleri problem üstünde çalışmayı sürdürmemi isterler.	1	2	3	4	5	6
40. Elimizdeki sorun hakkında açık bir fikir edinmek ilk önceliklidir.	1	2	3	4	5	6

	Hiç katılmıyorum	Katılmıyorum	Kısmen katılmıyorum	Kısmen katılıyorum	Katılıyorum	Tamamen katılıyorum
41. Çelişkili konulardaki fikrim genellikle en son konuştuğum kişiye bağlıdır.	1	2	3	4	5	6
42. Konu ne hakkında olursa olsun daha fazla öğrenmeye hevesliyimdir.	1	2	3	4	5	6
43. Sorunları çözmenin en iyi yolu, cevabı başkasından istemektir.	1	2	3	4	5	6
44. Karmaşık problemlere düzenli yaklaşımımla tanınırım.	1	2	3	4	5	6
45. Farklı dünya görüşlerine karsı açık fikirli olmak, insanların düşündüğünden daha az önemlidir.	1	2	3	4	5	6
46. Öğrenebileceğin her şeyi öğren, ne zaman ise yarayacağını bilemezsin.	1	2	3	4	5	6
47. Her şey göründüğü gibidir.	1	2	3	4	5	6
48. Diğer insanlar, sorunun ne zaman çözümleneceği kararını bana bırakırlar.	1	2	3	4	5	6
49. Ne düşündüğümü biliyorum, o zaman neden seçenekleri değerlendiriyor gibi davranayım.	1	2	3	4	5	6
50. Diğerleri kendi fikirlerini ortaya koyarlar, ama benim onları duymaya ihtiyacım yok.	1	2	3	4	5	6
51. Karmaşık problemlerin çözümüne yönelik düzenli planlar geliştirmede iyiyimdir.	1	2	3	4	5	6

APPENDIX 2

ENGLISH QUESTIONNAIRE

CTD QUESTIONNAIRE

The questionnaire below comprises 20 statements with 5 different answers. Please think on each statement carefully and decide on an answer.

1 ↔ Completely Disagree 2 ↔ Disagree 3 ↔ Not Sure
4 ↔ Agree 5 ↔ Completely agree

CRITICAL THINKING DISPOSITIONS	1	2	3	4	5
1. I believe that the best point of view is mine.					
2. I usually try to understand the ideas that I don't agree with.					
3. I do not consider the ideas supporting the opinions that l am opposed to.					
4. I do not question the reasons that lead other peoples' attitudes.					
5. I am easily influenced by the speeches of the effective orators.					
6. I do not question the philosophies that control my life.					
7. I can easily change an of my idea if I feel a logical fallacy or a limitation.					
8. I like analyzing the abstract concepts and find some relation among them.					
9. Learning is a source of excitement and joy for me.					
10. I sometimes question the validity and reliability of my beliefs, values and principles with an objective eye.					
11. I have some beliefs that I do not question their validity.					
12. I never change what l say in a discussion even if I know they are wrong.					
13. I can not think effectively when I am stressed and depressed.					
14. I read books and other materials with a specific point of view.					
15. If I happened to understand that my principles, beliefs and values and all I know about life were not actually valid and accurate, I would feel annoyed.					
16. Thinking critically may help me get rid of my prejudices.					
17. Thinking critically may lead me to a depression and cause confusion in my life.					
18. If I knew that being a real intellectual would annoy me and made me unhappy, I would, nevertheless, want to be an intellectual who understands his/her world and people.					
19. I find questioning myself annoying.					
20. I usually collect information before I come to a decision about anything.					

APPENDIX 3

Kişisel Bilgi Formu

Not: Aşağıdaki ifadelerden size uygun olan özelliği/özellikleri parantez içine X koyarak işaretleyiniz.

KATILIMCININ

1. <u>Sınıfı :</u> 1 ( ) 2 ( ) 3 ( ) 4 ( )

2. <u>Cinisiyeti :</u> Kadın ( ) Erkek ( )

3. Örgün Eğitim ( ) İkinci Öğretim ( )

4. <u>Mezun Olduğu Okul Türü :</u>

Düz Lise	( )	Anadolu Öğretmen	( )
Anadolu Lisesi	( )	Teknik Lise	( )
Süper Lise	( )	Anadolu Teknik/Mesleki L.	( )
Özel Okul	( )	Diğer	( )

5. Doğduğunuz yerleşim birimi:
( ) Köy ( ) Kasaba ( ) İlçe ( ) İl

6. Yaşamınızın büyük kısmını geçirdiğiniz yerleşim birimi:
( ) Köy ( ) Kasaba ( ) İlçe ( ) İl

7. Babanızın eğitim durumu:
( ) Okur-yazar değil ( ) Ortaokul mezunu ( ) Lisansüstü
( ) Okur-yazar ( ) Lise mezunu
( ) İlkokul mezunu ( ) Üniversite mezunu

8. Babanızın mesleği:
( ) Öğretmen ( ) İşçi ( ) Memur ( ) Çiftçi ( ) Serbest meslek

9. Annenizin eğitim durumu:
( ) Okur-yazar değil ( ) Ortaokul mezunu ( ) Lisansüstü
( ) Okur-yazar ( ) Lise mezunu
( ) İlkokul mezunu ( ) Üniversite mezunu

10. Annenizin mesleği:
( ) Öğretmen ( ) İşçi ( ) Memur ( ) Ev hanımı ( ) Çiftçi ( ) Serbest meslek

11. Ailenizin genel yapısı aşağıdakilerin hangisine uymaktadır?
( ) Otoriter ( ) Demokratik ( ) İlgisiz ( ) Aşırı ilgili ( ) Koruyucu

12. Kendinizi aşağıdaki sosyo-ekonomik düzeylerin hangisinde görüyorsunuz?
( ) Düşük ( ) Orta ( ) Yüksek

13. Aşağıdaki etkinliklerden hangisine katılmaktan hoşlanıyorsunuz?
( ) Bilimsel etkinlikler ( ) Kültürel etkinlikler ( ) Sportif etkinlikler

14. Aşağıdaki bireysel özelliklerden sizi en çok yansıtanları işaretleyiniz.
( ) Araştırıcı ( ) Girişken ( ) Risk alabilen
( ) Sorumluluk üstlenebilen ( ) İnsancıl ( ) Düşünmeye önem veren
( ) Kendine güvenen ( ) Yeni fikirlere açık ( ) Yaratıcı
( ) Sorgulayıcı

APPENDIX 4

COGNITIVE CRITICAL THINKING TAXONOMY OF BLOOM AND SKILLS DEMONSTRATED

COMPETENCE	**SKILLS DEMONSTRATED**
Knowledge	• observation and recall of information • knowledge of dates, events, places • knowledge of major ideas • mastery of subject matter • *Question Cues:* list, define, tell, describe, identify, show, label, collect, examine, tabulate, quote, name, who, when, where, etc.
Comprehension	• understanding information • grasp meaning • translate knowledge into new context • interpret facts, compare, contrast • order, group, infer causes • predict consequences • *Question Cues:* summarize, describe, interpret, contrast, predict, associate, distinguish, estimate, differentiate, discuss, extend
Application	• use information • use methods, concepts, theories in new situations • solve problems using required skills or knowledge • *Questions Cues:* apply, demonstrate, calculate, complete, illustrate, show, solve, examine, modify, relate, change, classify, experiment, discover

Analysis	• seeing patterns • organization of parts • recognition of hidden meanings • identification of components • *Question Cues:* analyze, separate, order, explain, connect, classify, arrange, divide, compare, select, explain, infer
Synthesis	• use old ideas to create new ones • generalize from given facts • relate knowledge from several areas • predict, draw conclusions • *Question Cues:* combine, integrate, modify, rearrange, substitute, plan, create, design, invent, what if?, compose, formulate, prepare, generalize, rewrite
Evaluation	• compare and discriminate between ideas • assess value of theories, presentations • make choices based on reasoned argument • verify value of evidence • recognize subjectivity • *Question Cues* assess, decide, rank, grade, test, measure, recommend, convince, select, judge, explain, discriminate, support, conclude, compare, summarize

CURRICULUM VITAE

Murat KARAKOÇ was born in Ordu in 1985. He completed his primary education in Mehmet Akif Ersoy Primary school, in Ordu, and completed Ordu Anatolian High School in 2003. He began his university education in English Language Teaching Department at Atatürk University. He was graduated from the university in 2007. He began teaching English in a state school in Erzurum in 2008. He began master education at Kafkas University in 2009.