T.C.
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PROMOTING CRITICAL THINKING SKILLS THROUGH MYTHOLOGY-BASED CRITICAL THINKING ACTIVITIES IN ELT DEPARTMENT AT AKDENIZ UNIVERSITY

MA THESIS

Gülseren Aslı SEÇMEN

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YÜKSEK LİSANSTEZİNİNADI: Promoting Critical Thinking Skills Through Mythology-Based Critical Thinking Activities in ELT Department at Akdeniz University

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ABSTRACT

PROMOTING CRITICAL THINKING SKILLS THROUGH MYTHOLOGY-BASED CRITICAL THINKING ACTIVITIES IN ELT DEPARTMENT AT AKDENIZ UNIVERSITY

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Becoming more and more interesting lately, critical thinking has been the subject of many studies both in Turkey and abroad. The common aim of the studies is to determine different ways of improving critical thinking skills. Similarly, the present study aims to make a contribution to education by investigating the use of mythological short stories and critical thinking activities. In this quasi-experimental study, 39 freshman students taking Oral Communication Skills II course in the Department of English Language Teaching (hereafter ELT) at Akdeniz University constitute the research group. One-Group Pretest-Posttest design was adopted as the research design. The quantitative data were gathered through the Cornell Critical Thinking Level Z Test (pre-test). After the implementation of a five-week (10 hours in total) mythology-based critical thinking activities, Cornell Critical Thinking Test Level Z (post-test) was used again to see whether there was a difference between pre and posttest scores of the students. The analysis of the results indicated that the difference between the pretest and posttest mean scores was statistically significant. Based on the results taken from Cornell Critical Thinking Test, it can, therefore, be concluded that after the implementation, there is an improvement in the critical thinking levels of the students as a whole. Interestingly, even though students boosted their test scores in five out of seven subskills, no statistically significant difference between the pretest and posttest mean scores was found in these subskills. Another issue emerging from the findings is that there was no significant relationship between students' scores in the critical thinking test and individual characteristics such as age and educational level of their parents.

Keywords: Critical thinking, Mythology based activities, English Language Teaching.

ÖZET

AKDENİZ ÜNİVERSİTESİ İNGİLİZCE ÖĞRETMENLİĞİ BÖLÜMÜNDE MİTOLOJİ TABANLI ELEŞTİREL DÜŞÜNME ETKİNLİKLERİ İLE ELEŞTİREL DÜŞÜNME BECERİSİNİN GELİŞTİRİLMESİ

Seçmen, Gülseren Aslı

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Son zamanlarda giderek daha fazla ilgi çekici hale gelen eleştirel düşünme, hem Türkiye'de hem yurt dışında birçok çalışmaya konu olmuştur. Çalışmaların ortak amacı, eleştirel düşünme becerilerini geliştirmenin farklı yollarını bulmaktır. Benzer şekilde, mevcut çalışma, mitolojik öykülerin ve eleştirel düşünme etkinliklerinin kullanımını araştırarak eğitime katkıda bulunmayı hedeflemektedir. Bu yarı-deneysel çalışmada araştırma grubunu, Akdeniz Üniversitesi İngilizce Öğretmenliği Bölümü'nde Sözlü İletişim Becerileri II dersini alan 39 birinci sınıf öğrencisi oluşturmaktadır. Araştırma deseni olarak tek gruplu öntest-sontest deseni kullanılmıştır. Nicel veriler Cornell Eleştirel Düşünme Seviye Z Testi (ön test) ile toplanmıştır. Beş haftalık (toplam 10 saat) mitoloji tabanlı eleştirel düşünme etkinliklerinin uygulamasından sonra, Cornell Eleştirel Düşünme Seviye Z Testi (son test), öğrencilerin ön ve sontest puanları arasında bir fark olup olmadığını anlamak amacıyla tekrar kullanılmıştır. Sonuçların analizi, ön test ve son test ortalama puanları arasındaki farkın istatistiksel olarak anlamlı olduğunu göstermiştir. Cornell Eleştirel Düşünme Testinden elde edilen sonuçlara dayanarak, uygulamadan sonra öğrencilerin eleştirel düşünme düzeylerinde genel olarak bir iyileşme olduğu sonucuna varılabilir. İlginç şekilde, öğrenciler 7 alt beceriden 5'inde test puanlarını artırmalarına rağmen, bu alt becerilerin öntest ve sontest ortalamaları arasında istatistiksel olarak anlamlı bir farklılık bulunamamıştır. Bulgulardan çıkan diğer bir durum ise, öğrencilerin eleştirel düşünme testindeki sınav puanları ile yaşları ve ebeveynlerinin eğitim düzeyleri gibi bireysel özellikleri arasında anlamlı bir ilişki olmamasıdır.

Anahtar Kelimeler: *Eleştirel düşünme, Mitoloji tabanlı etkinlikler, İngilizce Öğretmenliği.*

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LIST OF ABBREVIATIONS

ELT   : English Language Teaching

CT   : Critical Thinking

W-GCTA   : Watson-Glaser Critical Thinking Appraisal

CCTDI-T   : The California Critical Thinking Disposition Inventory Test

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CHAPTER I

INTRODUCTION

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1.1. Introduction

This chapter presents the statement of the problem along with the purpose of the study, and then it deals with the research question, sub-questions and the significance of the study. Finally, the chapter discusses the limitations of the study.

1.2. Statement of the Problem

Critical thinking is of vital importance gaining more and more interest lately. Naturally, everybody has the ability to think; however, in order to keep up with today's rapidly changing, quick-thinking, instant decision-making world, we need to enhance our higher-order thinking skills. Being in the Information Age, we are surrounded by different kinds of knowledge. However, we still soak up the raw knowledge without examining and questioning. So, are we trapped in traditional thinking system? The answer is both yes and no. Even though there have been improvements in education connected with thinking and learning system, critical thinking skills are not integrated into courses yet and most of the classes are still teacher-centred.

The problem of implementing CT skills can be traced back to the 20th century. As Paul (1990) states, most teachers assume that transmitting rules, formulas and basic information are called teaching. If students completely fulfil the task of memorizing and repeating what their teacher conveyed, they are thought to acquire the information. Paul (1990) adds that after teachers ask questions, they can't wait for the response long and share the answer in a few seconds, therefore students do not need to push themselves to think about the answer. When they do, they are supposed to give the same answers with no different information from the coursebook or what they have been taught.

In the same line of thinking, Schafersman (1991) holds the view that in order to prepare the students to become successful people in every part of life, their thinking skills must be developed first. For him, while educators are efficient in conveying the subject of the course, they mostly fail to show the correct way, or how to comprehend and analyze that subject. In

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another major study, Paul and Elder (2006) found that what professors do for teaching is only to transfer the knowledge in lectures and using examinations to understand which students learn the knowledge given so far. Unfortunately, the ability to memorize determines the ones who deserve higher grades and the ones who do not.

The Turkish education system can be an example of the same picture. Students have difficulty in putting the knowledge they learn into practice when they come across a problem. Similarly, some researchers (Irfaner, 2002; Özüberk, 2002; Ustunluoglu 2004, Buyukkara 2008; Deniz, 2009; Tiryaki, 2011) come to an agreement that despite its necessity and importance, critical thinking is not applied in classrooms. While educators expect students to learn, they do not teach them many things about how to reflect their knowledge. Therefore students are not aware of using the information they have learned in real life when needed.

To conclude, the teacher's inadequate knowledge and practice, deficiencies in the curriculum, education policies and weakness of the technology may decrease the feasibility of teaching critical skills in classrooms. Therefore, this study is supposed to be beneficial to the teachers who are not pleased with transferring information to their students but aim to inspire them to question, analyze and think critically.

1.3. Purpose of the Study

The present study attempts to find out the critical thinking levels of 39 freshman students taking Oral Communication Skills II course in the ELT Department at Akdeniz University. Also, the purpose of the current study is to analyze the impact of mythology-based CT activities on their CT skills. It is supposed to contribute to the increase in CT levels of the students by using critical thinking activities with mythological stories. Another aim of the study is to determine whether there is a relationship between their age, educational level of their parents and critical thinking levels of students.

1.4. Research Question and Sub-questions

The aim of this study is to answer the following research question:
Can the critical thinking skills of freshman students in the ELT Department at Akdeniz University be improved through Mythology based critical thinking activities?

The present study also focuses on the following sub-questions:

1. What are the CT levels of the freshman students attending the Oral Communication Skills II course in the ELT Department at Akdeniz University before the implementation of mythology-based critical thinking activities?

2. Do freshman students' critical thinking skill levels measured by Cornell Critical Thinking Test Z show any statistically significant difference after they are exposed to a mythology-based critical thinking programme?

3. Do freshman students' CT subskills levels measured by Cornell Critical Thinking Test Z show any statistically significant difference after they are exposed to a mythology-based critical thinking programme?

4. Is there any significant relationship between freshman students' CT levels and individual characteristics such as age and educational level of parents?

1.5. Significance of the Study

Today's notion of CT has been formed and developed by a wide range of scholars and philosophers. In the 20th century, John Dewey, considered as the father of modern critical thinking, explains CT as "learning to think" which is the initial aim in the field of education. In addition, Schafersman (1991) expresses that, CT is not associated with the low order thinking skills that people use anytime in everyday life for common routines but it deals with higher-order thinking skills that provide them to take significant and critical decisions about complicated cases. He also mentions that apart from its effectiveness in education, CT makes people more responsible and active citizens in the society they live.

Critical thinking has been the subject of many studies both abroad and in Turkey. The common purpose of the studies is to find out the ways of improving CT skills. Like those local and foreign studies, the present study aims to make a contribution to education by highlighting the role of CT in the field of learning and teaching.

1.6. Limitations of the Study

The current study has some limitations. The major limitation of this study is its duration. As the syllabus of the Oral Communication Skills II was predetermined, only 5 weeks (10 hours in total) could be reserved for the implementation. As Behar- Horenstein and Niu (2011) state, the longer the treatment is, the easier it becomes to find the changes in critical thinking. Secondly, it was not possible to make a random selection as the students were assigned to the

classes organized by the administration at the beginning of the academic year. Thus, the present study could not be generalized to similar groups. Lastly, the implementation was limited to only four short stories because of the time limit. If the number of the short stories had been increased, the students might have had more opportunities to enhance their CT skills.

CHAPTER II

LITERATURE REVIEW

2.1. A Brief History of Critical Thinking

The word 'critical' derives from the Greek roots 'Kritikos' that means to comprehend, analyze, and interpret something (Murrel & Houlihan, 2006). Critical thinking has been with us and discussed since the time of Greek philosophers, particularly Socrates. Known as a prominent philosopher, Socrates (470- 399 BC.) was also a great teacher who sacrificed himself for the sake of learning and thinking. He was accused of polluting the minds of the people around him by the ruling class, believed to be a threat, and as a result was sentenced to death. What he was doing was urging people to think with logic and question knowledge and truth by means of asking how the truth can be found and thus be sure that they know something rather than only having an idea about it (Noddings, 2007, p.6).

More than 2500 years ago Socrates initiated a method of questioning called "Socratic Method". Paul, Elder and Bartell (1997) demonstrated that being the oldest CT method, Socratic Method aims to help the learners differentiate between knowing something and only having an idea about it. The difference is determined mostly by questioning, analyzing, and exploring. For this method, in order to find the clarity and provability of an idea, one must use probing questioning that is to ask profound questions. Socrates highlighted that in order to acquire knowledge, we cannot trust those who are in power but rather we must ask and explore deeply before accepting or rejecting ideas. Today, having been regarded as one of the best CT methods, Socratic Method sheds light on the studies of the following philosophers and scholars such as Plato, Aristotle, Francis Bacon, Immanuel Kant, Descartes, John Dewey, John Locke, Wittgenstein, Jean Piaget, Richard Paul and Peter A. Facione (Paul and Elder, 2006). Several scholars have contributed to critical thinking in their own ways, thus it has changed and improved a lot throughout the years.

The famous students of Socrates; Plato and Aristotle, follow his ideology claiming that the concept of reality is far from how it seems to us. Therefore, in order to see the unseen realities, one must have a trained mind. Plato suggested that while training the minds, education ought to enable learners to analyze, interpret, and assess reasons. Later, in the middle ages, Thomas Aquinas had a significant contribution to the development of critical thinking by embodying it in his writings and teachings. He stated that CT cannot be

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considered as denying the facts but the ideas which are deprived of a logical base (Murrel & Houlihan, 2006).

In the Renaissance (15th and 16th centuries), many scholars employed CT perspective in art, politics, human rights and religion. *The Advancement of Learning* written by Francis Bacon has been considered as the first text written for critical thinking. French philosopher René Descartes argued the necessity of systematic and disciplined mind for thinking in his book *Rules for the Direction of the Mind.* Thomas More is another philosopher and scholar with his influential work, *Utopia*. In the book, he envisaged a new social order in which all social systems could be criticized by people freely. Furthermore, as a notable figure of the Italian Renaissance, Niccolo Machiavelli analyzed and criticized the politics of his period in his famous work *The Prince.* Following Machiavelli and his ideology, Hobbes and Locke questioned the common life and supported the necessity of evidence and reasoning in order to explain everything (Fisher, 2001).

In the 17th and 18th centuries, two scientists, Robert Boyle and Sir Isaac Newton made a contribution to critical thought in modern technology and science. They broadened the critical thought of scholars like Copernicus, Galileo, and Kepler by criticizing the traditionally adopted worldview and supporting the requirement of evidence and reason in chemistry and science (Paul and Elder, 2014, p.178). In France, the thinkers of the French Enlightenment, Montesquieu, Diderot, and Voltaire asserted that in order to comprehend social and political world better, the human mind must be disciplined by reason, and all thoughts must be analyzed critically (Paul and Elder, 2006).

The concept of CT was extended in many fields of science and philosophy in the 18th century. In 1781 "Critique of Pure Reason" was published by Immanuel Kant. In the 19th century, Sigmund Freud, Charles Darwin and Karl Marx enriched the concept of CT to a great extent with their pioneering books and works in biology, sociology and psychology.

In the 20th Century, CT played a role in the field of education. Being accepted as the 'father' of modern CT, John Dewey made a breakthrough with his masterwork, *How We Think,* in which he developed a new notion 'reflective thinking' in 1910. In his work, Dewey states that there is a reciprocal link between thinking and experience, action and the outcomes of action. He indicates that education must improve the capacity of 'learning to think'. Therefore, in consideration of Dewey's ideas, it was students who were set in the focal point of the instructing and learning environment. Moreover, some strategies and methods we use today

like cooperative learning and role-plays were shaped and developed in accordance with Dewey's ideas. Taking his source from Dewey, Edward Glaser co-developed the most widely used CT measurement tool for university students: Watson-Glaser Critical Thinking Appraisal which is a multiple-choice test designed to measure five levels of critical thinking ability: assumptions, interpretation, inference, deductions, and evaluation. (Paul and Elder, 2014)

Overall, throughout history, human beings have employed their thinking ability in order to overcome the problems they faced in different periods of their lifetime. During its long-travel from early times to the 21st century, CT has been shaped, changed, and improved thanks to numerous philosophers, scholars, educators and others.

2.2. Definitions of Critical Thinking

Throughout the years, there has been a multitude of differing definitions made for CT. John Dewey (1910), an outstanding American scholar and educator, used the term 'reflective thinking' for CT and defined it as: "active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusions to which it tends"(as cited in Collins and O'Brien, 2003, p. 298)"

Another definition is proposed by Watson and Glaser, (1964, as cited in Hurte, 2004) who formed a widely used instrument Watson-Glaser Critical Thinking Appraisal (W-GCTA) all over the world, as follows:

> *attitudes* of inquiry involving an ability to recognize the problems and an acceptance of the need for evidence in support of what is asserted to be true; *knowledge* of the nature of valid inferences, abstractions, and generalizations; and *skills* in employing and applying the above attitudes and knowledge (p.13).

The most common definitions made for CT asserted by the outstanding scholars and experts listed below:

> Critical thinking is...

> - "careful, deliberate determination of whether we should accept, reject, or suspend judgments about the truth of a claim or a recommendation to act in a certain way" (Reichenbach, 2001, p.19).

- "a part of the basic learning process, not a higher order of thinking to be saved for advanced courses" (Klein, 1993, p.91).

- "the act of gaining knowledge, the generation of explanations, the judging of ideas, or the construction of relationships between concepts" (Craver, 1989, p. 13).

Being a prominent expert in critical thinking, Robert H. Ennis (1989) defines CT as objective reflective thinking that is centred on determining your beliefs or deeds. He also developed the Cornell Critical Thinking Tests that are still used as a measurement in CT studies to a great extent. Lipman (1988) characterized CT by stressing its three components that are self-correcting, sensitive to context and dependence on criteria. Another definition is suggested by Paul, Binker, Adamson and Martin (1989) as "CT is the art of thinking about your thinking while you are thinking in order to make your thinking better; more clear, more accurate, or more defensible". CT is also defined as the right way of thinking by seeking appropriate and credible knowledge in general by Schafersman in his work in 1991. When we consider these definitions, it is clearly seen that CT does not occur if it is not realized with the actions, productions or decisions. As Paul (1993) points out, in order to survive in this rapidly changing world, CT is needed by all human beings.

In 1990, CT experts from the practices of psychology, philosophy, and education participated in a panel which differs from any other panels because there they came to an agreement on the definition of CT. The panel was called The Delphi Project and in terms of teaching and assessment of CT, the consensus was reached there (Giancarlo & Facione, 2001, p. 33). One of the most universal clarifications of CT made by these experts in the project is as follows: "purposeful, self-regulatory, judgement which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, criterion-logical, or contextual considerations upon which that judgement is based" (p.30). Moreover, they defined and described who an ideal critical thinker is: "The ideal critical thinker is habitually inquisitive, trustful of reason, fair-minded in evaluation, willing to reconsider, open-minded, honest in facing personal biases, prudent in making judgements, and reasonable in the selection of criteria" (Facione, 1990, p. 3).

CT is mostly considered as a higher-order thinking skill which needs deep thinking and some macro and micro abilities. Therefore, experts and researchers list the features of ideal critical

thinkers. One of them is Ennis (2005) who suggested the strategies that an ideal critical thinker employs: (p. 3)

-asking questions all the time

-inquisitive

-looking for new ways to solve problems

-analyzing the ideas

-paying attention to what others say and giving feedbacks

-knowing that CT is a lifelong process

-not making a judgement before collecting and analyzing the data

-always trying to find any evidence to support his/her ideas

-rejecting the invalid and wrong information

It is an undeniable fact that there have been various and plentiful definitions made for CT. Based on the results of the works in several fields like psychology, philosophy and education, defining critical thinking is such a controversial and broad issue that it's been clearly seen that limiting it into a couple of sentences is not possible.

2.3. Basic Critical Thinking Skills, Strategies, and Dispositions

CT is a way of thinking together with a good deal of interconnected skills. While Boyatzis and Kolb (1995) identifies a skill as a synthesis of capacity, knowledge, and experience that empowers an individual to accomplish something admirably, Baron (1990) describes a skill as anything that can be enhanced with speed and verified with the constant practice. As a number of skills (Kurfiss, 1988; Facione, 1990; Cotrell, 2005; Fisher, 2001; Çubukçu, 2011; Hawkins, 2012) are attributed to critical thinking, an analysis of these skills can give a superior understanding into the idea of CT.

Known as the father of CT, John Dewey indicated three dispositions which are essential in critical or reflective thinking: objectivity, sincerity and responsibility. Moreover, as Dewey (1933) suggests, a person who is aware of more than just one side of any topic is called objective. Responsibility needs thinking about the outcomes of possible action. Sincerity is

connected with the real willingness and commitment that a person must have while aiming to find the truth (p. 29-30)

In 1956, there was a huge advance towards defining CT skills when some examiners came together and worked under the guidance of Benjamin Bloom and made Bloom's taxonomy that is still used today. In Bloom's taxonomy, thinking is categorized into six phases in terms of complexity. The order begins with the least complex knowledge and continues with comprehension, application, analysis, synthesis and evaluation (Bloom, 1956, p.18).

In 1990, The American Philosophical Association arranged a panel with 46 experts from various disciplines with the aim of building a consensus on the definition and assessment of CT. The panel was directed by Dr Peter A. Facione and called "Delphi Report". In the Report, Facione (1990) declared that there was an increasing interest related to CT and some questions began to be answered like "what are critical thinking skills?". According to the agreement among the experts, the central critical thinking skills are appointed as cognitive skills which are analysis, evaluation, inference, interpretation, explanation and self-regulation. The committee also agreed on the sub-skills that are given in table 2.1:

Table 2.1 Consensus List of Critical Thinking Cognitive Skills and Sub-Skills

SKILL	SUB-SKILL
Interpretation	Categorization
	Decoding Significance
	Clarifying Meaning
Analysis	Examining Ideas
	Identifying Arguments
	Analyzing Arguments
Evaluation	Assessing Claims
	Assessing Arguments
Inference	Querying Evidence
	Conjecturing Alternatives
	Drawing Conclusions
Explanation	Stating Results
	Justifying Procedures
	Presenting Arguments
Self- Regulation	Self-examination
	Self-correction

(Facione, The Delphi Report, 1990, p.7)

Facione (1990) describes the core CT skills as follows:

INTERPRETATION: the ability to understand and state the importance of a diverse range of information, circumstances, judgements, principles, systems and beliefs.

ANALYSIS: the ability to determine and distinguish between intended and actual inferential connections among any forms of representation that are aimed to reflect decisions, judgements, information, experiences and beliefs.

EVALUATION: the ability to assess whether descriptions of one's experience or beliefs are credible or not, and to assess the strength of those intended or inferential connections that are established on those representations.

INFERENCE: the ability to identify and make inferences by using relevant information, and to form hypotheses or presumptions.

EXPLANATION: the ability to express, justify and present one's reasoning.

SELF-REGULATION: the ability to evaluate one's own cognitive activities together with their elements and results, to employ skills in analysis, and to question or correct one's reasoning or result. (p. 7-12)

In 2012, Hawkins (p.6-7) asserts that although no consensus was reached on the single definition of CT, it seems that CT researches come to an agreement on five CT skills which are inductive reasoning, deductive reasoning, analysis, evaluation, and inference.

2.4. Teaching Critical Thinking

Even though CT becomes an inseparable skill in today's education system, it still raises many questions one of which is whether it is possible to teach or not. There are relatively few studies indicating that it is impossible to teach CT since the ability to think is innate and develops as one grows older (Nickerson, Perkins & Smith, 1985). In addition, Dixon (1991, as cited in Hurte, 2004) asserts that even though it can be explained somehow, it is hard to show CT as it is not a behavioural but a cognitive skill. Therefore, this makes it impossible to observe the process and teach to the learners. However, as Benesch (1999) highlights, CT skills must be cultivated because "choosing not to teach CT may result in the unquestioning acceptance of prevailing conditions, limiting possibilities for dissent and change" (p.579). Several educationalists and scholars strongly believe that CT skills do not seem possible to improve without guidance because as Van Gelder (2005) asserts even though it may seem simple and basic, CT is indeed a complicated process and it is one of those major aims of education. He adds that having CT skill is a demanding process like mastering foreign

languages that needs a long time (p.41). Those who gather under the same roof of teachability of CT offer several ideas and techniques to realize this aim.

2.4.1. Instructional Designs to Teach Critical Thinking

CT skills are fundamental parts of education thus learners must acquire these skills before graduating and accomplish them throughout their lives. In order to realize this aim, certain instructional designs and techniques to teach CT skills can be introduced in the educational environment.

2.4.1.1. Explicit Versus Implicit Instruction

One of the best explanations about the difference between explicit and implicit instruction was made by Stern (1992) stating that "the explicit-implicit dimension is just whether the learner should be taught to approach the learning task consciously as an intellectual exercise, or whether he should be encouraged to avoid thinking about the language and absorb it intuitively" (p. 327).

Explicit instruction is the way of teaching in which a thinking skill is taught by illustrating it to the class. The teacher also explains the definition, importance and the way of accomplishing the task. Students are aware of the process of learning and able to express it. Contrarily, the infusion approach is the implicit way used for teaching thinking skills. In this type of instruction, learners are to transfer their previous knowledge into the new content they are studying. Here, they are not conscious of the process of learning but they employ their acquired skills for their behavioural reactions (Salehi, 2011, p. 467). One of the supporters of explicit instruction, Halpern (2014) reports that CT must be taught explicitly since it is not a natural outcome of instruction that is given in a definite field. Another scholar, Willingham (2007) defends explicit instruction of CT along with the examples that are connected with the former experiences of the learners. A parallel view was made by Beyer (2008) indicating that in order to improve any thinking skills, one needs more than indirect instruction. Moreover, Van Gelder (2005) supports the idea that CT "must be an explicit part of the curriculum" (p. 42).

On the other hand, the implicit instruction has been supported by several supporters like Beyer (2008) stating that the instruction integrated into thinking skill, that is using the subject to learn thinking skills or the other way around, is more successful than explicit instruction. In addition, Doughty (2003) emphasizes that while explicit instruction has everything in it like

the rules with their explanation to the learners, implicit instruction does not give any open reference to the rules (p.265).

2.4.1.2. Socratic Teaching or Socratic Questioning

The name Socratic teaching or Socratic questioning takes its source from Greek philosopher Socrates (470-399 B.C). Even though it is the oldest method of all, Socratic questioning is the most commonly adopted and efficient method that develops CT. More than 2000 years ago, Socrates put emphasis on the importance of questioning to think profoundly before approving or refusing any idea. In this type of teaching, the instructor pretends to be ignorant to procure what students know about the topic. The method is called *Socratic Questioning* and it is the most popular CT strategy Davis (2003).

With respect to Socratic teaching, Paul and Elder (2006) add that it provides an inner voice of reason to the critical thinkers so that they can control their ideas, thoughts and deeds in a more sensible way. The basic principles of Socratic questioning are to try to comprehend, to catch the links within thoughts, and seek further information. Also, Davis (2003) holds the view that through Socratic questioning, learners are able to focus and analyze their own thinking process; therefore, their CT skill improves. Moreover, this type of questioning provides a student-centred learning environment, contributes students to improve their problem-solving skills, constructs and enhances long-term storage of knowledge. Davis (2003) adds by giving some tips for teachers about how to use Socratic questioning in the learning environment. According to her, as a model of CT in the classroom, teachers should:

- show respect and interest in their ideas.
- restate what has been talked at certain intervals.
- try not to ask yes/no, vague or too difficult questions since they do not encourage the students to think and carry on the discussion.
- keep silent for at least 5 to 10 seconds to get the answers from the students.
- design and ask clear, understandable questions to avoid misunderstanding.
- prepare important questions and organize the flow of the lesson.
- sustain student's responses with probing questions and keep the discussion environment.
- draw and keep the attention of most students to the discussion.

In terms of Socratic questioning, Paul and Elder highlight that both teachers and students can be the source of questions; sometimes they are used in small or large groups, in pairs or even unaccompanied. The discussion takes students "from the unreasoned to reasoned, from the unclear to clear, from the unexamined to examined, from the implicit to the explicit, from the unarticulated to articulated, from the inconsistent to consistent" (2006). Here is the table of various types of questions that are employed in Socratic questioning prepared by Paul and Elder (2006).

Table 2.2 Different types of questions in Socratic questioning

Questions of Clarification_____?	**Questions That Examine Purpose**
• Would you say more about that? • Why do you say that? • What do you mean by • Is your basic point_____ or_____ ? • What is your main point _____? • Could you give me an example? • How does _____ relate to_____ ?	• What is the purpose of _____ ? • What is the purpose of the main character in this story? • How do the purposes of these two people vary? • What was your purpose when you said _____?
Questions That Examine Assumptions	**Questions That Examine Information, Reasons, Evidence, and Causes**
• What are you assuming? • You seem to be assuming _____ . • Do I understand you correctly? • What could we assume instead? • All of your reasoning depends on the idea that _____. • Why have you based your reasoning on _____rather than_____?	• What would be an example? • What other information do we need to know before we can address this question? • Why do you think that is true? • How do you know? • Do you have any evidence to support your assertion?
Questions about Viewpoints or Perspectives	**Questions That Examine Implications and Consequences**
• What would someone who disagrees say_____? • What is an alternative? • How could you answer the objection that _____would make? • Can/did anyone see this another way? • How would other groups or types of people respond? Why? What would influence them?	• What are you implying by that? • Would that necessarily happen or only probably happen? • When you say_____, are you implying? • But if that happened, what else would also happen as a result? Why? • What effect would that have?
Questions about the Question	**Questions That Examine Concepts**
• Can we break this question down at all? • How could someone settle this question? • Is the question clear? Do we understand it? • Do we need facts to answer this? • How can we find out?	• What was the main idea guiding the thinking of the character in this story? • Which idea is this author using in her or his thinking? • Why/how is this idea important?

2.5. Critical Thinking and Bloom's Taxonomy

In 1956, together with a commission of examiners and educational psychologists, Benjamin Bloom published "The Taxonomy of Educational Objectives". He aimed to change the test questions belong to the University of Chicago because they found that more than 95% of the questions in tests require students to think at the lowest level. Being the Associate Director of the Board of Examinations in the University of Chicago, Bloom designed a taxonomy filled with insights into students' cognitive process. The taxonomy was classified based on student behaviours, namely cognitive, the affective and the psychomotor domains (Bloom, 1956). The cognitive domain is related to knowledge and advancement of intellectual skills and attitudes, the affective domain includes the development of feelings or emotional sides and lastly, the psychomotor domain is related to physical skills. It is not different for CT in that regard as well even though Bloom's taxonomy was not made specifically for teaching CT (Bialik & Fadel, 2015, p. 8). Since as Paul (1985) asserts, the taxonomy can be thought as the most popular conceptualization of CT. As we deal with CT, the primary concern among the domains of taxonomy is the cognitive domain. In the cognitive domain, Bloom describes six goals that are knowledge, comprehension, application, analysis, synthesis and evaluation. These six categories are presented in the following pyramid.
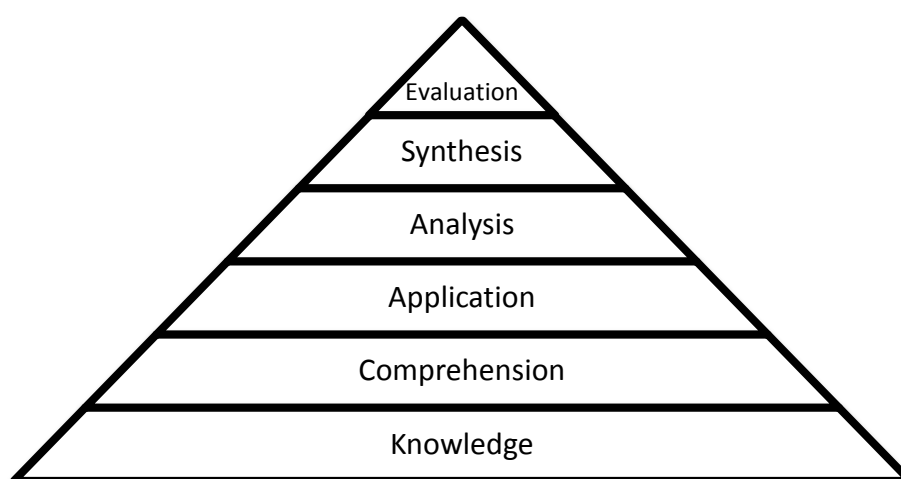
Figure 2.1 Bloom's Taxonomy of Cognitive Goals. (Institute for Academic Excellence, 1997, p. 2)

The categories are in their hierarchical order beginning from the least complex, knowledge, to the most, evaluation. For instance, in order to reach the level of application, one needs to master the previous level, comprehension, first. Being the first and lowest level of the cognitive domain, knowledge is the retrieval of the information that is previously learned.

Comprehension refers to the understanding, interpreting and translating information and predicting the consequences. Application is the third level being the ability to use the previously learned information into new conditions and to solve the problems. Analysis is the fourth level in the pyramid and the first high level of the cognitive domain. It is the competence of identifying the components of a whole and comprehending its organizational structure. Synthesis is the ability to construct a whole by putting parts together; using old ideas to make new ones or to draw conclusions. Lastly, evaluation is the ability to assess the value of ideas, statements or written works by using certain criteria. The last three domains, i.e., analysis, synthesis and evaluation are considered as the most related ones to CT (TenDam & Volman, 2004). Some useful verbs and sample questions related to Bloom's taxonomy are given in Table 2.3.

Table 2.3 Useful verbs and sample questions related to Bloom's taxonomy

KNOWLEDGE	
Useful Verbs	**Sample Questions**
List	How many...?
Name	What is...?
Describe	Who was it that...?
State	Find the meaning of...?
Relate	Can you name the...?
Find	What happened at/after...?
Tell	Who spoke to...?

COMPREHENSION	
Useful Verbs	**Sample Questions**
Interpret	Can you write a brief draft...?
Describe	Can you provide a definition for...?
Outline	What do you think could have happened next...?
Compare	Can you clarify what you mean...?
Discuss	Who do you think...?
Translate	What differences exist between...?
Distinguish	What is/was the main idea...?
	Can you distinguish between...?
	Who is/was the key character...?

APPLICATION	
Useful Verbs	**Sample Questions**
Solve	Would this information be useful if you had a ...?
Classify	From the previous information, can make some instructions about….?
Show	What questions would you ask of...?
Examine	What factors would you change if...?
Complete	Do you know another instance where..?
Illustrate	Could this have happened in...?
Use	Can you apply the method used to some experience of your own...?
	Can you group by characteristics such as...?

ANALYSIS	
Useful Verbs	**Sample Questions**
Analyze	What are some of the problems of….?
Distinguish	How was this similar to…….?
Explain	What was the turning point of the story?
Identify	Can you compare your….with that…… presented in….?
Compare	Why did …………………occur?
Contrast	What was the underlying theme of ……..?
Examine	What were some of the motives behind……..?
Investigate	Can you distinguish between……..?

SYNTHESIS	
Useful Verbs	**Sample Questions**
Create	Can you see a possible solution to …..?
Propose	Can you develop a proposal?
Invent	If you have a chance to access all resources you need, how would you deal with….?
Imagine	How many ways can you….?
Predict	Can you create new and unusual uses for…?
Plan	
Design	

EVALUATION	
Useful Verbs	**Sample Questions**
Judge	Can you suggest a better solution to....
Discuss	What is your idea about…..?
Select	Can you defend your position about.....?
Assess	How would you feel if…….?
Choose	What is a good or a bad about………...?
Argue	What changes to ... would you suggest to……?
Justify	How would you have handled.......?

(Dalton, & Smith, 1986)

Bloom's Taxonomy has gone through a revision by a former student of Bloom, Lorin W. Anderson, and a committee member who prepared the original taxonomy, David R. Krathwohl. The changes of the revised version were about the assessment, curriculum and instruction. Also, the nouns are changed into verbs because verbs are better at representing the active nature of cognitive goals than nouns. Moreover, in the new version, the rule of mastering the previous level to reach the next one is broken (Wilson, 2001). In 2007, Robert J. Marzano, and John S. Kendall revised the taxonomy again by making some changes like the names of the categories. All versions of the taxonomy with the revised names are given in Table 2.

Table 2.4 Taxonomies of Educational Objectives

Bloom et al. (1956)	Anderson and Krathwohl (2001)	Marzano and Kendall (2007)
Knowledge	Remember	Retrieval
Comprehension	Understand	Comprehension
Application	Apply	Analysis
Analysis	Analyze	Knowledge Utilization
Synthesis	Evaluate	Metacognitive System
Evaluation	Create	Self-system

2.6. Assessment of Critical Thinking Skills and Dispositions

Critical thinking skill is a mental activity and thus how to assess this skill is open to dispute. Several standardized tests and self-reports have been developed as the assessment tools for critical thinking skills and dispositions. These tools show differences in terms of some factors like test-takers age, what the test intends to assess specifically, or question types that the tool includes (Ku, 2009; Lai, 2011). The list of Critical thinking tests collected from Özmen (2006), and Li, Frankel, & Roohr (2014) is presented in Table 2.5.

Table 2.5 The list of Critical thinking tests

- Assessment of Reasoning and Communication - ICAT Critical Thinking Essay Test - California Critical Thinking Disposition Inventory (CCTDI) - Halpern Critical Thinking Assessment (HCTA) - California Critical Thinking Cognitive Skills Test (CCTCST) - ETS Proficiency Profile (EPP) Critical Thinking - Collegiate Assessment of Academic Proficiency (CAAP) Critical Thinking	- Collegiate Learning Assessment Plus + (CLA+) - Cornell Critical Thinking Test Level Z - Cornell Class Reasoning Test - Collegiate Learning Assessment Plus + (CLA+) - Cornell Conditional Reasoning Test - Cornell Critical Thinking Test Level - Cornell Critical Thinking Test Level - The Ennis-Weir Critical Thinking Essay Test	- Test of Enquiry Skills - New Jersey Test of Reasoning Skills - Watson Glaser Critical Thinking Appraisal (WGCTA) - Ross Test of Higher Cognitive Processes - Test of Inference Ability in Reading Comprehension - Test on Appraising Observations - The Test of Everyday Reasoning

In today's education, the most widely used assessment tools are The Watson-Glaser Critical Thinking Appraisal, The Cornell Critical Thinking Test, The Ennis-Weir Critical Thinking Essay Test, The California Critical Thinking Skills Test, and The California Critical Thinking Disposition Inventory.

The Watson-Glaser Critical Thinking Appraisal was prepared and introduced by Watson and Glaser (1980) but it has gone through many updates in time. It is a multiple-choice test that was designed to evaluate five levels of CT ability that are assumptions, interpretation, inference, deductions, and evaluation. There are 80 questions to answer and the target participants are young adults and above.

In 1985, two experts, Robert Ennis and Eric Weir developed The Ennis-Weir Critical Thinking Essay. The tool was designed to assess CT ability in the argumentation context. Test-takers are supposed to read a letter of eight paragraphs and write an essay in response by appraising and evaluating the arguments of the letter. High school and college students constitute the target participants.

Developed by Peter Facione (1990), The California Critical Thinking Skills Test (CCTST) assesses the central parts of cognitive and CT skills, i.e. inference, analysis, deduction and induction. The test consists of 34 multiple choice items with four or five options. Subjects are supposed to read a short text and answer the follow-up question for each item, and the test is scored based on the total number of the correct answers. The target participants are college-level students.

The California Critical Thinking Disposition Inventory was prepared by Noreen C. Facione, and Peter Facione (1992) with the aim of assessing the willingness of the subjects to think critically. The assessment tool has 75 items having seven subscales which are, truth-seeking, inquisitiveness, open-mindedness, maturity, systematicity, self-confidence and analyticity. The intended participants are adults. In 2003 the test was translated into Turkish by Kökdemir as CCTDI-T.

Being a standout amongst the most widely used CT tests, The Cornell Critical Thinking Test was published in 1971, and a new version with the definition of CT made by Ennis was published in 1985. In the test, five CT skills are measured and these are deduction, induction, observation, credibility and assumptions. In the deduction section, statements and a conclusion are presented to the participants and asked whether the conclusion is the exact

outcome of the statements. In the induction section, a statement based on experience is presented to the participants and they are asked if the following information and prediction are related to the statement. In the credibility and observation sections, participants are supposed to choose a more reliable statement that is associated with an experiment. In the assumption part, some descriptions are given and participants are asked to select the appropriate definition based on those descriptions and after reading the statements they are also supposed to choose the unstated assumptions. The test also has meaning and observation activities. In the meaning section, participants are given an argument between two people and asked to provide an answer about what is defective in their thinking. In the observation parts, the questions are made up with the credibility questions and ask students to distinguish what is fact and what is an opinion. The test includes two different forms, namely Level X and Level Z forms. While Level X is suitable for elementary and secondary school students, Level Z is prepared for advanced high school/college students and adults. The split-half reliability for Level X estimates ranges from .76 to .87 and for Level Z from .55 to .76 (Cornell Critical Thinking Test Manual, 2005).

Being one of the most important 21st century skills, CT has gained great interest and thus assessing it has become of vital importance. It is a fact that without its assessment, it is impossible to understand if the studies and strategies intended to enhance individual's CT skills are efficient or not.

2.7. Literature and Critical Thinking

Having been judged as an unpractical way to apply in language classes as it is complex and elevated in language, literature has become an essential subject in education lately. As Alagözlü (2006, p. 73) mentions, all the genres of literature (drama, poetry, short stories, novels) are worth and appropriate for integrating students into thinking deeply thanks to their argumentative feature. Also, some scholars have seen that when literature is involved in the process of learning, it has brought new dimensions to education (Erkaya, 2005).

In language classrooms, literature makes a significant contribution to students in terms of culture, linguistics and critical thinking. Widdowson (1982) ironizes some instructors who do not prefer to use literature in the curriculum since it's not suitable for the purpose of teaching language, create their own fictional situations and dialogues to be a model for language learning. Also, the characters in the textbooks are far from being natural and thus students

cannot humanly attach to them (p. 205). On the other hand, literary texts help students not only in mastering the four language skills, i.e. listening, speaking, reading and writing, but as they reflect real-life conditions, students can ideally perform CT activities as well.

Apart from language students, literature-based instruction can promote the ability to question, solve problems, analyze and communicate effectively in higher and university education as well (Burroughs, 1993). Like Burroughs, Wilson (as cited in Cobine, 1993) draws attention to the same point. For him, a critical reader does not only acquire information but s/he analyzes, evaluates and applies that information. By analyzing the author's ideas, s/he makes a comparison between personal ideas and those of the author, deduce the meanings and make an inference. In 1997, the Institute for Academic Excellence reported that literature reading is an active process and related to CT. The Institute asserts that the activity of reading a book is more than simply being exposed to words and sentences. The reader also collects some patterns from the book that she is reading, and former books she has read and construct meaning by adding her experiences to them. In the process of creating meaning, the report emphasizes Bloom's Taxonomy because, in order to construct meaning, one should analyze and interpret the information, question and differentiate the essential knowledge from others and assess the value of the ideas.

Some English instructors consider literature as pointless and inefficient for the outer world (Knight, 1993; Hirvela & Boyle, 1988; McKay & Moulding, 1986). However literature serves as a mirror reflecting life itself and by learning literature through critical thinking, students can see that CT is not something that is only taught in class but everywhere in life. Moreover, CT in literature helps us to get experienced in real life while showing empathy towards the characters and analyzing the work with a critical eye (McLaughlin, 1997). By reading a fictional or nonfictional story, students can deepen their perception of love, nature, emotions, death and every aspect of life. In the long run, they become more objective individuals who are free from prejudices and who are not satisfied with the existing information.

Schmit (2002) is another researcher who focuses on the importance of asking questions in people's life. He suggests that our comprehension of life is shaped by the questions we pose and this is also true in literature-based activities. He also claims that when reading a work of literature, there are several question possibilities that are based on the cognitive level of Bloom's Taxonomy. Moreover, he shares some questions templates that all of these questions depend on.

- What is..............? (knowledge)

- What is..........about? (comprehension)

- What is ....connected /related to? (application)

- What are the significant components of..........? (analysis)

- What does......mean? (synthesis)

- What is the value of........... (evaluation) (p. 119).

Schmit (2002) mentions that these six questions are associated with the cognitive level of Bloom's Taxonomy. As can be understood from the sequencing of the questions, like the process of Bloom's Taxonomy, they are hierarchically arranged to enable students to undergo the process of developing new ideas. Apart from being a critical reader, students who read literary texts with a critical eye become better at writing (Kemp, 2001).

As is understood, literature is considered to be an efficient tool to enhance student's CT skills in that it allows students to be freed from their biases and become a more active participant of the society with an open-minded attitude. Through analyzing and discussing the work of literature with the standards of CT, students identify the imaginary characters with themselves and the events in the text with their real life. At the end of the day, they will become more objective individuals having and respecting different points of view.

2.8. Studies on Critical Thinking

CT has become a buzzword and a popular research subject in different fields of education. Several scholars and researchers have conducted descriptive and experimental studies related to CT in Turkey and abroad.

In the US, Thomas (1999) had an interview with forty high school teachers and observed thirty-three of them while teaching in their classrooms. The aim was to determine whether those teachers practice the elements of CT in their courses. The findings indicated that a large percentage of those teachers fell behind in understanding of CT instruction in general, i.e. CT standards and skills, or how to foster these skills. The researcher made some suggestions based on his observations: (1) Pre-service and in-service education of teachers must integrate vocabulary, intellectual traits, philosophy, standards and processes of CT. (2) All students without considering their achievement level must be taught to think critically.

Several studies have investigated applying CT instruction to various language skills of EFL students. Liaw (2007) made a study in high school and aimed to find the effects of content-based writing and reading lessons on EFL students' CT levels. The participants were 32 Taiwanese students and the study took 5 weeks. The CT tasks were contextualized and generated from different cognitive domain levels, students' former experience, knowledge and assessment of their progress. In order to collect data, two instruments were applied: writings of the students being evaluated through Bloom's Taxonomy and Critical Thinking Test Level X with its 25 multiple-choice questions on interpretation, assumption identification, argument evaluation, induction, and deduction. The researcher reported that there was no significant difference between pre and post scores of the CT test. On the other hand, the evaluation of participant' writings revealed that they were able to perform all the requirements of cognitive domains presented in Bloom's Taxonomy.

Jantrasakul (2012) is another researcher who carried out a study to determine the effect of CT-based EFL lessons on learning language and engagement in English courses. It was a qualitative study and also observations and written documents like written assignments, tests and task sheets were employed. Participants of the study were students in a science-oriented university in Thailand. The data obtained in the study indicated that the EFL lessons based on CT made a contribution to language learning and engagement of the student.

In teacher education programmes, CT assessment has become an inseparable criterion in recent years. Therefore a wide range of studies has been conducted from all corners of the world. One of them belongs to Valdes-Corbeil (2005) whose aim was to learn whether 'Watson- Glaser Critical Thinking Appraisal' Test Preparation Programme affects CT skills of applicants in the teacher education programme. The applicants took Watson-Glaser Critical Thinking Appraisal with the teacher education programme in their department and to examine the efficiency of the participants, a causal comparative research design was employed. The data collected through Watson-Glaser Critical Thinking Appraisal showed the performance results of the applicants. To analyze the findings of the study, Pearson chi-square statistical technique was used and it was revealed that no statistically significant difference was found between the ones joined the Watson-Glaser Critical Thinking Appraisal Test Preparation Programme and those who did not.

Another study was carried out by Rimiene (2002) who aimed to improve students' CT skills and motivation to think critically. It was a three-month study (four hours per week) implemented in Vilnius Pedagogical University in Lithuania. The participants of the study

were 227 students, between 20-21 years old, and were assigned to two groups as experimental (77) and control (150) groups. In the study, active learning programme was employed so that the students would solve different kinds of problem and learn principles of CT. The programme comprised of problem-solving, active listening, cooperative learning, brainstorming, debates, and reflexive writing. The data collection instruments were the California Critical Thinking Skills Test (CCTST) and the California Critical Thinking Disposition Inventory (CCTDI). Based on the findings of the study, it was declared that while all CT skills of students' were considerably enhanced with the CT development programme, only some of their motivation was significantly affected.

Pullen (1992) with her fifteen colleagues carried out a study to enhance CT skills of students at Marlboro High School in New Jersey by using literature. The students were observed while doing writing activities and workshops and these activities were organized through the works of literature. According to the findings, students' CT skills were enhanced and the class became more student-centred.

Another study aimed to determine the effect of literature on CT was carried out by Ching and Fook (2013). In the study, the effect of graphic novels on CT skills in learning history was analyzed. The number of participants was 291 aged between 14 and 15. The data were collected through the quantitative method and quasi-experimental design. Also, there were three modes of graphic novel treatment which was used to assess the performance of students in learning history. The finding of the study indicated that graphic novels had a major role in improving and facilitating learners CT skills in learning history.

Generally, the studies which were conducted abroad have the same purpose, to improve students' CT by finding out their CT levels. Moreover, they have laid emphasis on some issues while assessing and enhancing CT. Examining the studies abroad, it can be clearly realized that a long-time period is needed to improve CT and educators must learn the concept and significance of CT. Also, being an indispensable part of education, CT can be enhanced through the right methods and instructions.

In addition to studies abroad, numerous studies were prepared in Turkey. Özçınar (1996) carried out a study in order to improve CT levels of preparatory students at Hacettepe University. A total of 28 students participated and were assigned to the control and experimental groups. Twenty activities were designed based on CT, and while some were adopted from different books, others were self-made. The process took eight weeks, and its

aim was to enhance thinking while reading and writing. After the treatment, the reading and writing skills of the students in each group were analyzed and compared by a real-life test which was designed by the researcher. To evaluate the data, T-test was used. The findings obtained from the study showed that the performance of the experimental group in the criteria of critical creativity, approach, and imagination increased significantly. In addition, reading and writing scores of the control group were lower than the scores of the experimental group.

Another factor affecting students' CT abilities is the teacher's attitude. With the aim of finding the relation between attitudes of teachers and CT abilities of students, Tokyürek (2001) from Sakarya University, applied a questionnaire on four primary school students and their teachers. The sample consisted of 100 teachers and the questions of the questionnaire were related to knowledge, observation, attitude and evaluation. The results demonstrated that there was a statistically significant relationship between CT skills of the students and the teaching curriculum since teachers stated that the curriculum prevents them. Therefore the hypothesis "teachers' attitudes have an effect on CT skills" has been verified.

Kürüm (2002) tried to find the CT levels of the students in faculty of education and the factors that have an impact on CT. The sample consisted of 1047 Turkish freshmen, sophomore, and junior pre-service teachers from five different departments at a public university. The data collection instrument which was used in this study consisted of the Watson-Glaser Critical Thinking Appraisal and a personal information questionnaire. According to the results, there were several factors that affect their CT levels such as age, alma mater, university entrance exam scores, the activities they do, or socio-economic and educational level of their parents. To be more specific, while the CT levels of students in the department of German Language Teaching were low, students Computer and Instructional Technologies, English Language Teaching, and Primary-school Mathematics Teaching had higher CT level. Moreover, sophomores outperformed freshmen in terms of the CT level.

In the same vein, Özdemir (2005) investigated university students' levels of CT skills and whether the place of birth, gender, and parents' socio-economic and educational backgrounds affect their CT level. A total of 128 randomly selected students constitute the study group. In order to collect data, a survey method and a 30-item attitude scale developed by the researcher were employed. The findings obtained from the study demonstrated that participants exhibited a moderate level of CT skills and also their place of birth, gender, and parents' socio-economic and educational backgrounds were inefficient in their CT levels.

Özüberk (2002) carried out a study to learn the effects of Feuerstein's instrumental enrichment programme on the critical thinking levels of high school students. The participants were assigned as control and experimental groups. In the programme, there were 14 activities for the experimental group and it took 20 hours to apply them. While the data was collected through the means of While Watson Glaser Critical Thinking Appraisal, T-test was used to evaluate them. Results showed that in terms of noticing the assumption, the programme was found to be efficient. However, in the practices of deduction, inference, interpretation and evaluation, the implemented programme was not successful.

Another study conducted by Dayıoğlu (2003), analyzed the CT levels of prep school students in a state university in Turkey. The sample consisted of 193 students. The data collection instruments were the Watson-Glaser Critical Thinking Appraisal Test which was translated into Turkish by Çıkrıkçı (1993), an English Proficiency Test and an informant form. The findings obtained from the study demonstrated that the relationship between students' major, proficient level and CT levels was statistically significant. On the other hand, no statistically significant relationship could be found between their CT and economical/educational level of parents, gender and the number of siblings.

Çubukcu (2006) conducted a study in the faculty of education in order to find out the CT disposition of the teacher candidates. In the study, descriptive research and causal-comparative research model were used. Also, a total of 400 students constituted the study group. The data were collected by means of gathering subjects' personal information and Critical Thinking Disposition Inventory adapted from The California Critical Thinking Disposition Inventory (CCTDI). The findings acquired from the study suggested that students showed higher performance on the two dimensions, Analyticity and Open-mindedness, than the others, Inquisitiveness and Systematicity.

In a study carried out in Ankara, Ungan (2007) aimed to find out whether short stories are effective instruments in terms of improving lower-order (remembering, understanding, and applying) and higher-order CT skills (analyzing, evaluating, creating) of students at Ankara University in Turkey. The participants were 20 freshman students in English Language and Literature Department. The study took four weeks and students were supposed to read one story per week, four stories in total. These stories are *The Necklace* by Guy de Maupassant, *The Story of an Hour* by Kate Chopin, *The Garden Party* by Katherine Mansfield, and *Cat in the Rain* by Ernest Hemingway. After reading, they wrote their personal responses, thoughts, and feelings related to the story. Moreover, they were asked to establish connections with

former stories they read or with their personal lives. At the end of four-week treatment, the written works of the students were read and counted sentence by sentence and classified as lower-order and higher-order thinking in accordance with Bloom's Taxonomy. The findings of the study demonstrated that the CT (higher-order) thinking level of students were higher in percentage than their lower-order thinking level. However, students were still not good at thinking critically. Being a high-order thinking level, evaluation was the category to which most of the students' responses were related. On the other hand, the percentage of two other higher-order thinking categories, analysis and synthesis, was less than expected. The researcher asserts that it is possible to enhance the higher-order thinking levels of students when they are provided with syllabuses which encourage CT.

In 2010, Işık conducted a study in order to find the relationship between students' CT dispositions and reading frequency in Turkish and English texts. Participants were 147 high school students and the data were collected through the California Critical Thinking Dispositions Inventory and Critical Reading Scale. The findings showed that the study has a positive and direct impact on the students but there is no significant correlation or relationship between the students' critical thinking dispositions and their critical reading levels.

In the light of the studies discussed above, some common conclusions could be drawn such as the importance of adapting CT skills into the curriculum. Teachers must be educated about the significance of CT and it is clearly seen that they have a remarkable contribution to enhance CT skills of the students. Also, the studies in Turkey are mostly descriptive aiming to find or measure CT levels of the students and the focus is mainly on reading and writing skills.

CHAPTER III

METHODOLOGY

3.1. Introduction

The purpose of this chapter is to present the research design, setting, participants, data collection procedure, instruments, and data analysis.

3.2. Sampling and Participants

In the present study, the sample was selected using convenience sampling. The researcher aimed to reach the maximum number of students and the data were gathered from the students who were present in the class. As one of the purposes of the study was to enhance CT levels of the students with speaking activities, the course was chosen in accordance with this purpose; namely, Oral Communication Skills II.

The participants of the study consist of 39 freshman students taking Oral Communication Skills II course in the ELT Department at Akdeniz University. They are a mixed group in terms of age, gender, and linguistic competency. The age and gender division of the participants is given in tables 3.1 and 3.2

Table 3.1 Students' age distribution

	Frequency	*Per cent*
18	12	30.7
19	15	38.5
20	5	12.8
22	1	2.6
23	1	2.6
24	1	2.6
26	2	5.1
28	1	2.6
40	1	2.6
Total	39	100.0

Table 3.2 Students' gender distribution

	Frequency	*Per cent*
Male	19	48.8
Female	20	51.2
Total	39	100.0

The sample consisted of one group with a total number of 39 freshman students ranging from 18 to 40 years of age. Even though the total number of the classroom was 40, one student was not present in the day of pretesting. Also, the number of male students is 19 and female students is 20. All were native speakers of Turkish and while 7 of them graduated from general high schools (17.9%), 23 of them graduated from Anatolian high schools (82.1%). In order to understand the backgrounds of the students and find out the connection with their CT skills, parental education levels were demonstrated as well.

As for the educational level of the mothers, the majority of them were primary school graduates (N=19) (%48.7). While there was only one middle school graduate (%2.6), the number of high school graduates was twelve (%30.8). Also, there were seven university graduates (%17.9). Most of the fathers were elementary school graduates (N=15) (%38.5) and the number of middle school graduates was two (%5.1). While there were ten high school graduates (%25.6), the number of university graduates was twelve (%30.8). All participants in the study were voluntary and confidentiality of testing results was assured and maintained.

3.3. Selection of Materials

In the implementation of the study, 4 Greek mythological stories were used: Hades and Persephone: The Myth of Four Seasons; The Story of Medusa and Perseus; The Trojan War and Golden Apple; The Story of Echo and Narcissus and a lecture "Mythology and Popular Culture" was given.

The primary reason why Greek stories were preferred to teach in this study is that mythology provides a variety of cultures while letting students compare those cultures to their own. It also enhances their appreciation for art and literature culminating in developing a broader perspective in life. By studying mythological stories they can find the traces of ancient thoughts and how people in ancient times explained phenomenon and situations. Therefore they can also begin thinking critically and analytically about the modern world they live in.

3.4. Research Design

The current study employed quantitative research method and it was conducted with a One-Group Pre-Test/Post-Test design in order to recognize the improvement of CT skills of freshman students through mythology-based CT activities. Related to quantitative research,

Taylor (2005) states that the main aim of quantitative research is to illustrate truly and objectively. With this type of research, the researcher aims to present ways of control phenomena by working on the variables (p. 91). The main quantitative research methods are experimental research, quasi-experimental research, action research, correlational research and casual comparative research. In this study, the quasi-experimental research design was used and the results of one-group pretest-posttest design are utilized as quantitative data. Fraenkel and Wallen (2003) defined quasi-experimental design as a kind of experimental design in which there is no possibility of random assignment of participants. The participants in this study could not be selected randomly because the classes were organized by the administration at the beginning of the academic year. The participants are also dependent variables since their success depends on the instruction they receive. A 5-week study (10 hours in total) was implemented to freshman students in "Oral Communication Skills II" course in ELT Department at Akdeniz University during the Spring semester of 2015-2016 Academic year. The study was carried out by the researcher who is also the instructor of the course.

3.5. Implementation of Critical Thinking Activities

As previously discussed in the literature review part, Bloom's Taxonomy has a great contribution to teaching CT skills. Several scholars and researchers asserted the importance of Bloom's Taxonomy in their CT studies (Thacker, 1990; Sunjosuseno & Watts, 1999; Comb, 1992; Schmit, 2002). The researcher emphasized and employed Bloom's Taxonomy in this study and organized CT activities in accordance with the taxonomy. In knowledge and comprehension levels, participants were asked questions about the mythological stories, characters, plots and setting. For the next level, application, they were supposed to apply the newly learned information in another situation or find similarities related to their lives. In the analysis level, they were asked deep and thought-provoking questions about the topic which required breaking it down into pieces in order to be analyzed. For the last level, synthesis, participants were supposed to produce something new such as writing or performing an alternative end or designing a cover. Activities prepared in accordance with the taxonomy assist participants in proceeding to the next level easily (see Appendix A). Therefore, it is clear that Bloom's Taxonomy makes a huge contribution to students in terms of improving their CT skills and applying these skills to real life.

In addition, real-life activities adopted from mythological stories were used in this study as well. In order to help the participants become active individuals and citizens, and distinguish right from wrong by evaluating the alternatives, real-life activities were highly preferred by the researcher. In real life activities, students are supposed to come up with ideas for the real-life problems presented in the works and they also put ideas into practice by adapting these works to a real-life context. In this regard, literature is considered to be the best source providing readers with precious life experiences that can be used to overcome modern-day problems. Since literature reflects the life like a mirror, it becomes an inseparable medium to promote CT skills which are essential for real life. Khatip and Nazari (2012) highlight the connection between literature and CT as well. They emphasize that poems, short stories and novels have a profound effect on developing CT skills of the students. Many other researchers highlight the importance and necessity of real-life activities in enhancing CT skills. (Combs, 1992; McLaughlin, 1997; Üstünlüoglu, 2004; Khatib & Mehrgan, 2012). Being the oldest work of literature, mythological stories give important messages to the reader and become a bridge between the universe and humanity. Different types of myths such as nature myths, creation myths or hero myths explain life with their stories and characters. They sometimes answer significant questions about life and provide a possible explanation about a phenomenon or situation. Therefore the researcher preferred to use Greek mythological stories and activities that were designed specifically to enhance CT skills of the students (see Appendix A).

Pair and group work activities and class discussion were employed in the study as well. Students present their point of view and evaluate the others by practising CT skills while they engage in pair, group or class discussions (Paul & Elder, 2001; Mirioğlu, 2002). In order to promote interaction and discussion, students were asked to work in pairs or groups while doing the activities which help them enhance their CT skills in the long run (see Appendix A)

The researcher also prepared activities based on induction, deduction, assumption and credibility in accordance with Cornell Critical Thinking Test Level Z in order to promote CT skills of the students. The activities include drawing a conclusion from general to specific or specific to general and making inferences from the mythological stories (see Appendix A)

3.6. Data Collection Instruments

The current study was conducted in three phases. Before implementation of the study, the data belonging to the students' levels of CT skills were gathered through Cornell Critical Thinking Test Level Z. Next, CT strategies were applied to the students through the practices of lesson plans designed according to Bloom's taxonomy. Lastly, after the implementation of CT strategies, Cornell Critical Thinking Test Level Z was conducted again to determine whether there was any change or improvement in students' levels of CT skill.

3.6.1. One-Group Pretest-Posttest Design

In order to determine the changes in students' levels of CT skills, a quantitative research design was employed. In one-group pretest-posttest design, the dependent variable is evaluated or tested once before the treatment and once after the treatment (Creswell, 2005). As there was no control group in the study, one group pretest-post-test design was used to ascertain that after implementing mythology-based CT programme, there would be a statistically significant difference in CT skill levels of the participants. Kozloff (2006) states that researchers, who seek to compare the dependent variables before and after implementing a treatment, must employ pretest-posttest design. Also, one group pretest-posttest design is employed in studies where there is no control group (Meiners, 2005). Through this design, the participants were given a test (pretest) and after the practice, they were presented the same test (post-test) by the researcher to analyze the effect of the treatment.

In this study, the Cornell Critical Thinking Test Level Z was chosen with the aim of diagnosing CT levels of freshman students. In 1962, Robert H. Ennis developed Cornell Critical Thinking Test Level X along with Cornell Critical Thinking Test Level Z. While the Level X of the CT test is used for the students in grades from 4 to 12, Level Z was prepared for gifted high school students, college students, graduate schools or adults. That is why the researcher preferred to employ Level Z for the current study. The test was employed both as a pretest with the aim of finding participants' levels of CT skills and as a post-test to determine whether there was a change after implementing the treatment. Normally the test can be administered within 50 minutes time but the researcher allowed participants one hour to complete it since some of them could not finish within that time frame. In addition, the synonyms of the unknown words are prepared and shared with the students before the implementation. On the test, each item has three choices and one true answer. It is also composed of five sections and 52 items designed to measure participants' competency in

different domains of CT. Even though the aspects of CT are presented separately, they are considerably interdependent. The distribution of the aspects is given in Table 3.3

Table 3.3 Aspects of Critical Thinking Incorporated in Level Z and Rough Assignment of Items Thereto

Aspects of Critical Thinking	Items of Level Z
Induction	17, 26-42
Deduction	1-10, 39-52
Observation	22-25
Credibility	22-25
Assumption	43-52
Meaning	11-21, 43-46
Dispositions	Not directly tested

(Ennis et al, 2005, p. 2)

Ennis (2005) demonstrated that a critical thinking test would not include dispositions and attitudes like caution or open-mindedness as it is very difficult to test them. Furthermore, a fair CT test must not penalize the participants for their private social or political value judgements.

Cornell Critical Thinking Test Level Z is one of the most reliable CT assessment instruments and thus has still been used for the related studies. According to the Cornell Critical Thinking Tests Administration Manual, the *reliability* of a test can be confirmed if it gives the same results repeatedly. The reliability of the Cornell Critical Thinking Test Level Z was estimated by the Kuder-Richardson and Spearman-Brown methods. Results show that reliability estimates of the test range from .49 to .87 which proves that the test can be depended upon to supply the same results repeatedly (p.16).

With respect to *validity*, The Cornell Critical Thinking Test was confirmed to be valid as it was used in many scientific studies like Infusing Critical Thinking in an Introductory Psychology Course (Ennis, 2005, p. 40). Moreover, the consistency of the dependence on the variables like IQ, gender, dogmatism, and independence is another strong support to construct validity (Ennis, 2005, p.38). According to Cornell Critical Thinking Tests Administration Manual, in term of seven correlations (personality, IQ/aptitude, academic accomplishment, socio-economic status, gender, miscellaneous, and grade level) there is a reasonable degree of

relationship between Cornell Critical Thinking Level Z and other CT tests in the criterion-related validity with a range around .50 (Ennis, 2005, p. 38).

3.7. Data Analysis Procedure

The data obtained by comparing pretest and posttest results in Cornell Critical Thinking Test Level Z were analyzed by descriptive statistics through Statistical Package for the Social Sciences (SPSS) 21.0 using a $p<.05$ significance level. In order to calculate the total score, each correct answer was given "1" point and wrong and empty answers were given "0" point. In order to find a statistically significant relationship between the scores that students got in the posttest and their age, and educational level of their parents, the data were analyzed whether they are not normally distributed or not. In order to assess the normality of the distribution of scores, the Shapiro-Wilk test was employed. Table 3.4 presents the normality tests for the total scores of the participants with different levels of mothers' education.

Table 3.4 Tests of Normality

| | *Shapiro-Wilk* | | |
	Statistic	*df*	*Sig.*
Primary School	,971	19	,799
High School	,941	12	,512
University	,893	7	,293

When Table 3.4 is examined, it is seen that the total scores received by the participants with different levels of mothers' education are normally distributed. For this reason, the parametric test (Independent samples ANOVA) was used in the analysis. Table 3.5 presents the normality tests for the total scores of the participants with different levels of fathers' education.

Table 3.5 Tests of Normality

| | *Shapiro-Wilk* | | |
	Statistic	*df*	*Sig.*
Primary School	.963	15	.740
High School	.958	10	.765
University	.913	12	.235

When Table 3.5 is analyzed, it is seen that the total scores received by the participants with different levels of fathers' education are normally distributed. Therefore, the parametric test (Independent samples ANOVA) was preferred in the analysis.

The normality tests for the total scores received by the participants in the age groups were presented in Table 3.6

Table 3.6 Tests of Normality

| | *Shapiro-Wilk* | | |
	Statistic	*df*	*Sig.*
18	.967	12	.878
19	.965	15	.785
20 and older	.917	12	.261

As shown in table 3.6, the total scores of the participants with different age levels are distributed normally. For this reason, the parametric test (Independent samples ANOVA) was used in the analysis.

CHAPTER IV

FINDINGS AND DISCUSSION

4.1. Introduction

This chapter presents the findings of the research. The data provided by the Cornell Critical Thinking Test Level Z will be analyzed in the light of the following research question: Can the critical thinking skills of freshman students in ELT Department at Akdeniz University be improved through mythology-based critical thinking activities? The study also focuses on the following sub-questions:

1. What are the critical thinking levels of the freshman students attending the Oral Communication Skills II course in the ELT Department at Akdeniz University before the implementation of mythology-based critical thinking activities?
2. Do the freshman students' critical thinking skill levels measured by Cornell Critical Thinking Test Z show any statistically significant difference after they are exposed to a mythology-based critical thinking programme?
3. Do freshman students' critical thinking levels of the subskills measured by Cornell Critical Thinking Test Z show any statistically significant difference after they are exposed to a mythology-based critical thinking programme?
4. Is there any significant relationship between freshman students' critical thinking levels and individual characteristics such as age and parental education levels?

To answer the research and sub-questions, Cornell Critical Thinking Test Level Z was employed as a pretest before the treatment and as a post-test after the treatment to measure the CT level of the students. Furthermore, to answer the fourth sub-question, independent samples ANOVA was used.

The results of the study indicated that there is an increase in the posttest scores of the students, and the difference between the pre-test and post-test mean scores was significant ($p= .016$, $p<.05$). However, although students boosted their test scores of the subskills Meaning and Fallacies, Observation, Hypothesis, Planning and Assumption, no statistically significant difference was found between the pretest and posttest mean scores in those subskills. In addition, the results showed that the relationship between freshman students' critical thinking

levels and individual characteristics such as age and educational level of parents was not statistically significant.

4.2. Pretest Critical Thinking Scores of the Students

In order to find out the CT levels of the students, Cornell Critical Thinking Test Level Z was employed before the treatment. 39 freshman students participated in the test and the answers of the students were analyzed through the instrument of SPSS 21.0. programme. The analysis of the pretest answers is given in Table 4.1

Table 4.1 Descriptive Statistics for Pretest Measures

		Pretest
N	Valid	39
	Missing	0
Mean		22.0769
Median		22.0000
Mode		22.00
Std. Deviation		4.07421
Variance		16.599
Skewness		.340
Std. Error of Skewness		.378
Kurtosis		.215
Std. Error of Kurtosis		.741
Range		19.00
Minimum		14.00
Maximum		33.00

Cornell Critical Thinking Test Level Z is a multiple-choice test including 52 items. Each correct answer of the test is worth 1 point which means that one can get up to 52 points from this test. Table 4.1 presents the overall scores of the freshman students in the pretest. From an overall perspective, it is clear that the pretest mean score of the students is 22.07 out of 52. Also, there is no missing value in the test score. The scores that students had in each subskill are also significant in terms of getting better information about the test. Thus, descriptive statistics for the subskills in the pretest are given in Table 4.2.

Table 4.2 Descriptive Statistics for Subskills (Pretest)

	Deduction Pretest	Meaning & Fallacies Pretest	Observa-tion & Credibility Pretest	Induction (Hypothesis)Pretest	Induction (Planning) Pretest	Definition Pretest	Assumption Pretest
Number of items	10	11	4	13	4	4	6
N Valid	39	39	39	39	39	39	39
Success in subskills (%)	62	30	40	44	34	39	37
Mean	6.2632	3.3333	1.6154	5.8205	1.3846	1.5641	2.2308
Median	7.0000	3.0000	2.0000	5.0000	1.0000	2.0000	2.0000
Mode	7.00	4.00	2.00	5.00	2.00	2.00	3.00
Std. Deviation	1.51630	1.28418	0.93514	2.17488	0.87706	0.85208	1.40416
Variance	2.299	1.649	0.874	4.730	0.769	0.726	1.972
Skewness	-0.952	-0.198	-0.151	0.680	-0.121	-0.076	0.047
Std. Error of Skewness	0.378	0.378	0.378	0.378	0.378	0.378	0.378
Kurtosis	0.453	-0.568	0.207	-0.107	-0.714	0.910	-0.773
Std. Error of Kurtosis	0.741	0.741	0.741	0.741	0.741	0.741	0.741
Range	6.00	5.00	4.00	8.00	3.00	4.00	5.00
Minimum	2.00	1.00	0.00	3.00	0.00	0.00	0.00
Maximum	8.00	6.00	4.00	11.00	3.00	4.00	5.00

In this critical thinking test, rights-only scoring method was used which means that while students receive 1 point for each correct answer, they do not lose a point for their incorrect answers. Mean scores of the subskills show that students received the highest scores in Deduction skill (6.26 out of 10). However, the test includes several subskills and every subskill has a different number of test items. Thus, it was not possible to use mean scores to find the success of the students in each subskill because it might have been misleading. Instead, the percentage of success was used when interpreting the results. Percentages of success were calculated by dividing the number of items by the mean. To illustrate, it seems that the mean score of Observation and Credibility skills is relatively low with 1.61. However, this score indeed equals to 40% success (higher than 4 other scores of the subskills) when the number of the items of the subskill considered. Also, while students got the highest percentage in Deduction (%62), Meaning & Fallacies has the lowest percentage (%30).

4.3. Post-test Critical Thinking Scores of the Students

Being similar to the descriptive statistics of the subskills in the pretest, the posttest includes several subtests and every subtest has a different number of test items. The descriptive statistics for subskill in the posttest were given in Table 4.3.

Table 4.3 Descriptive Statistics for Subskills (Posttest)

		Deduction Post	Meaning& Fallacies Post	Observa-tion & Credibility Post	Induction (Hypothesis) Post	Induction (Planning) Post	Definition Post	Assumptio n Post
N	Valid	39	39	39	39	39	39	39
	Missing	0	0	0	0	0	0	0
Success in subskills (%)		61	36	46	47	42	37	43
Mean		6.1026	3.9744	1.8718	6.1538	1.6944	1.4872	2.6154
Median		6.0000	4.0000	2.0000	7.0000	2.0000	2.0000	2.0000
Mode		7.00	4.00	2.00	8.00	2.00	2.00	2.00
Std. Deviation		1.44723	1.63010	0.95089	2.48721	0.99524	0.94233	1.53238
Variance		2.094	2.657	0.904	6.186	0.990	0.888	2.348
Skewness		0.471	0.235	-0.119	-0.607	-0.323	0.238	0.233
Std. Error of Skewness		0.378	0.378	0.378	0.378	0.378	0.378	0.378
Kurtosis		-0.007	-0.859	-0.323	-0.574	-0.815	0.139	-0.629
Std. Error of Kurtosis		0.741	0.741	0.741	0.741	0.741	0.741	0.741
Range		6.00	6.00	4.00	9.00	3.00	4.00	6.00
Minimum		4.00	1.00	0.00	1.00	0.00	0.00	0.00
Maximum		10.00	7.00	4.00	10.00	3.00	4.00	6.00

Therefore mean scores could not be trusted because it was misleading in revealing the success of the students. Instead of the mean scores, the percentage of success was used. It is apparent from the percentages that the highest score of students was taken from Deduction skill (%61). On the other hand, the lowest score was taken from the Meaning & Fallacies skills with a percentage of 36 even though it has the third-best mean score. It can also be observed that there is an increase by 6 per cent between the pretest and post-test of Meaning & Fallacies, Observation & Credibility and Assumption; by 3 per cent between Induction (Hypothesis), and by 8 per cent between the pretest and post-test of Induction (Planning). However, Definition is the second subskill having decrease (2%).

4.4. Comparison of Pretest and Posttest Critical Thinking Scores of the Students

After the implementation of mythology-based CT activities for five weeks, Cornell Critical Thinking Level Z test was applied to the students again as a post-test with the aim of determining whether the pretest and post-test scores of the students show any a difference. Then, the Paired-Samples T-test was used to see whether the pretest and post-test scores were significantly different.

Table 4.4 Descriptive Statistics for Pretest and Posttest Measures

		Pretest	Posttest
N	Valid	39	39
	Missing	0	0
Mean		22.0769	23.8205
Median		22.0000	23.0000
Mode		22.00	21.00
Std. Deviation		4.07421	4.99933
Variance		16.599	24.993
Skewness		.340	.353
Std. Error of Skewness		.378	.378
Kurtosis		.215	-0.472
Std. Error of Kurtosis		.741	.741
Range		19.00	21.00
Minimum		14.00	14.00
Maximum		33.00	35.00

The same 39 students attending pretest and the five-week treatment also participated in the post-test. The means of pretest and post-test scores of the students taking mythology-based CT activities are shown in Table 4.4. The table provides that while the pretest mean score is 22.07 out of 52, the post-test mean score is 23.82. The results obtained from the pretest and posttest scores reveal that there is a difference between these two tests since the pretest score increases from 22.07 to 23.82. It can be observed that there is a 1.75 point difference between the mean scores of pre and post-tests. Also, while the standard deviation of the pretest was 4.07, it increased to 4.99 in the post-test. After finding the differences between pre and posttests, the Paired Samples T-test was used to find out whether there is a statistically significant difference between pretest and post-test scores of the students. The result of the analysis is given in Table 4.5.

Table 4.5 Paired Samples T-Test Analysis Results

Measures	N	x̄	S	sd	t	p
Pretest Total	39	22.07	4.07	38	-2.53	.016
Post-test Total	39	23.82	5.00	38		
Deduction Pretest	39	6.26	1.52	38	.56	.580
Deduction Posttest	39	6.10	1.45	38		
Meaning Pretest	39	3.33	1.28	38	-2.00	.053
Meaning Posttest	39	3.97	1.63	38		
Observation Pretest	39	1.62	.94	38	-1.22	.230
Observation Posttest	39	1.87	.95	38		
Hypothesis Pretest	39	5.82	2.17	38	-0.79	.433
Hypothesis Posttest	39	6.15	2.49	38		
Planning Pretest	39	1.38	.88	38	-1.58	.122
Planning Posttest	39	1.69	1.00	38		
Definition Pretest	39	1.56	.85	38	.43	.667
Definition Posttest	39	1.49	.94	38		
Assumption Pretest	39	2.23	1.40	38	-1.53	.133
Assumption Posttest	39	2.62	1.53	38		

*p<.05

As mentioned before, the pretest CT mean score of the students is 22.07 while the post-test mean score is 23.82. Thus, it is clear that the CT mean scores of the students improved in time. In Table 4.5 Paired Samples T-Test indicates that the difference between the pretest and posttest scores was significant (p= .016, p<.05). However, no statistically significant difference was found between the pretest and post-test of the subskills (p>.05); Deduction (p=.580), Meaning (p=.053), Observation (p=.230), Hypothesis (p=.433), Planning (p=.122), Definition (p=.667), and Assumption (p=.133). Table 4.6 reflects the paired samples correlations of pretests and posttests together with the subskills.

Table 4.6 Paired Samples Correlations

Pairs	N	R	p
Pretest & Posttest total	39	.567	.000
Deduction Pretest & Deduction Post	39	.266	.101
Meaning Pretest & Meaning Post	39	.067	.685
Observation Pretest & Observation Post	39	.032	.847
Hypothesis Pretest & Hypothesis Post	39	.370	.020
Planning Pretest & Planning Post	39	.150	.362
Definition Pretest & Definition Post	39	.239	.143
Assumption Pretest & Assumption Post	39	.434	.006

*p<.05

As Table 4.6 illustrates, there are positive correlations between the pre and posttests of the subskills and as a whole(R=.567.) In positive correlation, the values must be between 0 and 1. On the other hand, a negative correlation is described with the value between -1 and 0 (Creswell, 2005).

4.5. The Relationship Between Students' Posttest Scores and Age

The results of unpaired samples ANOVA are presented in Table 4.7 and Table 4.8 for the purpose of determining whether there is a statistically significant relationship between the posttest scores and students' ages.

Table 4.7 Descriptives

age	N	Mean	Std. Deviation	Std. Error
18	12	22.5833	4.92597	1.42200
19	15	23.8667	5.08312	1.31246
20 and older	12	25.0000	5.09902	1.47196
Total	39	23.8205	4.99933	.80053

Table 4.8 The relationship between students' posttest scores and age

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	35.094	2	17.547	.691	.508
Within Groups	914.650	36	25.407		
Total	949.744	38			

When Table 4.7 and Table 4.8 are examined, it is seen that there is no significant relationship between the posttest scores and students' ages (F (2, 36) = .691, p>.05).

To find out whether there is a statistically significant relationship between the post-test scores and mothers' education levels, the results of unpaired samples ANOVA are given in Table 4.9 and Table 4.10.

4.6. The Relationship Between Students' Posttest Scores and Educational Levels of mothers

Table 4.9 Descriptives

	N	Mean	Std. Deviation	Std. Error
Primary	19	22.7895	3.95220	.90670
High	12	24.0000	5.22233	1.50756
University	7	27.4286	5.71131	2.15867
Total	38	24.0263	4.89615	.79426

Table 4.10 The relationship between students' posttest scores and educational levels of mothers

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	110.102	2	55.051	2.480	.098
Within Groups	776.872	35	22.196		
Total	886.974	37			

*p<.05

As shown in Table 4.9 and Table 4.10, it is seen that there is no significant relationship between the posttest scores and educational levels of mothers, (F(2, 35)= 2.480, p>.05).

4.7. The Relationship Between Students' Posttest Scores and Educational Levels of Fathers

The results of unpaired samples ANOVA are presented in Table 4.11 and Table 4.12 to determine whether there is a statistically significant relationship between the posttest scores and fathers' education levels.

Table 4.11 Descriptives

	N	Mean	Std. Deviation	Std. Error
Primary	15	23.4667	4.03320	1.04137
High	10	23.5000	3.56682	1.12793
University	12	23.8333	6.54819	1.89030
Total	37	23.5946	4.75780	.78218

Table 4.12 The relationship between students' posttest scores and educational levels of fathers

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.019	2	.509	.021	.979
Within Groups	813.900	34	23.938		
Total	814.919	36			

As Table 4.11 and Table 4.12 present, there is no significant relationship between the posttest scores and educational levels of fathers, (F (2, 34) = .021, p>.05).

Shortly, after finding out students' CT levels by using Cornell Critical Thinking Level Z test, they were exposed to the implementation of mythology-based CT activities for five weeks and after the implementation, the same test was applied again to see the difference. The results were analyzed through the instrument of SPSS 21.0. programme. The results indicated that there is a statistically significant difference between the pretest and posttest scores of the students as (p= .016, p<.05). However even though students improved 5 out of 7 subskill scores in the posttest, no significant difference was found between the subskills in pretest and posttest scores. Therefore it can be concluded that there is an improvement in CT levels of the students as a whole after the implementation. Also based on the results of unpaired samples, ANOVA conducted to find the relationship between the posttest scores and students' ages and educational levels of their parents, no significant relationship was found.

CHAPTER V

CONCLUSION

5.1. Introduction

In this chapter, the study is summarized with its purposes and findings are interpreted. Then, pedagogical implications for the teacher and the field of education are provided. The chapter ends with some suggestions made for future studies.

5.2. Discussion and Conclusion

The study aimed at finding out CT levels of freshman students before and after the treatment. It was carried out with 39 freshman students studying at ELT Department at Akdeniz University. This study sets out to answer the following research question: Can the critical thinking skills of freshman students in the ELT Department at Akdeniz University be improved through Mythology based critical thinking activities?

This study also focuses on the following sub-questions:

1. What are the critical thinking levels of the freshman students attending the Oral Communication Skills II course in the ELT Department at Akdeniz University before the implementation of mythology-based critical thinking activities?

2. Do freshman students' critical thinking skill levels measured by Cornell Critical Thinking Test Z show any statistically significant difference after they are exposed to a mythology-based critical thinking programme?

3. Do freshman students' critical thinking levels of the subskills measured by Cornell Critical Thinking Test Z show any statistically significant difference after they are exposed to a mythology-based critical thinking programme?

4. Is there any significant relationship between freshman students' critical thinking scores in the CT test and individual characteristics such as age and educational level of parents?

The first sub-question sought to determine the CT levels of freshman students before the treatment. For this purpose Cornell Critical Thinking Test Level Z was used as a pretest measurement. Based on the results of the test, it can be mentioned that the total mean score of 22.07 was close to the centre point, considering 52 as the highest score. It should be noted that

Cornell Critical Thinking Level Z is a long and very demanding test. In addition, it was the first time that the students had undertaken this kind of a test which is a significant factor that can have a negative impact on their success in the test. The researcher did not translate the CT test into Turkish as the students were having English-medium education. In the earlier studies, however, researchers preferred to use the Turkish version of the tests since it was difficult for the students in other majors to comprehend the questions in English. In the study of Bökeoğlu and Yılmaz (2005), the data collection instrument was the California Critical Thinking Disposition Inventory translated into Turkish by Kökdemir (2003). Similarly, Dayıoğlu (2003) collected the data through the Turkish version of the Watson-Glaser Critical Thinking Appraisal Test translated by Çıkrıkçı (1993).

In the second sub-question, the Cornell Critical Thinking Level Z test was applied to the students once more as a post-test to determine whether the pre-test and post-test scores show any difference. Results indicated that the pre-test mean score increased from 22.07 to 23.82 in the post-test, and the difference between the pre-test and post-test mean scores was significant ($p= .016$, $p<.05$). Even though the difference between the mean scores of pre-test and post-test was not high, it is still a noticeable increase for a five-week treatment of CT skills considering CT is a lifelong process and learning. Therefore, it can be concluded that the five-week mythology-based CT activities was successful in enhancing students' overall levels of CT. Even though literature is a new tool used in promoting CT levels, it can be nominated as one of the most suitable means education since together with critical thinking, literature study can improve problem-solving and reasoning skills. Also by studying mythological stories, students can learn how people in ancient times thought and explained phenomenon or situations and think critically and analytically about the modern world they live in. The result of the present study is in accord with several studies in Turkey indicating that programmes comprised of CT activities and exercises can improve the CT levels of the students (Özçınar, 1996; Kürüm, 2002; Işık, 2010). Similarly, the results of Rimiene's (2002) study show that CT activities such as cooperative learning, problem-solving, brainstorming, and active listening made a contribution to CT skills of the experimental group who got low scores in the pretest. However, the findings of the study conducted by Liaw (2007) do not support the previous results. The study suggested that after the five-week implementation of CT tasks with 32 Taiwanese students in a writing course, they were able to perform all the requirements of cognitive domains in Bloom's Taxonomy, but there was no significant difference between pre and post scores of the CT test. Valdes-Corbeil (2005) found the same

results after implementing the Watson-Glaser Critical Thinking Appraisal Test Preparation Programme which includes CT activities. The study revealed that there was no significant difference between the ones joined the Watson-Glaser Critical Thinking Appraisal Test Preparation Programme and those who did not.

With respect to the third sub-question, descriptive statistics for the subskills in the pre-test and posttest were analyzed. Since every subskill had a different number of test items, the percentage of success was used when interpreting the results. While Deduction holds the highest percentages of success (pre=%62, post=%61), Meaning & Fallacies had the lowest percentage (pre=%30, post=%36) both in pre and posttests. Even though Deduction decreased by one per cent in the post-test, it still had the highest percentage of success of all other subskills. Despite the increase of percentages in five out of seven subskills, no statistically significant difference was found between pre-test and post-test results of the subskills (p>0.05). Therefore, based on the results taken from the Cornell Critical Thinking test, it can be mentioned that there is an improvement in the CT levels of freshman students as a whole. On the other hand, even though students boosted their test scores of the subskills Meaning and Fallacies, Observation, Hypothesis, Planning and Assumption, no statistically significant difference between the pretest and posttest mean scores was found in those subskills. This finding is consistent with that of Özüberk (2002) who carried out a study to find the effects of Feuerstein's instrumental enrichment programme on the CT levels of high school students. The programme was found to be effective in general but in the practices of deduction, inference, interpretation and evaluation, it did not achieve the desired success in CT levels of the students.

The last sub-question in this study sought to determine the significant relationship between students' CT test scores and individual characteristics such as age and educational level of parents. The sample consisted of 39 freshman students ranging from 18 to 40 years of age. The results of the unpaired samples ANOVA indicated that the relationship between the age and CT test scores of the students was not statistically significant. A possible explanation for this result is that the older students get, the more overconfident they might become, and in the long run, they become overconfident which might be misleading for them. On the contrary, there is also a possibility that young people are more overconfident. It was also found that there was no significant relationship between the CT test scores and parental education levels. This result may be explained by the fact that the CT level of students might not change

depending on the environments they grow. Their performance in CT test might be affected by experiences and the education they have, rather than their families' backgrounds. It is encouraging to compare this result with that found by Özdemir (2005) who investigated the relationship between students' levels of CT skills and their place of birth, gender, and parents' socioeconomic and educational backgrounds. According to the results, none of those factors had an effect on their level of CT skills.

A large and growing body of literature has investigated the ways of improving CT skills. While some studies sought to enhance them through various methods such as active learning (Rimiene, 2002), cooperative learning (Uğurlu, 2010), or content-based writing and reading (Liaw, 2007), there is also a large volume of studies describing the role of literature in promoting critical thinking skills (Widdowson, 1982; Pullen, 1992; Schmit, 2002; Ungan, 2007; Yıldız, 2007; Ching and Fook, 2013; Lin, 2013). Thanks to these and several other studies, it has been demonstrated that promoting CT levels of the students is possible through using literature with critical thinking activities. However, the effects of using mythology-based critical thinking activities in class have not been explored previously. Thus, the purpose of the current study was to contribute to the literature by providing the positive impact of mythology-based CT activities on the CT levels of the students.

5.3. Pedagogical Implications and Suggestions for Further Studies

Despite the limitations of the present study such as the length of the implementation period and the small sample size, the results offer a number of implications and suggestions for further research.

1. The study aimed to emphasize the importance of mythology-based CT activities on the CT levels of students and it would be a big contribution if similar studies serving the same purpose are conducted. Then, the finding of the present study can be compared with those of studies and in this way, the significance of mythology-based critical thinking activities could be better understood.

2. Since the students of the present study were assigned to the classes organized by the administration at the beginning of the academic year, it was not possible to make a random selection. Further studies can be carried out with the participant selected randomly as the findings might provide novel and original ideas about the improvement of CT skills.

3. The study was carried out in a small sample which is another limitation because if the number of the participant is increased, it could be possible to generalize findings to a larger sample.

4. The major limitation of this study is its duration. As the syllabus of the Oral Communication Skills II was predetermined, only 5 weeks (10 hours in total) could be reserved for the implementation. Supposing that there had been more time, a pilot study could have been conducted. Accordingly, it is strongly recommended that further studies implemented in a longer period of time.

5. Apart from speaking skill, other language skills; reading, listening and writing can also be integrated into this study.

6. All the participants were adult learners in the present study. With the aim of learning the effectiveness of the CT activities on different age groups, middle, high or even primary school students can be included in the present and further studies.

7. The Cornell Critical Thinking Test Level Z might be translated into the native languages of the participants so as to find out whether there will be any positive or negative change in the student's CT levels.

8. Being one of the genres of literature, mythology-based CT activities made the study more enjoyable and increased the participation of the students by making literature an active process. Therefore, integrating CT skills in literature courses and if possible into the curriculum is highly recommended.

9. The study was not prepared for the instructor's professional development but by preparing activities for the students and also implementing them during the teaching process, it made several contributions to her teaching skills. Hence, further research might analyze the effects of critical thinking on professional development on teachers' and instructors'.

10. The study might also be conducted with a control and experimental group in order to determine whether the implementation would make any difference.

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APPENDIX A: LESSON PLANS AND CRITICAL THINKING ACTIVITIES

WEEK I /COURSE I

Lesson Topic: Hades and Persephone: The Myth of Four Seasons

Source: Graves, R. (2011). *The Greek Myths: The Complete and Definitive Edition*. London: Penguin Group

Critical Thinking Activities: Bloom's Taxonomy

Type of activities: Class Discussion and Group Work.

Time: 50 minutes

Pre Reading Activity

PROCEDURE: The course begins with the presentation of a painting of "The Abduction of Persephone" by Hades. Students do not have any background information so they try to read the painting by making guesses from what they see. They are given speaking activity worksheets and they discuss their ideas in groups of three or four. Then each group shares its ideas with the rest of the class. The questions in the activity are "Who do you think they are? How did they get there? What is happening there? Which atmosphere dominates the painting? Which feeling does the painting convey? Why do you think the painter used the red colour a lot? Does it symbolize something? Where is the man taking the girl to?"

Purpose of the activity: to prepare the students for the story they will read trigger their critical thinking skills

While-Reading Activity

PROCEDURE: The students are given the short story of "Hades and Persephone" and time to read and learn the reasons for four seasons in Greek Mythology. After they finish reading the story, the instructor asks several questions prepared in line with Bloom's Taxonomy. At first, they share and discuss their answers within the same groups. Then each group shares its ideas with the rest of the class and the discussion continues for a while. By the way, the instructor asks provoking questions causing them to change their perspective or stand behind their ideas.

Bloom's Taxonomy Questions:

Knowledge Level: Who is the only witness of the abduction? Why did Demeter decide to take a long leave from her duties?

Comprehension Level: Can you compare the characteristics of Zeus and Helios? What do you think of Hades' love?

Application Level: Do you know any other instance where a person does such a crazy thing for the sake of love? If you had a chance to change the end of the story, how would you change it?

Analysis Level: What do you see as other possible outcomes of the abduction of Persephone? What was the turning point in the story? Can you explain what Zeus should have done when he witnessed the abduction?

Synthesis Level: Would you do what Hades did if you had an unrequited love? What else would you do? Would you protect your brother if you were in the place of Zeus?

Evaluation Level: Is there a better solution to the problem of Persephone? How would you have handled if you Demeter?

Deduction Activity: Write at least two specific statements that are related to the message given by the story regarding real life.

Purpose of the activity: To encourage critical thinking by using Bloom's Taxonomy in the classroom. To make deduction and assumption from the short story.

WEEK I /COURSE II

Lesson Topic: Hades and Persephone: The Myth of Four Seasons
Source: Graves, R. (2011). *The Greek Myths: The Complete and Definitive Edition*. London: Penguin Group
Time: 50 minutes

After Reading Activity
PROCEDURE: Based on the information they have newly learned, students put the sequence of the story events in order. It is an individual activity. After they finish the activity, the correct sequence is provided by the instructor.

The Purpose of the Activity: To make students think critically about the plot of the story and use the information they have learned in a new context.

After Reading Activity 2

PROCEDURE: Students design a cover of the story of Hades and Persephone. Also, they write slogans on the characters such as "Hide your girls, he's BACK!" Therefore they can reflect their thoughts about the story and characters by painting. It is pair-work activity and the materials are provided by the instructor.

The Purpose of the Activity: To practise the synthesis levels of Bloom's Taxonomy and promote critical thinking in the course.

The abduction of Persephone
https://commons.wikimedia.org/wiki/File:Hates_abduction.jpg

Story Sequencing Activity

- One sunny day, while Persephone was picking flowers, Hades,

- the god of the Underworld noticed her and fell strongly in love with her

- so he decided to abduct her to the Underworld.

- When her mother Demeter, the goddess of fertility,

- realized the loss of Persephone, for nine days and nights she was wandering around searching for Persephone.

- When she visited Helios, the god of the sun,

- he revealed Demeter all the truth about what had happened.

- Demeter got so furious that she wanted to have nothing more do with the Gods

- and stopped all fertility on earth.

- In order to put an end to the world's misery,

- Zeus thought it would be best to bring Persephone back to her mother.

- However, before releasing Persephone,

- Hades gave her six seeds of pomegranate to eat.

- This way, Persephone would forever be connected to the Underworld.

- Therefore Zeus decided that Persephone would spend half months with her husband in Hades

- and half months with her mother on Olympus.

- When Persephone was with her mother,

- she was so delighted that the sun was shining and everything flowered.

- These were the months of spring and summer.

- All the remaining time where Persephone returned to the Underworld, Persephone was in grief and nothing grew.

- Thus autumn and winter would come to the world. This way, the seasons were created in the upper world.

WEEK II /COURSE I

Lesson Topic: The Story of Medusa and Perseus
Source: Graves, R. (2011). *The Greek Myths: The Complete and Definitive Edition*. London: Penguin Group
Time: 50 minutes

Pre Reading Activity
PROCEDURE: The course begins with the presentation of a famous painting of "Perseus" by Luca Giordano. Students do not have any background information so they try to read the painting by making guesses from what they see. They are given speaking activity worksheets and they discuss their ideas in the groups of three or four. Then each group shares its ideas with the rest of the class. The questions in the activity are "Who do you think they are? Where are they? Who is that head belongs to? What is that man doing with the head of a woman? Where is he looking at? Why are they scared of the man? Do you think the choice of bright and dull colours has a meaning? Which feeling does the painting convey?" Why are most of the men in grey?

Purpose of the activity: to prepare the students for the story they will read trigger their critical thinking skills

While-Reading Activity
PROCEDURE: The students are given the short story and comics of "Perseus and Medusa" and time to read and learn the reason why the Red Sea is called "Red". After they finish reading the story, the instructor asks several questions prepared in line with Bloom's Taxonomy. At first, they share and discuss their answers within the same groups. Then each group shares its ideas with the rest of the class and the discussion continues for a while. By the way, the instructor asks provoking questions causing them to change their perspective or stand behind their ideas.

Bloom's Taxonomy Questions:
Knowledge Level: Who did Perseus rescue on the way home? What did Perseus use to kill Medusa?

Comprehension Level: How would you summarize the story in your own words? Who was the key character in the story and why?

Application Level: What questions would you ask if you had a chance to meet the main character? If you had to buy Perseus a birthday present, what would you buy?

Analysis Level: What was the underlying theme of the story? Compare and contrast the protagonist and the antagonist of the story?

Synthesis Level: If you were King Acrisius and were told the prophecy of being killed by your grandson, what would you do? If you were Perseus, what would you do to Polydete, after you got the head of Medusa?

Evaluation Level: What do you think about the murder of Medusa by Perseus as a duty? Do you think fate is true for everyone? Who is right in the story? Perseus or Medusa?

Deduction Activity: Write at least two specific statements that are related to the message given by the story regarding real life.

Purpose of the activity: To encourage critical thinking by using Bloom's Taxonomy in the classroom. To make deduction and assumption from the short story.

WEEK II /COURSE II

Lesson Topic: The Story of Medusa and Perseus
Source: Graves, R. (2011). *The Greek Myths: The Complete and Definitive Edition*. London: Penguin Group
Time: 50 minutes

After Reading Activity
PROCEDURE: Students are presented two videos about the story from the perspectives of Perseus and Medusa. This leads to a discussion about who is right and who is wrong. The instructor does not ask yes/no questions as they do not encourage the students to think and carry on the discussion. She tries to keep the discussion environment alive with probing questions.

After Reading Activity2
After the discussion, students are asked to change the ending of the story and act it out with a group four or five people. The duration of the act-out is limited to 5-10 minutes.
Purpose of the activity: to help the students personalize the story because thanks to this activity they can develop empathy for the characters and think critically about finding solutions when they have a problem real life.

Perseus turning Phineas and his Followers to Stone

Medusa and Perseus Comic Book

Williams, M. (1991). *Greek Myths for Young Children.* Candlewick Press

Medusa was one of three monstrous sisters, with brass hands and golden wings, whose glance could turn men and beasts to stone.

But Perseus was not afraid.

He traveled for many days

but found no sign of Medusa.

Wearily, he lay down to rest.

As he slept, the goddess Athena came to him, bringing him a shield

in which he could look at Medusa's reflection, so that he would not be turned to stone.

The next day he set off again, but there was still no sign of Medusa.

That night, the god Hermes visited Perseus.

He gave him a sickle with which to cut off Medusa's snake-covered head.

Then Hermes told Perseus to go to the Gray Ones.

These three sisters had only one eye and one tooth between them.

Perseus went to Mount Atlas, where the Gray Ones lived.

Creeping up behind them, he snatched their single eye and tooth.

Perseus and the Gorgon's Head   361

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Act out

YouTube video links for the story of Perseus and Medusa:
https://www.youtube.com/watch?v=J8y4B8TVwjE
https://www.youtube.com/watch?v=YFCMC16ivWk

WEEK III /COURSE I

Lesson Topic: The Trojan War and Golden Apple

Source: Graves, R. (2011). *The Greek Myths: The Complete and Definitive Edition*. London: Penguin Group

Time: 50 minutes

Pre Reading Activity

PROCEDURE: The course begins with the presentation of a famous painting of "The Judgement of Paris" by Guillaume Guillon. Students do not have any background information so they try to read the painting by making guesses from what they see. They are given speaking activity worksheets and they discuss their ideas in the groups of three or four. Then each group shares its ideas with the rest of the class. The questions in the activity are "How many people are there and what are they doing? What is that man in the blue clothes doing? Why are they all looking at the man? Is he an important figure? Do you think the choice of white colour for some figures have a meaning? Which feeling does the painting covey"? Also, the instructor asks thoughtful questions to deepen their perspectives.

Purpose of the activity: to prepare the students for the story they will read trigger their critical thinking skills

While-Reading Activity

PROCEDURE: The students are given the short story of "The Trojan War and The Golden Apple" and time to read and learn the reasons for the Trojan War. After they finish reading the story, the instructor asks several questions prepared in line with Bloom's Taxonomy. At first, they share and discuss their answers within the same groups. Then each group shares its ideas with the rest of the class and the discussion continues for a while. By the way, while wandering around the classroom, the instructor asks provoking questions causing them to change their perspective or stand behind their ideas.

Knowledge Level: Which evil goddess made the apple? What words were engraved on the golden apple?

Comprehension Level: Who do you think deserves the golden apple? What are the differences between the bribes given by three goddesses?

Application Level: What would you do, if you were in this story? Have you ever had to make a quick and right decision at the same time?

Analysis Level: What is the main idea of the story? What is the function of the golden apple in the story?

Synthesis Level: What alternatives would you suggest to Paris about his judgment? How would the story be different if he made another judgment? Would it change the destiny of the war?

Evaluation Level: Which of the two main characters in the story would you prefer to have as a friend? Why? Did you like how the story ended? Why or why not?

Deduction Activity: Write at least two specific statements that are related to the message given by the story regarding real life.

Purpose of the activity: To put Bloom's Taxonomy into practice and encourage critical thinking with the probing questions. Also, to make a deduction and assumption from the short story.

WEEK III /COURSE II

Lesson Topic: The Trojan War and The Golden Apple
Source: Graves, R. (2011). *The Greek Myths: The Complete and Definitive Edition*. London: Penguin Group
Time: 50 minutes

After Reading Activity
PROCEDURE: Students are given the activity about who started the Trojan War. After discussing with their partners, they list the reasons why ………. is responsible for the conflict that led to the Trojan War on the worksheet.

The purpose of the activities: To make students support their thoughts by using their experiences, observation and the information they have newly learned.

After Reading Activity
PROCEDURE: After they complete the chart and discuss the answers with the class, they are asked to decide who is most to blame. They fill the WANTED! Poster with that character's name, illustration, and the reasons they think he or she bears the most blame for starting the Trojan War.

The purpose of the activities: To make deduction and assumption from the short story and emphasize critical thinking.

The Judgment of Paris

The Judgment of Paris

Name _____ Date _____

Whodunnit?

After reading "The Apple of Discord," think about who was to blame for starting the Trojan War. Many gods, goddesses, and mortals took part in the events that led to the war, but was one more responsible than the others?

Next to each character's name below, list the reasons you believe he or she is responsible for the conflict that led to the Trojan War. Then list reasons he or she isn't responsible for starting the war. (Use another sheet of paper if necessary.) After you have completed the chart and discussed your answers with the class, decide who you think is most to blame. Fill in the Wanted! poster on page 64 with that character's name, an illustration, and the reasons you think he or she bears the most blame for starting the Trojan War.

Character	Why I think this character was responsible for the conflict.	Why I think this character wasn't responsible for the conflict.
Thetis and Peleus		Why would they hel~ They were just trying to be happy.
Zeus	Because he didn't face the problem	didn't invite Eris
Eris		She was so frustrated because she was left out by others
Helen		She was affected by Aphro.
Aphrodite	she made Helen fall in love with Paris even though Helen was already married	
Hera		She was just trying to prove that she is the prettiest
Athena		
Paris		He was tricked by Aphro. didn't know Helen was married
Menelaus		It was the natural response that he wanted to fight
Hermes		He is just a messenger.

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It was the natural response It's perfectly normal for him to fight for his love.

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Baker, M. W. (2005).*Greek Mythology Activities.* U.S.A: Scholastic Inc.

WEEK IV /COURSE I

Lesson Topic: The Story of Echo and Narcissus
Source: Graves, R. (2011). *The Greek Myths: The Complete and Definitive Edition*. London: Penguin Group
Time: 50 minutes

Pre Reading Activity

PROCEDURE: The course begins with the presentation of a painting of "Echo and Narcissus". Students do not have any background information so they try to read the painting by making guesses from what they see. They are given speaking activity worksheets and they discuss their ideas in the groups of three or four. Then each group shares its ideas with the rest of the class. The questions in the activity are "What is the man doing? Where is he looking at and why? What is she doing? Why is she looking at the man? Do you like looking at yourself in the mirror? Why?" Do you have any idea about Narcissism or Narcissistic Personality Disorder? What is the connection between these terms and the painting? Also, the instructor asks probing questions to deepen their perspectives.

Purpose of the activity: to prepare the students for the story they will read and trigger their critical thinking skills.

While-Reading Activity

PROCEDURE: The students are given the short story of "Echo and Narcissus" and time to read and learn the reasons where Narcissus flowers, Narcissism or Narcissistic Personality Disorder and the name echo come from. After they finish reading the story, the instructor asks several questions prepared in line with Bloom's Taxonomy. At first, they share and discuss their answers within the same groups. Then each group shares its ideas with the rest of the class and the discussion continues for a while. By the way, the instructor asks provoking questions causing them to change their perspective or stand behind their ideas.

Bloom's Taxonomy Questions:
Knowledge Level: Who were the main characters in the story? Why did Hera punish Echo?

Comprehension Level: How did Echo felt when Narcissus treated her badly? What is meant by "From this moment forward, the only words you will ever be able to utter will be exactly the last words of others"?

Application Level: What examples can you find related to the selfishness of Narcissus? Do you know any other person who loves himself/herself more than anyone?

Analysis Level: Compare Hera and Echo in terms of giving punishment to others? What part of the story is the saddest? Echo's losing her voice or Narcissus's tragic end?

Synthesis Level: What would it be like to have Narcissus as a friend? How would the story be different if Echo did not lose her voice?

Evaluation Level: Do you think that Narcissus would fall in love with Echo if he could talk to her? Find evidence from the story to support your idea.

Deduction Activity: Write at least two specific statements that are related to the message given by the story regarding real life.

Purpose of the activity: To put Bloom's Taxonomy into practice and encourage critical thinking with the probing questions. Also, to make a deduction and assumption from the short story.

WEEK IV /COURSE II

Lesson Topic: Echo and Narcissus
Source: Graves, R. (2011). *The Greek Myths: The Complete and Definitive Edition*. London: Penguin Group
Time: 50 minutes

After Reading Activity
PROCEDURE: Students are given "Somebody Wanted But So" worksheet with the aim of applying the information into a new context by making connection among the actions and summarizing the story.

After Reading Activity 2
PROCEDURE: Students are asked to adapt the story to the real-life context and find modern characters related to the characters in the story. They are supposed to act it out with a group four or five people. The duration of the act-out is limited to 5-10 minutes.

Purpose of the activities: To have students find connections between the short story and real life by applying the situation into a real-life context. In addition, they can think critically about finding solutions when they have a problem in real life.

ECHO and NARCISSUS

Echo and Narcissus "Somebody Wanted But So" Worksheet

When a character wants something, the character is motivated to get what he/she wants. However, characters often experience a problem or conflict when trying to get what they want. This worksheet will help you to narrow down the motivation of specific characters and the consequences from those motivations, thereby understanding the plot of the myth more fully.

Character	Hera
Wanted	to find her husband and his affair
But	she couldn't because of Echo
So	she punished Echo

Character	Echo
Wanted	to Narcissus love her.
But	He rejected her.
So	she made him love himself

Character	Narcissus
Wanted	Echo to leave him alone
But	she didn't
So	Echo cursed him and he loved himself.

Echo and Narcissus "Somebody Wanted But So" Worksheet

When a character wants something, the character is motivated to get what he/she wants. However, characters often experience a problem or conflict when trying to get what they want. This worksheet will help you to narrow down the motivation of specific characters and the consequences from those motivations, thereby understanding the plot of the myth more fully.

Character	Hera
Wanted	to find out which nymph was tempting her husband away
But	Echo tried to distract her with a friendly conversation
So	Zeus and his lover managed to escape

Character	Echo
Wanted	to stop Hera and prevent her from seeing Zeus' lover
But	got punished by Hera's wrath
So	lost her speaking ability and got able to say only the others' last words

Character	Narcissus
Wanted	to kiss his own reflection on the water
But	got drowned in the pool
So	Narcissus flowers sprung up around the pool

WEEK V /COURSE I

Lesson Topic: Mythology and Popular Culture
Source: Graves, R. (2011). *The Greek Myths: The Complete and Definitive Edition*. London: Penguin Group
Time: 50 minutes

PROCEDURE: The instructor gives a lecture about the importance of mythology in our popular culture. She talks about how the names of the days, objects, and some adjectives take their name from mythology, and how much it is used in advertising. The lecture takes approximately 15-20 minutes and PowerPoint slides are used to illustrate the topic. After the lecture, students are asked to design and write their own myth to describe the origins of a name or an event. While writing their myth, they need to determine their heroes or heroines and describe the setting, conflict and the result. Then they share their myths with the rest of the class.

Purpose of the activity: To have students use their imaginations and creativity, empathize with unfamiliar situations and people, develop insights into universal life experiences, and increase willingness to enunciate.

WEEK V /COURSE II

Lesson Topic: Mythology and Popular Culture
Source: Graves, R. (2011). *The Greek Myths: The Complete and Definitive Edition*. London: Penguin Group
Time: 50 minutes

Activity
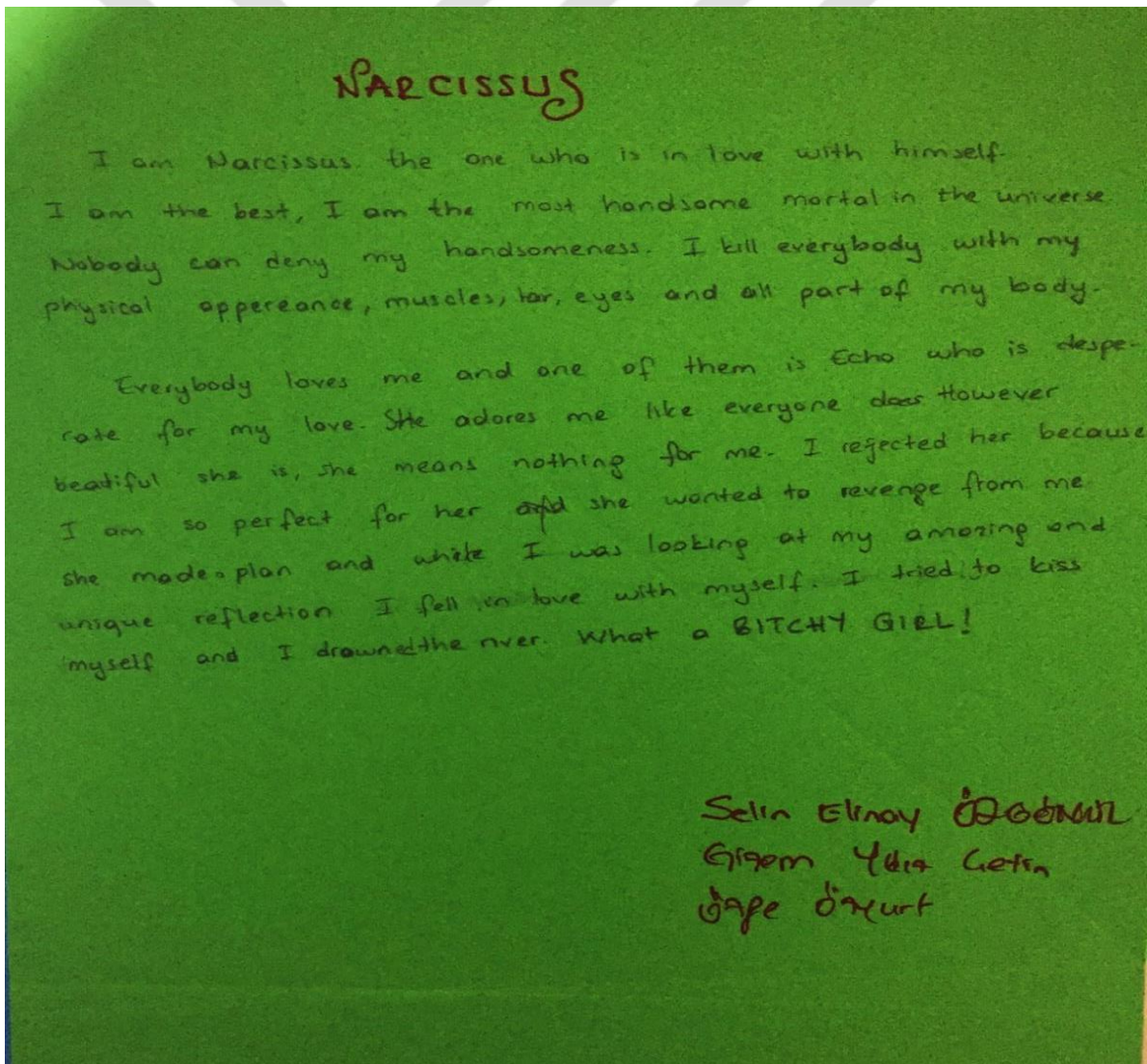**PROCEDURE:** Students are asked if they had a chance to be a mythological character, which one they would be. After discussing the answers with their reasons, they write about the specific characters they chose and share their works with the rest of the class.
Purpose of the activity: to help the students personalize the story since through this activity they can develop empathy for the characters and experience a new perspective.

Activity 2

PROCEDURE: Students play a mythology board game in groups of four or five. The game includes speaking activities. Before the game begins, each player rolls the dice and the one having the highest roll starts first. The players are to place their chips on the space matching the number rolled.

Purpose of the activity: Board games are beneficial for boosting critical thinking by helping students obtain reasoning and logical skills. Through this activity, students can practise essential cognitive skills such as solving problems. Also, playing board games has positive effects on prefrontal cortex and hippocampus which are responsible for the organization of memory networks and encoding new information.

NARCISSUS

I am Narcissus the one who is in love with himself. I am the best, I am the most handsome mortal in the universe. Nobody can deny my handsomeness. I kill everybody with my physical appereance, muscles, tar, eyes and all part of my body.

Everybody loves me and one of them is Echo who is desperate for my love. She adores me like everyone does. However beatiful she is, she means nothing for me. I rejected her because I am so perfect for her and she wanted to revenge from me she made a plan and while I was looking at my amazing and unique reflection I fell in love with myself. I tried to kiss myself and I drowned the river. What a BITCHY GIRL!

Selin Elinay ÖZGÖNÜL
Gizem Yldız Çetin
Şafe Özkurt

MEDUSA

I'am Medusa! I was isolated on a lifeless island in the middle of the sea I was very beautiful but I was cursed so no one can look at my eyes. I have snakes on my head

A lot of fearless heroes tried to get my head but when they look at my eyes, they turned into store I feel so lonely I always have a bad mood I want a brave man to come and end my sufference and this horrible curse.

One day, Perseus came to my palace and he was using his shield to save himself, he was very handsome I fell in love with him. And that is when everything finished. I don't remember anything from that point

Finally, when I woke up, my horrible curse finished and I'am the most wonderful girl that I was before I'am in the heaven thank you Perseus!

Ümmühan Esra KARACA
Begen KOCAGÖZOĞLU
Dicle GÜNDÜZ
1-B

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Baker, M. W. (2005). *Greek Mythology Activities.* U.S.A: Scholastic Inc.

IT'S FATE

FATE

List three of Zeus' good qualities to advance three spaces.

Hermes asks you to help him deliver a message to Mount Olympus. Will you risk it? If yes, take a FATE card. If no, miss a turn.

Hephaestus makes you a marvelous suit of armor. Thank him and move ahead two spaces.

Atlas asks you to hold up the sky for him. Agree and lose a turn or risk moving ahead to the nearest FATE space.

Poseidon is angry. A tidal wave sends you back two spaces.

FATE

Help Hestia tend the hearth. Stay here until your next turn.

You forgot to thank Demeter for a good harvest. Move back one space.

Tell Hera where Zeus is hiding. She'll reward you by advancing you one space.

Happy Hunting! Thank Artemis for the successful hunts so she will advance you two spaces.

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You had a successful day selling your crops in the agora (marketplace). Rest here until your next turn.

Apollo is angry today. He doesn't let the sun rise, and sends you back to Earth.

It's the Festival of Dionysus! Stay at the party (on this space) until your next turn.

FATE

Hades wants you to visit him in the underworld. Miss one turn while you're away.

You saw Athena bathing and she turned you into a statue. Move back two spaces.

Ares sends you into battle. Miss one turn.

Aphrodite smiles upon you. Advance to the River Styx.

FATE

You are almost at the River Styx. Pay Charon the boatman one obol (coin) to row you across. Give up one turn.

The River Styx

Welcome to the Elysian Fields! Enjoy your stay!

FINISH

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CURRICULUM VITAE

Kişisel Bilgiler

Adı Soyadı   : Gülseren Aslı SEÇMEN

Doğum Yeri ve Tarihi   : Antalya – 01.01.1991

Eğitim Durumu

Lisans Öğrenimi   : Atılım Üniversitesi Fen Edebiyat Fakültesi, İngiliz Dili ve Edebiyatı

Yüksek Lisans Öğrenimi : Akdeniz Üniversitesi Eğitim Bilimleri Enstitüsü, Yabancı Diller Eğitimi Anabilim Dalı

Bildiği Yabancı Diller   : İngilizce (İleri düzey), Almanca (Başlangıç)

Bilimsel Faaliyetleri

Replacing Cliches: Teaching Subordinated to Learning, Davetli Konuşmacı	Adana, Türkiye, 2016
3rd ULEAD Congress, International Conference on Applied Linguistics, Davetli Konuşmacı	Çanakkale, Türkiye, 2015
I. Dil, Kültür ve Edebiyat Çalıştayı. Davetli Konuşmacı	Antalya, Türkiye, 2015
The Macrotheme Conference. Davetli Konuşmacı	Paris, Fransa, 2014

İş Deneyimi

Çalıştığı Kurumlar   : Yes Language School, İngilizce Öğretmeni (2012-2014)

                             : Akdeniz Üniversitesi Yabancı Diller Yüksekokulu, Öğretim Görevlisi (2014-…)

İletişim

E-Posta Adresi   : asliscmn@gmail.com

BİLDİRİM

Hazırladığım tezin tamamen kendi çalışmam olduğunu ve her alıntıya kaynak gösterdiğimi taahhüt eder, tezimin kağıt ve elektronik kopyalarının Akdeniz Üniversitesi Eğitim Bilimleri Enstitüsü arşivlerinde aşağıda belirttiğim koşullarda saklanmasına izin verdiğimi onaylarım:

- o Tezimin tamamı her yerden erişime açılabilir.

- o Tezim sadece Akdeniz Üniversitesi yerleşkelerinden erişime açılabilir.

- o Tezimin 1 yıl süreyle erişime açılmasını istemiyorum. Bu sürenin sonunda uzatma için başvuruda bulunmadığım takdirde, tezimin tamamı her yerden erişime açılabilir.

Gülseren Aslı SEÇMEN

PROMOTING CRITICAL THINKING SKILLS THROUGH MYTHOLOGY-BASED CRITICAL THINKING ACTIVITIES IN ELT DEPARTMENT AT AKDENIZ UNIVERSITY

ORIJINALLIK RAPORU

%**17**
BENZERLIK ENDEKSI

%**10**
İNTERNET KAYNAKLARI

%**8**
YAYINLAR

%**14**
ÖĞRENCI ÖDEVLERI

BIRINCIL KAYNAKLAR

1	**Submitted to Bahcesehir University** Öğrenci Ödevi	%1
2	**courses.cs.vt.edu** İnternet Kaynağı	%1
3	**Submitted to Marmara University** Öğrenci Ödevi	%1
4	**etd.lib.metu.edu.tr** İnternet Kaynağı	<%1
5	**pure.qub.ac.uk** İnternet Kaynağı	<%1
6	**jsaer.org** İnternet Kaynağı	<%1
7	**Submitted to University of Hong Kong** Öğrenci Ödevi	<%1
8	**repository.uinjkt.ac.id** İnternet Kaynağı	<%1

Prof. Dr. Binnur Genç İlter