

**T.C.
ISTANBUL AYDIN UNIVERSITY
INSTITUTE OF GRADUATE STUDIES**



**PROMOTING CRITICAL THINKING DISPOSITIONS OF EFL
LEARNERS: A CASE STUDY AT A FOUNDATION
UNIVERSITY**

MASTER'S THESIS

Elif ÇAM

**Foreign Languages Education Department
English Language Education Program**

JULY, 2023

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**Foreign Languages Education Department
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APPROVAL PAGE

DECLARATION

I hereby declare with respect that the study “Promoting Critical Thinking Dispositions of EFL Learners: A Case Study at a Foundation University”, which I submitted as a Master thesis, is written without any assistance in violation of scientific ethics and traditions in all the processes from the Project phase to the conclusion of the thesis and that the works I have benefited are from those shown in the References. (20 / 07 /2023)

Elif ÇAM

FOREWORD

I would like to express my gratitude to my thesis supervisor Assistant Prof. Dr. Hülya Yumru, for her unending support, constructive feedback and sharing her experience and knowledge for the design and administration of this research. Without her invaluable guidance and feedback, this thesis would not have come into existence. I would also like to thank Prof. Dr. Türkay Bulut for her guidance and support.

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July, 2023

Elif ÇAM

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ABSTRACT

Regarded as one of the influential 21st century skills, alongside creativity, communication and collaboration and having roots in critical philosophy, critical thinking has long been a fundamental component in Western educational context. Consequently, enhancing the critical thinking abilities of learners has gained prominence in educational research worldwide. The current study attempted to address this issue and aimed at investigating how EFL learners perceive the benefits of training in critical thinking strategies in the EFL classroom. In addition to this, another aspect of the study is to analyze whether training in critical thinking strategies results in a change in EFL learners' perceived critical thinking dispositions. In order to conduct the study, 16 B1-level participants, who were enrolled in a foundation university English preparatory program, underwent a seven-week study. Throughout the course of seven-week experimental study, the participants received strategy training supported by critical thinking activities for five hours each week. The instruction involved employing nineteen critical thinking strategies in order to address the research questions raised. Data were collected through both qualitative and quantitative instruments. Critical Thinking Disposition Scale (CTHD) was administered at the beginning and at the end of the study for the quantitative data collection. Qualitative data were collected through student interviews and the researcher's diary on a weekly basis. Findings gathered from the quantitative data revealed that there has been a statistically significant improvement with respect to two critical thinking disposition levels of the participants, namely metacognition and open-mindedness. Findings of the qualitative data suggest that training in critical thinking strategies had markedly positive effects on the views of the participants in relation to benefits of the new instructional approach.

Keywords: Critical thinking skills, critical thinking dispositions, critical thinking strategies, strategy training

İNGİLİZCEYİ YABANCI DİL OLARAK ÖĞRENEN ÖĞRENCİLERİN ELEŞTİREL DÜŞÜNME EĞİLİMLERİNİ DESTEKLEME: BİR VAKIF ÜNİVERSİTESİ VAKA ÇALIŞMASI ÖRNEĞİ

ÖZET

Yaratıcılık, iletişim ve iş birliği ile birlikte etkili 21. yüzyıl becerileri arasında sayılan ve kökleri eleştirel felsefede bulunan eleştirel düşünme, uzun süredir eğitim bağlamında Batı'da temel bir bileşen olmuştur. Bu nedenle, öğrencilerin eleştirel düşünmesini geliştirmek dünya çapında eğitim araştırmalarında önem kazanmıştır. Mevcut çalışmada bu konu ele alınmaya çalışıldı ve İngilizceyi yabancı dil olarak öğrenen öğrencilerin yabancı dil derslerinde eleştirel düşünme eğilimlerini desteklemeye yönelik strateji eğitimin faydalarına ilişkin görüşlerinin araştırılması amaçlandı. Buna ek olarak, çalışmanın diğer bir yönü de eleştirel düşünme stratejilerine yönelik strateji eğitiminin, yabancı dil olarak İngilizce öğrenenlerin algılanan eleştirel düşüncelerinde bir değişikliğe yol açıp açmadığını analiz etmektir. Çalışmanın uygulanabilmesi için bir vakıf üniversitesi İngilizce hazırlık programı bünyesinde öğrenim gören B1 düzeyindeki 16 katılımcıya yedi haftalık bir çalışma yapılmıştır. 7 haftalık deneysel çalışma boyunca katılımcılar haftada 5 saat eleştirel düşünme etkinlikleriyle desteklenen strateji eğitimi almışlardır. Araştırma sorularını yanıtlamak amacıyla eğitim esnasında 19 tane eleştirel düşünme stratejisi kullanılmıştır. Verilerin toplanmasında hem nitel hem de nicel araçlar kullanılmıştır. Nicel verilerin toplanması için çalışmanın başında ve sonunda Eleştirel Düşünme Eğilimi Ölçeği (CTHD) uygulanmıştır. Nitel veriler, öğrenci görüşmeleri ve araştırmacının alan notları aracılığıyla haftalık olarak toplanmıştır. Nicel verilerden elde edilen bulgular, katılımcıların üst biliş ve açık fikirlilik olmak üzere iki eleştirel düşünme eğilimi düzeyinde istatistiksel olarak anlamlı bir ilerleme kaydettiğini ortaya koymaktadır. Nitel verilerden elde edilen bulgular, eleştirel düşünmeye yönelik strateji eğitiminin, katılımcıların yeni öğretim yaklaşımına ilişkin görüşleri

üzerinde belirgin derecede olumlu etkileri olduğunu göstermektedir.

Anahtar Kelimeler: Eleştirel düşünme becerileri, eleştirel düşünme eğilimleri, eleştirel düşünme stratejileri, strateji eğitimi

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LIST OF ABBREVIATIONS

CEFR : Common European Framework of Reference for Languages

CT : Dispositions: Critical Thinking Dispositions

CT : Skills: Critical Thinking Skills

CTHD: Critical Thinking Disposition Scale

EFL : English as a Foreign Language

ESL : English as a Second Language

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I. INTRODUCTION

A. Background to the Study

Critical thinking skills, along with collaboration, communication and creativity have taken great attention by the educators. Especially in the EFL context, implementing the aforementioned 21st-century skills has become a prerequisite due to paradigm shifts in education, triggered by digitalization, globalization and integration with the rest of the world. Traditional ways of learning and teaching of structure and knowledge have been replaced by modern approaches. To this end, there is a need to ensure that learners acquire the ability to think critically.

Critical thinking encompasses not just the ability to think logically and probabilistically, but also the ability to transfer these skills into content-dependent real-world issues. It can be defined as either cognitive abilities or an emotional and social demeanor. Critical thinking is characterized as a set of higher-order thinking skills that can be taught and transferred, such as analysis, inference, evaluation, induction and deduction and reasoning. Traits like truth seeking, open-mindedness, systematicity, analyticity, maturity, inquisitiveness, and self-confidence are all characteristics of this disposition (Facione, 2011; Yang & Chou, 2008). Therefore, critical thinking could be defined as “skillful and responsible thinking that facilitates good judgment because it (a) relies on criteria, (b) is self-correcting, and (c) is sensitive to context” (Weinstein, 2000, p. 41). Skillfulness accounts for the appropriate application of critical thinking in situations that call for reliable information. The responsibility of the critical thinker in the community to present reasons for acceptable standards or to challenge existing standards through persuasive arguments is associated with responsible thinking. Criteria are the grounds for a critical thinker’s appraisal of the main variables that are examined while challenging, supporting and analyzing a claim. Self-correction necessitates that the critical thinker implements critical thinking processes to construct the methods that he or she employs. Finally, context sensitivity refers to the implementation of defined criteria in various contexts (Weinstein, 2000).

B. Statement of Problem & Purpose

Developing and applying critical thinking skills needed for success beyond the classroom has been recognized as an important educational goal that meets the needs and demands of the century by universities. It has been observed by many educators at all levels of national education that Turkish education system is predominantly oriented towards curriculum and textbooks. As a result, students are conditioned to be passive recipients of knowledge, rather than being given the opportunity to engage with knowledge critically and creatively. Similarly, the majority of the Turkish EFL students struggle in tasks that demand them to apply critical thinking skills, mostly because they come from an education system that overemphasizes rote memorization and answering questions to multiple choice items at the expense of developing critical thinking skills. Most importantly, many students and educators, to some extent, fail to acknowledge the importance of critical thinking skills and how to develop and apply them. For example, the level of written and spoken tasks of students in EFL classes is unsatisfactory owing to difficulties in creating and structuring thoughts rationally, as well as making accuracy errors. Thus, in this study, it is expected that students' reflection on the benefits of training in critical thinking would provide further information.

A study that explored the use of critical thinking skills in EFL writing at a Palestinian university reveals that the majority of participants in the study (60%) tended to choose a topic that did not require them to employ critical thinking skills (Al-Dumari, E. & Al-Jabari, N. A., 2015). The students in the study chose a descriptive writing task that they were familiar with, rather than an argumentative task that demanded the use of analysis, logical thinking, self-reflection or explanation. The study also reveals that the participants who chose the argumentative task did not spend time on such pre-writing activities as brainstorming, mind mapping or free writing. These findings indicate that students do not consider thinking and employing high-order cognitive skills important in their writing tasks. Critical thinking-focused exercises in language classrooms, according to Daud and Hustin (2004), are ideal platforms for promoting, motivating and stimulating language learning, thereby increasing students' language competence. In line with the same issue, research in the Turkish educational setting reveals that critical thinking levels of students are moderate and low (Tümkiye, Aybek and Aldağ,

2009).

Although there has been a growing body of studies on critical thinking, the related literature indicates a scarcity of empirical research on promoting critical thinking through the integration of critical thinking strategies within the EFL in university context and this fact applies to the Turkish context as well. Thus, the current case study has two aims. First, it will investigate EFL learners' views on the benefits of training in critical thinking strategies. Over a seven-week study program, students will be subjected to training in critical thinking strategies. Second, it will try to identify changes in the perceptions of EFL students towards critical thinking dispositions. By describing the above-mentioned purposes, the present study will contribute to the existing literature on the implementation of critical thinking in EFL classes.

C. Significance of the Study

EFL university students must improve their critical thinking skills in order to increase their academic achievement and benefit from this 21st-century skill in the workplace and in social life. Firstly, university students must become independent thinkers as well as engaged citizens. Additionally, the provision of critical thinking skills helps students foster their idea of creativity and uniqueness. By doing so, students can harness various methods or strategies to present ideas or arguments succinctly and clearly. Lastly, a critical self-awareness of communicating ideas in a lucid, cohesive and critical way assists students in critically evaluating their own output.

Considering the recent interest in critical thinking as a significant component in EFL university education, the current study can be beneficial for three reasons. First of all, it will provide vital insights to curriculum or syllabus designers regarding the extent to which critical thinking should be incorporated into instructional materials. Secondly, teachers will benefit from this study as well, because it will draw their attention to the significance of critical thinking while teaching academic skills in the EFL context, as well as giving greater credit to their students' ideas. Finally, students will be the most significant party, given the recent academic trend that centers on building a learner-centered environment in educational settings. It will facilitate the promotion of conscious and active participation, creativity,

proactiveness and criticality of learners. They will be inspired to think creatively and come up with innovative solutions. In other words, learners will be encouraged to become more self-assured individuals and learn to appraise their ideas rather than merely fulfilling tasks that are accurate and within the confines of academic language skills.

D. Research Questions

The research questions underpinning the current study are as follows:

1. What are EFL learners' views of the benefits of training in critical thinking strategies in the EFL classroom?
2. Does training in critical thinking strategies result in a change in EFL learners' perceived critical thinking dispositions?

E. Operational Definition of Key Terms

1) Critical Thinking: “[Critical Thinking is] purposeful, self-regulatory judgement which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, criteriological, or contextual inquiry” (Facione, 1989, p. 3).

2) Critical Thinking Skills: It refers to six common principles that include such cognitive skills as “interpretation, analysis, inference, evaluation, explanation and self-regulation” (Facione, 1989, p. 5).

3) Critical Thinking Disposition: “[T]he consistent internal motivation to engage in problems and make decisions by using thinking” (Facione, Facione & Giancarlo, 1998 as cited in Tümkaya et al, 2009, p. 59).

4) EFL Classroom: An educational setting where English is taught to learners whose native language is not English and they are in a country where English is not an official language (Üstünel, 2016).

II. LITERATURE REVIEW

This chapter starts with an account of various definitions of critical thinking and skills and strategies of critical thinking. Next, it proceeds with the importance of engaging critical thinking in EFL classes. Finally, the chapter presents summaries of related experimental and descriptive studies conducted on critical thinking in EFL settings in Turkey and around the globe.

A. Critical Thinking

Critical thinking is a difficult concept to define and there are many different definitions. Paul and Elder (2005) outline critical thinking as “the process of thinking analyzing and assessing thinking with a view to improving it” (p. 7). Critical thinking is considered to be self-disciplined, self-directed, self-corrective and self-monitored. Critical thinking is the act of studying and evaluating one’s own thinking in order to improve it. According to Paul and Elder, the creative stage of critical thinking involves thought enhancement. With a broader interpretation, Ennis (1985) describes critical thinking “as reasonable, reflective thinking which is focused on deciding what to believe or do” (p. 54).

One widely-accepted definition of critical thinking comes from a report published by Dr. Peter Facione, who along with 45 other expert academicians conducted a research study between February 1988 and November 1989 on the notions of critical thinking. The consensus statement of the panel on the definition of critical thinking is reached as follows;

“We understand critical thinking to be purposeful, self-regulatory judgement which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, evidential, criteriological, or contextual considerations upon which that judgement is based. CT is essential as a tool of inquiry. As such, CT is a liberating force in education and a powerful resource in

one's personal and civic life. While not synonymous with good thinking, CT is a pervasive and self-rectifying human phenomenon. The ideal critical thinker is habitually inquisitive, well-informed, trustful of reason, open-minded, flexible, fair-minded in evaluation, honest in facing personal biases, prudent in making judgements, willing to reconsider, clear about issues, orderly in complex matters, diligent in seeking relevant information, reasonable in the selection of criteria, focused in inquiry, and persistent in seeking results which are as precise as the subject and the circumstances of inquiry permit (p. 3)."

According to Facione (2011), all definitions of critical thinking highlight that critical thinking is smart thinking, as opposed to 'irrational, illogical thinking.' Facione gives expert opinion in which a global panel of specialists was invited to attempt to reach an agreement on the definition of critical thinking. Facione (2011), refers to the following as "core critical thinking skills" in the consensus statement of the international panel, known as the Delphi Report:

- Interpretation: "To comprehend and express the meaning or significance of a wide variety of experiences, situations, data, events, judgments, conventions, beliefs, rules, procedures, or criteria."

- Analysis: "To identify the intended and actual inferential relationships among statements, questions, concepts, descriptions, or other forms of representation intended to express belief, judgment, experiences, reasons, information, or opinions."

- Inference: "To identify and secure elements needed to draw reasonable conclusions; to form conjectures and hypotheses; to consider relevant information and to reduce the consequences flowing from data, statements, principles, evidence, judgments, beliefs, opinions, concepts, descriptions, questions, or other forms of representation."

- Evaluation: "To assess the credibility of statements or other representations that are accounts or descriptions of a person's perception, experience, situation, judgment, belief, or opinion; and to assess the logical strength of the actual or intended inferential relationships among statements, descriptions, questions, or other forms of representation."

- Explanation: "To state and to justify that reasoning in terms of the

evidential, conceptual, methodological, criteriological, and contextual considerations upon which one's results were based, and to present one's reasoning in the form of cogent argument.”

- Self-regulation: “Self-consciously to monitor one’s cognitive activities, the elements used in those activities, and the results educed, particularly by applying skills in analysis, and evaluation to one’s own inferential judgments with a view toward questioning, confirming, validating, or correcting either one’s reasoning or one’s results.” (pp. 9-10).

Being a critical thinker requires more than just cognitive thinking skills; it also necessitates critical thinking tendencies and habits. According to Facione (2000), a distinction between critical thinking skills and dispositions should be made;

“To imagine a meaningful relation between CT skills and CT dispositions despises the task at hand. If we want our students to be both eager and able to engage in CT, and we do, then we must apply it both in school and professional development curricula, in our instructional assignments, and in our educational outcomes assessments. Why? Because being skilled does not mean one is disposed to use CT. And, being disposed toward CT does not mean that one is skilled” (p.81).

The above conclusion drawn by Facione suggests that critical thinking dispositions and skills characterize a reciprocal relationship in education where they should be fostered. To this end, Facione and his colleagues (1995) described these dispositions of critical thinking in detail and identified seven characteristics of being a critical thinker:

- *Inquisitiveness* refers to “one’s intellectual curiosity and one’s desire for learning even when the application of the knowledge is not readily apparent” (p. 6).
- *Open-mindedness* refers to “being tolerant to opposing, different opinions and sensitive to probability of one’s own bias” (p. 6).
- *Systematicity* refers to “being focused, orderly, organized, and attentive in questioning” (p. 7).
- *Analyticity* refers to “prizing the using of questioning and the applying proof

to solve problems, realizing possible conceptual or practical complications, and permanently being alert to the need to intervene” (p.7).

- *Truth-seeking* refers to “being willing to search for the best knowledge in each context, courageous about asking questions, and honest and objective about pursuing inquiry even if the results do not encourage one’s self-interests or one’s opinions” (p. 8).
- *Self-confidence* refers to “the belief one places in one’s own questioning processes” (p. 8).
- *Maturity* refers to “being judicious in one’s decision-making” (p. 9).

Closely related to the seven critical dispositions is Active, Open-Minded Thinking, an essential parameter of critical thought, which was identified by psychologist Jonathan Baron. Baron specifies it as:

“[T]he willingness to search actively for evidence against one’s favored beliefs, plans or goals and to weight such evidence fairly when it is available” (Baron, cited in Butchart, et al., 2009, p. 279).

1. Skills and Strategies of Critical Thinking

Some instructors describe critical thinking in the framework of Bloom’s Taxonomy (1956) or Revised Bloom’s Taxonomy (Anderson et al., 2001). Benjamin Bloom and a group of educators developed and presented Bloom’s Taxonomy, a framework for the categorization of educational objectives and goals, in 1956. The framework, consisting of six categories, is classified from lower-order to higher-order thinking skills (See Figure 1). Accordingly, the lower-order skills include such skills as knowledge, comprehension and application, while the latter refers to analysis, synthesis and evaluation. The three most important stages (analysis, synthesis, and evaluation or designated as analyze, evaluate, and create in the Revised Taxonomy introduced in 2001) are sometimes referred to as the levels of critical thinking (See Figure 1).

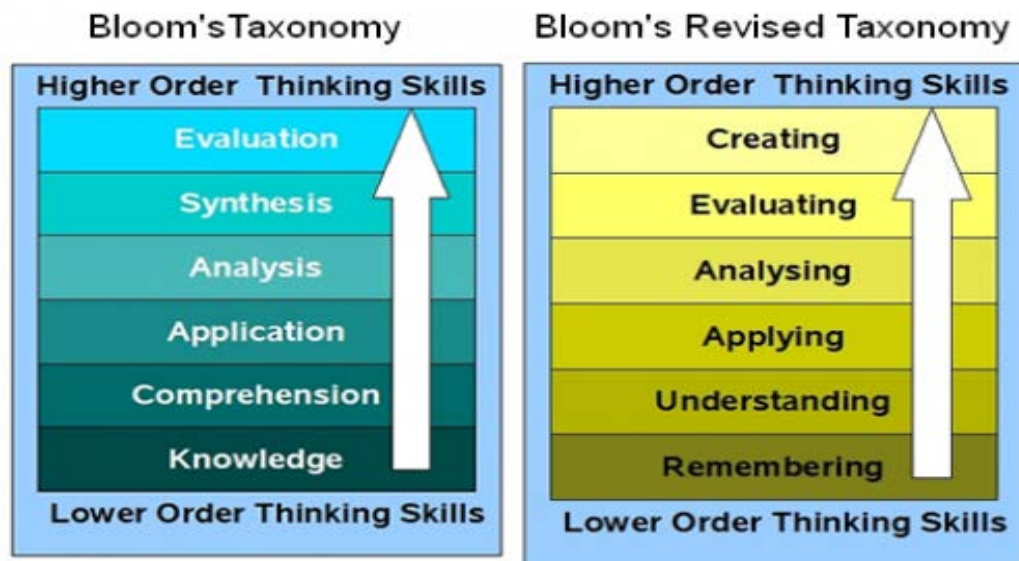


Figure 1. Bloom's Taxonomy and Bloom's Revised Taxonomy

In this categorization, thinking skills develop from concrete to abstract skills in the cognitive domain and one needs to successfully accomplish each order before proceeding to the next one. Fisher (1995, p. 70) describes the categories and thinking processes of Bloom's Taxonomy as in the following table:

Table 1. A Simple Form of Bloom's Taxonomy

Categories	Thinking Process Cues
1. Knowledge (remembering and retaining)	say what you know, what you remember, describe, repeat, define, identify, tell who, when, which, where, what
2. Comprehension (interpreting and understanding)	describe in your own words, tell how you feel about, say what it means, explain, compare, relate
3. Application (making use of)	how can you use knowledge?, where does it lead you?, apply what you know, use it to solve problems and demonstrate.
4. Analysis (taking apart)	What are the parts, the order, the reasons why, the causes, the problems, the solutions, the consequences?
5. Synthesis (putting together)	How might it be different?, how else, what if, suppose, develop, improve, create in your own way.
6. Evaluation (judging and assessing)	How would you judge it? Does it succeed, will it work, what would you prefer, why do you think so?

The Revised Taxonomy suggests a more dynamic classification of cognitive processes undertaken by learners when compared to educational objectives proposed in Bloom's original title (Armstrong, 2010). The Revised Taxonomy classifies

educational objectives as follows:

Table 2. Revised Bloom’s Taxonomy (taken and adapted from Armstrong, 2010)

Categories	Cognitive Processes
1. Remember (recognizing, recalling)	Recall facts and basic concepts define, duplicate, list, memorize, repeat, state
2. Understand (interpreting, exemplifying, classifying, summarizing, inferring, comparing, explaining)	Explain ideas or concepts classify, describe, discuss, explain, identify, locate, recognize, report, select, translate
3. Apply (executing, implementing)	Use information in new situations execute, implement, solve, use, demonstrate, interpret, operate, schedule, sketch
4. Analyze (differentiating, organizing, attributing)	Draw connections among ideas differentiate, organize, relate, compare, contrast, distinguish, examine, experiment, question, test
5. Evaluate (checking, critiquing)	Justify a stand or decision appraise, argue, defend, judge, select, support, value, critique, weigh
6. Create (generating, planning, producing)	Produce new or original work design, assemble, construct, conjecture, develop, formulate, author, investigate

Bloom’s Taxonomy or Revised Bloom’s Taxonomy has been widely used, providing educators across different countries with one of the earliest structured categorizations of thinking and learning processes. The accumulative hierarchical framework of six categories with each deeming it necessary to master the previous skill or ability before moving on the next one remains simple to grasp for educators to apply in class. In order to measure their students’ ability correctly, teachers need a categorization of levels of intellectual behavior in learning or, more simply, a measurement tool for thinking and Bloom’s Taxonomy fills this void.

Yet, the Taxonomy is not without its criticisms. For example, Paul (1984) raises criticisms against Bloom’s Taxonomy stressing its “limitations” with respect to curriculum development. To this end, Paul, Binker, Martin, Vetrano and Kreklau (1989) prepared a list consisting of 35 strategies of critical thinking. In their description, each strategy is supported through a principle which provides the theory of critical thinking the strategy is based on, application about how and when to use the strategy and lessons plans in which the strategy is used. They divided those

strategies into three dimensions; Affective Strategies that stress such affective parameters of critical thought as empathy, autonomy and being aware of obstacles in critical thinking; Cognitive-Macro-abilities that demand extensive employment of cognitive skills, and; Cognitive-Micro-skills that underscore critical moves specific and brief in nature. They stress that each dimension of critical thinking is equally important and should be integrated for the aim is an integrated, committed, thinking person rather than a set of disjointed skills. In addition, affective and cognitive dimensions as well as many individual strategies are intertwined and interdependent. The researchers explain that their motive in classifying cognitive strategies as macro-abilities and micro-skills is to provide a pedagogical schema for teachers that reflects the importance placed on the two levels of learning. That is to say, people apply two levels of learning in most complex abilities; we move from the most elementary move, micro-level, to more complex and often sophisticated moves, macro-abilities. However, an individual may often feel the need to go back to the micro-level in order to make sure that the basics are handled well. When thinking critically, we undergo a more holistic and complex process through integrating various elementary critical thinking skills and using them in concert with each other. This interdependent faculty of critical thinking should be given due attention. A complete list of the strategies as classified into three dimensions are succinctly provided below.

B. Affective Strategies

- S-1 thinking independently
- S-2 developing insight into egocentricity or sociocentricity
- S-3 exercising fairmindedness
- S-4 exploring thoughts underlying feelings and feelings underlying thoughts
- S- 5 developing intellectual humility and suspending judgement
- S- 6 developing intellectual courage
- S- 7 developing intellectual good faith or integrity
- S- 8 developing intellectual perseverance
- S-9 developing confidence in reason

C. Cognitive Strategies- Macro-Abilities

- S-10 refining generalizations and avoiding oversimplifications
- S-11 comparing analogous situations: transferring insights to new contexts
- S-12 developing one's perspective: creating or exploring beliefs, arguments, or theories
- S-13 clarifying issues, conclusions or beliefs
- S-14 clarifying and analyzing the meanings of words or phrases
- S-15 developing criteria for evaluation: clarifying values and standards
- S-16 evaluating the credibility of sources of information
- S-17 questioning deeply: raising and pursuing root or significant questions
- S- 18 analyzing or evaluating arguments, interpretations, beliefs or theories
- S- 19 generating or assessing solutions
- S- 20 analyzing or evaluating actions or policies
- S- 21 reading critically: clarifying or critiquing texts
- S- 22 listening critically: the art of silent dialogue
- S- 23 making interdisciplinary connections
- S- 24 practicing in Socratic discussion: clarifying and questioning beliefs, theories or perspectives
- S- 25 reasoning dialogically: comparing perspectives, interpretations or theories
- S- 26 reasoning dialogically: evaluating perspectives, interpretations or theories

D. Cognitive Strategies – Micro-Skills

- S-27 comparing and contrasting ideals with actual practice
- S-28 thinking precisely about thinking: using critical vocabulary
- S-29 noting significant similarities and differences

S- 30 examining or evaluating assumptions

S- 31 distinguishing relevant from irrelevant facts

S- 32 making plausible inferences, predictions or interpretations

S- 33 evaluating evidence and alleged facts

S- 34 recognizing contradictions

S- 35 exploring implications and consequences (Paul, Binker, Martin, Vetrano and Kreklau, 1989, p. 58)

1. Incorporating Critical Thinking in EFL Classroom

The recent trend in English language teaching and learning is the communicative approach that places specific stress on the use of language by learners rather than mastery of forms or structure of the language as in traditional approaches. The purpose is to make students successful in the target language communication. Kumaravadivelu (1993) argues that the communicative approach to learning languages lays great emphasis on learner proficiency in a language through using it rather than simply learning about the structure of language. In order to communicate in academic life, in business life and real life, learners need the use of related skills, and not just mastery of memorization of long word lists and grammatical rules. When learners are required to communicate in real life contexts that demand spontaneity, they frequently encounter the challenge of not having sufficient time to resort to such rules (Lian, 1993). Students of language need to be exposed to real life situations and practice functional language in proper situations. In real life situations, learners are provided with numerous opportunities to contest, distinguish and challenge their existing perceptions of the real world through wide range of circumstances and phenomena (Lian, 2000). Accordingly, Lian (2000) defines the ability to draw meaning “the meaning making mechanism” through resourcing to memory and inherent faculty of perceiving when confronted with real life situations.

Yet, learners still need to engage in thinking process to become proficient. This thinking process refers to critical and creative thinking. To this end, there is solid evidence that incorporating critical thinking skills in EFL classrooms is an important way to help students improve their language skills and use the foreign

language. Kubilan (2000), for example, contends that in order for language learners to become proficient in a foreign language, they must engage in creative and critical thinking while using the target language. Language students possessing critical thinking dispositions and employing critical thinking skills in their studies tend to be active participants of the target content rather than being passive recipients of information. Critical thinking in language classrooms enhances language learning by extending it beyond memorization and language skills (Sanavi and Tarighat, 2014). Development of critical thinking helps facilitate language skills acquisition and enrich language proficiency in general. One widely-accepted definition of critical thinking by Paul and Elder as being “the art of thinking about your thinking while you are thinking in order to make your thinking better: more clear, more accurate, more defensible” (2002, p. 316) underlines the significance of critical thinking in education by referring to the fact that it is, in fact, a conscious and teachable skill by nature.

To cultivate critical thinking skills and dispositions in foreign language classes, it is important for language teachers to plan and organize tasks and activities, as well as modify their teaching programs and materials. Thus, it has been proposed that teachers of foreign languages promote students’ critical thinking skills during the language acquisition process (Davidson, 1998). Paul and Elder (2005) draw attention to a common problem with teaching methods and conceptions of teachers in education. By distinguishing between the content (“what”) and process (“how”) in education, they point out that most teachers have the false assumption that when students acquire “what”, they will naturally employ “how” in a proper context and manner. In other words, education has failed, by laying emphasis on “content coverage” and underemphasizing “learning how to learn”, in teaching learners how to exercise control over their learning process, how to generate different ideas by making use of the mind itself and how to connect ideas within and across diverse disciplines. The researchers go on indicating assumptions of most teachers when devising instructional approaches:

- 1- “Lecture content be absorbed with minimal intellectual engagement on the part of students.
- 2- Students can learn important content without much intellectual work.
- 3- Memorization is the key to learning, so that students need to store up lots

of information (that they can use later when they need it)” (p. 8).

They argue that learners have trouble in acquiring thinking skills in classrooms due to low levels of intellectual engagement in learning. For this reason, it is crucial for teachers to acknowledge the significance of developing thinking skills in learning and engaging students in activities and methods that foster such skills. Taken together, the researchers seem to suggest that thought and content develop simultaneously, and one promotes the other. Teachers are responsible with equipping their students with necessary skills as well as knowledge needed beyond the classroom in order to be motivated, autonomous, lifelong and self-directed learners. Similarly, Paul et al., (1987) argue that if educators acquire the skill of critiquing their lesson plans and learn how to harness this art of criticism to improve the effectiveness of their lesson plans, they will “refine and develop their own critical thinking skills and insights, reshape the actual or ‘living’ curriculum (what is in fact taught) and develop their teaching skills” (p. 2).

According to Shirkhani and Fahim (2011), critical thinking is an important skill that needs to be fostered in language classes for many reasons. To begin with, if language students can control their own thinking, they can better monitor and assess their own methods of learning. In addition, critical thinking broadens the learners’ learning experience and makes the language more significant to them. Finally, critical thinking has a strong relationship with academic achievement on writing and speaking skills and language proficiency in general. The researchers believe that the teacher bears the responsibility of teaching these skills in the classroom. Therefore, they propose some methods for language teachers to help improve students’ critical thinking skills throughout the process of learning a foreign language through the use of authentic content-based materials as well as group assignments, project-based and demonstration activities that demand learners to think critically.

2. Related Studies on Critical Thinking

Recent advancements in technology, science and developments triggered by globalization and the internet have transformed the traditional approaches to education. With the paradigm shift in foreign language teaching that focuses on the learner as the core party, there has been an abundance of research addressing the issue of critical thinking in EFL classrooms from various perspectives. 21st-century

skills, consisting of creativity, collaboration, communication and critical thinking have become significant skills that learners are required to have developed throughout their education. Critical thinking, notably, has been studied from various perspectives and areas including foreign languages, social sciences, medicine, sports and life sciences in order to shed light on the existing situation or to improve existing standards, teaching methods and materials and so forth. Some of these descriptive and experimental studies conducted both in Turkey and abroad are summarized below respectively.

a. Studies conducted in Turkey

Gündüz (2017) carried out an experimental study in order to enhance critical thinking disposition levels of students, as well as to improve critical reading skills and L2 critical writing performance through the provision of explicit strategy training in critical thinking. The participants consisted of 26 B2 level EFL learners, with 13 in the experimental group and 13 in the control group, at a foundation university in Istanbul, Turkey. The experimental group was instructed in critical thinking skills, while the control group was instructed using traditional methods for four weeks. Data were collected through the California Critical Thinking Disposition Inventory – Turkish (CCTDI- T) (Kökdemir, 2003) before the treatment and four weeks after the treatment to observe delayed results, Critical Reading Self-Efficacy Scale (CRSES) (Küçüköğlü, 2008) was used in a pre- and post- test format, along with opinion essays by students and their definitions of critical thinking. The findings did not reveal statistically significant improvements between the experimental and the control groups in terms of perceived critical thinking dispositions, critical reading skills and L2 critical writing performance; however, findings of the qualitative data indicated difference between pre- and post-definitions of critical thinking by the experimental group. The researcher concluded that the students were engaged in debate and problem-solving activities and enjoyed expressing themselves in spoken tasks.

In their experimental study, Külekçi and Kumlu (2015) attempted to promote critical thinking skills of pre-service teachers through integrating literature, particularly novel reading. The researchers adopted a mixed research design where 40 participants took CAAP Critical Thinking Test before and after the intervention. Then, the participants were taught in content-based instruction to foster critical

thinking and language skills for 14 weeks. Follow-up qualitative interviews with ten volunteer participants were conducted in the second phase of data collection. The findings revealed that pre-service English teachers might still rely on their previous learning habits or experiences to deal with issues in different circumstances. However, when they were afforded critical thinking skills, they became competent at adjusting to unfamiliar situations and finding creative solutions. The participants indicated increasing awareness of critical thinking in that they took analysis, interpretation and evaluation into consideration while reading. They were also found to display such critical thinking dispositions as independent thought, exploring underlying thoughts and feelings and forming confidence in interpretation and analysis. Thus, the researchers suggest integrating literature, most specifically novels, and devising activities that can challenge EFL learners for the promotion of critical thinking skills.

Another experimental study conducted by Arslan and Yıldız (2012) examined the effectiveness of literature-based critical thinking instruction at a tertiary education and the impact of the instruction on critical thinking skills of students, as well as perceptions of both learners and educators about literature instruction. The research design implemented was a quasi-experimental, employing a one- group pre and post-test with a seven-week critical thinking program incorporating literature. The participants consisted of 34 seniors majoring in English Language and Literature Department. Data collection was done through various instruments, including surveys, interviews, the Cornell Critical Thinking Test Level Z and classroom observations. T-test results revealed significant improvements between pre and post-critical thinking levels of the participants. The study suggested that a literature-based critical-thinking program promoted a more student-centered educational setting and creative literature education, both of which could help students develop critical thinking skills. The findings further implied that existing barriers to critical thinking, including stress on memorization, classroom activities that were restricted and not challenging and insufficiency of thought proving questions could be eliminated through designing specific programs to facilitate the ability to think critically.

Alagözlü and Süzer (2010) conducted a research to explore the levels of critical thinking skills of Turkish pre-service English teachers as expressed in written texts, both in their native language and English. Drawing from previous research

indicating that Turkish learners of English struggled with critical thinking in L2 writing, the researchers attempted to find out whether this difficulty was caused by socio cultural transfer and whether Turkish learners of English experienced similar difficulties in Turkish texts assuming that it suggested any cultural transfer. The research participants included fifteen female and two male senior students of English Language Teaching Department. The participants were divided into two groups based on their GPA scores and were given Turkish and English versions of the tests. The instrument used was the Ennis-Weir Critical Thinking Essay Test (EWCTET) (Ennis & Weir, 1985). To evaluate critical thinking dispositions of the participants, they were asked to write essays with paragraphs to respond to a letter. The researchers point out that this open-ended form of test underlines the logical dimension of critical thinking through its scoring criteria. The researchers incorporated the following components of critical thinking ability approximately: “Getting the point, Seeing the reasons, Stating one’s point, Seeing other possibilities (Including other possible explanations), Responding appropriately to and/or Avoiding fallacies like Equivocation, Irrelevance, Circularity, Reversal of an If-Then (or Other Conditional) Relationship), The Straw Man Fallacy, Overgeneralization, Excessive Skepticism, Credibility Problems, and the use of emotive language to persuade” (p, 785). According to the findings, the critical thinking levels of the students attained through Turkish essays were not found to be higher than those of English ones. A comparison between the mean scores of the two independent groups was found to be close. Turkish learners’ critical thinking scores on the essay test were quite low. The presence of a non-significant statistical difference between the two groups reinforced the notion that they had similar success in CT in both languages. This insinuated that language was not a barrier when thinking critically. In short, the results lent support to the earlier body of literature that discusses the Eastern approach to thinking which harbors such socio-cultural variables as respect, benevolence, harmony and modesty.

A descriptive study, conducted by Tümkaya, Aybek and Aldağ (2009), analyzed the differences in critical thinking disposition and perceived problem-solving skills among university students based on gender, grade level and field of study, as well as the relationship between critical thinking disposition and problem-solving abilities. The participants consisted of 353 students from a state university in

Turkey majoring in different disciplines. The researchers used the California Critical Thinking Disposition Inventory by Facione and Facione (1996) and Problems Solving Inventory by Heppner and Petersen (1982) to collect data. Demographic data were collected through Personal Information Form developed by the researchers. According to the findings of this study, a higher disposition for critical thinking was associated with better problem-solving abilities. Gender was not found to be a significant variable in relation to critical thinking disposition or perceived problem-solving skills. The field of study of the students was closely linked to critical thinking dispositions but not to perceived problem solving skills. Social science students, for instance, demonstrated higher levels of these variables than science students. Both problem-solving and critical thinking dispositions were strongly correlated with grade level. This finding suggested that students' problem-solving abilities and critical thinking dispositions improved as they progressed through their college education. To this end, the researchers suggest incorporating instructional programs to support critical thinking and problem-solving skills while considering the affective side of these concepts into higher education curricula.

Çubukçu (2006) carried out a research employing a descriptive and casual-comparative design to determine the critical thinking disposition levels of Turkish teacher candidates. The research participants consisted of 400 teacher candidates at education faculty, enrolled in primary school class education, computer and instructional technologies in education, primary school science education and primary school mathematics education. Data were collected through the Turkish version of California Critical Thinking Disposition Inventory by Kökdemir, 2003. The findings concluded that among the dispositions, Open-mindedness and Analyticity were found to be the highest, while Inquisitiveness and Systematicity were among the lowest.

b. Studies conducted abroad

Mehta and Al-Mahrouqi (2014) conducted a qualitative case study on 30 university students majoring in English Language and Literature. The researchers based their intervention on an open question format developed by Norris and Ennis (1989) and subsequent assessment using the rubrics developed by McLaughlin and Moore (2012) to investigate the methods employed that can foster critical thinking through in-class practices, including discussion and subsequent writing. The study

participants had completed at least two semesters of foundation courses in such skills as reading, writing and speaking. Additionally, the participants had either completed or were registered for a critical reading course. The material used consisted of a selection of reading texts with short writings on tourism taken from Bailey's *Academic Writing: A Handbook for International Students*. The researchers believed that choosing texts on tourism, which was not specialization of the class, gave students the opportunity to detach themselves from the topic and to ensure an objective approach. The students were asked to identify reliable and relevant sources for further writing. They were also required to reflect upon academic writing and prospective benefits of this specifically-designed writing course through writing an essay. Then, the students answered comprehension questions related to the texts, identify each writing and matched it with a relevant genre, identified author's tone and purpose. Upon feedback from four instructors who evaluated the student writings, the researchers suggested that critical thinking and writing skills could be enhanced by factors such as scaffolding, social interaction, group discussion, training in detailed reading, feedback, relevant and meaningful writing tasks and process writing. Overall, the results revealed that practicing both oral and written skills continuously allowed students to promote critical thinking skills as they performed better in integrating refined and critical ideas into academic writing tasks.

Golpour (2014) investigated the relationship between Iranian EFL learners' critical thinking levels and their competence in various types of writing tasks. The research sample consisted of 94 advanced level EFL learners studying at Kish Institute of Science and Technology in Iran. The researcher formed the homogenized group, consisting of 64 students, through a TOEFL test. The participants majored in different disciplines, including natural sciences, mathematics and humanities. The researcher used the Longman paper and pencil test (2004) to help insure uniform distribution, a questionnaire of critical thinking developed by Honey (2004) that categorizes learners into high and low critical thinkers and an analytic scale of Weir (1990) for the evaluation of research participants' argumentative and descriptive writings. The results indicated that "the high critical thinkers' writing was better in both modes of writing [descriptive and argumentative] compared to the low critical thinkers" (p. 103). The researcher concluded that while all learners' proficiency was homogeneous, there were some differences in their writing styles that could be

attributed to their critical thinking. Language learners who were able to think critically were able to write more coherently and used more accurate forms of grammatical sentences and content words.

Cosgrove (2011) conducted a research at a public university setting in England to investigate the extent to which Oxford tutorial, a pedagogical framework that involves students writing short essays and receiving peer and tutor feedback, enhances learners' critical thinking skills. More specifically, the research was guided by three sub-questions: tutors' and students' conceptions of critical thinking, whether and to what extent critical thinking was employed both by tutors and students, and undervalued or unnoticed dimensions of critical thinking. Research participants included three tutors and seven second-year students majoring in the Politics, Philosophy and Economics (PPE). To collect data, the researcher employed semi-structured interviews and classroom observations. The results concluded that tutors were largely interested in enhancing students' abilities to explain basic questions, describe key terms and assumptions in essay writing. Other critical thinking skills and dispositions, such as (1) intellectual analysis and internalization of new ideas, (2) intellectual evaluation, and (3) intellectual traits of mind received less focused from the tutors. Overall, the study suggested that students tended to understand and accept intellectual skills and dispositions that were explicitly and systematically discussed and required, rather than those that were left implicit and appeared implicit.

Nikoopour et al. (2011) investigated the relationship between critical thinking and Iranian learners' use of direct and indirect language learning strategies. The study revealed a strong relationship between Iranian students' use of language learning strategies and their way of thinking. This important relationship, they researchers believed, could help language learners achieve greater success in the difficult process of language learning. The researchers stressed the need for curriculum designers to include critical thinking as one of the effective elements in the academic process to equip students with necessary analytical skills. They also emphasized that learners trained in critical thinking were more proficient in dealing with ideas, inferences, assumptions and intellectual future processes.

Liaw (2007) carried out an experimental study to examine the effectiveness of enhancing critical thinking skills and EFL skills of learners through a content-based instruction approach. The participants included thirty-two students studying at a

junior high school, aged between 12 to 13 in Taiwan. The researcher designed and followed a five-unit syllabus that covered social studies, language arts, science and mathematics. The data were collected through the Critical Thinking Test, Level 1 specifically designed for the assessment of Taiwanese junior high school students' critical thinking skills by Yeh (2003). The test was designed to measure student skills in assumption, identification, interpretation, identification, evaluation, induction and argument. The test was implemented before and after the intervention and pre-test and post-test results were compared. To evaluate student writing samples in terms of critical thinking, the researcher used Bloom's Taxonomy of Cognitive Domains. In addition, students were assessed on their development of content area knowledge through homework and in-class work samples. The final form of instrument included a questionnaire for a thorough description of the students' progress and responses. The results of the Critical Thinking Skills test indicated no significant differences with respect to critical thinking scores of the students prior to and after the intervention in five domains of critical thinking indicators proposed by Yeh. However, it was found out that, in their work samples, students implemented some critical thinking skills elements in all six cognitive domains classified by Bloom (1956). Student performance on English proficiency test increased significantly after the intervention study. Finally, students reported positive feedback in end-of-project survey, with students indicating their gains in subject field knowledge, English language proficiency, thinking skills, as well as increased motivation and confidence to learn.

The research study conducted by Mahyuddin et al. (2004) revealed that language learners possessing critical thinking abilities were equipped to think critically and creatively in order to fulfill curriculum objectives. They were able to make decisions and provide solutions to problems, employ their thinking skills to comprehend language or its content, capable of regarding thinking skills as continuous learning and finally, achieve a well-balanced state physically, spiritually, intellectually and emotionally. Similarly, a research by Paul and Elder (2006) lent support to the findings of the previous study. According to their research, effective critical thinkers asked key questions, acquired and assessed relevant information, approached an issue objectively, communicated effectively, and drew well-reasoned, logical solutions for complicated situations.

Astleitner (2002) conducted an experimental study at University of Erfurt with seventy undergraduate young adult students majoring in humanities and social sciences. The researcher investigated the effectiveness of critical thinking through web-lectured classes. In the experiment, the first group of students were instructed through audio recordings and the second one was instructed through video recordings of a lecture that dealt with non-formal errors in arguments. About one-half of the participants in each group were provided with such synchronous organizers as text, figures, etc. on MS-Powerpoint slides, while the rest of the students were not presented similar organizers. The research participants were made to learn with one of the four types of web-supported lectures for sixty minutes. The research findings were collected through ten randomly selected items of the California Critical Thinking Test developed by Facione and Facione in 1992. The findings indicated that the experimental group with critical thinking supported instruction enjoyed higher mean scores when compared to the results of the traditional classroom setting.

To summarize, research from various perspectives investigates the relationship between critical thinking and language skills, as this skill is essential for academic achievement and professional success. In this sense, incorporating critical thinking into higher education curricula and improving methodologies and practices for teaching this prominent skill is crucial. According to a study (Bezanilla et al., 2019), for instance, the three most effective methodologies to teaching teaching critical thinking that language teachers think and apply in the classroom are oral and written reflection and argumentation; reading, analyzing and synthesizing resources; case studies. To this end, conducting research on critical thinking and analyzing the data can provide valuable insights into the issue, which can be used to enhance classroom practices and methodologies.

III. METHODOLOGY

This chapter provides a comprehensive overview of the research design and methodology employed in the present study. It begins by offering a detailed description of the overall research design. Subsequently, it elucidates the study's context, followed by a discussion of the participants and materials used in the research. The chapter then delves into the data collection process and procedures, outlining how data were gathered. It further elaborates on the administration of the intervention on a weekly basis, providing insights into how the study's intervention was implemented. Finally, the chapter outlines the steps taken for data analysis, shedding light on the methods used to analyze the gathered data.

A. Research Design

The current research adopted a mixed methodology based on a case study research design. Adopting a case study design was appropriate for the overall aim, the scope and focus of the study as indicated by the particularities of case studies. As Cohen et al. (2007) specify that case studies afford a unique example of real contexts with real people, which allows readers to comprehend ideas in a comprehensive and clear way, rather than providing abstract theories or principles for them. Case studies can also penetrate situations that are not always open to numerical breakdown (Cohen et al., 2007). In addition to these, they can establish cause and effect relationships because they monitor effects in real-world contexts, acknowledging that context is an influential factor in the determination of both causes and effects (Cohen et al., 2007).

Both qualitative and quantitative methods were adopted for data collection and analysis in order to triangulate the data. According to Patton (1999), triangulation refers to the use of alternative strategies or multiple sources of data to gain a thorough understanding of phenomena (Patton cited in Carter et al., 2014). To this end, Critical Thinking Disposition Scale (CTHD) developed by Semerci (2016), the participants' reflection papers and the researcher's diary were employed for data

collection and analysis.

To investigate EFL learners' perceived improvements in critical thinking dispositions, the participants took the CTHD before and after the training in critical thinking strategies was administered. The instrument consisting of 49 items was a 5-statement Likert-type rating scale that analyzed five different sub-dimensions of critical thinking disposition. The items on the survey were translated into English by the researcher for the international students before administration in order to ensure that possible challenges that could impede comprehension were eliminated. The translated version was also back translated by an English instructor holding a degree in translation. Back translation is an effective method in the social sciences in order to check the accuracy of the translation and determine potential translation errors (Brislin, 1970, 1980, as cited in Douglas and Craig, 2007).

To explore the research participants' reflections on the benefits of the instructional intervention, a written form of feedback guided by a series of questions was gathered. The questions were translated into Turkish by the researcher to ensure clarity and eliminate any confusion. The respondents were given the choice to answer them in Turkish to deliver their opinions in the best way possible. The responses in Turkish were translated back into English by the researcher. The questions were designed to encourage the participants to reflect upon their experience with the training and changes in their ideas and attitudes over the course of the intervention.

Researcher's diary kept by the researcher facilitated recording observations and reflections of the instructional intervention promoting critical thinking through strategy training. The notes were guided by several questions that aimed at monitoring the class, the participants and the researcher. The notes were taken each week to record the progress of the participants, in-class observations and the informal conversations that took place throughout the class setting. The data was subjected to descriptive analysis.

B. Context of the Study

The current study was conducted at an English preparatory program within a foundation university in Istanbul, Turkey during the 2022-2023 academic year. The

English preparatory program offers 20 hours of English instruction per week. The program consists of four levels, namely A1, A2, B1, B2, following a curriculum based on the CEFR (Common European Framework of Reference for Languages). The curriculum adopts a four-skill integrated approach supported by extra materials such a grammar booklet and reading booklet prepared by school instructors in A1, A2 and B1 levels. All four skills are separated as academic reading, writing and listening, speaking. In the B2 level, learners study a specifically designed material that includes reading topics tailored to the needs and aims of students in their respective faculties, focusing on academic writing and response paper writing, listening, speaking, grammar points, vocabulary, debate practice, presentation and projects. The current study was conducted in the B1 Reading and Writing class, which is described in next section of this chapter.

C. The Reading and Writing Course

The reading and writing course is aligned with the curriculum objectives of the CEFR. The course is ten hours weekly for A1, A2 and B1 levels, each lasting two months. The overall aims of the B1 reading and writing course consist of familiarizing students with different types of text genres, enhancing their understanding of main ideas and details, developing the ability of making inferences, identifying purpose and audience, distinguishing between facts and opinions, organizing paragraphs, writing topic sentences, writing supporting ideas and details, summarizing charts and graphs and practicing essay writing. The assessment procedure includes both midterm and final examinations, along with six in-class writing tasks for academic writing assessment. After writing the first draft in class, students are given feedback and they revise their writing and submit the final draft. The writings papers are evaluated based on their content, accuracy, coherence, vocabulary (lexis) and punctuation.

D. Participants

The present study was conducted in a foundation university, English preparatory program setting in Istanbul, Turkey, during a seven-week period in the fall term of 2022-2023 academic year. Among the four B1 classes at the time of the study, one class, which was taught by the researcher, was randomly chosen in order

to carry out the research. The study participants consisted of 6 female and 10 male students. The majority of the participants were native Turkish speakers and local residents of Istanbul. There were only two international students, one from Iran and one from Kazakhstan, while a few others were from different cities in Turkey. All of the 16 students were registered- in line with CEFR- at the B1 level. Their majors included engineering (10), political science and international relations (2), psychology (2), interior architecture (1) and business (1). The students participating in the research were young adults ranging between the ages of 18-20. The demographic background of the participants, including their majors and gender, was incorporated in the first section of the Critical Thinking Disposition Scale (Semerci, 2016), as shown in the table below.

Table 3. Demographic Background of the Study Participants

Demographics of the Participants		N
Gender	Female	6
	Male	10
Nationality	Turkish	14
	Iranian	1
	Kazakh	1
Major	Engineering	10
	Political Science and International Relations	2
	Psychology	2
	Interior Architecture	1
	Business	1
	Total	16

E. Materials

The material used for teaching the integrated skills was Reflect Reading and Writing 3 and Listening and Speaking 3, first edition by the National Geographic Learning. It is an academic-light English book based on the CEFR and designed to develop the academic, critical thinking skills and language proficiency that students need.

The main source of material used to incorporate critical thinking was a reading booklet prepared by the English preparatory program instructors. Each unit in the booklet featured two authentic reading texts with themes that aligned with the

texts in the Reflect series. Each unit was also supported by theme-related writing tasks, comprehension questions and speaking tasks. The current study was in progress in line with the topics and materials presented in the booklet. However, the readings, writing and speaking tasks were adapted to allow for the enhancement of critical thinking. Throughout the seven weeks of the study, the existing material was exploited and additional tasks, group or pair work, research projects and presentation assignments were incorporated in alignment with the related critical thinking dispositions and strategies.

F. Data Collection Instruments

Qualitative and quantitative data were gathered in order to carry out the study and triangulate the data from different aspects. The quantitative data instrument of the study included Critical Thinking Disposition Scale (CTHD) in Turkish, developed by Semerci (2016). The survey, Critical Thinking Disposition Scale (CTHD), was administered twice as pre-test and post-test. The qualitative data was obtained from weekly reflection papers by the participants and the field notes kept by the researcher herself.

1. Critical Thinking Disposition Scale

The Critical Thinking Disposition Scale (CTHD), developed by Semerci (2016), consists of 49 items that are scored according to Likert-type rating scale of five points. Participants are asked to state their level of agreement with each item. Numeric values ranging from 5 to 1 refer to strongly agree, agree, neutral, disagree and strongly disagree respectively. The questionnaire with six parts investigates student replies to a number of key points concerning critical thinking dispositions and sub-scales. The CTHD includes five sub-scales, each addressing different aspects of critical thinking: metacognition (items 1-14), flexibility (items 15-25), systematicity (items 26-38), tenacity-patience (items 39-46) and open-mindedness (items 47-49). Drawing on the existing literature, it is important to provide a detailed account of the sub-scales for the purpose and context of the current study. Schraw and Dennison (1994 as cited in Simons & Metzger & Sonnenschein, 2020) define metacognition as “awareness, understanding and control of one’s mental processes” (p. 33). The second sub-scale flexibility is a critical thinking skill for adjusting to

different learning contexts, transferring information to new circumstances and comprehending and solving unexpected problems (Barak & Levenberg, 2016). For systematicity, Facione and Facione (1995) succinctly put that it “measures being organized, orderly, focused and diligent in inquiry” (p. 5). The next sub-scale, tenacity-patience refers to “the efforts put forth to reach a specific goal” and “resilience against difficult conditions” respectively (Aydın Gürler, 2022, p. 73). Facione and Facione (1995) state that open-mindedness “addresses being tolerant of divergent views and sensitive to the possibility of one’s own bias”, which is particularly important in pluralistic and multi-cultural societies (p. 5).

Through the implementation of the CTHD in pre-test and post-test fashion, it was expected to investigate the research participants’ awareness of critical thinking, their view of the benefits of strategy training in enhancing critical thinking and the changes in their perception of such critical thinking dispositions as metacognition, flexibility, systematicity, tenacity-patience and open-mindedness. The internal consistency of the CTHD was analyzed through Cronbach’s Alpha reliability test and the alpha coefficient value was measured as 0.93.

2. Reflection by the Research Participants

The instrument used to gather qualitative data included reflection papers, which the study participants delivered each week in response to the instructor-posed questions. They were asked to reflect upon their experience with the training in critical thinking strategies. Initially, the reflection session had been planned as semi-structured interviews with some randomly chosen students at the end of each week. However, considering time constraints and subsequent classes, the researcher had to adjust and change the format into a written fashion. In this way, it was expected that the participants would have enough time to reflect thoroughly on their experience and provide anonymous feedback to the instructor in the best way possible. The responses from the participants were expected to help indicate their perceptions of critical thinking and address the following questions:

- What is your opinion and feelings about the lessons that include critical thinking?
- How different are they when compared to traditional language classes?
- What challenged you the most? What are the problems in the lessons?

- What did you find most enjoyable and beneficial? What are the good points of the classes?

- Are the tasks easy or difficult?

- Do you believe that you are improving, challenging or changing your views?

- Do you have any recommendations?

3. Researcher's Diary

The second instrument used to gather qualitative data consisted of the researcher's diary. Field notes by the researcher herself were kept in order to record her observations and reflections with respect to the incorporation of critical thinking in the EFL class throughout the experimental study. The following questions guided the researcher's reflections recorded in the field notes:

- How have the students reacted to critical thinking tasks?

- What were the benefits of this particular critical thinking activity for my students?

- What were the strengths of the activities used in the class?

- What were the challenges faced during the activities?

- How can I eliminate the problems experienced by the students?

These questions were aimed at monitoring the classes and the way of teaching, reflecting on the specifics of the instruction and evaluating both the instructor and the intervention.

G. The Seven-Week Instructional Intervention

The aim of the seven-week strategy training in critical thinking was to make the participants develop an awareness in critical thinking and apply them as they are engaged in language learning journey. In line with this aim, an intervention supported through critical thinking strategies was developed. The strategy instruction was designed taking five separate critical thinking dispositions in the CTHD into consideration. To this end, 19 critical thinking strategies listed by Paul, Binker, Martin, Vetrano and Kreklau (1989) and explained in CHAPTER 2 were used in the

instruction. When the English proficiency level of the participants, scope of the study, practicality of the strategies and institutional considerations were taken into account, 16 strategies of critical thinking suggested by Paul et al. were excluded from the instruction.

The instructional intervention was conducted for five hours a week during academic reading and writing classes. Each week, the participants were introduced to five to six strategies in critical thinking. They practiced with the texts in their supplementary reading booklet, texts provided by the researcher, research projects, discussions, presentations, group works and debates. The first week of the intervention was focused on raising the participants' awareness of critical thinking, informing them about CT skills and dispositions and explaining critical thinking strategies to be practiced. Various strategies divided into three dimensions were employed in the study. The three dimensions of the strategies include Affective Strategies (S1- S9), Cognitive Strategies Macro-Abilities (S10- S26) and Cognitive Strategies Micro-Skills (S27- S35).

In the table below, examples and activities for classroom application of the 19 strategies employed in the study are listed.

Table 4. Examples for Classroom Application of Critical Thinking Strategies

S 1: Thinking Independently

Brainstorming ideas and group discussions to find solutions to a problem.
 Giving the opportunity to judge independently while gathering information, analysis, synthesis and evaluating the results in written assignments
 Engaging in discussions while highlighting the important points of the subjects at hand

S 3: Exercising Fairmindedness

Encouraging students to compromise or to show reciprocity when discussing conflicts or problems in the classroom
 Encouraging students to provide evidence and reason on matters they disagree or agree with
 Providing students with the opportunity to compare different viewpoints by explaining the opposing view

S 6: Developing Intellectual Courage

Fostering intellectual courage through a consistently openminded learning atmosphere
 Supporting students who disagree and doubt the views of their peers or the texts
 Giving students the opportunity to express their hesitation, restlessness or concerns about ideas in the classroom

Table 4. (Con) Examples for Classroom Application of Critical Thinking Strategies

S 8: Developing Intellectual Perseverance

Ensuring that students develop their ability to separate complex problems into simpler elements, so that students can approach problems systematically

For this reason, students can understand how to approach a given problem through group work, how to divide the problem into its elements and the necessity of spending time on the analysis of the problem

Having students to write down their ideas on basic ideas within such subjects as culture, justice or life and discuss these ideas

S 10: Refining Generalizations and Avoiding Oversimplifications

Raising questions about other important factors in cases of over-generalizations

Raising questions alternative contributing factors when texts ignores factors by stating one cause for a problem, situation or event

Encouraging students to qualify their statements when they have insufficient evidence to be certain

S 11: Comparing Analogous Situations: Transferring Insights to New Contexts

Encouraging students to employ new skills mastered or insights discovered to analyze different contexts

Combining the strategy with independent thought by asking students to identify analogous situations. Students can find analogies between historical events or beliefs and present-day practices and claims

S 12: Developing One's Perspective: Creating or Exploring Beliefs, Arguments or Theories

Giving students time to reflect and reach tentative conclusions when they are unsure what to think

Providing students with the opportunity to make comparisons between what they say, do and believe

Allowing students explain how what they have learned has changed their thinking in some way

S 14: Clarifying and Analyzing the Meanings of Words or Phrases

Paraphrasing new concepts in order to relate the new terminology to ideas students already understand. Supplying a range of examples and allowing students to add to the list can be helpful

Using analogies related to situations or ideas that students are familiar with when explaining a concept that students have never experienced before. Asking students to compare ideas

S 15: Developing Criteria for Evaluation: Clarifying Values and Standards

Raising awareness in developing criteria and in process or components of evaluation

Asking students, the purpose of evaluation and the criteria they used whenever students evaluate something such as an object, policy, solution or belief

Relating evaluation of governments, institutions, actions or policies to existing student perspectives on the purposes and functions of these

S 17: Questioning Deeply: Raising or Pursuing Root or Significant Questions

Providing students with the opportunities to reach their own conclusions, construct their own categories, devise their own solutions and formulate their own ideals when texts fail to address crucial or thought-provoking issues

Facilitating discussions about the purpose, importance or value of rules, institutions, activities or ideals

Table 4. (Con) Examples for Classroom Application of Critical Thinking Strategies

<p>S 18: Analyzing or Evaluating Arguments, Interpretations, Beliefs or Theories Encouraging students to argue back and forth and modify their positions in light of the strengths of others' positions Promoting practice of specific analytic techniques in order for students to better evaluate reasoning</p>
<p>S 19: Generating or Assessing Solutions Having students state the problem to give them the opportunity to explore causes at length and explore and evaluate multiple perspectives Having students evaluate the text's statement of problem and its causes, evaluate the solution tried and propose and evaluate alternatives Encouraging students to explore the beliefs underlying various choices of solutions</p>
<p>S 20: Analyzing or Evaluating Actions or Policies Encouraging students to raise ethical questions about actions and policies of themselves and others Making students evaluate the behavior of important people in history and enhancing such evaluations by having students report on the long-term consequences of past actions and policies. This is particularly important that students, as future citizens of democracy, develop their own sense of how leaders and countries should and should not behave</p>
<p>S 21: Reading Critically: Clarifying or Critiquing Texts Facilitating freedom to raise questions about materials students read Providing students with the opportunity to evaluate texts they read through units, chapters, section titles and headings Making students discuss their interpretations of what they read and compare their paraphrases and interpretations</p>
<p>S 28: Thinking Precisely About Thinking: Using Critical Vocabulary Encouraging students to use critical vocabulary when they are reasoning or discussing the reasoning of others Encouraging participating students to explain the role of their remarks in the discussion when conducting discussions</p>
<p>S 31: Distinguishing Relevant from Irrelevant Facts Encouraging students to make a case for the pertinence of their remarks and helping them see when their remarks are irrelevant Helping students distinguish relevant facts through reading a text or story with particular issues in mind and taking notes on the details of the issues</p>
<p>S 32: Making Plausible Inferences, Predictions or Interpretations Asking students to make inferences based on a wide variety of statements and actions and to argue for their inferences or interpretations Having students give examples, from their experience, of inferring incorrectly and encouraging them to recognize situations in which they are most susceptible to uncritical thought</p>
<p>S 33: Evaluating Evidence and Alleged Facts Asking students for their reasons when asking students to come to conclusions Routinely asking students to show specifically where in the book or passage they get that interpretation when discussing their interpretations or written material</p>

Table 4. (Con) Examples for Classroom Application of Critical Thinking Strategies

S 34: Recognizing Contradictions

Encouraging students to find points of agreement and specify points of dispute or contradiction when arguing opposing views

Helping students explore possible ways to reconcile apparent contradictions

(taken and adapted from Paul, Binker, Douglas, Vetrano and Kreklau, 1989, pp. 55-97).

H. Data Collection Procedures

After obtaining the necessary permissions from Istanbul Aydın University and Istanbul Commerce University and receiving confirmation from the preparatory program administration where the related study would be conducted, students were informed about the study and their consent was obtained.

The present case study aimed at investigating EFL learners' perspectives on the benefits of training in critical thinking strategies and determining whether training in critical thinking strategies resulted in a change in EFL learners' perception of critical thinking. The study was carried out over a period of seven weeks, with a total of five hours per week devoted to critical thinking instruction - four hours for instruction and one hour for writing.

Before commencing the training in critical thinking strategies, students were asked to take the Critical Thinking Disposition Scale (CTHD) developed by Semerci (2016) as pre-test in order to assess whether the students could identify the benefits of critical thinking. Following this, the importance and place of critical thinking in education and in subsequent phases of students' life, with specific emphasis placed on their professional development after graduation, were highlighted. To this end, the sub-dimensions of the critical thinking dispositions that would be implemented during the study were explained in detail. The purpose was to facilitate the process of intervention and help students feel engaged in the lessons as well as making them feel comfortable throughout the study. Finally, the material to be used, along with the related assignments, tasks and projects as the basis of improving critical thinking were described. Throughout the course of seven weeks, the participants received training in critical thinking strategies, which were incorporated into various language skills, such as reading, writing, speaking, listening, debates, projects and other tasks.

Once the intervention study was completed, the students were required to take CTHD again as post-test in order to track their progress and changes with respect to their perceptions about critical thinking after undergoing the training.

1. The Weekly Procedure

Data collection procedure lasted for seven weeks. The main source of the material used for the strategy training included a reading booklet with two authentic reading texts per week. The weekly reading topics were in line with the themes in the main academic skills books. Due to time constraints and the curriculum requirements, only one reading was covered each week during the process, only with the exception of Week 4 where two relatively academic-light texts were studied. The material was exploited and adapted to best suit the aims and critical thinking sub-dimensions. It was expected that this would give the students better chances to activate their prior knowledge and use vocabulary, language structures and skills better than they had already covered in the skills books. In addition to the readings, students were required to complete a number of other tasks such as group projects and presentations, discussions, debates, research projects and weekly in-class writings that were related to the topic.

a. Week 1

The initial aim of the first week was to familiarize the participants with the concept of critical thinking skills, dispositions and the general framework of the study. This week was spent on the introduction to the study, related tasks and the process. The concept of critical thinking skills and dispositions, as well as their sub-dimensions, were explained. In addition, the researcher placed special emphasis on the importance and subsequent benefits of critical thinking in education, language classes, academia and job market. Then, the whole class went through the items on the CTHD and the students took the CTHD as a pre-test.

After providing the above preliminaries, the main aim of the week was to incorporate the critical thinking dispositions, including metacognition, systematicity and flexibility into the classes. The CT strategies used for the week included S1, S3, S6, S10, S11 and S12. Apart from following the course syllabus, the following steps were taken in order to achieve the weekly aims.

1. The students were introduced to the reading and subsequent tasks. The first

reading was a shortened authentic text about alternative ways of life and communities. They studied the text named *Freetown Christiana*, which discussed an alternative Danish community and completed the tasks with a partner. The questions required the students to question reasons why people set up such a particular town and evaluate whether it was possible to establish similar communities in their city or country, and if possible, under what circumstances. In line with critical thinking strategies, the tasks about the text intended to give them a chance to apply that information into novel contexts, analyze a situation and propose solutions and evaluate the solutions.

2. For the first post-reading activity, the students were asked about their opinion regarding the Syrian refugees living in Turkey in a group discussion. They discussed whether it was a good idea to set up similar towns or ghettos for the Syrians in Turkey by stating their reasons for their opinions and elaborating on possible advantages and disadvantages of such schemes. The researcher listened to the individual students discussing as she walked around the groups.

3. For the second post activity, the students were also required to conduct a group research project and design a similar community, which they presented to their classmates. In groups of 3 or 4, they brainstormed ideas, went online and researched the topic. Then, one of the group members delivered a presentation about the community they had designed.

4. Finally, they were required to complete a writing task about alternative communities, including their advantages and disadvantages, by clarifying their reasons for their opinions.

5. At the end of the week, the researcher asked the participants to deliver a written form of feedback to elicit student reflections about the course and the benefits and challenges of critical thinking activities. They were asked to complete it after the class and hand it in during the next class hour due to time limitations.

b. Week 2

The aim of the second week was to further enhance the critical thinking dispositions introduced in the previous week, namely metacognition, systematicity and flexibility as well as tenacity and patience. The CT strategies employed for the week included S3, S11, S12, S14 and S34. In addition to following the course

syllabus, the following steps were taken to achieve the weekly aims.

1. The participants studied a reading text about changes in language, certain vocabulary and a misused word in English. Afterward, they were asked to apply that information to similar examples in their own language. They discussed comparable words in Turkish that acquired new meanings and gained popularity in different contexts, expressing their opinion and criticisms.

2. For the discussion, they were asked to state their opinions about borrowed words, mainly from Persian and Arabic in the Turkish case, as well as explain any criticisms they might have. In addition, they shared their ideas about whether borrowed words, especially in literature and poetry, make the language difficult to understand or deepen meaning across diverse contexts.

3. Next, the students were presented with an actual controversy that sparked heated debates on social media about a popular Turkish textile company with very large volumes of sales in Turkey and abroad manufacturing t-shirts with Arabic letters on them. As expected, some people were critical of the company on the grounds that it was an example of “Arab invasion” in Turkey and its language. In response, the company publicly issued a statement of apology, clarifying that the products were actually intended for the Arab market and subsequently removed the items from the domestic market. However, some Arabs and Turkish people denounced the company, pointing out similar products of the company with Latin or Japanese characters. The incident triggered a heated debate about xenophobia, radical nationalism and racism on social media. The students were given the task on Thursday and were allocated some time in class for their ideas. Yet, they were so interested and engaged in the topic that wanted to present their ideas the next day.

4. For the groupwork research project, the students were asked to research the standardization of Chinese. The researcher specified that they should focus on the acceptance of Mandarin as the official language across China and deliver a presentation about their research. The students analyzed the situation with respect to loss of dialects, ethnically-mixed societies, minorities and pluralism, taking into consideration the backdrop of the Chinese Cultural Revolution and its policy changes. For the presentation, they demanded extension of the of the due date until next week as they were mostly interested in the topic. The next week, they presented their findings on the reasons, results, benefits and drawbacks of this standardization

of language and the revolution.

5. Finally, they completed a writing task about the changes in languages, including examples from their own languages and comparing old and new definitions.

6. At the end of the week, the researcher asked the participants to deliver a written form of feedback to elicit their reflections on the course and the benefits and challenges of critical thinking activities. They were asked to complete it after the class and hand it in during the next class hour because of time limitations.

c. Week 3

The aim of the third week was to practice critical thinking dimensions, such as flexibility and systematicity, as well as problem solving, analysis and inference. The CT strategies used for the week included S1, S3, S11, S18 and S19. In addition to following the course syllabus, the following steps were taken to achieve the weekly aims.

1. The students studied an authentic reading material about fear. Then, they answered comprehension questions related to the text. The questions required them to apply summarizing, establish cause-and-effect relationships, make inferences, problem-solving and demonstrate analysis skills.

2. Following the completion of the comprehension questions, the students were presented with a scenario where they were asked to evaluate a business venture and invest their money into it. They brainstormed ideas about risky and profitable businesses and wrote these ideas on the board. In groups, they chose one of the business ventures to invest their money in and explained the reasons behind their choices, identified the associated risks and estimated the expected profits or gains. The task gave them the opportunity to assess the scenario from different perspectives, estimate the potential consequences of their choices and consider risks associated with their decisions.

3. Next, the students took part in a discussion in groups of three or four. Before the discussion, the students talked about the movie *Titanic* and questions were posed about the first people saved and the reasons for their priority. Then, the researcher showed them the death scene of the protagonist, Jack, in the movie and asked for their opinions on whether Rose was wrong not to share her wood with him

and if Jack could have been saved. After this warm-up activity, the students were given the task named *The Lifeboat Debate*, which presented a scenario where eight people were traveling in wild stormy weather on rough seas. With only enough space for six people on the boat, two individuals had to leave as it was about to sink. The students were provided such details about each person as their age, family, marital status, profession, achievements and character. In groups of five, students had to come to a conclusion about whom to send away and report their final decision, along with the justification of their choice based on given information. They spent approximately twenty or twenty-five minutes on discussion and then reported their group's final remarks.

4. Finally, the students completed a writing task about fear and taking risks, discussing the advantages and disadvantages of avoiding risks.

5. At the end of the week, the researcher asked the participants to complete a written form of feedback to elicit their reflections on the course and the benefits and challenges of critical thinking activities. They were asked to complete it after the class and hand it in during the next class hour due to time limitations.

d. Week 4

The aim of the fourth week was to improve such critical thinking dispositions as open-mindedness, metacognition and tenacity and patience. The CT strategies employed during the week were S1, S11, S15, S17, S19 and S31. In addition to following the course syllabus, the following steps were taken to achieve the weekly aims.

1. The reading texts in the weekly booklet were long and posed structural and lexical challenges for the participants, so the researcher added a different content. In order to select materials most suitable for learners, teachers must take context and needs analysis into consideration and gather data through them (Kostka & Bunning, 2016). In order to enable learners to practice more high frequency vocabulary related to the environment and study cause-effect relationships between phenomena, the researcher chose two text about renewable energy and the causes and effects of climate change. In order to activate their existing schemata, the students were introduced to efforts to preserve the environment and combat climate change and global warming. The researcher elicited their opinions about the current debates and

informed them about the works of leading activists and organizations, including the Greenpeace and Greta Thunberg. The students were shown a speech by Thunberg addressing world leaders at the 2019 UN Climate Action Summit in UN headquarters through online resources.

2. The first reading was a text about alternative sources of energy. As part of the warm-up activity, the students brainstormed different sources of renewable energy, types of renewable energy used in their countries or other parts of the world and identified the advantages and disadvantages of them. Then, they answered comprehension questions about the text, which required them to define renewable energy, list its types, identify its benefits and downsides, compare green energy with nuclear power, evaluate green energy as an alternative for energy needs of their country and propose other alternatives.

3. The second reading was about the causes and effects of climate change. As a pre-reading activity, the students discussed the ways that humans affect the environment and the serious environmental problems in their country. Then, they read the text and answered the comprehension questions about it, covering topics such as the human causes of climate change, effects of this change on the planet, effects of climate change on humans, possible effects of global warming and climate change on the survival of species, the main purpose of the author and the intended audience of the text.

4. The project was a whole-class debate about nuclear power versus renewable sources of energy. The students were given some time to research nuclear power in groups. During this process, they were expected to examine the benefits and drawbacks of nuclear power by comparing it to other forms of energy in terms of cost, efficiency and environmental risks. After completing their research, the students engaged in a discussion for about thirty minutes, considering various perspectives such as environment, ecology, economy, efficiency, maintenance, cost, safety issues and even power politics.

4. Finally, they were given a writing task that aimed to persuade a politician running for an elected position to change his views about re-opening coal mines and stopping investments in renewable sources of energy in their country.

5. At the end of the week, the researcher asked the participants to complete a

written form of feedback to elicit their reflections on the course and the benefits and challenges of critical thinking activities. They were asked to complete it after the class and hand it in during the next class hour due to time limitations.

e. Week 5

The aim of this week was to promote critical thinking dispositions, including systematicity and flexibility. The CT strategies used in the week included S1, S11, S14, S21 and S31. In addition to following the course syllabus, the following steps were taken to achieve the weekly aims.

1. The topic of the week was travel. The students were introduced to the subject of travel through an infographic that presented information about cosmic journeys. Afterward, they studied an authentic blog post that discussed the reasons people travel. Following the reading, they answered the comprehension questions that asked about the benefits of travel and reasons that drive people to explore new destinations. Throughout the text, students were provided with the opportunity to identify the use of metaphors in reading texts. One metaphor used in text was read “[t]he world is a book, and who doesn’t travel reads only one page” by St. Augustine. The researcher explained that ‘book’ was used as a metaphor and provided the dictionary definition of a metaphor, along with other examples. Then, the students were asked to identify other examples of metaphors used in the text, come up with alternative metaphors instead of the ones in the text and think of metaphors in their native language and their intended meanings.

2. Then, in groups, they brainstormed different types of vacations, discussed the advantages and disadvantages of three types of travel and finally reported their ideas.

3. The next two hours were allocated for the project called *Off the Beaten Track Tourism*. Before designing their own tour, the researcher asked them about the places they would like to see in a visit to Paris. As expected, the answers included the most popular tourist destinations in Paris, such as the Eiffel, Champs-Élysées, the Seine River, the Louvre Museum and similar places. Then, the students watched a video of a tour to alternative destinations in Paris, where a group of visitors interacted with the local people, dined at local restaurants, shopped at fish market and the flea market. They were asked to note the places the people in the video

visited and the activities they engaged in. Next, the students went through three short informative texts explaining off the beaten track tourism to gain a better understanding of it. After this, they were given a group project to plan a day for a visitor in Istanbul, focusing on off the beaten track experiences. They were expected to come up with unique places, local food, cultural experiences, music and interactions with local people that tourists could experience in Istanbul. The project required them to produce an itinerary with details such as times, transportation, locations, activities, food, people and a short explanation of why it was an off the beaten track experience. When they finalized their itineraries within their groups, they presented them to the whole class.

4. At the end of the week, the students wrote about a type of vacation they would choose, explaining the advantages and disadvantages of their chosen vacation type through reasons and examples.

5. At the end of the week, the researcher asked the participants to complete a written form of feedback to elicit their reflections on the course and the benefits and challenges of critical thinking activities. They were asked to complete it after the class and hand it in during the next class hour due to time limitations.

f. Week 6

The aim of this week was to practice such critical thinking dispositions as open-mindedness, systematicity and metacognition. The CT strategies used in the week were S1, S15, S17, S20, S21 and S30. In addition to following the course syllabus, the following steps were taken to achieve the weekly aims.

1. The researcher had to replace the theme in the weekly syllabus and omit the reading texts since the original ones were long and not level-appropriate. Neville Grant suggests that if the content in the textbook is not appropriate, a teacher may simply opt for skipping the lesson altogether, which addresses the challenges related to inappropriateness and enables him or her to do something else (Grant in Harmer, 2004, p. 111). Therefore, the researcher introduced a different theme and content: culture, namely intangible cultural heritage. To activate the students' existing schemata, the researcher asked about the UNESCO World Heritage List and elicited some examples both from Turkey and around the world. After this, the researcher went on showing some of the famous items on the list including the Great Barrier

Reef in Australia, the Art of Miniature and Turkish Art of Ebru (Marbling) in Turkey online. Before reading the assigned text, they also engaged in a discussion about the future of traditions and customs and read the introduction paragraph of the text, which elaborated on the concept of intangible cultural heritage, such as songs, customs and languages in detail. When they read the text, they answered comprehension questions related to it, thereby practicing their inference skills. This activity helped them distinguish between tangible and intangible culture, identify the reasons for the disappearance of traditions and the creation of Intangible Cultural Heritage List and evaluate the author's perspective on the effectiveness of UNESCO's work.

2. The participants took part in a discussion with their partners, which facilitated applying the information to the new contexts. In groups, they discussed the negative effects of globalization on local customs and practices, as well as the future and survival of these customs. They also explored initiatives taken by countries, with a focus on their own country, to preserve their living cultural heritage.

3. After the discussion, they went online in groups to check the items about their own country on the UNESCO Intangible Cultural Heritage List. They discussed whether efforts to save the customs on list were sufficient, questioned the usefulness and fairness of the ICH list. Additionally, they considered the reasons why some cultural practices and customs were included while some others were left out and discussed whether the inclusion of certain customs on the list could make a difference in the long run.

4. The students worked with the same groups again. The researcher asked them to think of famous examples of items that are important to their culture. The researcher then gave such examples as Turkish coffee, Almezma in Saudi Arabia and luxury fruit in Japan. In their groups, they were tasked with choosing one item from their culture and introducing it to the class on the board. During this presentation, they were supposed to provide reasons explaining why they made this particular choice among all the other items. They showed pictures of the item and explained its significance and function in their culture or why they considered it important.

5. At the end of the discussion, they completed an argumentative writing task about whether spending money, resources or effort to preserve customs is worth it.

6. At the end of the week, the researcher asked the participants to complete a written form of feedback to elicit their reflections on the course and the benefits and challenges of critical thinking activities. They were asked to complete it after the class and hand it in during the next class hour due to time limitations.

g. Week 7

The researcher had to make some changes to the overall program. Originally, this was planned to be an eight-week intervention study, but week eight was the last week of the B1 session. Due to the approaching final exam and the participants' nervousness about it there would not be enough time to follow the weekly syllabus and complete the CT lessons simultaneously. Therefore, week seven became the final week for the intervention study. The aim of this week was to improve critical thinking dispositions, such as metacognition, flexibility and systematicity. The CT strategies employed during the week included S8, S19, S28, S31, S32 and S34. In addition to following the course syllabus, the following steps were taken to achieve the weekly aims.

1. The theme of this week was creativity in business. During the pre-reading activity, the researcher elicited some famous examples of creative businesses and what made them stand out in terms of creativity. The students provided examples, including Google, Apple and other giant corporations. They talked about different practices in these companies that contributed to their uniqueness and creativity. They also discussed methods successful companies adopted to boost creativity and what they provided for their employees to foster a creative environment. After activating their schemata, the students studied a shortened authentic text about Google and creativity. They answered related comprehension questions that required them to draw conclusions, summarize, make inferences and identify reasons and results.

2. After the reading was completed, they engaged in a mini-project about selling something impossible to sell. They formed groups and assumed the roles of advertising agencies. The researcher provided them with some examples such as selling snow, sunlight, rainbow, sand or clouds. The participants were given full freedom to choose any product and were expected to support and persuade potential

customers effectively. They started working in groups and took some time to decide on their chosen product. In the following hour, one representative from each group came to the board and presented their product.

3. The students took part in a whole class debate about investing in space tourism. Originally, this activity was planned as a group discussion, where in groups of four or five, students would discuss whether their company *Mesla* should invest their billions of dollars in space tourism and reach a decision the majority agreed with as board members. However, due to positive feedback on the previous debate, the researcher changed the initial plan of holding a discussion to a debate format. To get them prepared for the speaking task, the researcher had provided additional reading texts that presented the pros and cons of space tourism or exploration into space the previous day. Students were expected to study the material and conduct additional research on the internet if needed, filling out the advantages and disadvantages and their reasons on the worksheet provided. The researcher asked for individual student's choice of group and the whole class was divided into two large groups, with one group supporting the idea of investing in space tourism while the other disagreed.

4. For the writing activity, the students imagined that they ran a multinational technology company. In the light of what they had studied and researched, they were supposed to think of ways to improve their business, services, products, productivity and employee efficiency and write about how to improve their company and be innovative in the competitive business market.

5. Since week 7 was the final week of the study, the researcher conducted a semi-structured interview with whole class at the end of the week. For the closing remarks, the researcher summarized what had been done throughout the intervention and shared some basic principles of CT skills and dispositions again. The entire class reviewed the characteristics of a good critical thinker and the steps to become one. The researcher also explained the CT dispositions that the survey measured, namely metacognition, flexibility, systematicity, tenacity-patience and open-mindedness. Together, they revised these dispositions with some examples from the researcher's own academic and personal life, as well as observations from diverse classes and students over a decade of teaching. Then, the researcher asked the students for their overall opinion about the classes, giving them a chance to reflect and share their final

remarks, thoughts about the course of the critical thinking classes and the benefits and challenges of critical thinking activities.

2. Data Analysis

Quantitative data from the pre-test and post-test questionnaires were subjected to descriptive analysis using IBM SPSS 20 (Statistics Package for Social Sciences). In addition, a paired sample T-test was administered to compare the results of the first and second questionnaires and determine if the results of the first and the second questionnaire were significantly different. Means (averages) and standard deviations to measure the students' view of the benefits of training in critical thinking strategies for each item on the questionnaire were illustrated separately. In addition, results of each disposition that compared the first and the second test were offered for a concise description.

In order to investigate the research participants' reflections on the perceived benefits of the instructional intervention in critical thinking, a written form of feedback session was conducted with them once the training was completed each week. The written feedback from the students was subjected to descriptive analysis. The main categories and themes that provided deeper patterns of meanings were allowed to emerge from the data through repeated reading of the data. Finally, they were organized, categorized and labelled to achieve coherence and facilitate data analysis and interpretation.

Another qualitative data collection instrument utilized in the study included the researcher's diary. Guided by a number of questions, the diary was used to record observations and reflections about the instructional intervention. The data gathered from the researcher's diary was analyzed descriptively.

IV. FINDINGS

The current chapter provides a descriptive analysis and interpretation of the findings of the study. Related data was collected over a seven-week intervention period using both quantitative and qualitative data collection instruments. The chapter focuses on interpreting the data in relation to the research questions underpinning the study that were posed in Chapter 1. The chapter is structured into three main sections: Findings of the Critical Thinking Disposition Scale (Section A), Paired T-Test Results (Section 1.), Findings of Reflection by the Research Participants (Section B) and Findings of the Researcher's Diary (Section C).

A. Findings of the Critical Thinking Disposition Scale (CTHD)

This section provides pre-test and post-test results of the CTHD implemented at the beginning and the end of the seven-week research. The frequency of responses to each statement in both questionnaires was compared using IBM SPSS version 20 and each sub-dimension was presented separately for a detailed interpretation.

The first sub-dimension of the CTHD included metacognition. Table 5 presents the descriptive statistics of pre-and-post-tests for metacognition.

Table 5. Descriptive Statistics for Metacognition (Items 1-14)

Items	Pre-Test		Post-Test	
	Mean	Std. Deviation	Mean	Std. Deviation
1. If there are weak points in my work or in any subject, I try to eliminate them.	4,06	,680	4,38	,619
2. I am aware of how my behavior affects other people.	3,81	,750	4,13	,619
3. I can find contrasts between information in what is being told or what I read.	3,88	,500	4,00	,632
4. I struggle to expand knowledge about my field.	4,00	1,095	4,44	,629
5. After deciding how to solve the problem, I definitely try that solution.	4,00	,632	4,25	,447

Table 5. (con) Descriptive Statistics for Metacognition (Items 1-14)

Items	Pre-Test		Post-Test	
	Mean	Std. Deviation	Mean	Std. Deviation
6. I can organize information and ideas that are meaningful to me in an organized manner.	3, 81	,655	4, 25	,931
7. If I find that I am sticking to a pattern when I think about any subject, I try to overcome it.	3, 75	,856	4, 38	,719
8. I am aware of how and when my emotions affect me.	4, 00	1,033	3, 81	1, 109
9. I try to eliminate the ambiguities that come up while working on any subject.	3, 94	,854	4, 13	,619
10. I apply appropriate criteria, models or rules in my work.	3, 50	,816	4, 06	,772
11. I can do oral explanations in accordance with the rules.	3, 06	,854	3, 44	1, 209
12. I openly express my opinion about anything.	3, 50	,894	3, 94	,929
13. I am curious about other areas of life and different thoughts.	3, 88	,957	3, 88	,806
14. I apply original solution techniques when solving problems.	3, 38	,806	3, 81	,834

The comparison of the pre- and post-tests for metacognition indicates statistically significant differences. The highest increase was recorded with item 7 ($M= 3, 75; 4, 37, SD= ,856; ,719$), which shows that the participants improved their ability to seek out different ways during the thinking process. The second highest score was obtained for item 10 ($M= 3, 50; 4, 06, SD= ,816; ,772$), suggesting that the respondents acknowledged use of appropriate criteria, models or rules in their work. Similarly, items 6 ($M= 3, 81; 4, 25, SD= ,655; ,931$) and 14 ($M= 3, 38; 3, 81, SD= ,806; ,834$) also showed similar increases. Taken together, the results indicate that the respondents improved their skills of organizing information and ideas and could resort to novel approaches to problems.

However, no change was recorded with the questionnaire item 13 ($M= 3, 88; 3, 88, SD= ,957; ,806$), indicating that the participants failed to develop a tendency to learn new things and displayed indifference to other aspects of life and unfamiliar thoughts. By the same fashion, questionnaire item 8 ($M= 4, 00; 3, 81, SD= 1, 033; 1, 109$) received a slightly lower score in the second test when compared to the first one, implying that the research participants were actually oblivious to their emotions

before the experimental study.

The second sub-dimension of the CTHD included flexibility. The descriptive statistics of pre-and-post-tests for flexibility are provided in Table 6.

Table 6. Descriptive Statistics for Flexibility (Items 15-25)

Items	Pre-Test		Post-Test	
	Mean	Std. Deviation	Mean	Std. Deviation
15. I check whether ideas and thoughts are reliable.	3, 88	,957	4, 38	,619
16. I try to access all the necessary information when preparing an assignment.	4, 06	,854	4, 00	1, 033
17. I can suggest more than one different solution to the problem.	3, 81	1,109	4, 06	,854
18. Before I start any work, I think about where my decisions will take me.	3, 81	1, 167	4, 44	,512
19. I always make use of criteria when evaluating my work.	3, 19	,750	3, 94	,854
20. I know how to reach the information I need on any subject.	3, 56	1, 031	3, 88	,885
21. I can drill down into details when comparing events or information.	4, 13	,806	3, 94	,854
22. I can apply what I have learned to other areas.	4, 19	,655	4, 25	,856
23. I listen carefully to other people's opinions.	4, 31	,602	4, 38	,619
24. I am aware of and weed out information that is not relevant to the subject I am interested in.	3, 50	,894	3, 69	,873
25. I can understand what the person whose ideas I am listening to or reading is trying to convey.	4, 00	,632	4, 13	,619

Descriptive statistics for flexibility reveal slightly significant differences. The comparison of the pre and post-tests show that the highest increase was recorded with item 19 (M= 3, 19; 3, 94, SD= ,750; ,854), suggesting that the participants showed improvements with respect to applying criteria or rules when assessing their work. The second highest improvement was observed for questionnaire item 18 (M= 3, 81; 4, 44, SD= 1, 167; ,512). The positive change in the post-test suggests that the participants paid more attention to the results of decisions and how their actions or choices could affect them.

However, questionnaire item 16 (M= 4, 06; 4, 00, SD= ,854; 1, 033) received a lower score in the post-test, meaning that the research participants failed to recognize the importance of conducting research or gathering more sources during the preparation of assignments. As for the lowest increases, questionnaire items 22 (M= 4, 19; 4, 25, SD= ,655; ,856) and 23 (M= 4, 31; 4, 38, SD= ,602; ,619) received the same increases in the second implementation of the survey. The results indicate that the participants had slight improvements in drawing connections across different areas or disciplines and valuing the opinions of others.

The third sub-dimension of the CTHD included systematicity. The descriptive statistics of pre-and-post-tests for systematicity are presented in Table 7.

Table 7. Descriptive Statistics for Systematicity (Items 26-38)

Items	Pre-Test Mean	Std. Deviation	Post-Test Mean	Std. Deviation
26. I can quickly identify the main idea when I read any article.	3, 25	,683	3, 50	,816
27. I control my thoughts before I make decisions.	3, 81	1, 167	3, 63	1, 088
28. I enjoy participating in discussions in class.	2, 81	1, 471	2, 88	1, 668
29. Before starting any task or making a decision, I think and plan how I will do it.	3, 94	,680	4, 00	,730
30. I try to see the problem from different angles before solving it.	4, 00	,632	3, 94	,772
31. I can easily recognize the challenges I face.	3, 50	,816	3, 56	1, 094
32. I do not speak and write before thinking.	3, 06	1, 181	3, 56	1, 459
33. I investigate the reasons behind any event.	3, 63	,885	4, 00	,632
34. I consider changes when analyzing information.	3, 94	,680	3, 94	,772
35. I collect appropriate data before my decisions.	3, 63	,719	3, 88	,806
36. I can concentrate on my studies and work.	3, 44	,892	3, 44	1, 263
37. I can objectively analyze problems with causes and consequences.	3, 75	,447	4, 13	,619
38. I can ask questions to better understand information, thoughts and ideas.	3, 88	,619	4, 19	,834

The comparison of the pre and post-tests for systematicity also reveals slight differences. The highest increase was obtained for item 32 (M= 3, 06; 3, 56, SD= 1, 181; 1, 459), suggesting that the research participants seemed to have developed positive habits about thinking. The second highest increase was recorded with item 37 (M= 3, 75; 4, 13, SD= ,447; ,619), which implies that the participants' perception of analyzing problems along with their causes and consequences improved. Similarly, questionnaire item 33 (M= 3, 63; 4, 00, SD= ,885; ,632) was found to be very close to item 37 in that both items indicated improvements in the respondents' reasoning skills.

However, the same findings indicated a decrease with item 27 (M= 3, 81; 3, 63, SD= 1, 167; 1, 088), which suggests that the respondents failed to control their thoughts before making decisions. The questionnaire item 30 (M= 4, 00; 3, 94, SD= ,632; ,772) also displayed a faint decrease in the post-test, which can be attributed to insufficiency of developing broader perspectives for problems. Besides, no improvements were recorded with items 34 (M= 3, 94; 3, 94, SD= ,680; ,772) and 36 (M= 3, 44; 3, 44, SD= ,892; 1, 263) in the second test. Taken together, the findings reveal that the students thought they performed poorly in considering changes when analyzing information and concentrating on studies and work.

The next sub-dimension of the CTHD included tenacity-patience. The descriptive statistics of pre-and-post-tests for tenacity-patience are shown in Table 8.

Table 8. Descriptive Statistics for Tenacity-Patience (Items 39-46)

Items	Pre-Test		Post-Test	
	Mean	Std. Deviation	Mean	Std. Deviation
39. I apply myself to my homework or work.	3, 88	1, 025	3, 63	1, 025
40. In order to better understand what I do, I take it apart and then put it back together.	3, 38	,619	3, 31	1, 250
41. I trust in myself.	3, 31	1, 302	3, 56	1, 315
42. I am constantly interested in my studies and their requirements.	3, 31	,946	3, 75	,931
43. I do not give up when I encounter an obstacle while dealing with any task.	3, 69	1, 302	4, 06	1, 063

Table 8. (con) Descriptive Statistics for Tenacity-Patience (Items 39-46)

Items	Pre-Test		Post-Test	
	Mean	Std. Deviation	Mean	Std. Deviation
44. I evaluate an assignment, project, or task after I complete it.	3, 94	,680	4, 19	,655
45. I usually do what I do perfectly and precisely.	3, 13	,719	3, 69	1, 302
46. I can motivate myself in my studies.	3, 56	1, 031	3, 88	1, 025

Similar to the previous two dispositions, descriptive statistics for tenacity and patience reveal statistically insignificant changes. The highest improvement was recorded with questionnaire item 45 (M= 3, 13; 3, 69, SD= ,719; 1, 302), meaning that the participants acknowledged the significance of precision and perfection. The second highest improvement was recorded with item 42 (M= 3, 31; 3, 75, SD= ,946; ,931), which suggests that the respondents showed improvements in their perceived interests in their lessons.

Yet, the comparison of both tests shows the lowest record with questionnaire item 39 (M= 3, 88; 3, 63, SD= 1, 025; 1, 025). The respondents dropped down in their perception of applying themselves to studies. Another regression was recorded with item 40 (M= 3, 38; 3, 31, SD= ,619; 1, 250), suggesting that the respondents held tentative perceptions of their ability to analyze things in greater detail and draw conclusions.

The last sub-dimension of the CTHD included open-mindedness. The descriptive statistics of pre-and-post-tests for open-mindedness are provided in Table 9.

Table 9. Descriptive Statistics for Open-Mindedness (Items 47-49)

Items	Pre-Test		Post-Test	
	Mean	Std. Deviation	Mean	Std. Deviation
47. I do not evaluate anything by its appearance.	3, 38	1, 025	3, 69	,793
48. I collect sufficient data before making a decision.	3, 56	,629	4, 19	,834
49. I can be flexible when needed.	3, 88	,957	4, 38	,719

The last sub-scale of the questionnaire included open-mindedness which, according to comparison of surveys, indicates statistically significant differences. The findings reveal that the highest score was received with item 48 (M= 3, 56; 4, 19, SD= ,629; ,834), suggesting that the intervention study facilitated the participants' perception of conducting research on topics and avoiding hasty decisions. However, the lowest score was obtained with questionnaire item 47 (M= 3, 38; 3, 69, SD= 1, 025; ,793). Despite its inconsiderable improvement, the item still suggests that the study participants underwent positive changes regarding evaluating issues elaboratively.

1. Paired T-Test Results

A paired T- test was carried out in order to determine the possibility of significant differences with respect to changes in the study participants' replies between the pre-test and the post-test.

Table 10. Paired Samples Statistics for Pre-Test and Post-Test

	Mean	N	Std. Deviation	Std. Error Mean
OverallPre	3.6862	16	.42508	.10627
-Post	3.9362		.44425	.11106
MetacognitionPre	3.7545	16	.42536	.10634
-Post	4.0625		.40731	.10183
FlexibilityPre	3.8580	16	.49456	.12364
-Post	4.0966		.42571	.10643
SystematicityPre	3.8854	16	.53565	.13391
-Post	4.0521		.62648	.15662
Tenacity-PatiencePre	4.0268	16	.81352	.20338
-Post	4.2946		.74225	.18556
Open-MindednessPre	3.6042	16	.45896	.11474
-Post	4.0833		.44721	.11180

Table 4.6 presents that the overall mean values of the questionnaire, which are 3.6862 and 3.9362 for pre and post-tests, respectively. The mean scores for the sub-scales of the CTHD are 3.7545 and 4.0625 for metacognition; 3.8580 and 4.0966 for flexibility; 3.8854 and 4.0521 for systematicity; 4.0268 and 4.2946 for tenacity-patience, and; 3.6042 and 4.0833 for open-mindedness.

Table 11. Paired Samples Test for Pre-Test and Post-Test

Pre-Post Test				% 95 Confidence Interval Difference		t	df	Sig (2 Tailed)
				Lower	Upper			
Overall	-25000	.50031	.12508	-51660	.01660	-1.999	15	0.64
Metacognition	-30804	.49947	.12487	-57418	.04189	-2.467	15	.026
Flexibility	-23864	.58151	.14538	-54850	-.07123	-1.641	15	.121
Systematicity	-16667	.67905	.16976	-52851	.19517	-.982	15	.342
Tenacity-	-26786		.25451	-81033	.27462	-1.052	15	.309
Patience		1.01803						
Open- Mindedness	-47917	.67735	.16934	-84010	-11823	-2.830	15	.013

When a paired t-test was conducted, two sub-dimensions of the CTHD were found to be significantly different. The first statistically significant difference was identified between the pre and post-test of metacognition ($p=.026$; $t=-2.467$). The second one was observed after the comparison of questionnaire findings of open-mindedness ($p=.013$; $t=-2.830$). While the other three sub-dimensions of critical thinking disposition were found to show a slight upward trend, the findings of the t-test clearly indicate statistically significant improvements with respect to metacognition and open-mindedness after the seven-week intervention procedure.

B. Findings of Reflection by the Research Participants

The research participants were asked to reflect upon the perceived benefits of the incorporation of critical thinking in EFL classes. To this end, they contributed to the process by expressing their opinions and feelings on a weekly basis after the intervention sessions. The participants were provided with some questions and they were asked to write their answers and submit their reflections. Initially, semi-structured feedback sessions that would take place at the end of the related week had been planned. Yet, due to time constraints and the subsequent classes, it was transformed into a written form. The questions were straightforward and simple to eliminate confusion or ambiguity. Thus, they served as an outlet for the participants to be stakeholders in the process and express their reflections on the benefits of the classes. The participants were given the freedom to answer in their native language or in English for the purpose of expressing themselves comfortably. Another important point worth mentioning is that asking written feedback from the students gave them the opportunity to reflect upon their learning experience in their own time

and pace and express themselves in a relaxed way without the close presence of the researcher who, in this particular case, was also the instructor. The reflection sessions took place regularly after each week in order to track the participants' progress or changes in their opinions over the course of the seven-week program. The researcher translated the responses given in Turkish into English. Then, the researcher tried to reach coherence and main categories of meaning through multiple readings of the responses.

Question 1: What is your opinion and feelings about the lessons that include critical thinking?

Question 4: What did you find most enjoyable and beneficial? What are the good points of the classes?

Although question 1 and question 4 seek different answers and were asked separately, the feedback from the participants does not show any distinguishing responses. Thus, it would be more convenient to discuss them together under the same heading. Without exception, all the participants reported positive responses for questions 1 and 4. The common themes included more opportunities to improve thinking skills, practice in English, more engagement in English classes when compared to traditional English classes, interesting content and a variety of activities. "I think that critical thinking incorporated activities are more efficient than standard activities because we need to express our real thoughts in our own sentences and this gets us used to thinking and expressing ideas in English on such general topics." said one participant. Another student reported, "It is nice to exchange ideas even though none of the themes and topics we are being instructed in critical thinking are very interesting to me." One another participant said, "The greatest benefit is to speak in English and improve. We constantly think about a topic in class. This is good for someone who is often distracted like me because it helps me stay focused."

Feedback from the students suggests that classes helped them expand their vocabulary and grammar through thinking on diverse topics, even though the lesson plans and critical thinking strategies did not emphasize vocabulary and grammar. For instance, one student said, "It is useful for learning new words because we force ourselves into thinking." Active thinking process, creating solutions to problems and coming up with ideas were found to be effective strategies by the participants. One student stated, "Voicing and hearing multiple different ideas and responses and the

fact that everyone can freely express their opinions are the best aspects of the course.” Another student expressed similar thoughts, “These two sessions were more informative for me. Because I had a mental challenge to use words with my classmates. There was a discussion about fear and we were supposed to choose freely. The good thing about it was that it mentally challenged me to make a choice. Second, I think this session is better when compared to talking about a text in the book with classmates because talking about the text is not an important achievement and basically one or two people are active and the rest are silent.” Similarly, another student expressed, “The group work in classes is the most enjoyable form for me and CT is always fun. Sometimes I have difficulties due to lack of knowledge, but during lessons and discussions, this situation improves or I expand my knowledge. These kinds of things broaden my view of the world. I can say that it is more informative than other classes.”

The students were particularly engaged in participating in the class discussions and debates. The group projects that required participation of all the members during preparation and research process and higher level of speaking activity motivated them, although they oftentimes felt challenged. In week three, for instance, the weekly task included *The Lifeboat Debate* where they were required to choose two people from a sinking boat and leave them behind by justifying their reasons. Without exception, all the students reported positive feedback about the activity. One student said, “It was a fun activity where everyone could say whatever they wanted.” Similar views were articulated for the debate on using nuclear power versus renewable energy in week four. A student said, “It helps a lot in speaking and generating ideas.” The point about promoting thinking process was by far the most pronounced aspect of the classroom activities. “Since it is necessary to think and say what you think instantly, it is like a simulation of dialogues in daily life,” said one respondent. Another student expressed, “It was not only challenging but a beneficial lesson when we all spoke at some point and delivered our opinions and more importantly, responded to each other spontaneously without being previously prepared.”

Question 2: How different are they when compared to traditional language classes?

Feedback from the students for question 2 included such common themes as

active participation of students in classes, expressing an opinion and using the language communicatively rather than vocabulary memorization and learning about the structure of the language. For example, one student said, “In high school, learning English meant mastering grammar exercises and memorizing vocabulary. Yet, it now consists of reasoning, explaining, speaking and writing. I think it is for real-life usage.” Similar points were expressed by another students, “Normally, English classes would be inactive and boring for the students. Doing activities encourages everyone to attend the lessons.”

One student provided a comprehensive answer for this question when reflecting on week seven classes. In week seven, they engaged in an advertising campaign where they needed to sell something that was actually impossible to sell such as snow, air or rainbow. The student said, “According to my experience in my previous studies, this course was a little different. The order of the training course was important to me and I liked the creative topics in the teaching of the students in this course. The topic of selling the product was a good idea because people were forced to find a solution to a hypothetical problem. For this reason, the mind is forced or challenged more. Unexpected problems arise and we need to expand our vocabulary, use more accurate grammar or provide definitions to answer them.” Another student reported, “In the traditional lesson approach, less room is provided for activities that require us to think about diverse topics. Sometimes it can be more beneficial to conduct lessons in this way.” Overall, the answers imply that the participants show a deep insight into understanding the common problems that arise in traditional language learning settings and acknowledge the significance of creative thinking, active participation in classes and using the language for communicative purposes.

Question 3: What challenged you the most? What are the problems in the lessons?

Question 5: Are the tasks easy or difficult?

Questions 3 and 5 were asked separately; however, a predominant majority of the respondents did not distinguish between challenges and the difficulty of the tasks. Thus, through repeated reading of the responses, similar themes emerged for both items. Common themes included difficulties with vocabulary, speaking and generating and organizing ideas. In fact, most participants did not specify the level

appropriateness of the tasks. Only very few respondents stated that the tasks were not difficult and they had problems with vocabulary. Since the respondents gave a more detailed account of the challenges that they experienced during the program, question 3 is analyzed in greater depth in the following paragraphs.

The majority of the participants referred to challenges associated with brainstorming and organizing ideas in a short period of time about topics that they had had little or no experience in, experiencing foreign language speaking anxiety most notably in front of an audience and problems related to English proficiency. For example, one student said, “I sometimes feel reserved about certain topics in front of the whole class.” This point was also expressed by many students during informal talks outside the class hours and recognized by the researcher during observations of the class. Another student reported, “It is difficult to find an answer in a short time on topics that I have not thought about deeply before. If we think about it a little more, I think we can come up with better answers.” Similar responses were echoed in another student’s response, “I find it difficult to understand some subjects in Turkish and provide appropriate responses for the tasks. As expected, in English it is far more difficult.” Another student added, “I like that our classes are not like in high school. Yet, expressing our thoughts in English makes me nervous. I get nervous even when speaking Turkish normally. That is why speaking in English makes me more nervous.”

With respect to proficiency related challenges, lexical knowledge of the individual participants was the most prevalent. Most students expressed that they had difficulty in remembering correct vocabulary for the right context and felt they were under pressure. One student, for instance, said, “My vocabulary knowledge is not so good, so it is difficult for me to convey my thoughts in English.” Additionally, one frank response by one student suggested pedagogical implications for language instructors and the trajectory of learning process for learners. He reported, “Vocabulary challenged me the most. Sometimes I am unable to compile the right words to explain my thoughts and I change my initial ideas.”

Question 6: Do you believe that you are improving, challenging or changing your views?

Question 6 was meant to make the participants track their own progress by raising their awareness. In other words, they were given the opportunity to be

actively involved in each step of the process, evaluate their level of progress, recognize their strengths and weaknesses and facilitate developing required skills towards being efficient critical thinkers. One prevalent opinion that was common to almost all the participants is that the study has had notable benefits on their thinking and speaking skills and overall English proficiency.

One student reported, “Classes with CT are very different because they allow you to learn by yourself. Before [the student means *previously*], I used to wait the teacher for the answers, but now I improve. When we do reflection [means *discussion* or *brainstorming*] as a group to solve something or come to a decision, it is very beneficial.” Similar ideas were shared by another student, “CT classes encourage a learning setting for everyone to share their diverse ideas. Although some tasks are on subjects that we have little or no experience at all, we can think critically about these subjects by researching. In summary, we both improve our thoughts on any subject and make it easier to learn the language by doing this in foreign language.” In addition, another participant expressed, “Making advertisement helps us organize different views on the same topic that helped us with our communication skills. *Mesla* debate and debate-like activities are the most efficient ones because they require quick thinking in English and it is very important. Activities that require participants to be active are the most efficient ones. They help everyone with their speaking and thinking skills in English. Making them more often will improve the English skills of students.”

In addition to expressing their views on the benefits of the intervention, one student, in particular, sincerely reflected that “At the very beginning of the classes, I had the fear of making mistakes, I personally think I got over it in time.” However, another student admitted suffering from speaking anxiety while stating that she improved her lexical knowledge “In terms of vocabulary, I have improved. In terms of speaking ability, I feel like I have to think in order to make up a sentence and because everyone is waiting for me at that time, I panic and mess up.”

Most participants stated that they enjoyed great benefits of expressing their thoughts and ideas in English not only in terms of speaking skills and improving their language proficiency but also in making progress in or challenging their existing views. This point was expressed by one student as “speaking English also changes our views.” In addition, most participants shared a common tendency to

equate improving their language proficiency and skills with their attitudes or behaviors in language classes. In other words, they believe that they can use the language for communicative purposes only when they master accuracy and lexical knowledge. One view by a respondent corroborates this point from the first few weeks of the program, “I think I have already progressed in terms of vocabulary, grammar and self-confidence.” Similarly, another respondent expressed, “I believe that my English improves as my writing skills, grammar and speaking skills improve.” One another student pointed out succinctly, “I am learning more vocabulary and thinking more. Thus, I am improving my views.”

Finally, participants acknowledged the significance of interaction and scaffolding by the instructor and their peers while working on tasks in groups. For competitive tasks, in particular, they needed to collaborate, gather and organize ideas and reach a consensus, all of which require the activation of critical thinking. When sharing his views on tasks including intangible cultural heritage and designing an alternative touristic route related to week five, one student reported, “There was a lot of dialogue between the group members and each person looked for the best solution. It enhanced creative thinking. For this activity, the participants had to use more vocabulary to convey their opinions. Also, the UNESCO Intangible Cultural Heritage List was an interesting topic. It is important to be aware of what the world knows or wants to know about us, which part of our culture is important to others and which part of their culture other people like the most.”

Question 7: Do you have any recommendations?

In the first few weeks, majority of the participants did not give any tangible responses to this item. However, as the program progressed and they were more involved in the process, they felt more open to express their opinions and recognized that their ideas were valued. Thus, they stated various recommendations with respect to the course of the lessons as well as their fellow friends’ engagement in the lessons. They also developed the ability to evaluate themselves and their classmates through their observations throughout the classes. Some strong students were critical of the weaker ones in that they abstained from fully participating in tasks, oral tasks in particular, including debates, discussions and presentations. Interestingly, they avoided disclosing their critical or negative opinions on the part of the researcher, although they were encouraged to feel open as much as possible each time during

feedback sessions.

During the first few weeks, most respondents expressed positive ideas about the classes. For instance, one student succinctly responded, “I have no recommendation. Everything is as it should be.” Yet, most students admitted that they enjoyed competitive speaking tasks and recommended the incorporation of more speaking activities. One respondent said, “If we include debate-style activities more often, everyone will have an opportunity to practice speaking.” In his evaluation of classmates for the debate on renewable energy and nuclear power, one student complained, “If everyone participates in the debate, it becomes more engaging. In any case, when topics become competitive, people have more to say and do not speak out of compulsion.” Similar views were held by another respondent on the debate about space tourism, “It was very nice and productive for me. But, as is usually the case, one group was dominant because an idea was common to both teams. When this situation is experienced together with some friends not attending, the course of the event actually continues in a different trajectory than it should. I think this is a situation caused by students; its solution can only be reached with their participation. If they are more willing and actively participate, the flow of the event will be more natural, neither the opposition team nor the teacher will need to intervene.”

Some students shared their ideas about the significance of including more people in the speaking process rather than assigning oral tasks to one single group member. One participant, for instance, recommended, “Making plans within a group and presenting them is efficient for the presenter, but it may be more efficient if there is more than one speaker in a group. Those who do not know much about the topic may experience disconnection while planning about a particular topic, but it can be more productive if more than one speaker and topic are assigned for each group. Since these types of tasks are fun, most people can participate and this is really important.” In addition, one student expressed discontent with respect to group dynamics, “I do not think it is good for us that the groups we discuss together are always the same. Maybe if our groups change in some classes, it will enable us to learn the thoughts of people with different ideas in more detail. In this way, we can see the benefits of these lessons more.” Similar ideas were reported by another participant when reflecting on the advertisement campaign in week seven, “I think

groups should include a smaller number of members. With a larger group, not everyone could participate and it was sad to have to choose one of the good ideas. Having the same people in the same groups all the time kills creativity.” Finally, another student drew attention to the low number of participants in the *Mesla Debate* in week seven, “As a suggestion, groups should be formed through a scoring competition from the very first week. One class hour should be set as a presentation time every week and the members of the other groups have to score honestly. In this case, the willingness to participate increases and people are forced to enter the game—something like the TV series *Squid Game*.”

To summarize, this student-centered reflection method helped build instructor-student rapport. The questions gave the opportunity to reflect on the phases of the whole program on the part of the participants. In other words, they served as a means to make students understand that they are the most important stakeholders, their individual ideas are valued and their criticisms or recommendations are taken into consideration.

C. Findings of the Researcher’s Diary

Field notes kept by the researcher facilitated recording observations and reflections about the instructional intervention aimed at promoting critical thinking. Throughout the course of the seven-week instructional intervention, the researcher recorded observations, reflections of both the students and herself, key points during the intervention, as well as views articulated by the students during informal talks or within the class hours. The notes were guided by a number of questions that aimed at reflecting on the reactions of the participants to critical thinking tasks, benefits of specific activities for the students, good points of the classes, challenges experienced by the participants and alternative ways to eliminate problems.

The data were subjected to descriptive analysis through multiple readings in order to let salient points emerge and attain coherence. The researcher organized and coded the data through outlining recurring topics. The final phase included generating and representing themes. In this respect, findings drawn from the researcher’s field notes were discussed around the themes below.

The first theme emerged from the findings included a sense of novelty on the

part of the predominant majority of the participants. They expressed that they never practiced critical thinking in their previous studies or schools when asked about their familiarity with the concept of critical thinking. Only one student reported having experience with critical thinking incorporated lessons and Socratic discussions in his high school philosophy classes a few times, though. For the rest of the class, it was merely a conspicuously new concept. Thus, they were a bit anxious and excited as to what their responsibilities and requirements would be in the coming weeks. Most of the activities, such as debates, discussions, research projects, creative tasks and expressing their views about controversial topics in public without being judged or criticized were perceived to be innovative for the participants. By the same token, some particular topics and the related tasks meant new experiences for the participants. In week six, for instance, the participants studied a text about UNESCO Intangible Cultural Heritage List. While all of them were aware of UNESCO World Heritage Sites and the efforts to protect them, the concept of intangible cultural heritage was a novel one. Likewise, going online to check the items about their own country on the UNESCO ICH list, questioning the fairness and usefulness of the list and also providing other customs or intangible cultural heritage items that were supposed to be on the list were new experiences in L2 classes for the participants. For example, the Iranian student, upon checking his country of items on the list, reported that the list is highly politicized: many of the customs and heritage in Iran actually date back to pre-Islamic Iran and is related to Zoroastrianism, but none of them are included on the list due to heavy censorship by the Islamic Republican regime. To this must be added the fact that presenting the participants with collaborative tasks that required them to communicate with their classmates and negotiate meaning were deemed to be an innovative and encouraging method of cultivating the thinking process. This point was supported by the participants' views. For instance, one student said, "Even though classes involving critical thinking were a bit challenging at first, I think I have improved now because I got used to the instruction in time. This difficulty may be due to the fact that we were not instructed in such classes in elementary and secondary schools, because the education system generally prefers to incorporate vocabulary memorization and heavy grammar instruction instead of such [memory or thought] improving methods."

The second theme was that igniting academic controversy or raising root

questions proved to be an effective method in order to cultivate critical thinking. The participants were offered authentic materials and content that provided opportunities to ignite controversy. Through this, actual controversies were explored, including the notorious practices of the Cultural Revolution in China, public disputes about Syrians living in Turkey, borrowed Arabic and Persian words in Turkish, the use of Arabic letters by a textile company and questioning and criticizing an important NGO in the learning context. These tasks facilitated evoking root questions. The participants perceived the tasks to be meaningful, thought-provoking and related to their experiences, which provided more room for analysis, synthesis, reasoning, inference, questioning, evaluation and elaboration. The controversial content contributed to fruitful classes, with almost all the participants expressing themselves freely on topics in which they initially had some reservations to share in front of others. For a larger number of learners, the ability to think critically is not considered to be innate or inherent in the constitution of the intellect. Instead, students can be trained to think critically through successful pedagogy. By raising root questions and igniting academic controversy, the participants were offered the opportunity to interact with the issues and common debates in society. In addition, the participants with more conservative outlooks were observed to question, criticize, consider unconventional perspectives, reason and evaluate their deep-rooted biases, views and values. An open and free learning setting where the participants discussed, supported opposing viewpoints and challenged opposing positions facilitated promotion of thinking skills while being perceived to be engaging and fun as well. This point was confirmed by one participant as he underlined his view of the pluralistic and welcoming learning setting during informal talks, “I certainly did not feel any discomfort while expressing my thought and did not impose any kind of censorship on myself. I was comfortable enough.”

In addition to this, raising root questions in classes contributed to the intellectual curiosity or inquisitiveness of the participants. From the researcher’s impression, they were observed to develop inclinations to acquire new knowledge, even though this knowledge was not obviously or immediately useful or yielding material gains. The weekly research task on the Cultural Revolution in China was a significant indicator of triggering intellectual curiosity. The study participants asked for an extension of the due date to research about the topic more extensively and

once they were ready, some groups delivered a well-researched presentation dealing with the issue from broader perspectives. Still, it is safe to conclude that the task gave the whole class the opportunity to explore the reasons and results of issues at hand and draw solid conclusions arrived through analysis and inference.

The third theme was that debates helped promote critical thinking in that through debates and competitive tasks engaging and highly communicative contexts were created. Holding debates was perceived to be the most popular task that could keep students interested and actively engaged in classes. Indeed, a debate task which was initially meant to be a group discussion was incorporated into the program in the last week upon receiving positive feedback on the previous debate on renewable energy versus nuclear energy. In the same fashion, a mini-project about selling something impossible to sell, which was not in the weekly procedure in the beginning, was included in the week, as it was noticed through class observations that the participants had great fun working together in competitive, creative and demanding tasks. The participants were observed to skillfully use their metacognitive and cognitive processes hand in hand. For instance, a student articulated his positive opinion on debate tasks, “For the first time, debating whatever the subject is, defending our own ideas, evaluating the ideas that are against us, and filtering them through our mind is a method of self-improvement in itself. We have also been able to do research and look at it from a different perspective with the groups we are in.” The student demonstrates metacognitive awareness and acknowledges self-regulation of their thinking process. The competitive nature of activities like debates and sense of aligning with like-minded fellow classmates contributed to improving language and thinking skills in a fun manner. For instance, one student concluded, “I like the session [debate] about renewable energy. Because we had to defend our opinions, it resulted in an effective brainstorming session.”

Likewise, debates facilitated the encouragement of favorable attitudes towards the incorporation of critical thinking strategies and practices in L2 learning. As the participants collaborated with their peers to complete the tasks and negotiate meaning, they applied a number of critical thinking strategies, including thinking independently, exercising fairmindedness, developing intellectual perseverance, generating or assessing solutions, recognizing contradictions and analyzing or evaluating arguments, interpretations, beliefs or theories. Almost all the debates and

collaborative tasks provided the participants with the opportunity to draw on reasoning, analysis, creativity, evaluation, inference, problem solving and finding reason and result relationships. For instance, the lifeboat debate came out to be a pure critical thinking activity for the participants were able to rely on analysis, inference, reason and good judgement skills to justify their choices depending on the information provided about each person on the boat, such as their age, occupation, marital status, family or character.

From the researcher's impressions and observations, the fourth theme included challenges pertaining to open-mindedness, most specifically in the very first few weeks of the instructional intervention. In the first week, the task was a controversial public debate in Turkey. The participants were asked about their opinions on Syrian refugees living in Turkey and whether it was a good idea to set up separate towns or ghettos for them. Most students expressed discontent with the Syrians living in Turkey. Their answers for the groupwork aligned with prevalent racist and xenophobic sentiments. Only a few took a more humanistic perspective, acknowledging their right to live in equal conditions rather than simply existing. The views expressed by the participants exposed cleavages between conflicting ideas and ideologies prevalent in the society they live. Another topic in the second week was in line with similar reactions from the participants. The theme of the session was changes in language and certain vocabulary. They were asked to apply this case to their own languages during discussion. As expected, many participants were critical of borrowed words in the Turkish language. One notable point was that they expressed criticisms against words borrowed from Arabic and Persian, but not against English or French words. The post-reading task was about a popular Turkish textile company manufacturing t-shirts with Arabic letters on them. The majority of the students expressed discontent with Arabic letters, stating that they were forbidden in Turkey. When the researcher drew one student's attention to the t-shirts manufactured by the same company with Japanese letters on them, he referred to the kinship with the Japanese. In summary, the majority of the answers reflected a nationalistic and somewhat xenophobic tone. They were clearly lacking trait of open-mindedness, which is a key component of an ideal critical thinker, most notably in multicultural and pluralistic societies, as stated in the related literature.

The next theme drawn through the researcher's diary was related to

challenges in language competency and skills experienced during the instructional intervention. Overall, it is worth underlining one prevalent pattern or student habit in forming sentences. Most students failed to recognize their level of English, in other words, that they were learners accompanied by language incompetency with respect to fluency and accuracy. As a result, they tended to form sentences that were equivalent to their level of language proficiency in Turkish, including the use of idioms, figurative expressions, metaphors and structural and lexical complexity. When demanded by the task, most participants had the tendency to stick to a pattern in their native language and did not consider simplifying the structure or changing the sentence altogether. This failure to seek out alternatives or be flexible sometimes left some students overwhelmed to the extent they gave up fulfilling the task altogether, which, in turn, resulted in feelings of despair or incompetency on the part of the learner. Another common challenge experienced by the participants and observed by the researcher is that most participants thought that their level of vocabulary and grammar was weak.

In addition, they suffered from foreign language speaking anxiety and low self-confidence, which culminated especially when they were required to deliver a speech in front of others. Notably, foreign language speaking anxiety was by far the greatest challenge for most of the participants. They reported that it was a mental and psychological challenge to express their ideas while being listened to by their peers and struggling with language barriers at the same time, especially when they had to come to the board. They also explained the reason for that: they were not given such chances in the past. Usually, English classes and almost all the tasks did not involve making public presentations or participating in debates. They mostly studied grammar, memorized vocabulary and did reading activities in class. Almost all the strong ones with good communication skills stated that they improved these skills through international online video games or interaction with other internationals through social media or similar outlets. Although a few female students were as competent as the strong male students, they were reserved and avoided speaking as much as possible, partly because they did not have a chance to improve or test their speaking skills through informal outlets. In addition, some female students, despite having a brilliant record of high performance in written tasks and comprehension activities, were mostly reserved during speaking activities and most notably, debates.

They preferred to read their notes after insistence by the researcher to participate. This might be due to a more conventional upbringing and a reserved outlook in class, influenced by an educational legacy that emphasizes rote memorization and gives little opportunity for students to openly express their ideas without fear of criticism. Some participants also expressed discontent about those who did not communicate in class, stating that this situation disrupted the activities and affected them negatively. Overall, all these learning barriers arrest the development of speaking skills and active participation of students in the classes. In order to eliminate these hindrances and encourage active participation of learners, it takes a lot of time and sustained effort, both for the instructor and the learner.

Despite these challenges, the majority of the participants reported very positive feedback on the classes in general when asked about their overall opinion about the instructional intervention, giving them a chance to reflect together. The instructional intervention helped the students apply some critical thinking strategies and improve their disposition towards being critical thinkers. The participants felt more comfortable and took risks as they enjoyed the positive and collaborative classroom atmosphere and found the tasks engaging as well as abundantly productive. For instance, during the debate on space tourism, one student pointed out the issue about time spent in space and how it negatively affects people. As response, another student from the opposing team came to the board and tried to refute the opponent's view from the perspective of quantum mechanics briefly, even drawing a diagram to support his argument. He also added that it was not possible to explain it in detail in such a short time period, he needed at least two hours to explain it fully. It was notable that the student who came to the board usually kept a low profile in classes, although he was among the strongest students and actively participated in all the groupwork. He rarely took the initiative to join a conversation. However, quantum mechanics was his interest and he had extensively read about the topic. The pedagogical implication was that when students are provided with tasks that demand them to use their prior knowledge and relate to their interests, they are given the opportunity to exploit it and incorporate this existing knowledge into new tasks or situations.

One last detail worth clarifying, which was articulated notably during informal talks, is that the classes have provided the participants with the opportunity

to challenge their views, question or give up their biases and compare their positions with those of others. For instance, during the off the beaten track tourism activity, where they designed a one-day itinerary for Istanbul, the students had the chance to change their views and think outside the box. They experienced the sense of exploring alternative routes or things, rather than sticking to the popular and touristy destinations. One participant succinctly summarized, “When a friend visits the city we live in, we usually take them to the most well-known and touristic places first, then visit lesser-known places where we can spend a good time. We experimented with a different planning approach in this lesson and it was an enjoyable preparation process. However, the most important lesson that this class has taught me is that trying to do what we are doing with pleasure rather than thinking too much and getting stressed can sometimes lead to a better result.” In addition, during the same activity, one student, who was usually disengaged and seemed absent-minded, displayed traits of utmost commitment in the task and accomplished the task successfully. The incidence implies that when provided with right opportunities, language learners tend to take initiatives and exploit circumstances to improve their skills. In line with this, another student articulated during an informal talk while expressing his ideas about advertising a product that is impossible to sell, “I think we have had a lot of benefits. The first one is presentation skills or what I call confidence in delivering presentations. As I observed my classmates and as the instructor said in passing, some of our classmates are capable of speaking English but incapable of expressing themselves in presentations. However, we are just getting started in university life and making presentations and promoting projects are the tasks we need to fulfill throughout our academic life. I think this activity supports this skill. Another benefit is, of course, its contribution to our imagination and creativity. The concept of “doing something that cannot be done” requires broad thinking and challenging our horizons.”

V. DISCUSSION AND CONCLUSION

The present chapter focuses on the discussion and conclusion of the study, analyzing the findings in the context of the research questions that guided the research, while also drawing connections to previous research in the literature. Through the study findings the effects of the instructional intervention on the participants, their thinking and perceptions of critical thinking and language learning are thoroughly discussed. The chapter is organized in four sections: Discussions of Research Question 1 (Section A) and Research Question 2 (Section B), Conclusion (Section C), Limitations of the Study and Suggestions for Further Research (Section D).

The research employed triangulation of quantitative and qualitative data collection measures in order to analyze the findings in response to the research questions raised in the first chapter. The quantitative data collected through the Critical Thinking Disposition Scale (Semerci, 2016) was statistically analyze using SPSS. The qualitative data gathered through student interviews and the researcher's diary were descriptively analyzed.

A. Research Question 1

What are EFL learners' view of the benefits of training in critical thinking strategies in EFL classroom?

The first research question guided the researcher to identify the participants' views and attitudes pertaining to the benefits of training in CT through strategies and related tasks. To this end, qualitative data consisting of the researcher's diary and reflection by the participants were analyzed for an in-depth understanding.

The findings drawn from the data, which emerged through the participants' reflections and the researcher's diary, disclosed that the participants mainly held positive perceptions and views of infusing critical thinking in EFL classes. Overall, their comments on the lessons and class observations by the researcher revealed that

the incorporation of critical thinking practices in language learning setting has contributed to enhancement of critical thinking and learning of English. Specifically, the students reported that they enjoyed the tasks and classes, found them meaningful and relevant and regarded them as different and novel as well. The findings are in line with previous studies (Alpat, 2019; Chen, 2017; Orszag, 2015; Dong, 2015; Y. Lin, 2014; Karakuzular 2013; Liaw, 2007) in that the participants reported positive feedback on the incorporation of critical thinking in L2 classes and that lessons facilitated the creation of a learning atmosphere where critical thinking was enhanced and opportunities to create meaning in L2 were developed. Similarly, previous studies conducted by Schrelmann and Kanatlı-Öztürk (2018), identifying the perceptions of gifted students regarding incorporation of thinking skills, demonstrated that instructional intervention was found meaningful and beneficial by the participants. Another experimental study examining the benefits of a 14-week intervention on gifted students' critical thinking revealed that the participants perceived the significance of developing thinking skills in language learning settings and related the classes to their experiences (Ulaş Taraf, 2022). Likewise, Chen (2017) employed a higher-order thinking approach in EFL classroom and investigated learner perceptions of and attitudes towards thinking in L2. The findings demonstrated that the participants developed favorable attitudes towards learning supported by high-order thinking skills. The respondents also reported certain contributions of the intervention on their learning behavior and performance, including L2 speaking and thinking performance. For instance, during the debate activity about space tourism, one student, who usually seemed dominated by his stronger peers, took the courage to come forward and explained the theory of quantum mechanics through drawings for the opponent team to consider the effect of time spent in space on human body. This single incident suffices to indicate that when shown special interest in each student and listened to them carefully, students become more motivated and active. The student later added that he read extensively on the subject and he could talk about it for hours. For he was interested in quantum physics, it provided a meaningful and relevant context for him to engage in.

As was comprehensively explained in the previous chapter, the study participants exhibited positive comments for the most part of the instruction for they perceived it to be engaging, relevant and meaningful. Findings corroborate basic

tenets of constructivist learning theory, which describes learning an interactive, active cooperative and constructive social process. Prominent theorists of constructivism, including Vygotsky and Dewey, assert that meaningful and significant experiences foster an appropriate learning environment. A well-defined summary of constructivist principles for the learning context by Fosnot (2013, as cited in Ulaş Taraf, 2022) lends support to the respondents:

...a constructivist view of learning suggests an approach to teaching that gives learners the opportunity for concrete, contextually meaningful experience through which they can search for patterns, raise their questions, and construct their models, concepts, and strategies (p. ix).

The participants declared benefits and effectiveness of the new instructional approach for it created opportunities for meaningful use of the target language, contextually appropriate development of critical thinking and a cooperative and interactive social learning process. For instance, some respondents related research projects and presentation tasks to their requirements in their faculties and paid attention to successful fulfillment of the tasks. Likewise, some others underlined immediate benefits of the critical thinking tasks, noting that they had a real purpose to use L2 communicatively, like in real life contexts, which is not possible with the traditional grammar and vocabulary-driven approach. Specifically, the inclusion of hotly debated or controversial topics about current events were found to be engaging for the students. The content was appealing to the students' interests since they follow the news, join current debates around them more than ever through the internet and the media as young adults and regard themselves equal citizens having a say in the matters in their country. As Johnson (1997) claims, implementing academic controversy or arousing intellectual conflict is an effective instructional procedure to set in motion critical thinking in learners. It was clear from the reflections of the participants and the researcher's field notes that the incorporation of controversy about the Syrian civil war victims living in Turkey and the use of Arabic letters by a textile company provided them with the opportunity to speak up and cultivated thinking skills through attentive engagement in learning. They compared not only different viewpoints but had to compromise upon listening to opposing arguments as well, thus they had the opportunity to use Strategy 3,

exercising fairmindedness.

The qualitative data also revealed that the participants reported a sense of novelty and an experience of a remarkably different outlook. To begin with, they had never been exposed to critical thinking in their previous studies. Therefore, undergoing this process in L2 was challenging, yet highly motivating for them. Throughout the seven-week instructional intervention they were required to fulfill numerous tasks that demanded the employment of high cognitive skills. As one participant summarized, they had never experienced some of the tasks before. In addition, the affective side of the tasks, including delivering a presentation in the target language in front of the whole class, taking part in debates and expressing opposing views, was considered to be novel for them. As the findings clearly reveal, they were constantly challenged to think, find solutions, analyze, synthesize new input, interpret, evaluate results and draw conclusions. One student succinctly put it as “the mind is constantly challenged.”

Many tasks incorporated into the study, such as advertising something impossible to sell, writing a letter to a prominent politician to prevent a nuclear power plant and debates about space tourism and nuclear energy versus environmentally clean energy were new experiences in their academic life. Beyer (1997) states some important teacher behaviors to cultivate thinking skills in classroom including, “address thought-provoking and challenging questions and tasks” and “encourage students to produce original, unusual ideas, explanations, and solutions” (p. 14). The research participants’ views and class observations justify effectiveness of Beyer’s recommendations. For instance, the advertisement project was one instance where the participants showed utmost commitment into the task and had the opportunity to exhibit many of the critical thinking strategies. As Halpern (1998) puts it, critical thinking is purposeful, goal-directed and reasoned, employed when solving problems, making inferences, evaluating probabilities and making decisions. Relying on the participants’ reflections, they displayed strong cognitive commitment in order to fulfill the tasks. They defined critical thinking tasks as creative, innovative and thought-provoking, which, in turn, fostered a highly motivating and engaging learning setting.

The final theme drawn from reflection by the students and class observations is that many of them articulated significant improvements in their L2 competence

and learning. Despite the fact that the instructional method placed emphasis on thinking skills due to limitations of the study, the research participants reported that they improved their grammar and specifically, vocabulary. This unintended finding of the study is in line with another empirical study on gifted students (Ulaş Taraf, 2022). The respondents stated improvements in grammar and vocabulary, even though the study was designed to foster thinking skills, thinking strategies, reading and writing skills.

As was previously clarified, their educational background, where accuracy is stressed over fluency and foreign language speaking anxiety, may partly account for unintended and unexpected findings of the research. During classes, some students were observed to be deeply immersed in choosing correct vocabulary or formulating accurate sentences, most notably before speaking tasks, in order not to fail and bear “humiliation” in front of their peers. This point was articulated by one female student, stating that when she struggles with correct vocabulary or grammar, she feels under pressure and panics as everyone watches her, leading to an unaccomplished task. The findings about reported enhancements to vocabulary and grammar additionally suggest that the students perceived improvements for they repeatedly needed to use the target language in meaningful contexts. The input they were exposed to and the output they were expected to provide demanded employment of low frequency academic vocabulary. The students repeatedly worked collaboratively in meaningful, relevant, socially-mediated contexts and used critical thinking components to articulate their thoughts and reflections. Improvements to vocabulary were also noticed through their use of more critical vocabulary, including argument, criteria, criticize, support and many more examples. Using more critical vocabulary was an instance of students’ practicing strategy 28 thinking precisely about thinking: using critical vocabulary.

B. Research Question 2

Does training in critical thinking strategies result in a change in EFL learners’ perceived critical thinking?

The second research question pertains to identifying changes in the research participants’ perceived critical thinking dispositions as a result of strategy training. In line with this aim, quantitative data obtained through the implementations of the

CTHD were mainly referred to for a concise description and summary. To this must be added the fact that qualitative data affords rich descriptions of personal attitudes, experiences, perspectives and beliefs (Patton, 1990 as cited in Niu, et al., 2013). Therefore, for the evaluation of findings, qualitative data consisting of reflection by the participants and researchers' diary were taken into consideration as well.

The results attained through a comparison of the participants' pre-and-post CTHD performances indicated statistically significant improvements, reinforcing the generally held views that instructional programs designed to enhance critical thinking are, for the most part, effective as supported by various empirical studies (Ulaş Taraf, 2022; Alpat, 2019; Lin, 2014; Karakuzular, 2013; Niu et al., 2013). Depending on the positive treatment effect in CTHD, the study concluded that the participants displayed improved performances in the two sub-dimensions of the test: metacognition and open-mindedness.

The first statistically significant improvement was recorded in the metacognition sub-dimension of the CTHD. Metacognition addresses the interrelated process of "knowledge about cognition and regulation of cognition" (Brown et al., as cited in Kutluturk and Yumru, 2017, p. 9). The instructional approach contributed to the metacognitive awareness of the students and facilitated understanding and control of their mental processes. The students seemed to successfully undergo plan, monitor and evaluation phases of their performance when engaged in a learning activity and employed high order executive skills throughout the study.

Most of the content and the context the participants were presented were authentic, enabling them to skillfully employ cognitive and metacognitive processes. Reflection by the participants and the observations of the researcher helped unveil how they engaged in self-regulating their thinking process and development. One view commonly held by the majority of the participants was related to progress in their thinking. For instance, one student positively reported that she was engaged in more thinking and improving as a result. Another student added that a good point of the classes included recognizing their individual progress, while another articulated creative thinking. During the course of the seven-week study, the students were mostly engaged in collaborative tasks through which they could communicate with their peers and negotiate meaning. Most notably, debates functioned as markedly favorable speaking tasks, which involved analysis of arguments, negotiation of

meaning, critical questioning, synthesis, reasoning and evaluation. The participants were introduced to and expected to talk about controversial topics such as the Great Proletarian Cultural Revolution in China, the use of Arabic letters, questioning the fairness and effectiveness of UNESCO Intangible Cultural Heritage List and debates. Indeed, these topics provided the participants with the opportunity to raise root questions. As Dewey (1910) puts it, “perplexity, confusion or doubt” is the root of thinking. Thinking does not dawn on “general principles” or spontaneously; perplexity, confusion or doubt evoke it (p. 13). The ability to raise or pursue deep questions is an indispensable component of developing critical thinking. Furthermore, research reinforces the view that argumentative or disputatious topics contribute to the enhancement of critical thinking skills and dispositions (Yazıcı and Seçgin, 2010; Johnson, 1997).

Semerci (2016) highlights the importance of learning settings that encourage expressing one’s opinions freely without feeling reserved, in nurturing critical thinking. A thoughtful classroom entails learner-centeredness, active participation of learners through collaborative activities and communicative contexts. As stated by Snyder and Snyder (2008), actively engaging learners in the investigation and application of information and collaborative tasks contributes to critical thinking skills. In line with this, one example that was observed during a discussion about ideologies corroborates the above conclusions. One student drew attention to hate against Israel in the Middle East, further stating that the same people benefit from sophisticated technology and high-quality goods and products by Israel. He pointed out that ideologies or prejudices prevent people from living in harmony and collaborating to attain a common good for humanity. The student did not only openly express his opinions freely in a democratic learning setting but did exhibit traits of reasoning and evaluation also.

The nature of critical thinking and metacognition is closely related for development of the former depends on the latter through employment of rigorous cognitive processing. As Van Gelder (2005) states in his sketch of six core lessons from cognitive science for instructing critical thinking, incorporation of learning activities that foster metacognitive awareness facilitates development of thinking critically. Likewise, Halpern (1998) draws attention to flaws with usual instructional methods for teaching content matter and states their failure to cultivate thinking skills

and transfer the skills across multiple domains. The model she proposes, which enables transferring skills across knowledge domains, includes four components, one of which is “metacognitive component used to direct and assess thinking” (p. 451). Findings from the quantitative data imply that the students displayed the skill of regulating their learning and thinking processes. The improvement in metacognition sub-dimension suggests that tasks fulfilled and strategies employed during the experimental study provided the students with the opportunity to enhance their metacognitive skills, resulting in higher-quality thinking and better learning outcomes, as also reinforced by other studies on the effectiveness of metacognitive strategies on different language skills (Kutlurk and Yumru, 2017).

Taken together, the findings suggest that the students seemed to apply metacognition through openly expressing their opinions, applying novel techniques when solving problems, eliminating weak points in their tasks, raising awareness of their behaviors and emotions and some other items in the CTHD. In addition to this, they practiced a great many of the strategies such as S-1 thinking independently, S-3 exercising fairmindedness, S-8 developing intellectual perseverance, S-17 questioning deeply: raising or pursuing root or significant questions, S-18 analyzing or evaluating arguments, interpretations, beliefs or theories, S-19 generating or assessing solutions, S-21 reading critically: clarifying or critiquing texts, S-28 thinking precisely about thinking: using critical vocabulary, S-31 distinguishing relevant from irrelevant facts and S-32 making plausible inferences, predictions or interpretations.

The second statistically significant improvement was recorded in the open-mindedness sub-dimension of the instrument. The participants’ disposition to be tolerant of divergent views and sensitive to the possibility of their inherent biases seemed to have improved. The positive effect of the instructional intervention, accompanied by the use of strategies and whole class procedures, helped them internalize the characteristics of open-mindedness. Drawing on the individual items for open-mindedness sub-dimension of the CTHD, it can be concluded that the students developed a tendency to evaluate issues deeply instead of taking them at face value, developed insights into accumulating substantial data before reaching a decision and exercised flexibility if need be. The result can be attributed to the fact that throughout the study, they had numerous opportunities to be tested on open-

mindfulness. They were required to collect a substantial amount of data before coming to a conclusion, as they were required to justify their decisions or provide well-grounded supporting points. Oftentimes, they needed to exhibit traits of flexibility at various stages of classroom practices. For instance, one student willingly changed his side during a debate activity due to uneven numbers and an unfair balance in favor of academically strong students in the teams and defended the opposite of what he truly supported. Some students were observed to comply with their groups members and yet contributed the process despite holding diverse views. Rich variety of research projects and spoken tasks enabled the students to evaluate things deeply after extensive research, rather than taking them for granted. In addition, they exercised many of the strategies as S-1, thinking independently, S-3 exercising fair-mindedness, S-6 developing intellectual courage, S-17 questioning deeply: raising or pursuing root or significant questions, S-20 analyzing or evaluating: evaluating actions or policies and S-33 evaluating evidence and alleged facts.

Overall, the findings for open-mindedness yield positive results for the students beyond the language classroom in the long term. Harking back to Facione and Facione (1995), manifesting open-mindedness is an indispensable trait of critical thinking, particularly for individuals living in pluralistic and multi-cultural societies. An ideal critical thinker with disposition towards open-mindedness esteems tolerance and understanding of divergent views, lifestyle choices and beliefs of the society in which he or she lives. Likewise, citizens with dispositional tolerance can be predicted to live in harmony with different political, religious, ethnic, political, cultural and family backgrounds. This implicates that exploiting taboo issues, controversial topics or ethical dilemmas in educational environments will provide more room for normalization, tolerance of differences and the elimination of cleavages, which will eventually result in better student engagement and critical thinking. Likewise, research supports the close relationship between critical thinking development and learning environments that enjoy extended freedom. In an empirical study with 5th graders on critical thinking, Eđmir and Ocak (2017, as cited in Önal, 2020) concluded that an educational process that is learner-centered and supportive of diverse ideas is effective in contributing to critical thinking. Providing more room for diverse ideas and encouraging freedom to express their thoughts were

also acknowledged by the research participants, as displayed in the reflection provided by them.

The modest extent of the positive treatment result of the study is consistent with prior experimental studies (Gündüz, 2017; Karakuzular, 2013; Niu et al., 2013; Akyüz and Samsa, 2009). Several parameters can be taken into consideration that account for this result. To begin with, as stated elsewhere, time is a crucial factor in cultivating critical thinking. Prior experimental studies with relatively insufficient periods of instructional intervention yielded similar results (Gündüz, 2017; Niu et al., 2013; Akyüz and Samsa, 2009; İrfaner, 2002). In line with this, critical thinking is not characterized as a set of skills that could be instructed or enhanced through short instructional approaches. Instead, it must be an embedded component of the curriculum across diverse educational settings. As Kong (2006) rightfully captures, “[w]hen practice is involved, time is a crucial factor. More time may be needed for significant changes to take place, particularly in the case of the CT dispositions” (p. 8).

Another important parameter is that it actually takes more time to develop critical thinking dispositions than it does for the cultivation of critical thinking skills. This point is claimed by some researchers upon designing similar experimental studies (e. g. Tung and Chang, 2009; Dong, 2015). Dong (2015) states cultivation of critical thinking dispositions necessitates appropriate content and practice, as well as consideration of the needs and feelings of individual students. Thus, it seems more realistic to expect modest improvements in the disposition to think critically over extended periods through sustained and rigorous effort. Critical thinking dispositions are internal motivations; good critical thinkers are those who are proficient in critical thinking skills and use them in appropriate contexts (Facione, 1990). To the discussion, Halpern (1998) adds, “[Critical thinking] is also an attitude or disposition to recognize when a skill is needed and the willingness to apply it” (p. 452). The extensive discussion of CT skills and dispositions available suggests that critical thinking includes a set of thinking skills on one hand and awareness and disposition to employ them diligently in appropriate time and context on the other.

Next, prior educational background and national education policies or curriculum play a significant role in the development of critical thinking. For the case of Turkey, numerous studies bring to light problems that impede the effective

development and promotion of critical thinking. On one side of the problem lie factors as cognitive insufficiency and negative affective characteristics, while on the other side lie the lack of critical thinking in coursebooks, an exam-driven educational system and in-service training that neglects nurturing critical thinking (Alkın, 2012 as cited in Önal, 2020). In another study, it was concluded that crowded classroom sizes, major problems with the design of the primary education program and a heavily loaded curriculum were listed as barriers to critical thinking (Bektaş et al., 2012 as cited in Önal, 2020). Teaching materials, most specifically textbooks, in state schools fail to contribute to a thoughtful classroom. Research calls for a comprehensive reorganization and adaption of textbooks used in public schools to include more room for thinking critically, as demanded by the 21st-century educational settings (Yağcılar, 2010). As can be concluded from prior discussions and the extensive body of research, fostering critical thinking entails a long time commitment accompanied by well-trained teachers, well-designed educational programs and materials.

Another point that deserves due attention, as important as the former, is the need to integrate critical thinking into all phases of education, not just into tertiary level. Critical thinking, by nature, demands high cognitive processing and can only be fostered gradually over extended periods of time. Although fostering thinking skills of young EFL learners poses some challenges, such as age, the abstract nature of thinking skills and the relatively recent development of field-specific research debate (Tehrani and Razali, 2018), research indicates the importance of integrating critical thinking into primary education, where more pronounced improvements were recorded with primary school pupils than with higher grades (e. g. studies by Arı, 2020; Şenel, 2019; Korkmaz, 2018; Acar, 2018; Arı et al., 2019 as cited in Kestel, 2022). Besides, integrating CT into secondary school EFL classes was found to yield favorable results for the development of thinking skills as well as language skills, motivation and self-awareness (e.g. Bağ and Gürsoy, 2021).

To this must be added the following fact that PISA 2018 results for Turkey indicate that 15-year-old students fell behind the OECD average in reading, mathematics and science. While the OECD average for Level 2 reading proficiency was 77%, it was 74% in Turkey. Sadly, only 3% of 15-year-olds were top performers in the PISA reading test, attaining Level 5 or 6 when compared to the OECD average

of 9%. It clearly points out that only 3% high achievers can comprehend long texts, deal with abstract concepts and distinguish fact from opinion (see OECD Turkey Report, 2018). The findings of PISA implicate that barriers that impede the cultivation and development of thinking skills are far more serious than it may seem on the surface. It is safe to conclude, therefore, that current educational practices and pedagogy that are fraught with overcrowded classrooms, teacher-centered and exam-driven instruction, rote learning and an unfair balance against disadvantaged groups fail to address fostering critical thinking. Thus, well-planned structural improvements need to be initiated in the curriculum and teaching practices in public schools in order for students to catch up with international standards and meet the demands of the century.

In brief, it is safe to conclude that training in CT strategies has yielded favorable findings for fostering higher order thinking skills effectively. Yet, it must be noted that expecting rapid improvement would be unrealistic given the nature of critical thinking, which accumulates through successive additions. Therefore, in order for the effective development of thinking skills and dispositions, designing instructional interventions that are implemented over long periods of time, incorporated across the curriculum and integrated into specific programs addressing the needs of individual learners are deemed imperative.

C. Conclusion

“Enlightenment is man’s emergence from his self-imposed nonage. Nonage is the inability to use one’s own understanding without another’s guidance. This nonage is self-imposed if its cause lies not in lack of understanding but in indecision and lack of courage to use one’s own mind without another’s guidance. Dare to know! (Sapere aude.) “Have the courage to use your own understanding,” is therefore the motto of the enlightenment.” (Kant, 1784).

The above famous classic is a powerful statement of the requirement for thinking in a society without depending on others for this faculty. It states once for all a point of view that in the 21st century we are living the capacity to think independently and reasonably is notably a fundamental requirement demanded in all phases of one’s life cycle. In line with this, one of the most essential functions of

mass education is to yield well-informed students who are able to think in accordance with reason and independence and apply this skill to real-life problems. Throughout the 80s, the U.S. educational system was undergoing a crisis with educators and officials putting the blame on one another. The problem was, in part, caused by students' accumulation of knowledge that would be deemed redundant in real life situations. The solution offered was incorporation of critical thinking into the national education, which brought about a remarkable change in national education policies (Lipman, 1990 as cited in İrfaner, 2002). Likewise, as discussed earlier, PISA results for Turkey reveal that students fall behind the OECD standards in terms of employing thinking and reasoning skills.

This research has come into existence from the researcher's conclusion that a successful pedagogy can supply a basis for the promotion of critical thinking in language classes. For traditional teaching methods fall short of cultivating this fundamental skill, it is important to teach students how to think instead of what to think. This involves enriching the relevant methods through collaborative tasks and adopting a learner-centered teaching approach. As supported by research, educational settings that are teacher-centered and do not comply with democratic ideals or practices are considered hindrances to the development of critical thinking skills (Sağlam and Büyükuysal, 2013). Incorporating critical thinking into L2 programs through strategies that create meaningful and relevant tasks can contribute to enhancement of critical thinking skills and dispositions (Orszag, 2015).

This small-scale empirical study purported to investigate the effectiveness of training in critical thinking strategies in EFL learners' perception of critical thinking dispositions and their experience in the intervention. The research employed triangulation of quantitative and qualitative data collection measures in order to analyze the findings in response to the research questions raised in the first chapter. The quantitative data collected through CTHD (Semerci, 2016) was statistically analyzed using SPSS. The qualitative data gathered through student interviews and the researcher's diary was descriptively analyzed. The analysis of the findings reveals promising outcomes about an infusion method that utilizes critical thinking strategies. A brief summary of the conclusions that might be categorized in response to the research questions is presented below:

- the participants reported favorable views about the benefits of training in CT

strategies;

- the classes that integrated critical thinking activities through strategies have resulted in positive perceptions towards the instructional intervention;
- the participants have developed positive attitudes towards and views of the inclusion of critical thinking practices in L2 classes;
- the participants have regarded the critical thinking incorporated classes to be enjoyable, motivating, meaningful and relevant;
- the participants have perceived practices and tasks in the lessons to be different, challenging and novel;
- the participants have reported benefits to their English competency, speaking skills, vocabulary and grammar as a result of the instructional intervention;
- the instructional intervention has positively impacted the participants' critical thinking and dispositions;
- the participants have performed better in the post-CTHD after the instructional intervention; they have displayed increased scores in the metacognition and open-mindedness sub-dimensions of the questionnaire;
- the participants have practiced a lot of the critical thinking strategies and had the opportunity to apply many of them in real-life situations throughout the study;
- the participants have had the opportunity to challenge their existing views, regulate and have control over their thinking, discuss and share opinions with their peers, articulate their ideas openly, practice problem-solving, evaluate, make inferences and predictions, synthesize, question, justify and reflect;
- the participants have developed awareness about the significance of critical thinking in education, which would later enable them to grow as effective critical thinkers in life.

In conclusion, the current instructional intervention aimed to analyze to what extent a critical thinking-infused program benefits EFL learners and results in changes in their perceptions of CT dispositions. The tasks and activities designed provided meaningful and relevant opportunities for the cultivation of critical thinking

and authentic L2 use. Collaborative learning tasks allowed the students to exchange ideas, foster creativity, negotiate meaning, articulate their views, regulate their thinking processes and reflect on their perceived improvements. The study affirms also that instructional interventions are usually effective in cultivating critical thinking. The modest magnitude of the positive treatment effect suggests that critical thinking can be enhanced through designing instructional interventions, yet it is unrealistic to expect drastic increases in a short period of time. Therefore, it is impossible to avoid the conclusion that developing skillful thinking is marked by great effort needing long time commitment over extended periods.

D. Limitations of the Study and Suggestions for Further Research

It is important to admit that the current study is not without its limitations. A number of factors, including sample size and characteristics, length of the intervention and research context and lack of a pilot study have had negative effects on the process and the results. To begin with, the number of research participants was relatively low, as the research sample consisted of 16 participants. This poses the risk of population generalizations, rendering it difficult to generalize the study findings over diverse contexts. Similarly, the predominant majority of the participants included Turkish EFL learners in a single educational institution. In order to eliminate these issues, similar studies with larger sample sizes and more heterogeneous samples could be conducted.

The second limitation relates to the length of the treatment. It is evident from the vast body of research on critical thinking that longer interventions have the potential to yield fruitful results in cultivating critical thinking in learners. For instance, the meta-analysis study Niu et al., (2013), which examined the quantitative research carefully conducted between 1994 and 2009, found out that “the most effective instructional intervention was single intervention longer than 12 weeks” (p. 124). Due to several factors beyond the researcher’s capacity to alter, the current study had to last seven weeks. In other words, the study was carried out at a university context where a pre-planned syllabus and established curriculum had to be applied. Data collection and contact hours for the instructional intervention had to be restricted to avoid setbacks in pacing and fundamental disruptions to the institutional program. In addition, the university applies a modular system consisting of eight-

week modules. Students have final exams in the final week of each module and whether students pass or fail, the groups are mixed in new modules meaning that it would be unrealistic to carry out the same study with the same students for a longer period of time. In this respect, the length of the intervention for this study was deemed insufficient for effectively cultivating critical thinking and obtaining tangible results. In order to gather more comprehensive data and provide deeper insights into the development of critical thinking, it would be more productive to conduct similar studies ideally adopting a longitudinal research design.

Finally, the last limitation relates to not piloting the questionnaire. As some of the items on the questionnaire included abstract concepts and ideas, interpretation of them by the participants might be flawed. Given that the participants have had very little, if not any, previous experience in responding to surveys, most notably in critical thinking, the whole task of fulfilling the instrument and understanding the conveyed thoughts successfully were overwhelming for them. A few complained that they found some questionnaire items ambiguous. All these challenges highlight the importance of piloting data collection instruments to trial them before embarking on a course of scientific research. Therefore, it is suggested that future studies consider this issue to draw more solid conclusions and improve upon the limitations of the current study.

To sum up, the study findings imply positive results regarding the incorporation of critical thinking into academic EFL classes at the tertiary level of education. As a next step, future studies may take into account such affective factors of research participants as gender, motivation, educational and social background, learning styles and age in research design. Additionally, researchers may consider integrating an objective test along with participants' perceived level of critical thinking and use these two methods in combination to obtain more comprehensive data and draw well-grounded conclusions.

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APPENDICES

APPENDIX A: Istanbul Aydin University Ethical Committee Consent Form

APPENDIX B: Istanbul Commerce University Ethical Committee Consent Form

APPENDIX C: Critical Thinking Disposition Scale (CTHD) Consent Document

APPENDIX D: Critical Thinking Disposition Scale (CTHD)

APPENDIX A: Istanbul Aydın University Ethical Committee Consent Form

Evrak Tarih ve Sayısı: 13.03.2023-80986



T.C.
İSTANBUL AYDIN ÜNİVERSİTESİ REKTÖRLÜĞÜ
Lisansüstü Eğitim Enstitüsü Müdürlüğü

Sayı :E-88083623-020-80986
Konu : Etik Onayı Hk.

13.03.2023

Sayın Elif ÇAM

Tez çalışmanızda kullanmak üzere yapmayı talep ettiğiniz anketiniz İstanbul Aydın Üniversitesi Etik Komisyonu'nun 02.03.2023 tarihli ve 2023/02 sayılı kararıyla uygun bulunmuştur. Bilgilerinize rica ederim.

Dr.Öğr.Üyesi Mehmet Sencer GİRĞİN
Müdür Yardımcısı

Bu belge, güvenli elektronik imza ile imzalanmıştır.

Belge Doğrulama Kodu : BS94C9NS4Z Pin Kodu : 28182

Belge Takip Adresi : <https://www.turkiye.gov.tr/istanbul-aydin-universitesi-ebys?>

Adres : Beşyol Mah. İnönü Cad. No:38 Sefaköy , 34295 Küçükçekmece / İSTANBUL

Telefon : 444 1 428

Web : <http://www.aydin.edu.tr/>

Kep Adresi : iau.yazisleri@iau.hs03.kep.tr

Bilgi için : Tuğba SÜNNETÇİ

Unvanı : Yazı İşleri Uzmanı

Tel No : 31002



APPENDIX B: Istanbul Commerce University Ethical Committee Consent Form



İSTANBUL TİCARET ÜNİVERSİTESİ İSTANBUL TİCARET ÜNİVERSİTESİ REKTÖRLÜĞÜ

Tarih: 27/02/2023 17:29
Sayı: E-65836846-044-280132
REKTÖRLÜK



T.C.

Sayı : E-65836846-044-280132
Konu : Etik Onayı

27.02.2023

Sayın Öğr. Gör. Elif ÇAM

İlgi : 25.01.2023 tarihli dilekçeniz.

İlgi yazınız ile "Promoting Critical Thinking Skills of EFL Learners: A Case Study at a Foundation University" isimli çalışmanın anket çalışması, mülakat soruları ve sınıf içi uygulama çalışmalarına Etik Kurul onayı talep edilmektedir.

Adı geçen ve ekte yer alan anket çalışması, mülakat soruları ve sınıf içi uygulama çalışması, Üniversitemiz Etik Kurulunca incelenerek etik tanım, değer ve ilkelere aykırı bir düzenleme tespit edilmediği, önerilen anket çalışması, mülakat soruları ve sınıf içi uygulama çalışmalarının etik kurallara uygun olduğu ve etik onayının verildiği ifade edilmiştir.

Konuya ilişkin bilgilerinizi rica ederim.

Prof. Dr. Ömer ÇAHA
Rektör Yardımcısı V.

Ek: Etik Onaylı Anket Çalışması, Mülakat Soruları ve Sınıf İçi Uygulama Çalışması

Bu belge güvenli elektronik imza ile imzalanmıştır.

Belge Doğrulama Kodu: 0934D0E7-D0C7-4EAF-8AC1-7C16F6E7B56D
Adres: Örnektepe Mah. Imrahor Cad. No: 88/2 Beyoğlu/İstanbul
Telefon No: 444 04 13 / 4580 Faks No: 0212 320 70 11
E-Posta: boz@ticaret.edu.tr İnternet Adresi: www.ticaret.edu.tr
KEP Adresi: ticaretuniversitesi@hs02.kep.tr

Belge Doğrulama Adresi: <http://e-belge.ticaret.edu.tr>
Ayrıntılı Bilgi İçin: Bahadır ÖZ
Büro Personeli
Telefon No: 444 0 413 - 4580



APPENDIX C: Critical Thinking Disposition Scale (CTHD) Consent Document

Elif Çam

Gönderen: Nuriye SEMERCİ <nsemerci@bartin.edu.tr>

Gönderildi: 4 Ekim 2022 Salı 11:41:04

Kime: Elif Cam

Konu: Re: Kritik Düşünme Ölçeği

Merhaba Elif Hanım,

Ölçeği kullanabilirsiniz. Ancak Kritik Düşünme Ölçeği revize edilerek 2016 yılında Turkish Studies dergisinde yayınlandı. İsterseniz onu kullanabilirsiniz. Kararınızı bana bildirirseniz sevinirim. İyi çalışmalar.

Nuriye SEMERCİ

Kimden: "Elif Cam" <elifcam@ticaret.edu.tr>

Kime: "Nuriye SEMERCİ" <nsemerci@bartin.edu.tr>

Gönderilenler: 3 Ekim Pazartesi 2022 21:27:25

Konu: Kritik Düşünme Ölçeği

Merhaba Sayın Prof. Dr. Nuriye Semerci,

İstanbul Aydın Üniversitesi, İngiliz Dili ve Eğitimi alanında Yüksek Lisans tezimi yürütüyorum.

Tezim kapsamında İngilizce Hazırlık öğrencilerinin eleştirel düşünme eğilimlerini saptamak amacıyla, "Kritik Düşünmenin Mikro Öğretim Dersinde Eleştiri Becerisini Geliştirmeye Etkisi" başlıklı doktora çalışmanızda geliştirdiğiniz Kritik Düşünme Ölçeği'ni kullanmak için izninizi istiyorum.

Ayracağınız zaman için teşekkür ederim.

Saygılarımla,

Elif Çam

APPENDIX D: Critical Thinking Disposition Scale (CTHD)

1. Yaptığım işlerde ya da herhangi bir konuda zayıf olduğum noktalar varsa gidermeye çalışırım.
2. Davranışlarımın diğer kişileri nasıl etkilediğinin farkındayım
3. Anlatılanlarda ya da okuduklarımda bilgiler arasındaki zıtlıkları bulabilirim.
4. Alanımla ilgili bilgileri genişletmek için uğraşırım.
5. Problemin nasıl çözüleceğine karar verdikten sonra mutlaka o çözümü denerim
6. Benim için anlamlı olan bilgileri ve fikirleri düzenli bir şekilde organize edebilirim
7. Herhangi bir konuda düşündüğüm zaman bir kalıba bağlı kaldığımı fark edersem bunu aşmaya çalışırım
8. Duygularımın nasıl ve ne zaman beni etkilediğinin farkındayım.
9. Herhangi bir konuda çalışma yaparken karşıma çıkan belirsizlikleri gidermeye çalışırım.
10. Çalışmalarımda uygun kriterleri, modelleri ya da kuralları uygulam
11. Sözlü anlatımları kurallarına uygun olarak yapabilirim.
12. Herhangi bir şey hakkındaki düşüncelerimi açıkça ifade ederim.
13. Yaşamın diğer alanlarına ve farklı düşüncelerine karşı merak duyarım.
14. Problemleri çözerken orijinal çözüm yolları kullanırım.
15. Fikirlerin ve düşüncelerin güvenilir olup olmadığını kontrol ederim
16. Bir ödev hazırlarken gerekli olan tüm bilgilere ulaşmaya çalışırım
17. Problemin çözümü için birden fazla farklı çözüm yolu önerebilirim.
18. Herhangi bir çalışmaya başlamadan önce verdiğim kararların beni nereye götüreceğini düşünürüm
19. Çalışmalarımı değerlendirirken mutlaka ölçütlerden yararlanırım
20. Herhangi bir konuda ihtiyacım olan bilgiye nasıl ulaşacağımı bilirim
21. Olayları ya da bilgileri karşılaştırırken ayrıntılara inebilirim
22. Öğrendiklerimi diğer alanlara uygulayabilirim
23. Diğer insanların fikirlerini dikkatli bir şekilde dinlerim
24. İlgilendiğim konu ile ilgili olmayan bilgilerin farkında olur ve onları ayıklarım
25. 25. Fikirlerini dinlediğim ya da okuduğum kişinin ne anlatmak istediğini anlayabilirim
26. Herhangi bir yazı okuduğumda anafikri çabucak bulabilirim
27. Kararlarımı vermeden düşüncelerimi kontrol ederim
28. Derslerde tartışmalara katılmaktan zevk alıyorum
29. Herhangi bir işe başlamadan ya da karar vermeden önce nasıl yapacağımı düşünür ve planlarım
30. Problemi çözmeden önce değişik açılardan görmek için uğraşırım
31. Karşıma çıkan zorlukları kolayca tanıyabilirim
32. Düşünmeden önce konuşmam ve yazmam
33. Herhangi bir olayın ardında yatan nedenleri araştırırım
34. Bilgileri analiz ederken değişiklikleri göz önüne alırım
35. Kararlarımdan önce uygun verileri toplarım

36. Derslerime ve çalışmalarına karşı dikkatimi yoğunlaştırabilirim
37. Neden ve sonuçlarıyla problemleri objektif olarak analiz edebilirim
38. Bilgi, düşünce ve fikirleri daha iyi anlamak için sorular sorabilirim
39. Yaptığım ödevlere ya da işlere dört elle sarılırım
40. Yaptığım işlerin ne olduğunu daha iyi anlayabilmek için onu önce parçalara ayırır sonra tekrar birleştiririm
41. Kendime güvenirim
42. Derslerimle ve derslerimin gerekleriyle sürekli ilgilenirim
43. Herhangi bir işle uğraşırken bir engelle karşılaştığımda pes etmem.
44. Bir ödevi, projeyi ya da işi bitirdikten sonra onu değerlendiririm
45. Yaptıklarımı genelde kusursuz ve tam yaparım.
46. Çalışmalarımda kendi kendimi motive edebiliyorum
47. Hiçbir şeyi dış görünüşüne göre değerlendirmem
48. Karar vermeden önce yeterli veri toplarım
49. Gerektiğinde esnek davranmasını bilirim

RESUME