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TURKISH EFL PRE-SERVICE TEACHERS' PERCEPTIONS ON CRITICAL THINKING

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ETİK BEYANNAMESİ

Pamukkale Üniversitesi Eğitim Bilimleri Enstitüsü'nün yazım kurallarına uygun olarak hazırladığım bu tez çalışmasında; tez içindeki bütün bilgi ve belgeleri akademik kurallar çerçevesinde elde ettiğimi; görsel, işitsel ve yazılı tüm bilgi ve sonuçları bilimsel ahlak kurallarına uygun olarak sunduğumu; başkalarının eserlerinden yararlanılması durumunda ilgili eserlere bilimsel normlara uygun olarak atıfta bulunduğumu; atıfta bulunduğum eserlerin tümünü kaynak olarak gösterdiğimi; kullanılan verilerde herhangi bir tahrifat yapmadığımı; bu tezin herhangi bir bölümünü bu üniversitede veya başka bir üniversitede başka bir tez çalışması olarak sunmadığımı beyan ederim.

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ÖZET

Türk İngilizce Öğretmen Adaylarının Eleştirel Düşünmeye İlişkin Algıları

COŞKUN, Duygu

Yüksek Lisans Tezi, İngiliz Dili Eğitimi Bilim Dalı
Tez Danışmanı: Dr. Öğr. Üyesi Pınar KARAHAN
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Bilgi çağında yaşamak bireylerin her şeye akıl ve şüpheyle yaklaşmasını gerektirmektedir. Bu sebeple eleştirel düşünme bugünlerde hayatın her alanında uygulanabilecek önemli bir beceri haline gelmiştir. Eleştirel düşünme becerilerine sahip olmak bireylerin mantıklı, analitik ve akılcı vatandaşlar olmalarına yardımcı olmaktadır. Bu yüzden bu çalışma İngilizce öğretmenliği öğrencilerinin eleştirel düşünme eğilimlerini ve eleştirel okuma öz-yeterliliklerini ölçmeyi amaçlamaktadır. Aynı zamanda bu çalışma öğrencilerin eleştirel düşünme eğilimlerinin ve eleştirel okuma öz-yeterliliklerinin cinsiyet, sınıf, başarı ve okuma sıklığına göre ne ölçüde değiştiğini bulmayı hedeflemektedir. Ölçme araçları eleştirel düşünme eğilimi ölçeği, eleştirel okuma öz-yeterliliği ölçeği ve görüşmeyi içermektedir. Bir devlet üniversitesinde uygulanan çalışmada İngilizce Öğretmenliği bölümünde okuyan 118 öğretmen adayı anketlere katılmıştır. Açık uçlu görüşmeye katılan 36 öğrenci vardır. Toplanan veriler t-test, korelasyon ve Anova gibi istatistiksel yöntemler ve içerik analizi yöntemi kullanılarak analiz edilmiştir. Çalışmanın sonuçlarına göre eleştirel düşünme eğilimleri ve eleştirel okuma öz-yeterlilikleri orta seviyede bulunmuştur. Öğrencilerin akademik başarısı ya da cinsiyetinin eleştirel düşünme eğilimleri ve eleştirel okuma öz-yeterlilikleriyle önemli düzeyde ilişkili olmadığı, okuma sıklıklarının eleştirel düşünme eğilimlerini ve eleştirel okuma öz-yeterlilikleriyle ilişkili olduğu anlaşılmıştır. Ayrıca öğrencilerin sınıf düzeyinin eleştirel okuma öz-yeterlilikleriyle önemli düzeyde ilişkili olduğu saptanırken, öğrencilerin sınıf düzeyi ile eleştirel düşünme eğilimleri arasında önemli düzeyde bir ilişki bulunamamıştır. Aynı zamanda, öğrencilerin eleştirel düşünme eğilimleri ile eleştirel okuma öz-yeterliliği arasında anlamlı bir pozitif ilişki olduğu bulunmuştur. Bunun yanı sıra, açık uçlu görüşmeye verilen öğrenci cevaplarının

sonuçları öğrencilerin eleştirel kavramı üzerine farkındalık sahibi oldukları, ancak eleştirel düşünme ve okuma becerilerinin geliştirilmesi gerektiğini ortaya çıkarmıştır. Nicel ve nitel veri analizlerinin sonucu olarak, eleştirel okuma ve düşünme becerilerine yabancı dil öğretmen eğitimi alanında daha fazla önem verilmesi gerektiği anlaşılmıştır. Sonuç olarak, bu çalışmanın öğretmen eğitimcilerine ve İngilizce öğretimi program geliştiricileri için faydalı olacağı düşünülmektedir.

Anahtar kelimeler: Eleştirel düşünme, eğilim, eleştirel okuma, öz-yeterlilik, akademik başarı, öğrenci algıları

ABSTRACT

Turkish EFL Pre-service Teachers' Perceptions on Critical Thinking

COŞKUN, Duygu

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Living in a world of information required individuals to approach everything with reasoning and suspicion. That is why, critical thinking has become an important skill to be practiced in every field of life nowadays. Having critical thinking (CT) skills could help individuals to become reasonable, analytical and rational citizens. Therefore, this current study intends to measure Turkish EFL pre-service teachers' critical thinking disposition levels and critical reading self-efficacy levels. This study also aims to find out to what extent critical thinking disposition levels and critical reading levels of Turkish EFL pre-service teachers change in terms of gender, grade level, success, and reading frequency. The instruments included in Critical Thinking Disposition Scale, Critical Reading Self Efficacy Scale and a semi-structured interview. 118 students studying at the department of English Language Teaching at a state university participated in the scales. There were 36 students participating in the semi-structured interview. The data were analyzed by using statistical methods such as t-test, correlation and Anova and content analysis method. According to the results of the present study, the students' critical thinking disposition and critical reading self-efficacy levels found to be at mid level. Moreover, it was grasped that Turkish EFL pre-service teachers' critical thinking disposition levels and critical reading self-efficacy changed in terms of reading frequency while gender and academic achievement did not have a significant relationship with their critical thinking disposition levels or critical reading self-efficacy levels. Besides, grade level of Turkish EFL pre-service teachers had a significant relationship with their critical reading self-efficacy levels while it did not have significant relationship with their CT disposition levels. Furthermore, it was found out that there was a significant positive relationship between students' critical thinking dispositions and critical reading self-efficacy levels. In addition, the results of the

semi-structured interviews revealed that the students were aware of the concept of critical, but their critical thinking and reading skills needed to be developed. As a result of analysis of quantitative and qualitative data, it is concluded that more importance should be given to critical reading and thinking skills in the field of foreign language teacher education. Consequently, it is believed that this study would be helpful for teacher educators and English language teaching programme developers.

Keywords: Critical thinking, disposition, critical reading, self-efficacy, academic achievement, student perceptions

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LIST OF ABBREVIATIONS

ANOVA - Analysis of Variance

CR - Critical Reading

CRSES - Critical Reading Self-Efficacy Scale

CCTDI-T - California Critical Thinking Disposition Inventory - Turkish

CT - Critical Thinking

CTD - Critical Thinking Disposition

CW - Critical Writing

EFL - English as a Foreign Language

ELT- English Language Teaching

GPA - Grade Point Average

CHAPTER 1: INTRODUCTION

In this chapter, background to the study, the statement of the problem, the significance of the study, purpose of the study, and research questions are presented in order.

1.1. Background to the Study

The term ‘critical thinking’ (CT) has been raised with the purpose of cultivating critical and democratic individuals for nations (Ten Dam & Volman, 2004). Therefore, critical thinking and teaching critical thinking have become one of the educational aims for societies. Paul (2005) suggested that the main focus of both individual achievement and national demands should be on critical thinking skills. In a similar vein, Pascarella and Terenzini (2005) stated that people should acquire the skills of handling information, judging opinions, and deducing suggestions in a growing era of information. Likewise, Dewey (1933) pointed out that learning how to think is the main goal of education. Besides, Willingham (2008) noted that schooling aims to equip students with critical thinking.

CT was defined as “the art of thinking about your thinking while you are thinking in order to make your thinking better; more clear, more accurate, or more defensible” (Paul et al., 1989, p. 91). Furthermore, Cottrell (2005) remarked that people do not inherit critical thinking naturally or it is not a characteristic feature; instead it is a conscious way of thinking with strong arguments in mind. Even if everyone thinks that it is a natural thing to do, we have biases in our minds while thinking (Paul & Elder, 2008). Processing the information by reasoning and thinking critically instead of directly accepting it as a truth has been an accepted fact. Also, Cottrell (2005) noted that background research is the main source for critical thinking. Besides, Teo (2014) suggested approaching technology with a skeptical and critical eye because of its open data to everyone. In a similar vein, Işık (2010) remarked that people and especially students should have a critical eye and ear to the the questions of ‘what, why and how’ to distinguish what is needed from the pile of information gathered from every possible source. What is more, Willingham (2008) remarked that critical thinking requires practice and knowledge of the field. Additionally, Connor-Greene and Greene (2002) stated that critical thinking does not only help us in academy but also survive in this era which is full of knowledge. That is why learning critical thinking seems quite necessary for individuals.

According to Işık (2010), the fact that 'critical' may create negative associations in people's minds may result in a misunderstanding. Halpern (2013) also pointed out that both positive and negative features should be built up for the appraisal of critical thinking. Therefore, critical thinking was described as guiding and regulating yourself without having any biases (Paul & Elder, 2007). Fisher and Scriven (1997) underlined that critical thinking is the ability of analyzing previous knowledge, impressions, understandings and reasoning. To sum up, critical thinking was depicted as guiding, regulating, controlling, and adjusting yourself on your own (Elder & Paul, 2008). Accordingly, Halpern (1998) remarked that societies are lack of individuals who can discriminate the useful and valuable content from the unnecessary and inaccurate ones and use it in a distinctive way. That is why, critical thinking is a crucial need for individuals and societies.

1.2. Statement of the Problem

Previous research shows that there are many studies revealing the possible advantages of critical thinking skills for learners and teaching. For instance, Alagözlü (2007) associates Turkish students' inability to share their ideas in English as a Foreign Language (EFL) writing with their lack of knowledge in critical thinking and their low critical thinking skills. Additionally, Teo (2014) recommends teachers to guide students through critical thinking for the massive information they are exposed to. In a similar vein, Ataç (2015) mentions the effects of globalization and modernization on public and global issues as a trigger for language teachers to cover critical thinking in their research studies. According to Larking (2017), the incontrollable and easily fallible content of the internet creates a needed assessment of this information by EFL students who therefore should be taught critical reading strategies. Moreover, he asserts that as long as it is popular, any kind of information could be shared on the internet without looking its accuracy. Furthermore, Trilling and Fadel (2009) underline the importance of using digital means and critical thinking and information literacy skills to be able to live in and cope with loads of information in the 21st century. Likewise, Norris (1985) describes critical thinking as the crucial and inseparable unit of education rather than only an alternative for teaching and he remarks that educated individuals must be equipped with critical thinking skills. In a similar vein, American Philosophical Association (1990) remarks that like reading and writing, critical thinking is important due to its applicability in learning and so many areas of life. However, traditional education system causes students to have difficulties in adapting into academic environment and critical thinking skills in universities (Paul &

Elder, 2000). Namely, Gupta (2005) specifies that there is an inadequate performance of teaching and assessing CT in colleges and curricula. Similarly, Trilling and Fadel (2009) point out that critical thinking is a neglected skill in schools, colleges and universities. Therefore, it can be claimed that there is a need to observe and measure students' CT levels and knowledge about CT in schools and then to teach and assess CT accordingly. As a matter of fact, students' need to learn critical thinking stemmed from the fact that easier access to information does not meet their needs in their education (Stupnisky et al., 2008). Furthermore, Walz (2001) points out that even if the Internet is quite accessible and appealing for everyone, its content which can be provided by anyone does not seem reliable. Indeed, aforementioned researchers imply that pondering upon the given input rather than believing as it is would be more reliable for students' learning. Likewise, Chapman (2001) claims that memorizing and absorbing knowledge rather than constructing one's own learning in an active way may create difficulties for actual learning. As a matter of fact, the significance of critical thinking for classroom, workplace, and particularly for real life situations is well-known (Ornstein et al., 2011). By all means, there is a need to raise awareness about the importance of critical thinking, teaching and assessing CT. Hence, it is necessary to explore students' critical thinking dispositions, critical reading self-efficacy levels and perceptions on CT.

1.3. Significance of the Study

Considering previous studies and literature on critical thinking issues in ELT, it is found out that there are not enough studies on assessing CT and CR. Besides, most of the previous studies focus on critical thinking or critical reading (CR) separately as it is underscored by Güner (2015). The importance of CT in terms of learning, teaching and assessing may not be precisely comprehended without assessing CT dispositions, CR self-efficacy levels and perceptions of students. Teaching or assessing CT can be integrated into lessons by understanding students' perceptions and current levels of CT dispositions and CR self-efficacy levels. Studies on measuring and revealing students' perceptions, dispositions and self-efficacy on CT and CR are limited. What is more, critical thinking has been a crucial skill in 21st century (Trilling & Fadel, 2009). Therefore, this study intends to explore students' critical thinking dispositions, critical reading self-efficacy levels, and students' perceptions about CT.

What is more, most of the studies conducted in different departments have Turkish as medium of instruction. In this regard, Tang (2016) remarks that English language

teaching programs should attach more importance to critical thinking skills along with the improvement of English language skills. English teachers are expected to teach four skills including reading, writing, listening, and speaking. In this regard, the study on teaching and assessing CT with the help of these skills could enhance awareness on this issue. Therefore, the present study is carried out in an ELT department which uses English as medium of instruction.

1.4. The Purpose of the Study

In line with the abovementioned research studies, the present study aims to reveal Turkish EFL pre-service teachers' critical thinking disposition levels and critical reading self-efficacy levels. In this way, it is intended to investigate Turkish EFL pre-service teachers' perceived CT competency and self-efficacy levels. Additionally, the study intends to explore the relationship of academic success (gpa) with Turkish EFL pre-service teachers' critical thinking dispositions or critical reading self-efficacy levels if there is any. Furthermore, the study aims to investigate whether grade level, gender and reading frequency have any relationship on students' critical thinking disposition and critical reading self-efficacy levels. This study also aims to find out the relationship between students' critical thinking disposition levels and critical reading self-efficacy levels. What is more, students' perceptions about critical thinking are intended to analyze in this study. Hence, this study is expected to pave a way for awareness among prospective English language teachers who might teach critical reading and writing strategies in their future classes and to give implications for researchers who could make further studies on critical thinking. Therefore, this study aimed to investigate the following research questions.

1- What are the critical thinking disposition levels and critical reading levels of the participating Turkish EFL pre-service teachers?

2- How do critical thinking disposition levels and critical reading levels of Turkish EFL pre-service teachers change in terms of:

a) gender,

b) grade level,

c) general academic success (GPA), and

d) reading frequency?

3- Is there a significant relationship between the participants' CT disposition levels and critical reading levels?

4- What are the participants' perceptions about critical thinking, reading and writing?

1.5. Limitations of the Study

There are some limitations of this study. First of all, the present study made use of scales and semi-structured interviews. Further studies can be conducted with different data collection tools such as observations, diaries and reflective journals. Secondly, collecting data in a short period of time can not be generalized and this may not be efficient in terms of understanding the long term influence of the course on the students. Thirdly, there were a small number of participants in this study and the findings might display differences with a larger population in another context.

1.6. Assumptions of the Study

In this study, the participants were assumed to reflect their opinions candidly in the data collection tools. It was aimed to create a positive and unconstrained environment by applying the instruments in online platforms and giving consent form to students.

CHAPTER 2: LITERATURE REVIEW

This section of the study consisted of theoretical framework and review of literature. First of all, theories related to critical thinking are presented. Secondly, critical thinking is defined. Thirdly, critical thinking skills, the characteristics of critical thinkers and critical thinking dispositions are given. Next, teaching and assessing critical thinking are explained. Then, critical reading and writing are described and related studies with critical reading and writing are presented. Afterwards, self-efficacy is described in terms of its importance for the study. Finally, related studies on critical thinking, teaching and assessing critical thinking are presented.

2.1. Theoretical Framework

There are different theories related to critical thinking. To start with, Thompson (2011) mentions traditional ones like progressivism and idealism and modern ones like cognitive information processing and Bloom's Taxonomy (1976). While progressivism focuses on how to think, idealism centralizes on the mind (Thompson, 2011). On the other hand, progressivism highlights the importance of thinking with the question of "how" instead of what (Ozman & Craver, 2008; Tyler, 1949). Meanwhile, idealism attaches importance to the mind rather than matter and extensive reading to understand the root of the problem for the events in the texts (Ozman & Craver, 2008).

As one of the modern theories of CT, Cognitive Information Processing Theory mainly emphasizes the signifance of memory. The reason of this is that the memory provides an appropriate circumstance for the individual to comprehend, analyze and synthesize information. It is asserted that employing the information to solve the problems and adapting it into new conditions as a significant aspect of critical thinking is more meaningful to be able to transfer it to long term memory and keep it in there for a long time, which leads to better and meaningful learning. (Topolovčan & Matijević, 2017).

What is more, Topolovčan and Matijević (2017) claim that critical thinking can be approached with three points of view which are philosophical, psychological, and educational (didactic). Firstly, from the philosophical point of view, Ennis (1985) states that critical thinking is 'reflective and reasonable thinking that is focused on deciding what to believe or do' (p. 45). The concept of CT is also accepted as reflectively deciding on your action or belief from philosophical perspective (Facione et al. 2000). Secondly, from a psychological perspective, CT could be explained as the process of thinking with

strategies and and depictions in people's minds while figuring out problems, judging and exploring (Sternberg, 1986) and also utilizing those strategies to be able to have a worthy result (Halpern, 1998). The third approach which is didactic point of view is based upon education. The taxonomy of the cognitive goals of Bloom clarifies this point of view even if it is acknowledged that critical thinking dates back to a long time in European didactics. Lai (2011) stated that all of these three points of views included may different skills such as argument analysis, decision making, inference making, and problem solving.

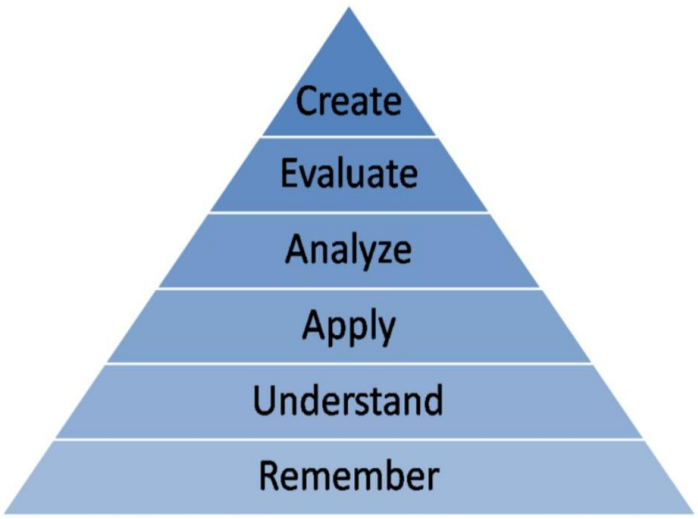

Figure 2.1. Bloom's revised taxonomy (Anderson & Krathwohl, 2001, p. 28)

2.2. Critical Thinking

The word "to think" is defined as "to have a particular idea or opinion about something/somebody" or "to believe something" (Oxford learner's dictionaries online, 2022). In addition, two levels of thinking according to Bloom's (1956) levels of cognitive domain are low and high. Lower-level thinking (requiring less thinking skills) includes *knowledge, comprehension and application* while higher-level thinking (requiring more thinking skills) covers *analysis, synthesis and evaluation.* Indeed, the word critical originates from the Greek word *krinein*, and it means "to separate, to choose" (Barnet & Bedau, 2014, p. 3), which requires individuals to possess purposeful questioning abilities. Thus, CT can be considered as higher level thinking (Lai, 2011; Sternberg, 1986). As Pourghasemian and Hosseini (2017) suggest, critical thinking is another name for higher-level thinking skills.

Subsequently, Benesch (1993) suggested two types of CT in education and English as a Second Language (ESL) and these are CT as cognitive skills and CT for social change.

CT as cognitive skills is a set of higher order thinking skills including evaluation, analysis, and synthesis, while CT for social change is social practice to expose sociopolitical roots of knowledge and bring about change. This study is designed to analyze CT as cognitive skills.

When it comes to the history of CT, Paul, Elder and Bartell (1997) presented its history in an elaborative way. CT dated back to over 2,500 years ago to Socrates' 'probes questioning'. Socrates claimed that people cannot prove or justify their statements. He emphasized examining and questioning the ideas before believing or considering them as the ultimate truth. He also addressed the power of looking for proof, questioning ideas and assumptions in a proper way, examining primal constructs, and investigating both uttered and performed suggestions. His questioning is called as 'Socratic questioning' at the moment and it is the most notable way for teaching CT. Paul et al. (1997) pointed out that Plato, Aristotle, and the Greek skeptics traced Socratic questioning by underlining that matters are the same as we see them in their appearance and we can only see the truth by distinguishing between surface and deeper meanings. In the Middle Ages, Aquinas' understanding of CT contributed to both our awareness and "cross-examined" reasoning. Furthermore, some fields like religion, art, society, human nature, law, and freedom were affected from CT in Renaissance (15^{th} and 16^{th} centuries). Some scholars like Colet, Erasmus, Moore and Bacon in England pursued previous understanding of CT. Bacon remarked the value of empirical research on the world itself in his book 'The Advancement of Learning'. When it comes to Descartes, he pointed out that there was a need for certainty in thinking. He claimed that reasoning, examining and probing are essential for thinking. Besides, with his book, Utopia, Thomas Moore argued a questionable world. Furthermore, Machivelli examined political era and politicians of his time in a critical way. Hobbes and Locke in England in the 16^{th} and 17^{th} century refused to consent the dominant views and "normal" conceptions of their time. Boyle (in the 17^{th} century) also questioned the previous chemical theory. Newton (in the 17^{th} and 18^{th} century) originated a scientific method which was a great chance to question the established world view. The thinkers of the French Enlightenment; Bayle, Montesquieu, Voltaire, and Diderot were the other scholars who supported critical thinking. They claimed that people could grasp a better understanding of social and political world if they were trained by reasoning (Paul et al., 1997).

Critical thinking was defined many times in many different ways in the literature. That is to say, defining critical thinking is not easy thing to do (Huber & Kuncel, 2016; Lai, 2011) because it can be examined through different ways (Lai, 2011; Sternberg, 1986). Some of the definitions referred to CT as an ability. To exemplify, Collins and O'Brien (2011) referred to CT as having the skill of employing the practice of higher-level thinking as a behaviour. Similarly, critical thinking was defined by Wallace (2003) as having the skill of reviewing the system of the texts by identifying the deficiencies. Additionally, Browne and Keeley (2011) suggested that critical thinking was based on knowing how to question and having answers to those questions at the right times. As for another definition of critical thinking by Klein (1993), it is an outcome of learning procedure instead of being a type of higher order of thinking. Fisher and Scriven (1997) also defined CT as proficient and effective examination and illustration of impressions, connections, knowledge and reasoning.

Some other scholars described CT as a way of attitude or judgment. According to Glaser (1941), critical thinking was related to three dimesions. Later, Watson and Glaser developed a well-known instrument, Watson-Glaser Critical Thinking Appraisal (W-GCTA), in 1964. CT was defined as attitudes of questioning by identifying problems, providing evidence and possessing information about the concept of current inferences in this instrument. Additionally, a panel organized by the American Philosophical Association in 1990 with the participation of 46 CT experts on psychology, philosophy, and education achieved a consensus on a universal description of CT and this consent was named as "The Delphi Report". A universal definition of CT was declared in the Delphi Report as in the following:

> *"We understand critical thinking to be purposeful, self-regulatory judgement which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, criteriological, or contextual considerations upon which that judgement is based" (Facione, 1990, p.2).*

CT was also described as purposeful thinking by some researchers. For instance, Lipman (1988) defined critical thinking as thinking in a practiced and accountable way by depending on norms, adjusting to circumstances and contexts. According to Halpern (2013), CT was employing cognitive skills and plans to be able to receive a worthy result and therefore it should be purposeful, judged and target oriented in solving problems, creating assumptions, measuring possibilities and making deductions. Likewise, Ennis'

(1962) definition of CT was “the correct assessing of statements” (p. 83). He broadened his definition as “reflective and reasonable thinking that is focused on what to believe or do” (Ennis, 1985, p.45). John Dewey (1909), who was the American philosopher, psychologist and educator and considered as the ‘father’ of the modern critical thinking tradition, described critical thinking as “reflective thinking” and defined it as: “active, persistent, and careful consideration of a belief or supposed form of knowledge in the light of the grounds which support it and the further conclusions to which it tends” (Dewey, 1909, p. 9). In a more recent source, Pourghasemian and Hosseini (2017) associated critical thinking with “reflective thinking” and also “thinking about thinking” (p. 12). All in all, critical thinking was reflected as an ability, attitude or judgment process or purposeful thinking.

2.2.1. Critical Thinking Skills

Cottrell (2005) proposed that developing good critical thinking skills would help people access the right information in a short period of time even though it was believed that the process of critical thinking was slow. Similarly to the definition of critical thinking, skills needed in critical thinking differed. Firstly, the panel organized by American Philosophical Association in 1990 with the participation of experts from different fields revealed that the cognitive skills such as analysis, evaluation, inference, interpretation, explanation and self-regulation were regarded as the main critical thinking skills.

The skills and sub-skills of critical thinking which were agreed on the panel and presented in The Delphi Report, by Facione (1990, p. 6) are illustrated in Table 2.1. below.

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

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

As shown in Table 2.1, there are six critical thinking cognitive skills and 16 cognitive sub-skills. The first critical thinking cognitive skill is interpretation and it focuses on making sense of various beliefs, experiences and events. The second critical thinking cognitive skill, analysis, aims to define the interrelationships among different set of concepts and statements in the process of explaining opinions. Another critical thinking cognitive skill, namely evaluation, aims to assess different forms of concepts and statements and the interrelationships among them. The fourth critical thinking cognitive skill is inference which concludes specific statements or concepts and creates hypotheses. The fifth critical thinking cognitive skill is explanation and it mainly expresses the thinking and reasoning process of someone by providing evidence. The last critical thinking cognitive skill is self-regulation and it focuses on controlling one's own mental activities with self-awareness and by making use of techniques such as reasoning and questioning in their own judgmental processes.

Table 2.2. below indicates critical thinking abilities depicted by Ennis (1991, p. 12) as the following:

Table 2.2. *Critical Thinking Abilities*

(1) To determine the target: the subject, question, or outcome
(2) To evaluate statements
(3) To ask demanding and analytic questions and answer them
(4) To describe phrases, evaluate descriptions terms, and judge definitions, and employ with ambiguity
(5) To determine indefinite thoughts
(6) To evaluate the reliability of a source
(7) To monitor, and evaluate monitoring processes
(8) To conclude and evaluate conclusions
(9) To make inferences, and evaluate those inferences
a. to generalizations
b. to clarified outcomes (including hypotheses)
(10) To create and evaluate worthy statements
(11) To contemplate and judge from premises, justifications, suppositions, situation, and other suggestions with which one conflicts and about which one needs to question without allowing the conflict or questioning affect one's own thinking ("suppositional thinking").
(12) To combine skills and tendencies with making and advocating a conclusion
(13) To advance on a regulated behavior matching with the context, for instance
a. to comply with acts of problem solving.
b. to observe one's own thinking.
c. to apply a logical critical thinking checklist.
(14) To be responsive to others' grade of knowledge, feelings and level of sophistication.
(15) To apply suitable rhetorical plans for debates and presentation (orally and written).
(16) To follow and respond to the concept of "fallacy" labels with a proper attitude.

As shown in Table 2.2., critical thinking includes many abilities from determining the target to showing proper attitudes. In line with these abilities, Glaser (1941) offered the

following critical thinking skills; (a) to identify problems, (b) to provide feasible mediums to solve these problems, (c) to assemble and arrange relatedknowledge, (d) to identify indefinite thoughts and values, (e) to understand and practise the language in a correct, clear and biased way, (f) to evaluate data, (g) to review arguments and assess utterances, (h) to identify the presence of rational links between suggestions, (i) to receive qualified outcomes and generalisations, (j) to examine those outcomes and generalisations, (k) to create a system of beliefs from experiences, and (l) to depict correct evaluations about certain attributes of daily life.

2.2.2.Critical Thinkers

The scholars from Delphi Report came up with an explanation for critical thinker as well. The ideal critical thinker is:

> *habitually inquisitive, well-informed, trustful of reason, open-minded, flexible, fair-minded in evaluation, honest in facing personal biases, prudent in making judgments, willing to reconsider, clear about issues, orderly in complex matters, diligent in seeking relevant information, reasonable in the selection of criteria, focused in inquiry, and persistent in seeking results (Facione, 1990, p. 2).*

Willingham (2008) underlined that critical thinking is not a skill, rather it is a set of metacognitive strategies helping to grasp CT better. An ideal critical thinker should have the following strategies (Ennis, 1985, p. 46) as seen in Table 2.3.:

Table 2.3. *The Strategies of an Ideal Critical Thinker*

-Always questioning	-Internalizing CT as an everlasting method
-Curious	-Not having any bias against the data before checking its accuracy
-Revealing original solutions	-Searching for strong arguments all the time
-Examining the opinions	-Refusing incorrect and misleading data
-Giving importance to what has been told and stating comments about it	

Thompson (2011) defined critical thinkers as inquisitive. Likewise, Facione (1996) signified self-monitoring as an important cognitive skill for critical thinking. What is more, the role of critical thinker was also emphasized by underlining the importance of training students to be critical thinkers rather than becoming critics. Besides, Cottrell (2005) pointed out that including both the strengths and weaknesses of an academic text was necessary for a good criticism instead of just referring to negative points. Likewise, Paul and Elder (2007) asserted that critical thinkers adopt a Socratic principle which asks individuals to question their lives so they are aware of the fact that unquestioned lives would create an unfair, unsafe and uncritical world. They also suggested that to be able to

be a critical thinker, one needs to improve oneself in detail and meticulous way and that is why it needs to become a life-long learning to gain critical thinking skills and dispositions.

2.2.3. Critical Thinking Dispositions

By referring to Pascarella and Terenzini (2005), Stupnisky et al. (2008) defined critical thinking as the combination of skills and disposition: "(1) a set of cognitive skills, such as identifying central issues and assumptions, evaluating evidence, and deducing conclusions; and (2) a disposition based on a willingness to apply critical thinking skills" (p. 514). Norris (1985) remarked that the most important skill to be able to adapt was having critical disposition in a fruitful way towards the matters. Disposition was defined as consistent willingness, motivation, inclination and an intention to be engaged in critical thinking while reflecting, making decisions and solving problems (Facione et al., 1995). Therefore, critical thinking dispositions were always of great importance for critical thinking.

Table 2.4 below presents the following CT dispositions by Ennis (1991, p. 12) which an ideal critical thinker should have:

Table 2.4. *The CT Dispositions of an Ideal Thinker*

(1) To be certain about the explanation of the underlined message in the given input.
(2) To decide and keep the conclusion or question in the center.
(3) To keep the present position in mind.
(4) To look for and provide reasons.
(5) To be aware of the situation.
(6) To search for other options.
(7) To try to be accurate as much as possible.
(8) To attempt to be conscious about opinions of one's self.
(9) To be open to other thoughts; taking other opinions into account rather than only one's self.
(10) To avoid having bias when there aren't enough evidence or reasons.
(11) To determine one's own place (or shift one's own place) when there are enough evidence or reasons.
(12) To take advantage of critical thinking abilities.

In another definition by Facione et al. (1995), critical thinking disposition was described as the tendency to use one's critical thinking skills, and did not directly address one's actual degree of skills. Furthermore, Facione et al. (1995) stated that the relationship of the disposition to CT and CT skills was not crystal clear. Even though the necessity of critical thinking disposition for the classroom and real life environment was known, the source and effect on success were not as clear as critical thinking skills (Stupnisky et al., 2008). However, it was believed that critical thinking disposition would help to improve CT skills and the improvement of CT skills would help to raise critical thinking

disposition. Thus, there was a reciprocal relationship between CT skills and dispositions. CTDs were defined as approaches to life that contribute to critical thinking (Facione, 1990). Yüksel and Alci (2012) stated that "critical thinking, on the other hand, is defined as a cognitive process, a purposeful self-regulatory judgment with two components: cognitive skills (interpretation, analysis, inference, evaluation, explanation and self-regulation) and a motivational component (the disposition toward critical thinking)" (p. 83). In a similar way, Paul (1992) stated that critical thinking can be applied by using one's critical disposition. It was stated that studies on critical thinking mostly focused on critical thinking skills even if the idea that skills and dispositions were both main parts of critical thinking was accepted by many researchers (Ten Dam & Volman, 2004). Therefore, it would not be wrong to conclude that students need to have critical thinking disposition to be able to think critically.

Furthermore, Facione (1998) explained CT disposition with a continuous internal motivation to deal with problems with the help of critical thinking and stated that continuous internal motivation and thinking skills led to achievement. Also, Yüksel and Alci (2012) noted that a correlation existed between critical thinking dispositions and academic success. Besides, positive relationship between critical thinking and academic achievement was found in many studies (Bers, et al., 1996; Facione & Facione, 1997; Giancarlo & Facione, 2001; Pintrich et al., 1993). Therefore, having a high critical thinking disposition could have a relationship with motivation and academic success.

2.2.4. Teaching Critical Thinking

Critical thinking was the aim rather than being an aim of education according to Paul (1992). Ten Dam and Volman (2004) conveyed its importance by considering it as "a 'quality' of what is taught and learned" (p. 365). Moreover, Norris (1985) stated that teaching CT was a moral sign of responsibility and respect. Similarly, Yang et al. (2013) stated that critical thinking should be a matter of teaching and learning in the 21st century. Furthermore, Halpern (1993) remarked that describing thinking skills is possible along with learning and teaching them. Besides, students in all degrees are exposed to a massive amount of misleading information; that is why the importance of teaching critical thinking to students should be understood by every unit of education system (Coiro et al. 2008; Cope & Kalantzis 2000; Knobel & Lankshear 2007; New London Group 1996; Unsworth 2008). Finally, Işık (2010) believed that the idea of teaching critical thinking arose from

the challenge of comprehending and processing critical thinking on one's own. Hence, novel skills like critical thinking should be acquired by students to cope with the possible costs of technology.

In a more recent study, Seçmen (2019) asserted that the lack of teaching critical thinking detains students from integrating their knowledge into real life situations. The study conducted by Kennedy et al. (1991) proved that teaching critical thinking contributes to students' critical thinking. Similarly, Abrami et al. (2008) analyzed more than 1300 experimental studies between the years in 1960 and 2005 and concluded that critical thinking skills of participants increased with teaching critical thinking without paying attention to how CT was taught. King (1994) also advised teaching students critical thinking to make them realize the essence of learning with a growing cognition.

What is more, Lipman (1988) suggested that teaching critical thinking depended on teachers' concept knowledge of critical thinking. Likewise, comprehending the features of ideal critical thinker was a key for teaching CT according to the participants of Delphi research (Facione et al., 1995). Therefore, teachers should possess a clear mind about the gist of CT.

However, there seems a student resistance towards learning critical thinking (Buskist & Irons, 2008). While some students find CT hard to study (Kurfiss, 1988; Lawrence et al., 2009), some others do not have enthusiasm about questioning their present ideas (Buskist & Irons, 2008; Halpern, 2009) or do not trust themselves to think critically (Connor-Greene & Greene, 2002). As a matter of fact, some means should be found to dominate this resistance by showing the students' possible results and contributions of the process (Brookfield, 2005; Halpern, 2009; Kassin et al., 2008; Paul & Elder, 2006; Wade, 2009).

Thompson (2011) remarked that the requirements for teaching critical thinking included "a philosophical shift in focus from learning to thinking (Chun, 2010), from drill and practice to problem-based learning (Savery, 2009), from subject isolation to subject integration, from output to process, from what is convenient to what is needed, and from now to the future (Peddiwell, 1939)" (p. 1). Moreover, Nold (2017) reported that language teaching programs should include critical thinking skills because of its importance for improving students' critical thinking skills. However, Paul et al. (1997) stated that teachers were not well aware of the critical thinking concept although they announced CT in their

teaching program. In this respect, it can be pointed out that there is a clear need to evaluate teaching programs and question the contribution of critical thinking to the students (Thompson, 2011). That is why, there is a need to observe and study quality of CT teaching and also assessment of critical thinking in schools.

2.2.5. Assessing Critical Thinking

There are different strategies used for assessing CT. The most used strategy is the use of quantitative method (Tsui, 2002). Ennis (2003) describes some critical thinking assessment tools which are multiple choice tests with written justification, essays and performance tasks. In line with these methods and tools, multiple choice tests can be provided by SAT (Scholastic Aptitude Test) critical reading test, essays can be included to assess students' critical reading and writing skills and performance task can be used to gather students' reflections on the course and writing task. To measure critical thinking skills, the Watson-Glaser Critical Thinking Appraisal, Ennis-Ware Critical Thinking Essay Test, the California Critical Thinking Skills Test, and the California Critical Thinking Disposition Inventory are utilized mostly.

Taube (1997) suggested that assessment of critical thinking became valuable after critical thinking gained popularity in education. Furthermore, he remarked that an important non-intellectual factor for the assessment of critical thinking is critical thinking disposition. To measure critical thinking ability, Watson and Glaser developed The Watson-Glaser Critical Thinking Appraisal in 1925. Similarly, Robert Ennis and Eric Weir developed The Ennis-Ware Critical Thinking Essay Test to assess critical thinking ability in 1985 in the form of writing. In this test, the participants were expected to read a letter covering eight paragraphs and discuss the letter in their essays. High-school and college students are generally chosen as the participants.

Huber and Kuncel (2016) asserted that there were two approaches to define CT. While one of them desribes critical thinking as a predisposition, the other one considers it as a skill. Some tests were developed to be able to measure these approaches. That is to say, Huber and Kuncel (2016) claimed that while the California Critical Thinking Disposition Inventory (CCTDI) was applied to measure disposition and levels, the California Critical Thinking Skills Test (CCTST) was used for measuring critical thinking levels.

Another test was the California Critical Thinking Skills Test (CCTST) which was developed by Facione (1990). It aimed to analyze participants' reasoning ability. Participants needed to read a text for each question and answer 34 multiple choice questions. Their accurate number of answers would determine their scores. Finally, Facione and Facione (1992) developed The California Critical Thinking Disposition Inventory (CCTDI) to assess disposition levels of participants while using critical thinking skills. There were 75 items in the inventory and the titles of seven subscales were truth-seeking, open-mindedness, analyticity, systematicity, inquisitiveness, self-confidence, and maturity.

2.3. Critical Reading and Writing

Richards (1997) described reading by referring to its function of involving the reader, the text, and the interaction occurring between them. Wallace (2003) stated that there were three personal reasons for reading: we read to survive (reading for survival), we read to learn (reading for learning), and we read for pleasure (reading for pleasure). Elder and Paul (2004) stated that students may consider reading as a passive process and think reading as: "You let your eye move from left to right, scanning one line at a time, until somehow, in some inexplicable way, meaning automatically and effortlessly happens in the mind" (p. 37). Even if reading was always taken as a passive activity, current perception about reading asserts the opposite. Therefore, reading as an active skill also requires being a critical and reflective thinker (Fisher & Frey, 2020; Hovland, 2019; Kern, 2000). That is why critical reading should be differentiated from classical reading which Goodman (1984) described as "ritualistic" reading. The definitions and perceptions of CR depicted it as an active skill to be learned by individuals in time. For instance, Schwegler (2004) mentioned critical reading as a concept for active reading and learner-focused task. Similarly, Douglas et al. (2016) stated that readers were actively engaged while reading critically and following the writer through his/her text. Likewise, Combs (1992) stressed out that critical reading process created an interplay between thoughts at the same time. In addition, Philips and Sotiriou (1992) pointed out that application, analysis, evaluation and imagination were components of critical reading. Similarly, Gönen and Kızılay (2022) stated that CR was a process including metacognitive awareness and close observation of the process while trying to make sense of the text rather than being a result. Additionally, Milan (1995) emphasized the importance of reading critically by pointing out to its

contribution to students' objectivity, which shapes their understanding of the text without being directed into any expectation of the writer.

For these reasons, students are asked to have the ability of thinking and reading critically for academic texts particularly in higher education environment (Akdağ & Kırkgöz, 2020; Kurt Taşpınar & Çubukçu, 2020; Şahin & Han, 2020; Wallace & Wray, 2011). Nevertheless, it was seen that enough importance was not attached to CR according to some researchers. For example, Biancarosa and Snow (2006) asserted that receptive reading was used more often than critical reading in high schools. Additionally, Mickelson (2018) claimed that most of the university students did not know how to read complicated texts when they encountered them. Similarly, previous studies conducted in Egyptian context revealed that schools did not attach enough importance to the teaching of critical reading (Ahmed, 2016).

Masoud and Mostafa (2020) advocated that critical reading skills should be acquired by the students rather than learning classical reading skills. Using classical reading strategies including memorization and rehearsal instead of higher order thinking skills restrained the teaching of critical reading. Correspondingly, AbdKadir et al. (2014) stated that if students are not taught critical reading skills, they cannot be expected to acquire these skills. By this means, Gelder (2005) declared that only learning critical thinking does not improve students' CT and therefore they must actively use CT. Likewise, AbdKadir et al. (2014) suggested that without teaching critical reading skills, students would be 'passive learners' and 'submissive readers' by approving everything they read or encounter. Furthermore, Masoud and Mostafa (2020) claimed that the significance and judgment of the ideas in a text, and spotting the writer's attitude towards the text are some of the skills that students should possess. In the same way, Ahmed (2016) stated that writers should be a guide to the readers with well-grounded opinions and supporting ideas to let them read critically. Indeed, AbdKadir et al. (2014) stated that students should be guided through discovering original learning ways for critical reading. Accordingly, it can be concluded that learning how to read critically is highly important for students. Therefore, teachers need to acquire critical reading skills to be able to teach critical thinking skills (Karabay et al., 2015).

In a similar way to Benesch's (1993) suggestion on two types of critical thinking, two ways of critical reading were described as reading for academic success and reading

for social engagement by Manarin et al. (2015). Firstly, subskills of critical reading as academic success are describing the elements of the reading texts, being able to differentiate main ideas and subordinate ones, being able to assess reliability of the information in reading texts, evaluating the ways of reasoning in a text and making appropriate assumptions about a text. Secondly, subskills of critical reading as social engagement are exploring different sorts of rhetoric, being aware of the role of power, questioning assumptions, finding relations between the text and the world, and building new assumptions about the reading texts.

On the one hand, critical reading was defined as "active reading" (Schwegler, 2004; p. 8). On the other hand, Bean et al. (2002) depicted critical reading as active reading and also associated it with writing. Likewise, Scriven (1976) perceived critical thinking as an academic activity associated with reading and writing. That is why we can infer that reading and writing critically could enhance thinking and inquiring in an active and conscious way. Hyland (2002) stated that students could take critical reading as a guide for their writing. Likewise, Işık (2010) stated that critical reading and critical thinking reciprocally affected each other and that is why they were seen inseparable. Therefore, it could be stated that there was a mutual relationship between critical thinking and critical reading and also critical thinking and critical writing. Some researchers believed that a connection existed between critical thinking and writing (Applebee, 1984; Cohen & Spencer, 1993). Applebee (1984) stated that "it is widely accepted that good writing and careful thinking go hand in hand" (p. 577). While critical thinking leads into reading and writing critically, the focus of critical reading and writing was on critical thinking. Likewise, Baratta (2020) suggested that critical reading leads to critical thinking and then critical writing. In a similar way, Ataç (2015) suggested that reading and writing critically are the components of critical thinking. Hence, students should be taught how to read and write critically at the same time. Meanwhile, Cottrell (2013) asserted that writing with a 'critical voice' should be a necessity for students. However, writing lessons did not include critical thinking even if the significance of critical thinking is known (Zhang, 2018). Zhang (2018) also pointed out that EFL writers could become successful if they were taught how to evaluate their texts, how to control their own writing processes and how to analyze their texts critically. Overall, it can be stated that critical thinking reveals its potential in reading and writing. Masoud and Mostafa (2020) also found out that critical reading and writing were interconnected and university students should possess those abilities. Similarly, Smith

(2012) suggested that creating college level writers could be only completed by having college level readers. For this reason, teaching CT should cover teaching the combination of how to read and write critically.

2.4. Self-Efficacy

According to Bandura (1997), self-efficacy is a set of "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (p. 3). Moreover, Pajares (1997) remarked that these beliefs affect one's choices and actions. Flammer (2015) described self-efficacy as "the individual's capacity to produce important effects" (p. 1). Similarly, Bandura (1997) noted that the most crucial aspect of humanity is self-efficacy. Therefore, self-efficacy was considered as an important feature to possess. What is more, perceived self-efficacy is not an assessment of a person but a belief on one's abilities in different contexts and therefore, the same people in different contexts may behave differently (Bandura, 1997). Thus, it can be stated that students' performance is under the influence of their beliefs in their abilities. As Bandura (1997) suggested, students' real capabilities is not as good as their beliefs in terms of foreseeing their performance. In this regard, Raoofi, Tan and Chan (2012) remarked that the significance of self-efficacy for learners and teachers comes from the fact that the higher learners have self-efficacy the higher they can perform in activities than those with lower self-efficacy. By the same token, Bandura (1986) stated that self-efficacy anticipates success. Likewise, describing a concept like success, motivation or learning does not seem achievable without mentioning the contributions of self-efficacy (Pajares & Urdan, 2006). Besides, students with high self-efficacy are more motivated, persistent, prepared than those with low self-efficacy (Zimmerman, 1995). Additionally, Zimmerman (1995) also asserted that the effect of self-efficacy beliefs of learners on their academic performance is much higher than anxiety related issues.

2.5. Studies on Critical Thinking, Reading, and Writing

There are many studies conducted both in Turkey and abroad on critical thinking, reading, and writing in foreign language classes. Some of the studies tried to explore the relationship between students' academic achievement and their CT skills or dispositions. These studies came up with different results.

There are many studies resulting in a positive correlation between CT skills and dispositions and academic achievement. To start with, Abbasi and Izadpanah (2018) tried

to explore whether students' academic achievement in English course can be predicted by their CT levels. The eleventh-grade female students were the participants of the study. They used California Critical Thinking Skills Test (CCTST). According to the results of the study, students' CT levels have an important potential to enhance their academic achievement.

In a similar study, Ghanizadeh (2016) intended to identify whether university students' academic achievement is affected by reflective thinking, critical thinking as higher order thinking skills and self-monitoring. The participants included 196 Iranian university students. The instruments consisted of the 'Reflective Thinking Questionnaire' designed by Kember et al. (2000), the 'Watson–Glaser Critical Thinking Appraisal' (2002) and eight items of the self-regulation trait questionnaire designed by O'Neil and Herl (1998). The results of the study showed that students' academic achievement could be estimated by critical thinking and reflective thinking skills. Furthermore, a positive relationship was found between CT and self-monitoring. In other words, when students are able to improve their critical thinking skills, they are more prone to monitor themselves about their achievement.

Similarly, Fong et al. (2017) aimed to explore whether students' CT at a community college influenced their success. They searched for the previous studies which had the same aim. The findings of the study showed that there was a significant positive correlation between students' academic achievement and CT levels.

However, there are also other studies which did not reveal any relationship between CT skills, dispositions and academic achievement. To illustrate, Azar (2010) aimed to identify the relationship between students' achievement in "Selection and Placement Exam for University" (OSS) and their CT dispositions. He also tried to seek whether students' gender, grade or major have an effect on their CT dispositions. The instrument was the Critical Thinking Disposition Scale (CTDS) developed by Akbıyık (2004) which aims to explore students' CT dispositions. 121 students who were preparing for the OSS exam were selected randomly for the study. The findings showed that the students' academic achievement was not affected by their CT dispositions while there was not any significant correlation between students' CT dispositions and their gender, grade or major.

Correspondingly, the study of Emir (2009) aimed at exploring the effect of academic achievement on students' CT if there was any. The California Critical Thinking

Disposition Inventory which was adapted into Turkish by Kökdemir (2003) was the instrument of the study. According to the results of the study, it was found out that there was statistically no significant correlation between students' CT and their academic achievement.

Also the relationship between CT and academic success was studied in other fields. To begin with, Sepahi et al. (2014) aimed to enlighten whether critical thinking disposition had any effect on medical students' academic achievement. 259 medical students studying at Medical Sciences were the participants of the study. They used California Critical Thinking Disposition Inventory (CCTDI) as instrument. According to the results, there was no correlation between students' CT dispositions and academic achievement.

In a similar path, Shirazi and Heidari (2019) aimed to explore whether nursing students' critical thinking skills and learning styles had an impact on their academic achievement. The participants were 139 sophomores and seniors. A demographic questionnaire, the Kolb's Learning Style Standard Questionnaire, and the California Critical Thinking Skills Questionnaire were administered. Academic achievement was taken as students' previous semester's grade point average (gpa). According to the results of the study, while there was a significant correlation between students' learning styles and academic achievement, students' CT levels did not have any impact on their academic achievement.

Similarly, Shirrell (2008) tried to explore the relationship between nursing students' critical thinking levels and academic success if there was any. 173 nursing students were the participants. Collegiate Assessment of Academic Proficiency (CAAP) critical thinking test (Fraenkel & Wallen, 2003) was used as an instrument. To measure success, students' GPA and nursing exam results were considered. According to the results of the study, critical thinking did not have an impact on students' success.

In another study, Yüksel and Alci (2012) aimed to find out the effect of pre-service teachers' self efficacy and critical thinking dispositions on success in teaching practicum course. Teachers' Sense of Self-Efficacy Scale (Çapa et al., 2005) and the Turkish version of California Critical Thinking Dispositions Inventory (CCTDI) which was adapted into Turkish by Kökdemir (2003) were used to gather data for measuring pre-service teachers' self-efficacy and critical thinking disposition levels. The participants included 104 pre-service teachers. To measure success, grades of pre-service teachers given by their

supervisors in school practicum course were considered. According to the results of the study, there was no relationship between pre-service teachers' self-efficacy levels and success while there was a significant correlation between their grades in school practicum course and critical thinking disposition levels.

Some of the studies focused on the effectiveness of CT teaching and aimed to investigate if CT teaching could make an improvement on students CT skills, reading and writing performances. One of afore mentioned studies belongs to Fahim and Hashtroodi (2012) who attempted to understand if the critical thinking based instruction with the help of writing could develop Iranian university students' argumentative essays in their experimental study. 63 students majoring in the department of translation at an Iranian University were the participants of this study. Experimental and control groups were created from two composition classes. While the experimental group took Thesis-Analysis-Synthesis Key (TASK) developed by Unrau (1997) as critical thinking instruction, the students in the control group were not taught critical thinking. Before and after taking the courses, the students were asked to write five paragraph argumentative essays in both groups. Unrau's (1997) scoring guide was used to analyze students' essays. The findings showed that there was no significant difference between the experimental and control groups even if the students in both groups developed their composition skills. Therefore, the researchers stated that critical thinking instruction could support critical thinking development; however, it did not support writing argumentative essays to a significant degree.

Additionally, Mehta and Al-Mohrooqi's (2015) case study tried to explore the instruction of critical thinking in EFL environment. They attempted to understand how students brought their critical reading ability into their writing performances. They hypothesized that students' critical thinking and reading ability would be raised with the help of necessary training, class discussions and writing drafts and this process would be reflected in students' writing as well. 30 undergraduate students at a university were asked to write reflective essays on a specific topic at the beginning and at the end of a semester and these writings were compared for this study. They benefited from an open question format and rubrics to evaluate the reflection of critical reading into writing. The study concluded that as long as students speak and write during the process, they could enhance their critical thinking and writing skills. Furthermore, comparing students' writings revealed that critical thinking had a teachable quality in EFL contexts.

In another study by Vong and Kaweruai (2017), it was aimed to identify the outcomes of an instructional model. In this instructional model, they intended to improve trainee students' critical thinking levels and teaching skills of CT to learners as prospective teachers. 15 trainee students were the participants of the study. The instruments included evaluation form of the instructional model, instructional handbook, instructional document for training, pre-and post-tests, observation form, critical thinking observation form for teaching, reflection form, perception questionnaire, and the structured interview. Scoring rubrics, descriptive statistics, the Wilcoxon test, and content analysis were used to analyze the data. According to the results of the study, instructional model developed by researchers proved its applicability. Students' post critical thinking scores outnumbered their pre-critical thinking scores. Teaching skills of CT to the students resulted in an ideal success. Finally, the students' perceptions toward learning and teaching CT peaked after the implementation of the model.

In a thesis study by Gündüz (2017), it was also attempted to investigate the effects of critical thinking course on EFL students' critical thinking disposition, critical reading self-efficacy levels, and L2 critical writing performances in addition to the opinion essays. In this study, two intermediate level classes with a total 26 Turkish EFL students at a preparatory school of a private university were the control and experimental groups in this study. The data were collected with the help of California Critical Thinking Disposition Inventory-Turkish (CCTDI-T) (Kökdemir, 2003), Critical Reading Self-Efficacy Scale (CRSES) (Küçükoğlu, 2008), students' opinion essays and students' writing performance about critical thinking. The results demonstrated that there was no significant difference between control and experimental groups' critical thinking disposition, critical reading self-efficacy levels, and L2 critical writing performance while there was a difference between pre- and post-opinion essays of students in the experimental group. Therefore, it could be concluded that CT course helped to change students' approaches toward CT even though it did not affect their CT dispositions, skills or writing performance.

Another study conducted by Aygün (2018) intended to identify to what extent critical thinking skills affected Turkish EFL students' writings. Another aim of the study was to find out whether using online asynchronous learning tools to teach critical thinking skills triggers the students' use of critical thinking skills in their writings. 32 students in the School of Foreign Language at a state university were the participants of the study and they were in two groups as control and experimental groups. The students in the study

were taught to use Edmodo which is one of the online learning tools. The quantitative data were gathered via The Critical Thinking Dispositions Scale (Akbıyık, 2002) as pre- and post-test whereas the qualitative data consisted of students' writings before and after the online critical thinking instruction. Written Communication Value Rubric (Rhodes, 2009) and Critical Thinking Value Rubric (Rhodes, 2009) helped the researcher to evaluate the students' writings. The procedure of the study included 8-week online critical thinking instruction to the students in the experimental group. The findings showed that there was no significant change between students' writings before and after the study. However, it was obvious that critical thinking skills were observed in students' writings after online critical thinking instruction.

Likewise, in Ünal's (2014) action research study, the purpose was to identify how a critical reading course created a change on critical thinking levels of pre-service English language teachers. A critical reading course was designed for the study. 19 pre-service English language teachers at a state university in Turkey were the participants of the study. Questionnaire as a class blog was the instrument of the study. An open-ended questionnaire was implemented before the study to measure students' knowledge about critical reading and another open-ended questionnaire was administered to the students after the study to evaluate the effect of critical reading course on students. The class blog was used to send reading texts to the students and then to see students' comprehension of these texts by reading their comments on the posts. The results showed that an action research based on critical thinking had positive impacts on students' awareness toward critical thinking and their ability to think and read critically.

Similarly, Atikler (2008) aimed to reveal to what extent critical thinking contributed to students' writing performances. The study intended to develop preparatory school students' writing skills at a private university. 34 preparatory school students were the subjects of the study. The participants were two groups as experimental and control groups. A five-week instruction program was designed for the students in the experimental group. The results indicated that those of the students in experimental group outnumbered the post-test scores of the students in the control group. However, pre-test scores did not show any significant change between the control and experimental groups. For this reason, the study suggested favorable sights to integrate critical thinking into writing instruction rather than applying traditional teaching methods on writing.

Besides, Nasrollahi et al. (2015) attempted to explore to what extent Iranian EFL students make use of critical reading strategies with the help of the Cognitive Domain of Bloom's Taxonomy. Action research design was employed in the study. Observation checklists and interviews were the instruments of the study. The participants consisted of 15 Iranian EFL students. According to the results of the study, the students were knowledgeable about common reading strategies and mostly used critical reading strategies like skimming, scanning, asking questions and taking notes.

Furthermore, Seçmen (2019) aimed to find out the effect of mythological short stories on critical thinking. The study claimed that students' critical thinking would be increased with the help of critical thinking activities based on mythology. Furthermore, the study intended to identify if there was any relationship between students' age and parents' education level and critical thinking scores. With these goals in mind, Oral Communication Skills II course was chosen to implement critical thinking activities in 10 hours and then to collect data from the students in this course. The participants were 39 pre-service English teachers from a state university in Turkey. The participants were given four Greek mythological stories to study and do critical thinking activities. These critical thinking activities were prepared by the researcher according to Bloom's Taxonomy and The Cornell Critical Thinking Level Z Test. The Cornell Critical Thinking Level Z Test was used as pre- and post-test to measure critical thinking levels of the students before and after the implementation of critical thinking activities. According to the results of pre- and post-test, the scores of students' critical thinking scores increased. However, there was no significant difference between the critical thinking levels and individual features of the students. Furthermore, the students' scores in the sub-skills did not show any significant change in pre-test and post-test. As a concesequence, applying CT activities in a limited period of time may not be enough to expect significant changes in students' pre- and post-test scores on CT and measure the effectiveness of these CT activities.

Another study by Lu and Xie (2019) aimed to identify the effectiveness of the International Critical Thinking Reading and Writing Test (ICTRWT) developed by Paul and Elder. Furthermore, a university in China analyzed the adaptation of this test into a course's instruction module on critical thinking and writing. They used this test to design their own instruction content for the course 'Advanced English Argumentative Writing' and called it the 'ICTRWT instructional pattern'. Therefore, they intended to find out how this instructional pattern shaped the students' critical thinking and writing. For data

collection, they used the ICTRWT, two writing tasks taken from the Test of English as a Foreign Language (TOEFL), a questionnaire and an interview. The participants were two groups of students who took the afore-mentioned course. While the ICTRWT instructional pattern was involved in treatment group's learning procedure, instructor's regular teaching pattern was carried out for the control group. The results showed that the scores of students' critical thinking and writing were higher in the treatment group than in the control group. Furthermore, the results of interviews and questionnaires indicated that the instructional pattern was favored by the participants.

In addition to afore-mentioned studies, a number of studies specifically aimed to identify critical thinking, reading and writing skills of especially pre-service teachers and also secondary and high school students in Turkey. Firstly, Kürüm (2002) investigated pre-service teachers' critical thinking levels and factors affecting their critical thinking levels. In her thesis, she applied Watson-Glaser Critical Thinking Appraisal and a questionnaire for personal information. The participants included 1047 participants in total, freshmen, sophomores and juniors studying at Education Faculty of a state university. The findings revealed that pre-service teachers' performance for critical thinking was at mid-level. Besides, it was concluded that some factors such as age, the type of high school students graduated from, their families' education and economic level were found influential on their critical thinking levels.

In their descriptive study, Karasakaloğlu et al. (2012) also aimed to measure pre-service teachers' critical reading self-efficacy levels. Freshmen and seniors in Primary School Teaching Department at a state university participated in this study. Critical Reading Self-Efficacy Scale developed by Küçükoğlu (2008) was used as the data collection tool. According to the results, the pre-service teachers' self-efficacy perceptions were found to be low. They mostly chose "disagreed" for most of the items in reading part of scale which had five points ranging from strongly agree (5) to strongly disagree (1), respectively.

Besides, Güner (2015) investigated the critical thinking disposition, critical reading self-efficacy levels and foreign/second language (L2) writing performance in his experimental study. The aim was to find out if there was a difference between students who take critical thinking instruction and the ones who do not. The participants in this study comprised of 61 Turkish pre-service English teachers in two classes. In a random

way, while one class was chosen as the control group, the other one was taken as the experimental group. The Turkish version of the California Critical Thinking Disposition Inventory (Kökdemir, 2003), Critical Reading Self-Efficacy Scale (Küçükoğlu, 2008), and argumentative essays were the data collection tools in this study. According to the results, there was no significant difference between the two groups in terms of critical thinking disposition, critical reading self-efficacy levels or L2 writing performance.

What is more, Çelen's (2018) study aimed to investigate the relationship among senior student teachers' beliefs about language learning, perceptions about critical thinking and their critical thinking skills. The participants of the study included pre-service English teacher at a state university in Turkey. The study made use of both qualitative and quantitative methods. The Beliefs about Language Learning Inventory (BALLI) to figure out student teachers' beliefs about language learning and the Watson Glaser Critical Thinking Appraisal (WGCTA) to measure student teachers' CT levels were implemented to 133 student teachers for the collection of quantitative data. The qualitative data were gathered via semi-structured interviews with seven participants. The findings revealed that the participants were determined as moderate-level critical thinkers. Moreover, it was concluded that there was a positive correlation between their perceptions about critical thinking and their WGCTA scores. Finally, even if there was no strong score of CT, the participants' beliefs and critical thinking skills had an influence on each other.

Additionally, Buran's (2016) study attempted to measure critical thinking levels of the students in an Education Faculty at a state university as well as their experiences toward critical thinking. The study used both quantitative and qualitative methods. The California Critical Thinking Dispositions Inventory (CCTDI) was implemented to 663 students to measure their critical thinking dispositions. 20 students were interviewed for the qualitative data. The data were analyzed with the help of Vygotsky's Sociocultural Theory. Therefore, the findings of the study provided a wide interpretation of critical thinking. The results of the quantitative data showed that the students' critical thinking disposition level was positive. Moreover, half of the students mentioned the change of their perspectives toward critical thinking from negative to positive. In addition to being able to think critically, the environment of the participants and features of people in that environment affected the results of the participants' critical thinking levels. Therefore, this study suggested that the critical thinking levels can change depending on the process of the study, context, and experiences of the subjects.

In another study, Akdere (2012) intended to measure pre-service teachers' critical thinking levels, their attitudes and self-efficacy beliefs about the teaching of critical thinking and the relationship between these variables. Another aim was to find out whether pre-service teachers' demographic information had an effect on these variables or not. 1091 senior pre-service teachers in 14 state universities were the participants of the study. The instruments included critical thinking test, attitude scale, self-efficacy scale and a form about demographic information developed by the researcher. According to the results, critical thinking scores of the pre-service teachers were found below average. On the other hand, their attitudes for the teaching of critical thinking were considerably positive and self-efficacy levels were at a moderate level. For the correlation between demographic information and dependent variables, pre-service teachers' critical thinking levels, their attitudes and self-efficacy beliefs about the teaching of critical thinking were not affected by their gender and motivation towards teaching of critical thinking while these variables had a correlation with participants' major, academic achievement, high school background, father's level of education, reading behaviour, and prior training on critical thinking.

Likewise, Bayındır (2015) investigated critical thinking levels of the students in state secondary schools and other factors affecting it. The study aimed to find out whether there was a relationship between students' critical thinking levels and various factors such as their grade, gender, school area, parents' education level, and income. To collect demographic information, the students were given Personal Information Form which was prepared by the researcher. The Turkish version (Kökdemir, 2003) of California Critical Thinking Dispositions Inventory (CCTDI) which was developed by Facione and Facione (1998) was administered to the students to find out their critical thinking dispositions. The participants were 545 students from the 6^{th}, 7^{th}, and 8^{th} grades in four secondary schools in rural and urban areas in a city in Turkey. According to the findings, critical thinking scores of the students in urban areas outnumbered those of the students in rural areas. Moreover, the 6^{th} grade students had higher critical thinking scores in the test than the 7^{th} and 8^{th} grade students. Also, the students had higher scores in some sub-skills of the questionnaire such as analyticity and inquisitiveness than other skills in general. Furthermore, it was found that there was not a correlation between the students' critical thinking levels and their demographic information.

Işık (2010) also attempted to identify the critical reading levels of high school students. This study also aimed to reveal whether students' reading patterns affected their

critical reading levels and dispositions. 147 high school students from a state university in Turkey were the participants of this study. Critical Reading Scale and California Critical Thinking Dispositions Inventory (Facione & Facione, 1998) were the instruments in the study. According to the results of Critical Reading Scale, most of the students were reported to be at medium level. The findings revealed that the 9th graders' critical reading levels outnumbered the students in the 11th grade. It was also concluded that no correlation was found in students' reading patterns and critical reading levels while a positive but not significant relationship was found between students' critical thinking dispositions and critical reading levels. Therefore, the study emphasized that critical reading skills could be improved with the help of a high critical thinking disposition. However, it was stated that reading frequency did not influence critical reading.

Similarly, in Küçükoğlu's (2008) study, the aim was to measure the critical reading performances of pre-service English teachers in English Teaching Language (ELT) Program. The participants were 227 students enrolled in the ELT program of three state universities in Turkey. A self-sufficiency scale was developed by the researcher to explore how students regarded their own critical reading skills. According to the results, the students had positive thoughts on critical reading. In addition, they employed a considerable amount of critical reading skills.

Karabay, Kuşdemir Kayıran and Işık (2015) aimed to identify the critical reading self-efficacy perceptions of pre-service teachers in their study. Besides, they tried to grasp whether graduation programs, grade levels, genders and academic achievements of pre-service teachers have any effect on their critical reading self efficacy. The instrument was the "Critical Reading Self-efficacy Perception Scale" developed by Karabay (2013). The participants included 594 pre-service teachers with different grade levels at different departments of a state university. According to the findings, critical reading self efficacy of pre-service teachers exceeded the intermediate level. Furthermore, while a correlation between critical reading self efficacy and gender, departments and academic achievements was found out, there was no correlation between critical reading self efficacy and grade levels of pre-service teachers.

There are also some other studies which attempted to find out teachers' beliefs and perceptions about CT in different contexts. First of all, Toshpulatova and Kinjemuratova (2020) aimed to identify how Academic English (AE) teachers perceived critical thinking

and what they thought about teaching critical thinking. According to the results of the study, including critical thinking into their teaching was crucial for teachers. To improve critical thinking skills, students used strategies like evaluating information, analyzing, logical reasoning, arguing, reflecting, and problem solving the most and Academic English language classes were appropriate for students to improve critical thinking strategies. Furthermore, debates, class discussions, evaluating presentations, listening for main ideas and details, reading for the main idea and evaluation of sources, writing argumentative essays, academic reports and reflection were considered as beneficial activities to develop critical thinking.

In another study, Şahin and Kahraman (2014) aimed to reveal whether high school English language teachers use their critical thinking strategies in their classrooms. Participants of the study included 72 English language teachers in the Ministry of National Education. The Turkish adapted version (Kökdemir, 2003) of California Critical Thinking Dispositions Inventory (CCTDI) was the instrument administered to the English language teachers. A scale based on cognitive domain of Bloom's taxonomy was designed by the researcher to understand the range of teachers' use of critical thinking strategies. The results showed that the teachers used critical thinking strategies at medium level. However, their critical thinking ability and knowledge favorably affected their use of critical thinking skills in their classrooms.

Finally, Cantekin (2012) intended to investigate non-native English teachers' awareness and implementation of critical reading in their classrooms. A Likert-type scale-questionnaire was designed to evaluate teachers' perceptions about teaching critical reading. The participants consisted of 200 English teachers employed in different schools in Turkey. The findings of the questionnaire revealed that the teachers were aware of critical reading and believed using CR in their classrooms would be useful for the learners.

CHAPTER 3: METHODOLOGY

In this part of the study, details of research design, universe and participants, data collection tools, procedure and data analysis are mentioned respectively.

3.1. Research Design

The present study made use of mixed method design which is based on collecting and analyzing both qualitative and quantitative data. Mixed methods design was used to interpret findings of the study to strengthen the results by combining both quantitative and qualitative data in a comprehensive and flexible way (Leech & Onwuegbuzie, 2004). In this line with these, this study has a mixed method design by using scales and semi-structured interview. The research design used in this study was the convergent design. It is also named as concurrent or parallel design and is used when qualitative and quantitative data are gathered with the purpose of combining or comparing data at the end of the study (Creswell & Plano Clark, 2017). Morse (1991) stated that convergent design aims "to obtain different but complementary data on the same topic" to be able to grasp the research problem well (p. 122). Moreover, it was pointed out that exploring the strengths and weaknesses of qualitative and quantitative methods is another objective of this design (Patton, 1990). Creswell and Plano Clark (2017) also remarked that advantages of convergent design include being able to "collect and analyze data separately and independently" and "direct comparison of participants' perspectives with open-ended questioning and close-ended questioning" (p. 54). It is also a descriptive study which tries to understand the significance of critical reading and writing course on students' CT levels. Descriptive study is the description of situations in terms of their moves, styles, changes and relations to other studies and mainly interested in the question of what (Gall et. al., 2003). Furthermore, the study tries to explore whether students' gender, grade level, reading frequency and academic success levels have a relationship with their CT disposition and CR self-efficacy levels. Table 3.1. below demonstrates a summary of research questions, instruments, and analysis type used in this study.

Table 3.1. *The Summary of Research Questions, Instruments, and Analysis Type*

RQ Objective	Data collection tool	Data analysis
1. The scores of students' critical thinking disposition and critical reading self-efficacy levels	CCTDI-T and CRSES	Descriptive statistics on SPSS
2. The relationship of CCTDI-T or CRSES with:		
a) gender	CCTDI-T and CRSES	T-test on SPSS
b) grade level	CCTDI-T and CRSES	ANOVA on SPSS
c) GPA	CCTDI-T and CRSES	ANOVA on SPSS
d) reading frequency	CCTDI-T and CRSES	T-test on SPSS
3. The relationship between CCTDI-T and CRSES	CCTDI-T and CRSES	Correlation on SPSS
4. Opinions about critical reading and writing	Semi-structured interview	Summative content analysis

3.2. Setting and Participants

This study was conducted in an English Language Teaching Department of a state university. The participants of this study were freshmen, sophomore, junior and senior students majoring in English Language Teaching (ELT). The participants were chosen in accordance with convenience sampling. This sampling type is used when participants "meet certain practical criteria, such as geographical proximity, availability at a certain time, or easy accessibility" (Dörnyei, 2007, p. 61). Thus, this study used this sampling type since the participants were easy to reach. That is to say, the ones who are accessible were selected as the participants as it is also very practical to use (Dörnyei, 2007). The study was conducted within the scope of Critical Reading and Writing course in the first term of 2021-2022 academic year. Academic texts were analyzed and afterwards genre-based writing was used in this course. The course also intends to enhance students' high level reading and writing skills and practice the analysis of APA rules and communicative purposes in research articles. Before applying questionnaires and semi-structured interview, students were given consent form which specified participating in the study voluntarily (see Appendix II). 118 students studying at the department of English Language Teaching at a state university in Turkey participated in Critical Thinking Disposition Scale and Critical Reading Self Efficacy Scale. Demographic information includes gender, age, grade level, reading frequency, and GPA. These are presented below in Table 3.2.

Table 3.2. *Demographic Characteristics of Students*

		Frequency	Percent
Gender	Male	43	36.4
	Female	75	63.6
	Total	118	100.0
Grade	1	56	47.5
	2	34	28. 8
	3	3	2.5
	4	25	21.2
	Total	118	100.0
Reading frequency	Always	14	11.9
	Sometimes	72	61.0
	Rarely	29	24.6
	Never	3	2.5
	Total	118	100.0
GPA	0.50-2.49	2	1.7
	2.50-2.99	32	27.2
	3.00-3.49	79	66.9
	3.50-4.00	5	4.2
	Total	118	100.0

Table 3.2. above shows that while 43 (36.4%) of the students were males, 75 (63.6%) of them were females. Their ages changed between 18 and 35. The mean of their ages was 20.55. 56 (47.5%) of the students were first year students, 34 (28.8%) of them were second year students, three (2.5%) of them were third year students and 25 (21.2%) of them were fourth year students. Furthermore, there were only two (1.7%) students who had GPA between 0.0 and 2.49. 32 (27.1%) of students had their GPA between 2.5 and 2.99 and 79 (66.9%) students had GPA between 3.0 and 3.49 while only five (4.2%) students had GPA between 3.5 and 4.0. Most of the students had GPA between 3.0 and 3.49. Also, only 14 (11.9%) students chose always for reading frequency. 72 (61.0) of them chose sometimes, 29 (24.6%) of them chose rarely and three (2.5%) of them chose never.

Also, 36 students who took Critical Reading and Writing course participated in the semi-structured interview. They were English Language Teaching (ELT) students studying at a state university. They were asked to answer six semi-structured interview questions (see Appendix III).

3.3. Data Collection Tools and Procedure

Institutional approval was taken from Research Ethics Committee to be able to do research at the department of English Language Teaching at Pamukkale University (see

Appendix I). The data were collected through scales and semi-structured interview. First of all, the adapted version of California Critical Thinking Disposition Inventory (CCTDI) by Kökdemir (2003) was applied to participants to reveal their tendency toward critical thinking. This inventory was designed by Facione and Facione (1992) and translated into English by Kökdemir (2003). Also, Critical Reading Self-Efficacy Scale developed by Küçükoğlu (2008) was used to measure students' level of critical reading. Cronbach alpha coefficient is calculated to ensure internal consistency reliability (Dörnyei, 2007). Therefore, to provide reliability of the scales, Cronbach alpha scores were given. In order to understand Turkish EFL pre-service teachers' perceptions about critical thinking, semi-structured interview was applied via e-mail.

3.3.1. Turkish Version of the California Critical Thinking Disposition Inventory (CCTDI-T)

The CCTDI is an inventory which has originally 75-items. It was developed by Facione and Facione in 1992 and aimed to identify critical thinking disposition through seven subscales: truth seeking (12 items), open-mindedness (10 items), analyticity (11 items), systematicity (12 items), inquisitiveness (11 items), self-confidence (nine items), and maturity (10 items). Afterwards, CCTDI was adapted into Turkish by Kökdemir (2003) and updated version of CCTDI had 51 items. There are 22 negatively worded items (items 5, 6, 9, 11, 15, 18, 19, 20, 21, 22, 23, 25, 27, 28, 33, 36, 41, 43, 45, 47, 49, 50). Therefore, reverse coding was used for these items. The cronbach alpha was measured as 0.88 in the Turkish version of the scale. The Cronbach Alpha score of this current study was computed as 0.80.

3.3.2. Critical Reading Self-Efficacy Scale (CRSES)

Halpern (1993) pointed out that critical thinking became meaningful with the help of competence and performance. Performance could be assessed by writing. Therefore, this study used students' critical thinking and reading results for the assessment of critical thinking, critical reading and writing.

To explore Turkish students' critical reading self-efficacy levels, Küçükoğlu designed Critical Reading Self-Efficacy Scale in 2008. While there were 33 items in the scale at first, eight of them were excluded after a pilot study. This scale aimed to identify the critical reading self-efficacy levels of Turkish students. Therefore, its latest version consists of 25 items. According to the analysis of items, the scale was found to have 0.85

Cronbach Alpha score and the use of the scale in other studies was proven in terms of reliability. The anchors in the scale vary from strongly agree (5) to strongly disagree (1) respectively. The Cronbach Alpha score was found to be 0.90 in the present study.

3.3.3. Semi-Structured Interview

To gather students' opinions on critical thinking, reading and writing and also the course, a semi-structured interview was applied to students. In the semi-structured interview, there are six questions formed by the researcher (see Appendix III). Semi-structured interview questions were prepared by reviewing the literature. According to Dörnyei (2007), semi-structured interview consists of guiding the participants to answer and clarify on leading open-ended questions which are prepared beforehand. This study made use of semi-structured interview because of its flexible and structured nature at the same time. Thus, students were expected to answer questions in a flexible and in-debt manner. With semi structured interview, it was aimed to let students give their own opinions without any constraint or intervention. Furthermore, the interview was conducted via e-mail. Meho (2006) stated that using e-mail is one of the most common methods of online asynchronous interviewing platforms and semi-structured interviewing with the participants. In the present study, the participants answered pre-prepared interview questions via e-mail and asked for clarification and additions when it was necessary.

3.4. Data Analysis

The data were analyzed both qualitatively and quantitatively because of the nature of data. The data gathered from scales were computed with the help of Statistical Package for Social Sciences (SPSS). The data gathered from semi-structured interview was analyzed through inductive content analysis.

As it is suggested by Dörnyei (2007), parametric tests are run when the quantitative data is normally distributed. In this regard, normality plots, skewness and Kurtosis values were checked for normal distribution. Table 3.3. below shows two scales' normality tests run in SPSS.

Table 3.3. *Normality Tests for CT Disposition Inventory and CR Self-efficacy Scale*

	M ± SD	Skewness	Kurtosis
CTDI-T	219.12 ± 22.70	.100	.175
CRSES	110.08 ± 11.52	-.228	.589

*CTDI-T=Critical Thinking Disposition Inventory-Turkish
*CRSES=Critical Reading Self-Efficacy Scale

As indicated in Table 3.3., the skewness and Kurtosis values of two scales changes between -1 and +1. Since there is a normal distribution, parametric tests were applied on the data. Correspondingly, this study conducted t-tests, correlation and Anova test in SPSS. First of all, a descriptive statistical analysis was applied to identify students' critical thinking disposition levels and critical reading self-efficacy levels. Secondly, in order to see the relationship of gender and Critical Reading and Writing course with the participants' critical thinking disposition levels and reading self-efficacy, independent t-test was applied. Thirdly, Anova tests were administered to analyze the relationship of achievement, reading frequency and grade levels with the scales. Finally, to examine the relationship between critical thinking disposition scale and critical reading self-efficacy scale, correlation test was applied.

When it comes to semi-structured interview questions, the textual data were analyzed through qualitative content analysis technique. Dörnyei (2007) reported that definite categorizations are created by counting words in written contents in this technique. He also stated that content analysis was a written transformed version of quantitative research however there is a basic difference between them. Downe-Wamboldt (1992) stated that content analysis helps analyzing data systematically and objectively to be able to present and report a distinct account from different types of data. Qualitative content analysis allows for creating qualitative categories from the data without deciding them in advance unlikely to the predetermined categories of quantitative research designs (Dörnyei, 2007). Therefore, it could be asserted that qualitative content analysis is much more convenient than quantitative research as it provides for analyzing participants' real thoughts without any restraint. Morgan (1993) remarked that qualitative content analysis consists of a wider and more subjective use of codes. However, it is considered as flexible method (Cavanagh, 1997). Content analysis is chosen for data analysis to grasp students' core knowledge without any intervention in addition to being flexible. As Babbie (1992) suggested, it is unobstrusive and nonreactive. Moreover, Morgan (1993) stated that the use of content analysis has been seen as a kind of analyzing qualitative data quantitatively; however, it provides the interpretation of data after counting the patterns. In this regard, he also pointed out that while analysis ends after demonstration of numerical findings in quantitative content analysis, qualitative content analysis includes interpretation of patterns formed from codes after giving the frequencies by counting. Additionally, Downe-Wamboldt (1992) remarked that the only feature of content analysis is not counting; it is

also engaged explanations, objectives, results and context. Therefore, qualitative content analysis does not only count the words and give the numbers, but it also includes the description or interpretation of numbers accordingly. Furthermore, Hsieh and Shannon (2005) pointed out that summative approach helps to determine and count specific words or themes in order to find out their contexts. Similarly, the current study benefited from summative content analysis to comprehend the contexts of frequent words. Thus, with the help of summative content analysis, students' answers for semi-structured interview were analyzed to count frequencies, find similarities and interpret on the data. During the content analysis, the steps of inductive approach are followed in the study. Creswell (2014) remarks that inductive approach in qualitative analysis is forming generalizable patterns from gathered data and comparing them with experiences and related literature. Figure 3.1 below shows the steps of inductive approach in qualitative analysis.

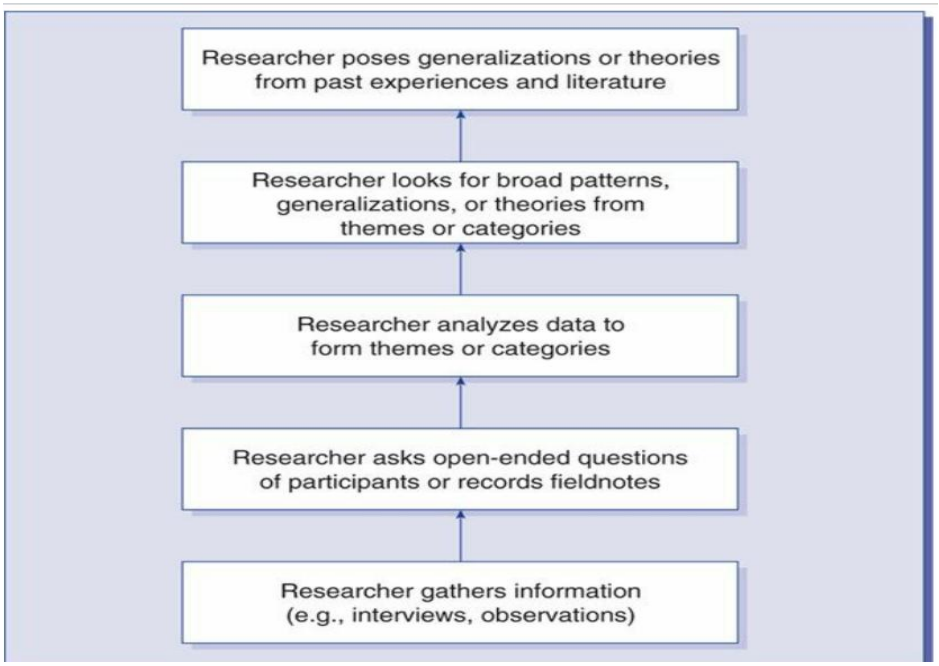

Figure 3.1. The Inductive logic of research in a qualitative study (Creswell, 2014, p. 100)

As it is displayed in Figure 3.1., researcher collects data and then analyzes it by creating categories or themes. Afterwards, researcher attempts to find patterns or theories from these categories or themes. Then, generalizations or theories could be presented by investigating the literature or previous experiences. When it comes to the present study, firstly the students were numbered accordingly to ensure confidentiality. Then, for each question, common codes were created according to their frequency by hand. After that, these codes were counted for their frequency in students' answers and these frequencies

were ranked according to the percentage. Later, the commonalities among students' answers were identified to interpret and compare them with the previous literature on the related issues. In addition, these similarities were used to associate and support quantitative data results. Intra-rater reliability was provided in the study. Intrarater reliability was regarded as self-consistency of the rater while analyzing the data (Gwet, 2008). Cohen (2017) noted that intra-rater reliability is calculated by re-reading and analyzing the data by the same rater a few times. In order not to come up with irrelevant or misrelevant points while analyzing semi-structured interview, the literature has been reviewed by the researcher. In this regard, this study used intra-rater reliability by analyzing the students' answers to semi-structured interview questions by the researcher in multiple times.

CHAPTER 4: FINDINGS

This chapter demonstrates the results of the scales and semi-structured interviews by presenting tables and analysis.

4.1. R.Q. 1. What are the critical thinking disposition levels and critical reading levels of Turkish EFL pre-service teachers?

To answer the first research question, a descriptive statistical analysis was applied to find out the critical thinking disposition levels and critical reading levels of Turkish EFL pre-service teachers. Table 4.1. below shows the descriptive statistics of students' critical thinking disposition levels and critical reading self-efficacy levels.

Table 4.1. *Critical Thinking Disposition and Critical Reading Self-Efficacy Levels of Turkish EFL Pre-service Teachers*

	M ± SD
CCDTI-T*	219.12 ± 22.70
CRSES*	110.08 ± 11.52

**CCDTI-T=California Critical Thinking Disposition Inventory-Turkish*
**CRSES=Critical Reading Self-efficacy Scale*
M=Mean SD=Standard Deviation

According to Table 4.1., mean score of CCDTI-T was 219.12 while standard deviation was found to be 22.70. Therefore, it could said that the scores of CCDTI-T were at mid level. When it comes to the results of CRSES, the mean score of CCDTI-T was 110.08 while standard deviation was found to be 11.52. What is more, the results of CRSES were at mid-level as well.

4.2. R.Q.2. How do critical thinking disposition levels and critical reading levels of Turkish EFL pre-service teachers change in terms of gender, grade level, GPA, and reading frequency?

In order to see if gender had an effect on Ss' critical thinking disposition levels and reading self-efficacy, independent t-test was applied. Table 4.2. below displays t-test results of prospective English language teachers' critical thinking disposition levels and gender.

Table 4.2. *T-test Results of Critical Thinking Disposition Levels and Gender*

Gender	N	Mean	Std. Deviation	t	p
Male	43	218.5116	24.01921	-0.222	0.825
Female	75	219.4800	22.07993		

Table 4.2. above shows that there is no significant difference between students' genders and critical thinking disposition levels (p>0.05). The results of the CCDTI-T scale

demonstrated that students' gender did not have a significant relationship with students critical thinking disposition levels.

Table 4.3. below shows the t-test results of Turkish EFL pre-service teachers' critical reading self-efficacy levels and gender.

Table 4.3. *T-test Results of Critical Reading Self-Efficacy Levels and Gender*

Gender	N	Mean	Std. Deviation	t	p
Male	43	108.5581	11.07147	-1.090	0.278
Female	75	110.9600	11.79262		

According to Table 4.3., there is no significant difference between students' genders and Critical reading self-efficacy levels (p>0.05). It can be said that gender did not have significant relationship with students' CR self-efficacy levels.

Another objective of this study was to identify if there was a statistically significant difference between students' grade levels and their critical thinking disposition levels and critical reading self-efficacy levels. In order to measure it, one way variance test was utilized. Table 4.4. displays t-test results of Turkish EFL pre-service teachers' critical thinking disposition levels and grade levels.

Table 4.4. *Anova Results of Critical Thinking Disposition Levels and Grade Levels*

	N	Mean	Std. Deviation	F	p
1	56	213.19	24.73	2.594	0.056
2	34	225.67	17.59		
3	3	223.00	27.05		
4	25	223.04	21.54		
Total	118	219.12	22.70		

According to Table 4.4., it was seen that there was no statistically significant difference between students' grade levels and critical thinking disposition levels (p>0.05).

Table 4.5. presents t-test results of critical reading self-efficacy levels and grade levels.

Table 4.5. *Anova Results of Critical Reading Self-Efficacy Levels and Grade Levels*

	N	Mean	Std. Deviation	F	p
1	56	106.19	12.25	4.990	0.003*
2	34	112.02	8.70		
3	3	114.00	12.12		
4	25	110.08	10.56		
Total	118	110.08	11.52		

*$p<.05$

According to Table 4.5., it was seen that there was a statistically significant difference between students' grade levels and critical reading self-efficacy levels (p<0.05). Turkish EFL pre-service teachers' grade levels had a significant relationship with their critical reading self-efficacy levels.

All in all, it can be claimed that Turkish EFL pre-service teachers' grade levels has a significant relationship with their critical reading self-efficacy while it does not have any relationship with critical thinking disposition. At this point, it was decided to look at whether Turkish EFL pre-service teachers took Critical Reading and Writing course or not. Critical Reading and Writing course is in the first term of the second year of the university and this study was implemented at the end of the first semester. Therefore, it could be said that students at the second, third and fourth years took the course and first year students did not take the course. Therefore, another analysis on SPSS was run. In order to see if taking critical reading and writing course caused a statistically significant difference for CT disposition levels and reading self-efficacy, independent t-test was applied. Table 4.6. below displays t-test results of critical thinking disposition levels and critical reading and writing course.

Table 4.6. *T-test Results of CT Disposition Levels and Taking Critical Reading and Writing Course*

Course	N	Mean	Std. Deviation	t	p
Taking the course	62	223.52	18.00	2.212	0.029*
Not taking the course	56	214.42	26.20		

**p<.05*

According to table 4.6., a significant relationship was found between the students who took the course and the ones who didn't take the course in terms of the critical thinking disposition levels (p<0.05). It can be said that course had a significant relationship on students' CT disposition levels.

Table 4.7. presents t-test results of critical thinking disposition levels and critical reading and writing course.

Table 4.7. *T-test Results of CR Self-efficacy Levels and Taking Critical Reading and Writing Course*

Course	N	Mean	Std. Deviation	t	p
Taking the course	62	113.32	9.477	3.292	0.001*
Not taking the course	56	106.61	12.552		

**p<.05*

According to Table 4.7., the critical reading self-efficacy levels of students changed between the students who took the course and the ones who didn't take the course (p<0.05). It can be said that there is a significant relationship between these two variables.

As shown in Table 4.6. and 4.7., the number of students who are at the second, third and fourth years of university were 62 and the first year students are 56 students. That is to say, 62 students took the course while 56 students did not take the course. The findings show that taking the course had a statistically significant relationship with both CT disposition levels and CR self-efficacy levels of Turkish EFL pre-service teachers.

This study also aimed to identify if Turkish EFL pre-service teachers' critical thinking disposition levels and critical reading self-efficacy levels changed according to their GPAs. In order to measure it, one way variance test was utilized. Table 4.8. below demonstrates t-test results of Turkish EFL pre-service teachers' critical thinking disposition levels and GPAs.

Table 4.8. *Anova Results of Critical Thinking Disposition Levels and GPAs*

	N	Mean	Std. Deviation	F	p
0.50-2.49	2	209.00	21.79	2.421	0.070
2.50-2.99	32	206.52	19.16		
3.00-3.49	79	200.77	18.13		
3.50-4.00	5	181.00	19.82		
Total	118	219.12	22.70		

According to Table 4.8., it was seen that there was no statistically significant difference between students' gpa scores and critical thinking disposition levels (p>0.05).

Table 4.9. shows t-test results of prospective English language teachers' critical thinking reading self-effiacy levels and GPAs.

Table 4.9. *Anova Results of Critical Reading Self-Efficacy Levels and GPAs*

	N	Mean	Std. Deviation	F	p
0.50-2.49	2	105.00	8.73	1.313	0.274
2.50-2.99	32	116.11	11.26		
3.00-3.49	79	107.09	10.54		
3.50-4.00	5	103.2	12.68		
Total	118	219.12	22.70		

According to Table 4.9., it was seen that there was no statistically significant difference between students' gpa scores and critical reading self-efficacy levels (p>0.05).

Eventually, Turkish EFL pre-service teachers' GPA was taken as their success. However, there was not a significant relationship between their GPA and CT disposition

and CR self-efficacy levels. It could be stated that CT disposition and CT self-efficacy levels do not change according to GPA.

Moreover, this study attempted to find out if there was a statistically significant difference between students' reading frequency and their Critical Thinking Disposition Levels and Critical Reading Self-Efficacy Levels. In order to measure it, one way variance test was utilized. Table 4.10. below exhibits Anova results of critical thinking disposition levels and reading frequency.

Table 4.10. *Anova Results of Critical Thinking Disposition Levels and Reading Frequency*

	N	Mean	Std. Deviation	F	p
Never	3	182.33	16.80	3.103	0.029*
Rarely	29	221.55	24.07		
Sometimes	72	218.76	21.26		
Always	14	223.85	23.00		
Total	118	219.12	22.70		

**p<.05*

According to Table 4.10., it was seen that there was a statistically significant difference between students' reading frequency and critical thinking disposition levels (p<0.05).

Table 4.11. below demonstrates Anova results of critical reading self-efficacy levels and reading frequency.

Table 4.11. *Anova Results of Critical Reading Self-Efficacy Levels and Reading Frequency*

	N	Mean	Std. Deviation	F	p
Never	3	95.33	7.50	4.513	0.005*
Rarely	29	109.00	10.83		
Sometimes	72	109.54	10.90		
Always	14	118.28	12.56		
Total	118	110.08	11.52		

**p<.05*

According to Table 4.11., it was seen that there was a statistically significant difference between Turkish EFL pre-service teachers' reading frequency and critical reading self-efficacy levels (p<0.05).

Namely, Turkish EFL pre-service teachers' critical thinking disposition and critical reading self-efficacy levels change according to their reading frequency. In other words, the more Turkish EFL pre-service teachers read, the higher they possess CT disposition and CR self-efficacy levels.

4.3. R.Q.3. Is there a significant relationship between students' CT disposition levels and critical reading self-efficacy levels of Turkish EFL pre-service teachers?

In order to identify the relationship between Turkish EFL pre-service teachers critical thinking disposition and critical reading self-efficacy levels, correlation was administered on SPSS. Table 4.12. displays the mean scores of and critical reading self-efficacy levels and critical thinking disposition levels.

Table 4.12. *The Mean Scores of Critical Reading Level Self-Efficacy and Critical Thinking Dispositions Levels*

	Mean	Std. Deviation	N
CRSES_Mean	110.0847	11.52521	118
CCTDI-T_Mean	219.1271	22.70831	118

As given in Table 4.12., the mean score of all students' answers for critical reading self-efficacy was 110.0847 and the standard deviation was 11.52521. The mean score of the answers in the critical thinking dispositions scale was 219.1271 and these points the standard deviation of 22.70831.

Table 4.13. below shows the relationship between students' critical reading self-efficacy levels and critical thinking dispositions.

Table 4.13. *The Relationship between Students' Critical Reading Self-efficacy and Critical Thinking Disposition Levels*

Correlations			
		CRSES	CCTDI-T
CRSES	Pearson Correlation	1	.605**
	Sig. (2-tailed)		.000
	N	118	118
CCTDI-T	Pearson Correlation	.605**	1
	Sig. (2-tailed)	.000	
	N	118	118

**p<.05*

To identify if there was a relationship between the points of two scales, correlation coefficient was computed after the mean scores of two scales were obtained. According to calculation, it was found to be 0.605. As given in Table 4.13., there was a significant positive relationship between students' critical reading self-efficacy levels and critical thinking dispositions (p<0.05) (r= .605). Therefore, it could be claimed that the higher Turkish EFL pre-service teachers have CT disposition, the higher their CR self-efficacy levels are. Similarly, their CR self-efficacy levels increase as long as they have high CT disposition.

4.4. R.Q. 4. What are the students' opinions about critical thinking, reading and writing?

To grasp students' opinions about critical thinking, reading and writing, students' answers to the semi-structured interview were analyzed through content analysis method. A qualitative content analysis research approach was used to analyze students' answers on semi-structured interview questions.

Interview Question 1: What do you know about critical thinking?

Table 4.14. *Students' Opinions about Critical Thinking*

Emerging Themes	Frequency
Analyzing	11
Understanding	8
Evaluation	6
Asking questions	5
Rational	4
Having deeper meanings	3
Supporting with evidence	3
Connection among them	3
Necessary for learning a language	3
Objective	2

According to the results of the first question, 11 students associated critical thinking, reading and writing with "analyzing". It was found to be the most recurring answer among students.

> *Critical thinking is a way of thinking that includes mental processes such as reasoning by analyzing and evaluating them.* (S4)

> *Critical thinking is asking questions about the text we are reading and analyzing details of the supporting idea or counter arguments.* (S11)

> *It makes me think or analyze from different perspectives.* (S32)

> *The critical thinking means that analyzing, looking deeper and thinking about a text or an idea.* (S36)

It is seen that Turkish EFL pre-service teachers associated critical thinking with analyzing texts deeply from different angles. Therefore, analyzing is regarded as an indispensable part of critical thinking in terms of participants' points of view. The second most frequent answer is CT's help to *understand*. Eight students mentioned *understanding* as a quality of these skills.

> *Critical thinking also improves our understanding comprehensively. Critical thinking improves understanding skills.* (S16)

> *I know that critical thinking helps us to make us a better writer and to better understand what we are reading in most types of texts, including academic texts.* (S26)

Turkish EFL pre-service teachers noted that critical thinking supports understanding the texts in a better way. Furthermore, evaluation was found to be the third frequent answer among students. Six students stated that CT is related to evaluation.

> *Critical thinking is to be able to evaluate the information given in detail.* (S8)

> *Critical thinking also help your objective evaluation skills.* (S33)

Besides, Turkish EFL pre-service teachers remarked their awareness toward the evaluation quality of critical thinking. What is more, five students reported that having these skills means being able to *question* the information they have gathered.

> *Critical thinking, reading and writing are the skills that are related to each other. Those include, while reading or listening, asking questions, examining, etc.* (S35)

Additionally, some students also gave specific questions to ask. For instance;

> *It means asking probing questions like, "How do we know?" or "Is this true in every case or just in this instance?* (S23)

> *The most important question is 'why', everything you write should have a meaning and a reason.* (S32)

Four students also explained CT with the word "*rational*."

> *I know that the critical thinking is the ability to think more rationally.* (S20)

Some ideas repeated three times. For instance, 3 students reported that critical thinking, reading and writing skills help us to find *deeper meanings*. Moreover, these skills requires individuals find *evidences* to support their ideas. Likewise, these skills are important for *learning language.* Last idea was that critical thinking, reading and writing are all *connected* to each other.

> *Critical reading, thinking, and writing are all connected.* (S31)

> *Critical thinking, reading and writing are the skills that are related to each other.* (S35)

Turkish EFL pre-service teachers also implied that critical thinking, reading and writing support each other. The least frequent answer among students was that learning these skills is necessary for being *objective*. This statement was also associated with reading and wriitng in addition to thinking.

To be able to think, read and write objectively. (S19)

Interview Question 2: What are the characteristics of a critical thinker?

Table 4.15. *Characteristics of a Critical Thinker*

Emerging Themes	Frequency
Analyzing	19
Being open-minded	13
Being objective	12
Searching	10
Being curious	9
Questioning	9
Being creative	7
Being good at observing	6
Looking from different angles	6
Not letting feelings affect their thinking	5
Being a good listener	5
Capturing little details	4
Evaluating well	3
Being sceptical	3
Being good at communication	3

The results of second research question showed that "*analyzing*" was the most common characteristic. 19 students documented that critical thinkers should have the ability of *analyzing*.

A critical thinker should be able to analyze situations carefully. (S6)

Critical thinkers analyze information before they rely on them. (S16)

Similar to the analysis of firs interview question, the most recurring answer for this question was *analyzing*. Turkish EFL pre-service teachers pointed out that analyzing is very important in different situations. In addition, being *open-minded* was found to be the second common answer for students. 13 students reported that being open-minded is a characteristic of being a critical thinker.

Critical thinkers are skeptical, open-minded, fair, etc. (S4)

Critical thinkers are open-minded and objective towards matters.. (S21)

Being open-minded was attached great importance in terms of being able to think critically. The third frequent answer was being *objective* with 12 answers.

Critical thinkers are able to stay objective. (S13)

They think objectively. (S6)

Objectiveness was found to be a requirement to be able to be a critical thinker. According to the findings, 10 students believed that critical thinkers should be *searching* for the information.

> *He/she should like analyzing the texts, making research about them. A critical reader should be a good analyzer and researcher.* (S33)

Besides, researching was regarded as significant for analyzing texts. Being *curious* and *being able to question* were the fourth common answer with 9 students.

> *Curiosity is another characteristics of a critical thinker.* (S13)
>
> *They always look at different situations with curiosity*. (S24)
>
> *He or she should be able to ask questions.* (S6)

These two answers were associated with each other. According to Turkish EFL pre-service teachers, one should be curious all the time and ask question in different situations. The fifth common answer among students was being *creative* and *good at observing* with 7 students.

> *Being creative is also a characteristic feature of a critical thinker.* (S20)

Another significant quality of critical thinker was found to be creative by Turkish EFL pre-service teachers. The sixth frequent answer among students were being *good at observing* and *looking from different angles* with 6 students.

> *Observation is one of the essential characteristics of a critical thinker.* (S13)
>
> *Critical thinkers have strong observation skills.* (S16)
>
> *He or she must be able to see the world from a different perspective.* (S35)

According to Turkish EFL pre-service teachers, one should observe things around him or her carefully from different angles to be able to be a critical thinker. The seventh frequent answer were *not letting feelings affect one's thinking* and *being a good listener* with five students.

> *They shouldn't let their own feelings or thoughts affect their thinking and criticizing process.* (S6)
>
> *Their emotions are in second place.* (S16)
>
> *Critical thinkers are active listeners.* (S13)
>
> *S/he is a good listener.* (S8)

Turkish EFL pre-service teachers also believed that a critical thinker should not let his or her feelings interfere with thinking and should listen carefully. Moreover, four students believed that critical thinkers can *capture little details*.

They understand the world in detail. (S16)

A critical thinker should be curious, pay attention to little details,.. (S25)

The ninth frequent answers were *evaluating well*, *being skeptical*, and being *good at communication.*

A good critical thinker must be evaluate the texts objectively. (S33)

Critical thinker is skeptical. (S8)

Basically, having a communicative character is important. (S6)

Interview Question 3: What kind of a relationship is there between critical thinking and language learning?

Table 4.16. *The Relationship between Critical Thinking and Language Learning*

Emerging Themes	Frequency
CT affecting language learning	29
Only confirming a relationship	7

All of the students believed there is a relationship between critical thinking and language learning and explained their opinions about it. Most of them remarked that learning CT helps and improves language learning. Moreover, seven students confirmed that there is a relationship but didn't explain in what ways.

A person who has critical thinking abilities can learn a language easily. (S1)

When learner is exposed to critical thinking, their learning skills will expand. (S16)

Interview Question 4: What were your thoughts before taking this course and how did they change after taking this course?

Table 4.17. *Students' Thoughts about Course*

Emerging Themes	Frequency
Improvement on critical reading and writing	11
Learning citation styles	8
Learning how to analyse texts	5
Gaining different perspectives	4
Gaining interpretation skills	3
Gaining understanding	2

Seven students stated that they taught Critical Reading and Writing course as a difficult course. However, their opinions had changed after taking the course and gained an awareness toward it. Also, 11 students pointed out that their performance on critical reading and writing improved after taking this course.

After taking this course, I learned the details about thinking critically, approaching a text in a different and more complex way. (S36)

My writing and reading skills improved after taking this course. (S17)

Turkish EFL pre-service teachers noted their improvement on critical reading and writing with the course. Eight students reported that they have learned how to make a proper reference list.

For instance, I learned how to give a reference list. It made me aware of the references in research articles. (S29)

Student 29 exemplified one of the contributions of the course by underlining his or her awareness toward reference lists. Seven students considered the course would be difficult before taking it. Also, most of these students pointed out that it was not difficult after taking it.

Before taking this course, I thought that it is going to be so hard and tedious. (S22)

After taking the course, Turkish EFL pre-service teachers changed their opinions about the difficulty of critical thinking. Furthermore, the students realized that they were able to analyze, look from different perspectives, interpret and understand better after taking this course.

After taking this course it helped me how to analyze and write research articles. (S11)

I can say that I have started to look at things from a different and meaningful perspective. (S34)

I always try to analyze and interpret the things what I read from different perspectives. (S21)

I can understand what is meant to say thanks to critical reading and writing course. (S10)

What is more, Turkish EFL pre-service teachers mentioned different types of contributions of the course to themselves. All in all, Turkish EFL pre-service teachers compared their knowledge before and after taking the course and gave examples of their personal experiences for the course.

Interview Question 5: What kind of a relationship is there between critical thinking and critical reading and writing?

Table 4.18. *Identifying the Relationship between Critical Thinking and Critical Reading and Writing*

Emerging Themes	Frequency
Mutual relationship among them	17
Considering CT as necessary for CR and CW	7
Important for everyday life	2
A relationship between CT and CR	2

According to the findings of the interview questions, 17 students stated that there is a mutual relationship among CT, CR and CW.

> *I think these three terms are interrelated with each other.* (S8)

Most of Turkish EFL pre-service teachers stated their awareness toward the relationship among these skills. Some of them explained why they thought like that.

> *I think they can't exist without each other. Because somebody can't do critical reading without critical thinking. Or somebody can't write without understand what he/she reads.* (S13)

> *I think that they are all connected in a way. Without the critical thinking, how can someone understand, write or criticize a literary piece? Vice-versa.* (S20)

Besides, the second most common answer was to consider CT as necessary for CR and CW with eigth students.

> *Critical thinking is necessary both for critical reading and writing. By having critical thinking skills, we can analyze texts better for our reading skills and it would help us have better background about the topic and we would be able to do critical writing better.* (S11)

> *Once we think critically, critical reading and writing come.* (S24)

> *Without critical thinking, one cannot excel in critical reading and writing.* (S25)

Therefore, it could be stated that most of Turkish EFL pre-service teachers participating in the semi-structured interview noted a mutual relationship among CT, CR and CW, while only eight of them considered CT more important than CR and CW. The third recurring answers were to consider CT as *important for everyday life* and two students stated that there is *a relationship between CT and CR* with.

> *Being able to think critically helps people to use it in everyday life as well.* (S28)

Our thoughts also consist of what we are exposed to. The person who reads critically, eventually internalizes critical thinking. (S35)

Turkish EFL pre-service teachers also acknowledged the importance of CT in everyday life as well as academic life. Therefore, the value of critical thinking has been accepted by Turkish EFL pre-service teachers in both academic and everyday life.

Interview Question 6: As a prospective English language teacher, how can you adapt critical thinking into your future lessons?

Table 4.19. *Students Opinions about Adapting CT into Lessons*

Emerging Themes	Frequency
Teaching writing skills	8
Letting students speak and discuss	8
Teaching how to question	7
Creating situations to be solved by students	6
Letting students research	5
Enhancing reading skills	5
Telling students the importance of CT	4
Creating group works	4
Debates	3
Asking students open-ended questions	3
Teaching how to think from different aspects	3
Integrating students‘ interests into lesson	3

To answer this question, students gave some suggestions to be used in their future classrooms. The most common answer was to integrate critical thinking into lessons with the help of *writing* and *letting students speak and discuss*.

I would want them to write their own texts. (S33)

I would make them discuss the text with their pers. (S34)

The communicative ways such as *writing* and *speaking* were found to be the most frequent answers among Turkish EFL pre-service teachers. In other words, Turkish EFL pre-service teachers realized the importance of practice to gain critical thinking. *Teaching questioning* was the second common answer with seven students.

I will teach my students to question. (S18)

The more my students ask questions the more they understand because critical thinking is based on asking questions. I will teach my lesson in a question-answer approach. (S24)

Turkish EFL pre-service teachers associated questioning to critical thinking and understanding. The third common answer among students were *creating situations to be solved by students*.

I can create situations that my students can solve by using critical thinking so that they realize the importance of it. (S8)

What is more, Turkish EFL pre-service teachers noted their willingness to create situations or problems to let them use critical thinking. One of the fourth most common answers to this question was *letting students research* with five students.

I would give my students topics that are posing a problem and they are required to make a research and find a solution. (S21)

Asking students research was another task to give students decided by Turkish EFL pre-service teachers. Another common answer was with the help of *reading*.

The more students are willing to read, the more critical thinking thanks to getting different ideas and evaulating from different perspectives. (S32)

To highlight the importance of critical thinking, I would discourse the lesson with texts and ask them questions. (S33)

Turkish EFL pre-service teachers also underlined the utmost importance of reading. *Telling students the importance of CT* and c*reating group works* were the fifth frequent answers among students. Four students referred to each unit. *Debates, asking open-ended questions, teaching how to think from different aspects, searching on students' interests and including them into activities* were the sixth common answers with 3 students for each.

I try to explain the importance of critical thinking. (S13)

I can encourage students for group work for a given topic. (S11)

I can include debates in the class for a topic. (S11)

I can ask open-ended questions to students. (S11)

By giving students tome tasks that requires thinking, students will be encouraged to improve their thinking skills. Critical thinking skills will be developed while students trying to think different aspects of given task. (S1)

I would firstly analyze and find their interests. (S20)

To sum up, different kinds of suggestions were given by Turkish EFL pre-service teachers for the last question of the interview. These suggestions included different tasks and integrations of different language skills to enrich teaching of CT.

CHAPTER 5: DISCUSSION AND CONCLUSION

In this chapter, the results will be discussed with the previous studies and conclusion part of the study will be given.

5.1. Discussion

In this chapter of the study, it was attempted to compare the results of this study with the relevant studies. The aim of this present study was to identify critical thinking disposition levels and critical reading self-efficacy levels of Turkish EFL pre-service teachers' and the relationship of their gender, grade levels, success, and reading frequency with these variables. Beside, exploring the relationship between CT disposition levels and CR self-efficacy levels was another purpose of the study. Finally, it was also intended to investigate Turkish EFL pre-service teachers' perception of CT. The findings of these objectives will be discussed accordingly.

5.1.1. Discussion on Identifying Critical Thinking Disposition Levels and Critical Reading Levels of Turkish EFL Pre-service Teachers

The first research question of this study was to specify the critical thinking disposition levels and critical reading levels of Turkish EFL pre-service teachers. The questionnaires utilized for this aim were Turkish version of Critical Thinking Disposition questionnaire and Critical Reading Self Efficacy questionnaire. Critical Thinking Disposition Scale was six-point Likert-scale survey and Critical Reading Self Efficacy scale was six-point Likert-scale survey. While the total mean score of the first questionnaire was 219.12, the total mean score of the second scale was found to be 110.08. The results of this study showed that both critical thinking disposition levels and critical reading self-efficacy scores were found at mid-level. This could be related to the lack of previous experience in learning CT. That is to say, Turkish EFL pre-service teachers did not have an opportunity to learn or practice critical thinking, reading or writing before the university. Therefore, this could be the reason of their mid-level CT disposition levels and CR self-efficacy levels.

This study results bear some similarities and differences with previous literature. Firstly, the findings of critical thinking scores from the similar studies were presented in the following sentences. To illustrate, Kürüm's study (2002) revealed that pre-service teachers' performance for critical thinking was at mid-level. Similarly, Çelen (2018) found senior student teachers as moderate-level critical thinkers. However, Buran (2016)

remarked that students' critical thinking disposition level was positive and Akdere (2012) reported that critical thinking scores of the pre-service teachers were found below average.

There are similar studies that have found critical reading self-efficacy levels as mid-level. For instance, Işık (2010) also attempted to identify the critical reading levels of high school students. According to the results of 'Critical Reading Scale', most of the students were reported to be at medium level.

Unlikely to the results of this current study, there are also other studies which have found the scores of critical reading self-efficacy above or below the average. For example, in their descriptive study, Karasakaloğlu et al. (2012) also aimed to measure pre-service teachers' critical reading self-efficacy levels. According to the results, pre-service teachers' critical reading self-efficacy perceptions were found to be low.

5.1.2. Discussion on the Relationship of Gender, Grade level, Success and Reading Frequency with Turkish EFL Pre-service Teachers' Critical Thinking Disposition Levels and Critical Reading Levels

The second research question of this study was to identify the effect of students' gender, grade level, success and reading frequency on the critical thinking disposition levels and critical reading levels of Turkish EFL pre-service teachers.

As reported by previous studies (Akdere, 2012; Bayındır, 2015), this present study could not find any relationship between gender and critical thinking dispositions and critical reading self-efficacy. In other words, gender does not seem to have a role on Turkish EFL pre-service teachers' CT disposition levels and CR self-efficacy levels. There are some studies which could not find a significant relationship between gender and critical thinking dispositions and critical reading self-efficacy as well. For instance, Bayındır (2015) investigated critical thinking levels of the students in state secondary schools and its relationship with their demographic information and remarked that gender did not have an effect on students' critical thinking levels. Similarly, Akdere's study (2012) investigated the relationship between secondary students' gender and critical thinking levels and noted that critical thinking levels of students were not affected by their genders. Therefore, it could be stated that students' critical thinking disposition levels and critical reading self-efficacy levels were not determined by their gender in both the present study and previous studies.

This study concluded that Turkish EFL pre-service teachers' grade levels did not have a significant relationship with their CT disposition levels. Thus, it could be alleged that Turkish EFL pre-service teachers' grade levels did not have a significant relationship with their perceived competency levels. This could be related to Turkish EFL pre-service teachers' different background information and perceptions. When it comes to critical reading self-efficacy, it turned out o have a significant relationship with their grade levels. It could be stated that taking course on reading or especially Critical Reading and Writing course could be the reason. Their reading frequency could be another reason as it could increase with their grade levels or age. These two possibilities would be studied in the upcoming parts of this study. It could be stated that taking Critical Reading and Writing course increases their perceived CT competency and CR self-efficacy. In her study, Kürüm (2002) concluded that there was not a significant relationship between pre-service teachers' critical thinking levels and grade levels.

After analyzing the relationship of grade levels, it was decided to investigate this issue as it could be associated with the possible relationship of taking Critical Reading and Writing course on Turkish EFL pre-service teachers' CT disposition and CR self-efficacy levels. Therefore, independent t-test was applied for this data. The results showed that there was a statistically significant relationship between the course and CT disposition and CR self-efficacy of Turkish EFL pre-service teachers. Therefore, it could be stated that taking Critical Reading and Writing course helps Turkish EFL pre-service teachers have higher scores on CT disposition and CR self-efficacy levels. Increasing class hours of courses on critical, thinking or writing or attempting to integrate these into other course could improve Turkish EFL pre-service teachers' critical thinking, reading and writing performances as well as their CT disposition and CR self-efficacy levels. Considering the previous studies in the literature, there are some studies which supported the effectiveness of teaching CT in their study and the ones that could not find any evidence to prove the effectiveness of the course. This study found a statistically significant relationship of taking Critical Reading and Writing course with Turkish EFL pre-service teachers' critical thinking disposition levels and critical reading self-efficacy levels along with similar previous studies. Likewise, in their case study, Mehta and Al-Mohrooqi's (2015) intended to identify how students brought their critical reading ability into their writing performances based on the instruction of critical thinking in English as a Foreign Language (EFL) environment. According to the results of the study, students had a chance to improve

their critical thinking and writing skills as long as they speak and write during the process. Furthermore, the study concluded that collecting students' writings at the beginning and end of the semester proved the effectiveness of teaching critical thinking in EFL contexts. In another study by Vong and Kaweruai (2017), the aim was to identify the outcomes of an instructional model developed by them. This model intended to improve trainee students' critical thinking levels and teaching skills of CT to learners as prospective teachers. The results showed that students' post critical thinking scores outnumbered their pre-critical thinking results. That is to say instructional model developed by researchers proved its applicability. Moreover, students' teaching skills of CT resulted in an ideal success. Finally, the implementation of the model boosted students' perceptions toward learning and teaching CT. Similarly, Atikler (2008) aimed to reveal to what extent teaching critical thinking contributed to students' writing performances after a five-week instruction program was designed for the students in the experimental group. The results indicated that the post-test scores of the students in experimental group outnumbered the post-test scores of the students in the control group while pre-test scores did not show any significant change between control and experimental groups. For this reason, the study suggested favorable sights to integrate critical thinking into writing instruction rather than applying traditional teaching methods on writing. Correspondingly, one of the aims of Aygün's study (2018) was to spot the applicability of online asynchronous learning tools to teach critical thinking skills in terms of their effectiveness for students' writing performances. According to the results, students' writings did not show any significant differences in their post-writings. However, students' writings included critical thinking skills after online critical thinking instruction. In addition, in his action research, Ünal (2014) aimed to analyze the effectiveness of a designed critical reading course on critical thinking levels of pre-service English language teachers. The results showed that an action research based on critical thinking had positive impacts on students' awareness toward critical thinking and their ability to think and read critically. Another study by Lu and Xie (2019) tried to identify the effectiveness of the International Critical Thinking Reading and Writing Test (ICTRWT) developed by Paul and Elder. They designed their own instruction content for the course and called it 'ICTRWT instructional pattern'. The results showed that the scores of students' critical thinking and writing were better in the treatment group than in the control group.

There are some other studies that could not find a significant difference (Fahim & Hashtroodi, 2012; Gündüz, 2017). Fahim and Hashtroodi (2012) attempted to seek whether critical thinking based instruction with the help of writing could develop Iranian university students' argumentative essays in their experimental study with experimental and control and groups. The results of the study displayed that experimental and control groups did not show any significant difference. Likewise, Gündüz (2017) seeked to determine the effects of critical thinking course on EFL students' critical thinking disposition, critical reading self-efficacy levels, and L2 critical writing performance in addition to the opinion essays of students who took this course. The results demonstrated that EFL students' critical thinking disposition, critical reading self-efficacy levels, and L2 critical writing performance did not show any significant difference between control and experimental groups. However, students' opinion essays of experimental group improved after taking the course. Thus, it could be stated that CT course contributed to the students' awareness of CT even if it did not cause a big change in their CT dispositions, skills and writing performance in some studies. Increasing the effectiveness and awareness toward critical thinking could be achieved by integrating these subjects into curriculum and including related courses from primary school to university.

In accordance with previous studies, this study also revealed that there is not a relationship between students' success and critical thinking disposition levels (Azar, 2010; Emir, 2009; Sepahi et al., 2014; Shirazi & Heidari, 2019; Shirrell, 2008). According to Azar's study (2010), students CT dispositions did not have an influence on students' academic achievement. In addition, the findings of Emir's study (2009) did not reveal a significant correlation between students' CT and their academic achievement. Correspondingly, Shirazi and Heidari (2019) found out that students' academic achievement was not determined by their CT levels.

However, there are some studies which obtained a positive relationship between students' success and critical thinking disposition levels (Abbasi & Izadpanah, 2018; Akdere, 2012; Fong et al., 2017; Ghanizadeh, 2016; Yüksel & Alci, 2012). The study of Abbasi and Izadpanah (2018) strived to explore whether students' academic achievement in English course can be predicted by their CT levels and the results of their study showed that CT levels of students could be an indicator of their academic achievement. Similarly, Ghanizadeh (2016) intended to identify whether university students' academic achievement is affected by their critical thinking levels and concluded that a positive

relationship was found between CT and achievement. Furthermore, he reported that the more students improve their critical thinking skills the more they are inclined to monitor themselves about their achievement. Likewise, in their descriptive study, Fong et al. (2017) studied the effect of CT levels of students at a community college on their success and examined previous studies with the same aim and found a significant positive correlation between students' academic achievement and CT levels. What is more, Yüksel and Alci (2012) tried to find out the effect of pre-service teachers' self-efficacy and critical thinking dispositions on success in school practicum course. They detected a significant correlation between pre-service teachers' grades in school practicum course and pre-service teachers' critical thinking disposition levels. In Akdere's study (2012), academic achievement was one of the variables to be searched in the demographic information asked from the students and she declared a correlation between students' critical thinking and academic achievement.

Another aim was to identify the effect of reading frequency on students' thinking disposition levels and critical reading self-efficacy levels. This study revealed a significant relationship between students' reading frequency and their critical thinking disposition levels and critical reading self-efficacy levels. Similarly, one of the intentions of Akdere's study (2012) was to measure the relationship between pre-service teachers' critical thinking levels and their reading behavior and found out a correlation between them. In contrast to this study, Işık's study (2010) did not find a relationship of reading frequency with critical thinking disposition levels and critical reading self-efficacy levels.

5.1.3. Discussion on Identifying the Relationship between Students' CT Disposition Levels and Critical Reading Levels of Turkish EFL Pre-service Teachers

The fourth research question was to identify the relationship between students' CT disposition levels and critical reading levels of Turkish EFL pre-service teachers if there is any. The results showed that there is a significant positive correlation between students' CT disposition levels and CR self-efficacy levels. Unlikely to this study, in Işık's study (2010), a positive but not significant relationship was found between students' critical thinking dispositions and their critical reading levels. Therefore, the study emphasized that critical reading skills could be improved with the help of a high critical thinking disposition.

5.1.4. Discussion on Identifying Students' Opinions on Critical Thinking, Reading and Writing

The fifth research question was to understand students' opinions on critical thinking, reading and writing. For this aim, students were asked to answer a semi-structured interview. According to the results of the study, most of the students gave similar answers to the questions. For instance, most of the students' awareness toward the critical reading and writing course increased. First, they thought the course as hard and then they changed their mind in a positive way. Similarly, they gave relevant answers with the literature.

The first interview question was '*What do you know about critical thinking?'* The most frequent answers for the first question were *analyzing, understanding, evaluation, asking questions, rational, having deeper meanings, supporting with evidence, connection, necessary for learning a language, being objective.* It could be stated that students mostly associated critical thinking with *analyzing*. It could be related to practicing analyzing in Critical Reading and Writing course. The findings of quantitative analysis presented a significant relationship of this course with the scales. The second most common answer was *understanding*. In this regard, it could be claimed that they comprehended the importance of understanding to be able to analyze or accomplish other academic requirements in the course. The third common answer was *evaluation* and it could be related to evaluation of research article in the aforementioned course. Therefore, it could be supposed that taking the course had a role on Turkish EFL pre-service teachers' CT dispositions, CR self-efficacy levels and CT perceptions. When we look at the literature about critical thinking, we see that the answers of "analyzing and evaluation" are coherent with the skills in afore-mentioned critical thinking cognitive skills while "supporting with evidence" is included in subskills of critical thinking skills (Facione, 1990). As a matter of fact, this interview question asks Turkish EFL pre-service teachers' perceived CT competency. This could be associated with critical thinking dispositions of them. Indeed, the subskills of aforementioned CT disposition inventory included some of the answers. The similar ones are truth seeking analyticity to searching for *evidence* and *analyzing*. All in all, it can be stated that students' existing knowledge about critical thinking after taking critical reading and writing course implies similar constructs with the previous literature.

The second question was '*What are the characteristics of critical thinker?*' *Analyzing, being open-minded, being objective, searching, being curious, questioning,*

being creative, being good at observing, looking from different angles, not letting feelings affect their thinking, being a good listener, capturing little details, evaluating well, being skeptical, being good at communication were the most common answers for the second interview question. Students' answers to this question comply with the description of ideal thinker by Facione (1990). The answers of "being open-minded, objective, searching, being curious, questioning, being skeptical" is respectively coherent with "being open-minded, objective, seeking relevant information, inquisitive, focused in inquiry, willing to reconsider" in the afore mentioned definition. Furthermore, the objectives of Critical Reading and Writing course are included in the answers as *analyzing*, *being objective* while analyzing research articles, searching for *evidence* and references, and *questioning*. Similarly, strategies of ideal critical thinker (Ennis, 1985) have strategies like "always questioning, curious, searching for strong arguments, examining the opinions, and giving importance to what has been told". These are respectively coherent with answers like 'questioning, being curious, searching, analyzing, and looking from different angles'. In Critical Thinking Dispositions of an Ideal Critical Thinker by Ennis (1991), 'to search for other options, and to be open to other thoughts' comply with 'searching, being open-minded and looking from different angles' in students' answers. What is more, the subscales of CCTD are coherent with the students' answers. The subscales of "open-mindedness, analyticity, inquisitiveness" are also included in students' answers as 'being open-minded, analyzing, and being curios'. To sum up, it can be suggested that most of the students' answers are mentioned before in the literature. Also, in previous research studies, students gave similar answers for the question of characteristics of critical thinker. For instance, in a study by Gündüz (2017), students stated that analytic questioning and logical reasoning were two common answers for the characteristics of critical thinker. Similarly, this study concluded that questioning was one of the frequent answers.

When students were asked '*What kind of a relationship is there between critical thinking and language learning?'* as the third interview question, there were two most common answers. Students most commonly reported that *CT affects language learning.* Some of them *only confirmed a relationship between them* but did not comment on it. The relationshiop of language learning with critical thinking was also acknowledged by Işık (2010) by mentioning CT's indispensable help on learning a language.

The fourth interview question was '*What were your thoughts before taking this course and how did they change after taking this course?'* Students' most frequent answers

for this question were *'improvement on critical reading and writing, learning citation styles, learning how to analyze texts, gaining different perspectives, gaining interpretation skills, gaining understanding'.* It could be stated that all of the students associated this course with positive outcomes even if their answers were not that common. Since quantitative results also found a relationship between Critical Reading and Writing course and CT disposition levels or CR self-efficacy levels, Turkish EFL pre-service teachers confirmed this relationship by mentioning the contributions of the course. To illustrate, they realized their improvement on critical reading and writing. Furthermore, analyzing was one of the objectives of the course and some of the students reported their learning on analyzing texts. Also, students gained awareness for the content and learning outcomes of the course. Moreover, some students considered CT as difficult before taking the course. After they take the course, they stated that their opinions changed in a positive way. Similarly, some studies in the literature encountered same kind of problems (Kurfiss, 1988; Lawrence et al., 2009). Some studies noted that students' resistance toward learning critical thinking should be decreased with the help of beneficial outcomes of learning CT (Halpern, 2009; Wade, 2009). In this regard, taking a course on critical thinking, reading or writing could overcome this problem like in this current study. Furthermore, taking the course would provide its relationship with CT disposition levels and CR self-efficacy levels. Taking a course before the university would help students understand the importance of learning CT and maybe learn to integrate it into their academic and everyday life.

The fifth interview question was '*What kind of a relationship is there between critical thinking and critical reading and writing?'* Emerging themes from the answers were *'mutual relationship among them, considering CT as necessary for CR and CW, important for everday life, a relationship between CT and CR'.* The previous studies confirmed the answers of the students in the findings of this study. For instance, Işık (2010) stated that there was a reciprocal relationship between critical reading and critical thinking**.** Similarly, Hyland (2002) stated that students could use critical reading as a helper for their writing. Moreover, there were some researchers put forward a connection between critical thinking and writing (Applebee, 1984; Cohen and Spencer, 1993). Besides, Ataç (2015) suggested that critical thinking comprise of reading and writing critically. By the same token, Scriven (1976) associated critical thinking with reading and writing as an academic activity. Additionally, Turkish EFL pre-service teachers'

aggrement on the relationship of these three skills was also confirmed by the findings of the qualitative data. A positive correlation was found between Turkish EFL pre-service teachers' CT disposition levels and CR self-efficacy levels.

The sixth interview question was '*As a prospective English language teacher, how can you adapt critical thinking into your future lessons?'* Students' most common answers included t*eaching writing skills, letting students speak and discuss, teaching how to question, creating situations to be solved by students, letting students research, enhancing reading skills, telling students the importance of CT, creating group works, debates, asking students open-ended questions, teaching how to think from different aspects, integrating students' interests into lesson.* Except one of the themes, all of them implied inductive teaching method. Previous studies showed the importance of teaching CT. To exemplify, Kennedy et al. (1991) confirmed that students' critical thinking could be enhanced by teaching critical thinking. King (1994) also emphasized the necessity of teaching students critical thinking to make an awareness toward learning. This can be achieved by the suggestion of 'telling the students of importance of CT' and giving examples from real life. Besides, Seçmen (2019) underlined the importance of teaching CT by students' lack of adaptation of their knowledge into real life situations. Therefore, 'creating situations to be solved by the students' could be a suggestion from students' answers to both integration of critical thinking into lessons and real life situations. As Chun (2010) suggested, teaching critical thinking changes its focus from 'learning to thinking'. Therefore, another student answer of 'teaching how to think from different aspects' can be very important for teaching CT. Similarly, Abrami et al. (2008) examined more than 1300 experimental studies between the years in 1960 and 2005 and concluded that critical thinking skills of participants increased with teaching critical thinking without giving any importance to how CT is taught. What is more, the quantitative data revealed that taking the course had a statistically significant relationship with Turkish EFL pre-service teachers' CT disposition and CR self-efficacy levels. However, Turkish EFL pre-service teachers' CT disposition and CR self-efficacy levels were found to be at mid level. Therefore, integrating CT into curriculum from the early ages could increase their CT disposition and CR self-efficacy levels and enhance their perceptions of CT. To this respect, students should be taught CT with either inductive or deductive method. All in all, attempting to assess CT after teaching and integrating it into the lessons is very important for teachers and learners and Turkish EFL pre-service teachers could be guided to prepare proper lesson plans CT tasks.

5.2. Conclusion

This study firstly aimed to find out critical thinking disposition levels and critical reading self-efficacy levels of Turkish EFL pre-service teachers. According to the results of the study, Turkish EFL pre-service teachers had mid level CT disposition and CR self-efficacy. That is to say, Turkish EFL pre-service teachers' perceived CT competency and self-efficacy are not in an expected level. This could be related to lack of previous learning experiences. These levels could be improved with the help of integrating CT into the curriculum from primary school to university. Besides, increasing class hours on CT or CR could help a better understanding and awareness for Turkish EFL pre-service teachers. In addition, much more time should be allocated to practice Turkish EFL pre-service teachers CT, CR, or CW skills in courses. Moreover, Turkish EFL pre-service teachers should learn how to teach and assess CT at the same time. In that way, assessment of students' CT disposition levels and CR self-efficacy levels could help in teaching and assessing CT and CR. In other words, learning CT and how to teach CT could make Turkish EFL pre-service teachers more conscious of their position in education. Karabay, Kuşdemir Kayıran and Işık (2015) suggested supporting the curriculum in the faculty of education departments in terms of educating pre-service teachers through critical thinking and reading for their future lesson in their teaching career. In this regard, Williams (2005) put forward teaching critical thinking is crucial for every academic discipline, but it is of utmost importance when it comes to teacher training.

Further, identifying the relationship between critical thinking disposition levels and critical reading self-efficacy levels was another aim of the present study. According to the results of the study, a positive relationship was found between them. Therefore, it could be stated that students have similar levels of CT dispositions and CR self-efficacy. Additionally, the relationship between different variables such as Turkish EFL pre-service teachers' gender, grade level, success and reading frequency and two different scales was also examined in the study. The results showed that gender and academic success did not show a significant relationship with students' CT and CR levels. When it comes to grade level, it did not have a significant relationship with CT disposition while it had a significant relationship with CR self-efficacy levels. Reading frequency had also a significant relationship with both CT dispositions and CR self-efficacy levels. Turkish EFL pre-service teachers' opinions on CT and CR were taken with the help of semi-structured interview questions. The content analysis indicated that Turkish EFL pre-service teachers

were knowledgeable about these concepts and they associated CT and CR with similar concepts such as analyzing, questioning, evaluating, etc. What is more, Turkish EFL pre-service teachers' answers were related to the conceptual framework of critical thinking dispositions and previous studies. All in all, considering students' mid-level critical thinking disposition and critical reading self-efficacy levels and related answers with the literature, further studies should focus on first improving students' perceptions on CT and CR and then finding and implementing ways to to teach and assess CT and CR. Accordingly, two practices of teaching critical thinking were suggested by Schafersman (1991). While the first one is related to integrating CT into teaching and assessing methods, the second one is making use of proper materials and plans based on expert opinions. In this regard, it can be claimed that there is a need for developing teaching materials, assessment techniques and designing curricula referring to critical thinking skills in the field of teacher education.

5.2.1. Limitations and Suggestions

There are some limitations of this study as well. First of all, instruments for data collection may not be enough for the study since the opinion of measuring "critical" may not be as easy and practical as it seems. Secondly, collecting data in a short period of time may not be generalizable and this may not be efficient in terms of understanding the long term influence of the course on the students. Another limitation is measuring students' critical thinking disposition levels and critical reading self-efficacy levels once. Furthermore, a small number of students participated in this study. Collecting data from only ELT students is another limitation of this study. Moreover, trying to collect data in a Covid-19 pandemic process has been challenging in this study.

To overcome afore-metioned limitations in further studies, some suggestions will be given to the readers. Firstly, different types of instruments could be used to be able to support the results with each other. Also, students' critical thinking, reading and writing performance could be measured in addition to their disposition and self-efficacy and these results could be compared. Secondly, students' answers could be gathered in long period of time after taking the course. Therefore, students' CT disposition and CR self-efficacy levels could be measure with pre and immediate post or delayed post tests. Another suggestion could be measuring students' CT, CR, and also CW levels before and after the Critical Reading and Writing course. Moreover, this study could be conducted with a larger group of students as pariticipants. Also, studies could be expanded by studying with

the experimental and control groups. Additionally, this study could be repeated in other departments of teaching in addition to English Language teaching. The instruments could be enriched with more and different types of tools.

5.2.2. Educational Implications

This study has further implications for prospective teachers, English language teachers, and teacher educators. First of all, learning, teaching and assessing critical thinking has been an important issue for teacher educators. When they realize the importance of critical thinking and see the reflections of critical thinking on students, they can attach more importance on teaching critical thinking. However, there is also a need to explore how to teach critical thinking. Therefore, there should be further studies to understand the effectiveness of different strategies to teach critical thinking. Thus, more time should be spent to enhance the effectiveness of courses on critical thinking, reading or writing. Furthermore, action research can be applied by researchers, teachers or teacher educators. Secondly, being aware of the significance of critical thinking is very important for teachers as well. For instances, Scriven (1976) considered critical thinking as an academic activity associated with reading and writing. As the literature suggests, learning critical thinking enhance students' reading and writing skills. Therefore, learning critical thinking supports students' academic reading and writing skills. Finally, learning critical thinking and thinking about how to teach it to the students in their future classes have been a crucial matter not only for Turkish EFL pre-service teachers but also the teachers of other disciplines. As soon as they realize the improvements that critical thinking creates on them, they can begin thinking about how to apply it in lessons. Furthermore, pre-service teachers could be given extra time and opportunity to apply it in their practicum or micro-teaching. Therefore, they should be taught critical thinking, how to teach critical thinking as well as making them use it in critical reading and writing. Additionally, workshops, trainings or online seminars could be provided for teachers in any discipline to raise CT awareness and share their experiences about teaching CT. Besides, teachers should be encouraged to do action research on teaching and assessment of CT. Finally, CT is very crucial for curriculum designers while adapting CT into curriculum or writing coursebooks. With these kinds of studies, understanding the necessity of CT can help to integrate CT into the curriculum and coursebooks in primary and high school in addition to all kinds of disciplines in universities.

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APPENDICES

APPENDIX I. Institutional Approval of Research Ethics Committee

T.C.
PAMUKKALE ÜNİVERSİTESİ
Sosyal ve Beşeri Bilimler Araştırma ve Yayın Etiği Kurulu

Sayı : E-93803232-622.02-33347
Konu : Duygu COŞKUN

DAĞITIM YERLERİNE

İlgide kayıtlı başvurunuz 10/03/2021 tarih ve 05-13 toplantı/karar nolu etik kurul toplantısında görüşülmüş olup, alınan karar ekte sunulmuştur.

Gereği için bilgilerinize arz ederim.

Prof. Dr. Ertuğrul İŞLER
Kurul Başkanı

Ek: Etik Kurul Kararı (1 sayfa)

Dağıtım:
Gereği:
Eğitim Bilimleri Enstitüsüne

Bilgi:
Sayın Dr. Öğr. Üyesi Pınar KARAHAN

T.C.
PAMUKKALE ÜNİVERSİTESİ
SOSYAL VE BEŞERİ BİLİMLERİ BİLİMSEL ARAŞTIRMA VE YAYIN ETİĞİ KURULU

SAYI: 68282350/2018/G05

Toplantı Tarihi: 10.03.2021
Toplantı Sayısı: 05
Toplantı Saati: 13:00

S.N	Adı Soyadı	İmza
1	Prof. Dr. Ertuğrul İŞLER	
2	Prof. Dr. Mithat AYDIN	
3	Prof. Dr. Naci KARKIN	
4	Prof. Dr. Asuman DUATEPE PAKSU	
5	Prof. Dr. Murat BALKIS	
6	Prof. Dr. İsmail ÇEVİŞ	
7	Prof. Dr. Süleyman BARUTÇU	

KARAR 13- Üniversitemiz Eğitim Bilimleri Enstitüsü Yabancı Diller Eğitimi Ana Bilim Dalı İngiliz Dili Eğitimi Tezli yüksek lisans programı 182151032 numaralı öğrencisi Duygu ÇOŞKUN'un tez danışmanı Dr. Öğr. Üyesi Pınar KARAHAN sorumluluğunda ***"The Effect Of Critial Reading On Tthe Writing Skills Of Prospective English Language Teachers"*** konulu çalışmasına yönelik başvuru formunun usul ve etik açıdan verdiği beyan ve ekler tetkik edilmiş olup; proje sahibinin, başvurusunda yer alan bilgi, belge ve taahhütnamelere uygun bilimsel davranışlar sergileyeceği kanaati oluşmuştur. İş bu karar oy birliği ile alınmıştır

ASLI GİBİDİR
10.03.2021

Prof. Dr. Ertuğrul İŞLER
Başkan

APPENDIX II: Online Scales

Bu anket PAÜ İngilizce Öğretmenliği bölümü yüksek lisans öğrencisi Duygu Coşkun tarafından yapılmaktadır. Çalışma İngilizce Öğretmenliği bölümünde okuyan öğrencilerin eleştirel okuma ve yazma hakkındaki düşüncelerini ölçmek içindir. Bu çalışmaya ayırdığınız zaman için çok teşekkürler.

Bu çalışmaya gönüllü olarak katılmayı kabul ediyorum ve istediğim zaman bırakabileceğimi biliyorum. Evet _____.

I. BİRİNCİ BÖLÜM: KİŞİSEL BİLGİLER

Yaş _____

Sınıf: 1 ( ) 2 ( ) 3 ( ) 4 ( )

Akademik Ortalama _____

Kaç yıldır İngilizce öğreniyorsunuz? _____

Cinsiyet: Kadın ( ) Erkek ( )

Yurtdışı deneyiminiz oldu mu? Evet ( ) Hayır ( )

Eleştirel Okuma ve Yazma (Critical Reading and Writing) dersini aldınız mı?: Evet ( ) Hayır ( )

Kitap Okuma Sıklığınız: Her gün ( ) Ara sıra ( ) Çok nadir ( ) Hiç ( )

II. California Eleştirel Düşünme Eğilimi (CCTDI) Ölçeği (Kökdemir, 2003)

Aşağıdaki ifadelerin sizi ne kadar tanımladığını düşünerek size uygun gelen ifadeyi yuvarlak içine alınız.

	Hiç katılmıyorum	Katılmıyorum	Kısmen Katılmıyorum	Kısmen Katılıyorum	Katılıyorum	Tamamen katılıyorum
1. Tüm hayatım boyunca yeni şeyler çalışmak harika olurdu.	1	2	3	4	5	6
2. İnsanların iyi bir düşünceyi savunmak için zayıf fikirlere güvenmeleri beni rahatsız eder.	1	2	3	4	5	6
3. Cevap vermeye kalkışmadan önce, her zaman soruya odaklanırım.	1	2	3	4	5	6
4. Büyük bir netlikle düşünebilmekten gurur duyuyorum.	1	2	3	4	5	6
5. Dört lehte, bir aleyhte görüş varsa, lehte olan dört görüşe katılırım.	1	2	3	4	5	6
6. Pek çok üniversite dersi ilginç değildir ve almaya değmez.	1	2	3	4	5	6
7. Sadece ezberi değil düşünmeyi gerektiren sınavlar benim için daha iyidir.	1	2	3	4	5	6
8. Diğer insanlar entelektüel merakımı ve araştırıcı kişiliğimi takdir ederler.	1	2	3	4	5	6
9. Mantıklıymış gibi davranıyorum, ama değilim.	1	2	3	4	5	6
10. Düşüncelerimi düzenlemek benim için kolaydır.	1	2	3	4	5	6
11. Ben dahil herkes kendi çıkarı için tartışır.	1	2	3	4	5	6
12. Kişisel harcamalarımın dikkatlice kaydını tutmak benim için önemlidir.	1	2	3	4	5	6
13. Büyük bir kararla yüz yüze geldiğimde, ilk önce, toplayabileceğim tüm bilgileri toplarım.	1	2	3	4	5	6
14. Kurallara uygun biçimde karar verdiğim için, arkadaşlarım karar vermek için bana danışırlar.	1	2	3	4	5	6
15. Açık fikirli olmak neyin doğru olup olmadığını bilmemek demektir.	1	2	3	4	5	6
16. Diğer insanları çeşitli konularda neler düşündüklerini anlamak benim için önemlidir.	1	2	3	4	5	6
17. İnandıklarımın tümü için dayanaklarım olmalı.	1	2	3	4	5	6
18. Okumak, mümkün olduğunca, kaçtığım bir şeydir.	1	2	3	4	5	6
19. İnsanlar çok acele karar verdiğimi söylerler.	1	2	3	4	5	6
20. Üniversitedeki zorunlu dersler vakit kaybıdır.	1	2	3	4	5	6
21. Gerçekten çok karmaşık bir şeyle uğraşmak	1	2	3	4	5	6

zorunda kaldığımda benim için panik zamanıdır.						
22. Yabancılar sürekli kendi kültürlerini anlamaya uğraşacaklarına, bizim kültürümüzü çalışmalılar.	1	2	3	4	5	6
23. İnsanlar benim karar vermeyi oyaladığımı düşünürler.	1	2	3	4	5	6
24. İnsanların, bir başkasının fikrine karşı çıkacaklarsa, nedenlere ihtiyacı vardır.	1	2	3	4	5	6
25. Kendi fikirlerimi tartışırken tarafsız olmam imkânsızdır.	1	2	3	4	5	6
26. Ortaya yaratıcı seçenekler koyabilmekten gurur duyarım.	1	2	3	4	5	6
27. Neye inanmak istiyorsam ona inanırım.	1	2	3	4	5	6
28. Zor problemleri çözmek için uğraşmayı sürdürmek o kadar da önemli değildir.	1	2	3	4	5	6
29. Diğerleri, kararların uygulanmasında mantıklı standartların belirlenmesi için bana başvurular.	1	2	3	4	5	6
30. Zorlayıcı şeyler öğrenmeye istekliyimdir.	1	2	3	4	5	6
31. Yabancıların ne düşündüklerini anlamaya çalışmak oldukça anlamlıdır.	1	2	3	4	5	6
32. Meraklı olmam en güçlü yanlarımdan birisidir.	1	2	3	4	5	6
33. Görüşlerimi destekleyecek gerçekleri ararım, desteklemeyenleri değil.	1	2	3	4	5	6
34. Karmaşık problemleri çözmeye çalışmak eğlencelidir.	1	2	3	4	5	6
35. Diğerlerinin düşüncelerini anlama yeteneğimden dolayı takdir edilirim.	1	2	3	4	5	6
36. Benzetmeler ve analojiler ancak otoyol üzerindeki tekneler kadar yararlıdır.	1	2	3	4	5	6
37. Beni mantıklı olarak tanımlayabilirsiniz.	1	2	3	4	5	6
38. Her şeyin nasıl işlediğini anlamaya çalışmaktan gerçekten hoşlanırım.	1	2	3	4	5	6
39. İşler zorlaştığında, diğerleri problem üstünde çalışmayı sürdürmemi isterler.	1	2	3	4	5	6
40. Elimizdeki sorun hakkında açık bir fikir edinmek ilk önceliklidir.	1	2	3	4	5	6
41. Çelişkili konulardaki fikrim genellikle en son konuştuğum kişiye bağlıdır.	1	2	3	4	5	6
42. Konu ne hakkında olursa olsun daha fazla öğrenmeye hevesliyimdir.	1	2	3	4	5	6
43. Sorunları çözmenin en iyi yolu, cevabı başkasından istemektir.	1	2	3	4	5	6
44. Karmaşık problemlere düzenli yaklaşımımla tanınırım.	1	2	3	4	5	6
45. Farklı dünya görüşlerine karşı açık fikirli olmak, insanların düşündüğünden daha az önemlidir.	1	2	3	4	5	6
46. Öğrenebileceğin her şeyi öğren, ne zaman işe yarayacağını bilemezsin.	1	2	3	4	5	6
47. Her şey göründüğü gibidir.	1	2	3	4	5	6
48. Diğer insanlar, sorunun ne zaman çözümleneceği	1	2	3	4	5	6

kararını bana bırakırlar.						
49. Ne düşündüğümü biliyorum, o zaman neden seçenekleri değerlendiriyor gibi davranayım.	1	2	3	4	5	6
50. Diğerleri kendi fikirlerini ortaya koyarlar ama benim onları duymaya ihtiyacım yok.	1	2	3	4	5	6
51. Karmaşık problemlerin çözümüne yönelik düzenli planlar geliştirmede iyiyimdir.	1	2	3	4	5	6

III. Eleştirel Okuma Becerisine İlişkin Özyeterlik Algısı Ölçeği (CRSES)

(Küçükoğlu, 2008)

	5	4	3	2	1
1. Okuduğum bir yazıda anlatılanları sahip olduğum bilgiler ışığında değerlendirebilirim.					
2. Bir yazıda anlatılanları yalnızca anlamakla kalmaz o konuda değerlendirme yapmaya da dikkat ederim.					
3. Bir yazıyı okurken, yazının sonunda neler olabileceğini tahmin edebilirim.					
4. Okuma parçasına ilişkin okuduğunu anlama soruları hazırlayabilirim.					
5. Okumak benim için sıkıcı bir çalışmadır.					
6. Okuduğum bir parçada geçen bilgileri ihtiyaçlarım doğrultusunda yeniden düzenleyebilirim.					
7. Okuduğum parçada yazarın savunduğu fikirlerin doğruluğunu değerlendirebilirim.					
8. Kendimi etkin bir okuyucu olarak görüyorum.					
9. Okumayı severim.					
10. Okurken metin üzerine not almak okuduğumu daha iyi anlamama yardımcı olur.					
11. Okurken önemli gördüğüm kısımları belirleyerek okumak okuduğumu daha iyi hatırlamama yardımcı olur.					
12. Bir okuma parçası üzerinde çalışırken önemli bilgileri kendi ifadelerimle not alırım.					
13. Bir okuma parçasını tam olarak anlamam için bütün kelimeleri bilmem gerekmez.					
14. Okuduğum parçanın ana fikirlerini kendi cümlelerimle özetleyebilirim.					
15. Okuduğun parçayla ilgili sorulabilecek soruları tahmin edebilirim.					
16. Okurken parçayla ilgili muhtemel soruların yanıtlarını düşünerek okurum.					
17. Karışık bir sıralama ile verilmiş bir metni sıralayabilirim.					
18. Okuduğum parçadaki bilmediğim kelimelerin anlamını parçanın bütününden çıkartabilirim.					
19. Bir okuma parçasındaki önemsiz bilgiyi önemli bilgiden kolaylıkla ayırabilirim.					
20. Okuduğum parçanın yazarının fikrini parçadan yorumlayarak çıkarabilirim.					
21. Okuduğum parçadan mantıklı çıkartımlar yapabilirim.					
22. Okuduğum parçadaki ana fikirleri parçada nerede arayacağımı bilirim.					
23. Okuduğum parçaya uygun bir son yazabilirim.					
24. Okuma çalışmaları yapmak için kendimi güdüleyebilirim.					
25. Okuduğum parçanın ana fikrini önceki bilgilerimle birleştirebilirim.					

APPENDIX III: Semi-structured Interview Questions

1) What do you know about critical thinking, reading and writing?

2) What are the characteristics of a critical thinker?

3) Do you think there is a relationship between critical thinking and language learning?

4) What were your thoughts before taking this course and how did they change after taking this course?

5) What kind of a relationship is there between critical thinking and critical reading and writing?

6) As a prospective English language teacher, how can you adapt critical thinking into your future lessons?

APPENDIX IV: An Example of Semi-structured Interview

1) What do you know about critical thinking?

Critical thinking is clear, reasonable, reflective thinking focused on deciding what to believe or do. It means asking probing questions like, “How do we know?” or “Is this true in every case or just in this instance?” It involves being skeptical and challenging assumptions, rather than simply memorizing facts or blindly accepting what you hear or read.

2) What are the characteristics of a critical thinker?

Critical thinkers are focused on constantly upgrading their knowledge, and they engage in independent self-learning. Some of the features they should have are, observation, curiosity, analytical thinking, empathy, open-mindedness, creative thinking, active listeners, etc.

3) Do you think there is a relationship between critical thinking and language learning?

In language learning and teaching, critical thinking (CT) is being constantly addressed. CT discussions especially affect English for Academic Purposes (EAP), which is the intention of teachers to help students develop all the skills required to excel in their university career.

4) What were your thoughts before taking this course and how did they change after taking this course?

Before taking this lesson, I did not think that I could improve myself to understand what I was reading and to think more logically and make comments. Things I learned after taking this lesson, what the text says: after critically reading a piece i can take notes, paraphrasing - in my own words - the key points; What the text describes: i have understood the text sufficiently to be able to use my own examples and compare and contrast with other writing on the subject in hand; Interpretation of the text: this means that i can fully analyze the text and state a meaning for the text as a whole.

5) What kind of a relationship is there between critical thinking and critical reading and writing?

Critical thinking depends on critical reading. I can think critically about a text (critical thinking), after all, only if i have understood it (critical reading).

6) As a prospective English language teacher, how can you adapt critical thinking into your future lessons?

To foster critical thinking in education i will promote critical enquiry or encourage questions from students, i will use problem solving method of teaching. I will encourage cooperative and collaborative learning among student groups.