

## 78. Exploring Turkish EFL pre-service teachers' perceptions of critical thinking and reading<sup>1</sup>

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### Abstract

The process of critical thinking (CT) plays an important role in enhancing English language proficiency levels of learners, especially the reading and writing proficiency levels. Since there are not many studies focusing on the relationship between CT and critical reading (CR), the current study intended to measure Turkish EFL pre-service teachers' CT disposition levels and CR self-efficacy levels together. 118 students studying at the department of English Language Teaching at a state university participated in the study. 36 of them participated in the semi-structured interviews. The quantitative data were analyzed via descriptive and inferential statistics. The qualitative data were analyzed through inductive content analysis. Findings of the study demonstrated that the students' CT disposition and CR self-efficacy levels were found to be at moderate level. Results of the relationship between CT disposition levels and CR self-efficacy levels revealed that there was a statistically significant difference between them. As for the results of the semi-structured interviews, the students were aware of the concept "critical"; however, their CT and reading skills needed to be developed. Results of the study overall indicated that more importance should be given to CT and reading skills in the field of foreign language teacher education.

**Keywords:** Critical thinking, critical reading, critical reading dispositions, self-efficacy, perceptions

## Türk İngilizce öđretmeni adaylarının eleřtirel düşünme ve okuma algılarına yönelik keřif çalışması

### Öz

İkinci yabancı dil olarak İngilizce öğrenenlerin dil yeterlik seviyelerinin, özellikle de okuma ve yazma yeterliliklerinin geliştirilmesinde eleřtirel düşünme süreci önemli bir rol oynar. Eleřtirel düşünme ve eleřtirel okuma arasındaki iliřkiyi ele alan çok fazla çalışma olmadığı için, bu çalışma Türk İngilizce öđretmeni adaylarının eleřtirel düşünme eğilimleri ve eleřtirel okuma öz-yeterlik düzeylerini birlikte ölçmeyi amaçlamıştır. Arařtırmaya bir devlet üniversitesinin İngilizce Öđretmenliđi bölümünde öğrenim gören 118 öğrenci katılmıştır. Bu öğrencilerden 36 tanesi yarı yapılandırılmış görüşmelere katılmıştır. Nicel veriler tanımlayıcı ve çıkarımsal istatistiklerle analiz edilmiştir. Nitel veriler ise tümevarımsal içerik analizi ile çözümlenmiştir. Arařtırmanın bulguları, öğrencilerin eleřtirel düşünme eğilimleri ve eleřtirel okuma öz-yeterlik düzeylerinin orta seviyede olduğunu göstermiştir.

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Eleştirel düşünme eğilimi düzeyleri ile eleştirel okuma öz-yeterlik düzeyleri arasındaki ilişkinin sonuçları, bu iki değişken arasında istatistiksel olarak anlamlı bir fark olduğunu ortaya koymuştur. Yarı yapılandırılmış görüşmelerin sonuçlarına göre, öğrencilerin “eleştirel” kavramının farkında oldukları; ancak eleştirel düşünme ve okuma becerilerinin geliştirilmesi gerektiği görülmüştür. Araştırma sonuçları genel olarak yabancı dil öğretmenliği eğitimi alanında eleştirel düşünme ve okuma becerilerine daha fazla önem verilmesi gerektiğini göstermiştir.

**Anahtar kelimeler:** Eleştirel düşünme, eleştirel okuma, eleştirel okuma eğilimleri, öz yeterlik, algılar

## 1. Introduction

Critical thinking (CT) can be described as the process of thinking that questions ideas and it is a way to decide whether a certain claim is true, false, or partially true. From an educational perspective, students can construct their own learning by becoming active participants through CT. The process of CT also plays an important role in enhancing English language proficiency levels of EFL learners, especially the reading and writing proficiency levels (Karahan & Coşkun, 2022). The term CT has been raised with the purpose of cultivating critical and democratic individuals for nations (Ten Dam & Volman, 2004). Therefore, CT and teaching CT have become one of the educational aims for societies. Dewey (1933) pointed out that learning how to think should be the main goal of education. In a similar vein, Paul (2005) suggested that the main focus of both individual achievement and national demands should be on CT skills. Likewise, 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. Willingham (2008) also noted that schooling should aim to equip students with CT skills. Previous research shows that there are many studies revealing the possible benefits of CT skills for both learning 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 CT and their low CT skills. Additionally, Teo (2014) recommends teachers to guide students through CT 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 CT in their teaching practices.

Besides reading and writing, CT is also important due to its applicability in learning and so many areas of life (Murawski, 2014). However; traditional education system causes students to have difficulties in adapting to the requirements of academic environment and applying CT skills and strategies in universities (Paul & Elder, 2000). Gupta (2005) mentions that there is an inadequate performance of teaching and assessing CT in colleges and curricula. Similarly, Trilling and Fadel (2009) point out that CT is a neglected skill in schools, colleges and universities. Therefore, 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. There is also a need to raise awareness about the importance of CT, teaching and assessing CT. Hence, it is necessary to explore students' CT dispositions, critical reading (CR) self-efficacy levels and perceptions of CT.

Considering the previous studies on CT in the field of English Language Teaching (ELT), it is understood that there are not many studies on assessing CT and CR. Besides, most of the previous studies deal with CT or CR separately. 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. Therefore, this study intends to explore ELT students' CT dispositions, CR self-efficacy levels, and perceptions of CT all together.

Tang (2016) remarks that English language teaching programs should attach more importance to CT skills along with the improvement of English language skills. English teachers are expected to teach four language skills including reading, writing, listening, and speaking. In this regard, this 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. The study is expected to pave a way for awareness of CT among prospective English language teachers and to provide implications for researchers who could conduct further studies on CT. In line with the above-mentioned aims, this study intends to answer the following research questions:

1. What are the CT disposition levels and CR levels of the Turkish EFL pre-service teachers?
  - Is there a relationship between the participants' CT disposition levels and CR levels?
2. How do CT disposition levels and CR levels of Turkish EFL pre-service teachers change in terms of:
  - a. Gender
  - b. Grade
  - c. General academic success (GPA), and
  - d. Reading frequency
3. What are the participants' perceptions on CT and CR?

## 2. Literature review

### 2.1. Critical thinking dispositions

By referring to Pascarella and Terenzini (2005), Stupnisky et al. (2008) defined CT as the combination of skills and dispositions: “(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 possessed by individuals was having a critical disposition in a fruitful way towards matters. Disposition was defined as a consistent willingness, motivation, and an intention to be engaged in CT while reflecting, decision making and solving problems (Facione et al., 1995). Therefore, CT dispositions were always of great importance for CT. In another definition by Facione et al. (1995), CT disposition was described as the tendency to use one's CT skills and did not directly address one's actual degree of skills. Furthermore, Facione et al. (1995) stated that the relationship of the dispositions to CT and CT skills was not crystal clear. Even though the necessity of CT dispositions for the classroom and real-life environment was known, the sources and effects of this concept on student success were not as clear as CT skills (Stupnisky et al., 2008). However, it was believed that CT dispositions would help to improve CT skills and the improvement of CT skills would help to raise CT dispositions. 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). Also, Yüksel and Alci (2012) noted that a correlation existed between CT dispositions and academic success. Besides, positive relationship between CT 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 CT disposition could have a relationship with motivation and academic success.

## 2.2. Studies on Critical Thinking and Reading

There are many studies conducted both in Türkiye and abroad on CT and CR in foreign language classes. These studies attempted to explore the relationship between students' academic achievement and their CT skills or dispositions. Some of these studies resulted in a positive correlation between CT skills and dispositions and academic achievement. To start with, Abbasi and Izadpanah (2018) attempted to explore whether students' academic achievement in an English course can be predicted by their CT levels. The eleventh-grade female students were the participants of the study. The researchers used the California Critical Thinking Skills Test (CCTST) in their study. According to the results of the study, students' CT levels have an important potential to enhance their academic achievement. In a similar study, Ghanizadeh (2017) intended to identify whether university students' academic achievement is affected by reflective thinking, CT 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' (Watson & Glaser, 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 CT and reflective thinking skills. Furthermore, a positive relationship was found between CT and self-monitoring. In other words, when students can improve their CT skills, they are more prone to monitor their achievement.

However, there are also some other studies which did not reveal any relationship between CT skills and dispositions and academic achievement. To illustrate, Azar (2010) aimed to identify the relationship between students' achievement in the "Selection and Placement Exam for University" (OSS) and their CT dispositions. The study also tried to find out whether students' gender, grade or major have any effect on their CT dispositions. The instrument was the Critical Thinking Disposition Scale (CTDS) developed by Akbıyık (2002) which aims to explore students' CT dispositions. 121 students who were preparing for the OSS exam were selected randomly for the study. Findings showed that the students' academic achievement was not affected by their CT dispositions and there was not any significant correlation between students' CT dispositions and their gender, grade or major.

In another study Yüksel and Alcı (2012) aimed to find out the effect of pre-service teachers' self efficacy and CT dispositions on their success in the teaching practicum course. Teachers' Sense of Self-Efficacy Scale (Çapa et al., 2005) and the Turkish version of California Critical Thinking Dispositions Inventory (CCTDI) were used to collect data for measuring pre-service teachers' self-efficacy and CT disposition levels. The participants included 104 preservice teachers. To measure success, grades of pre-service teachers given by their supervisors in school practicum course were taken into consideration. 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 CT disposition levels.

Some studies focused on the effectiveness of CT teaching and aimed to investigate if CT teaching could make an improvement in students CT skills, reading and writing performances. To illustrate, Gündüz (2017) investigated the effects of CT course on EFL students' CT disposition, CR self-efficacy levels, and

L2 critical writing performances. Two intermediate level classes with 26 Turkish EFL students at a preparatory school of a private university were the control and experimental groups in the study. The data were collected through the California Critical Thinking Disposition Inventory-Turkish (CCTDI-T) (Kökdemir, 2003), Critical Reading Self-Efficacy Scale (CRSES) (Küçüköğlü, 2008), students' opinion essays and students' writing performances about CT. The results demonstrated that there was no significant difference between control and experimental groups' CT disposition, CR self-efficacy levels, and L2 critical writing performances 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 performances.

Similarly, Karabay et al. (2015) aimed to identify the CR self-efficacy perceptions of pre-service teachers in their study. Besides, they attempted to find out whether graduation programs, grade levels, genders and academic achievements of preservice teachers have any effect on their CR 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 their findings, CR self efficacy of pre-service teachers exceeded the intermediate level. Furthermore, while correlations between CR self efficacy, gender, different departments, and academic achievement were found out, there was no correlation between CR self efficacy and grade levels of pre-service teachers.

### 3. Methodology

The present study made use of mixed method design which is used to interpret findings by combining both quantitative and qualitative data in a comprehensive and flexible way (Onwuegbuzie & Leech, 2004). In line with this, this study adopts a mixed method design by using scales and a semi-structured interview. The present study is also a descriptive study which attempts to describe the participants' perceptions of CT and CR. Furthermore, the study aims to explore whether students' gender, grade, reading frequency and academic success have any relationship with their CT disposition and CR self-efficacy levels.

#### 3.1. Setting and participants

This study was conducted at an English Language Teaching (ELT) Department of a state university. Participants were freshmen, sophomore, junior, and senior students studying in the above-mentioned department. They were selected through convenience sampling for this study. 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, the researchers preferred this sampling type since the participants were easier to reach. The study was conducted within the scope of Critical Reading and Writing course at the first term of the 2021-2022 academic year. This course aims to enhance students' reading and writing skills together, practice APA rules and study communicative purposes in research articles. Before conducting the study, students were given consent forms to ensure voluntary participation. 118 students agreed to fill in the CT Disposition Scale and the CR Self Efficacy Scale. Table 1 below presents the demographic information of participants, which includes gender, age, grade, reading frequency, and GPA, respectively:

**Table 1.** Demographic Characteristics of Participants

		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 1 above shows that 43 (36.4%) of the participants were male and 75 (63.6%) of them were female. 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 GPA in 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. Moreover, 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. Additionally, 36 students who took the Critical Reading and Writing course participated in the semi-structured interviews. They were asked to answer six semi-structured interview questions written in English and prepared by the researchers. Only the students who had already taken the Critical Reading and Writing course were selected for the semi-structured interview since these students were expected to have more awareness and knowledge about the relationship of CT and CR, compared to the ones who had not taken this course yet at the time this study was being conducted.

### Data collection tools and procedure

Institutional approval was first taken from the Research Ethics Committee to be able to conduct this research in the department of English Language Teaching at a state university located in Türkiye. The

data were collected through scales and a semi-structured interview. Firstly, the adapted version of California Critical Thinking Disposition Inventory (CCTDI) by Kökdemir (2003) was given to participants to reveal their tendency toward CT. This inventory was designed by Facione and Facione (1996) and translated into English by Kökdemir (2003). Moreover, the CR Self-Efficacy Scale developed by Küçüköğlü (2008) was also used in this study to measure students' CR levels. With an aim to understand Turkish EFL pre-service teachers' perceptions of CT and CR, the semi-structured interview questions were sent to the participants via e-mail.

### **3.2. Data analysis**

The data were analyzed both quantitatively and qualitatively. The data gathered from the scales were computed via descriptive and inferential statistics. The data gathered from the semi-structured interview, on the other hand, were analyzed through inductive content analysis. Firstly, a descriptive statistical analysis was conducted to identify students' CT disposition levels and CR self-efficacy levels. Secondly, independent samples t-test was administered to see the relationship of gender and Critical Reading and Writing course with the participants' CT disposition levels and reading self-efficacy. Thirdly, Anova tests were conducted to analyze the relationship of achievement, reading frequency and grade levels. Finally, a correlation test was applied to examine the relationship between CT dispositions and CR self-efficacy.

As for the semi-structured interview questions, the textual data were analyzed through the qualitative content analysis technique. This technique allows for creating qualitative categories from the data without deciding them in advance, contrary to the predetermined categories of quantitative research designs (Dörnyei, 2007). Summative approach was also adopted in this study to determine and count specific words or themes with an aim to find out their contexts. The current study benefited from summative content analysis to understand the contexts of frequently repeated words. Thus, with the help of summative content analysis, students' answers in the semi-structured interviews were analyzed by counting frequencies, identifying similarities and interpreting the data (Creswell, 2014).

For the sake of ensuring intra-rater reliability, both researchers first analyzed the data separately and revised their emerging themes about three weeks later. The agreement level between the researchers was found to be .82 according to the inter-rater formula proposed by Miles and Huberman (1994). This result indicates a high level of agreement level as .70 is accepted to be the minimal ideal level for inter-rater reliability.

## **4. Results and discussion**

### **R.Q. 1. What is the CT disposition levels and CR levels of Turkish EFL pre-service teachers?**

Descriptive statistical analysis was conducted to find out the CT disposition levels and CR levels of Turkish EFL pre-service teachers. Table 2 below presents the results of the first research question.

**Table 2.** CT Disposition and CR Self-Efficacy Levels of Turkish EFL Pre-service Teachers

	Mean	Std. Deviation
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

According to Table 2, the mean score of CCDTI-T was 219.12 while the standard deviation was found to be 22.70. Therefore, it could be said that the scores of CCDTI-T were at moderate level. When it comes to the results of CRSES, the mean score was 110.08 while the standard deviation was found to be 11.52. The results of CRSES were at moderate level as well. This could be related to the participants' lack of previous experience in learning CT. In other words, Turkish EFL pre-service teachers might not have had the opportunity to learn or practice CR, reading or writing before entering the university. Therefore, this could be the reason for their moderate level CT dispositions and CR self-efficacy levels.

This finding bears some similarities and differences with the findings of previous literature. To illustrate, Kürüm's study (2002) revealed that pre-service teachers' performances of CT was also at moderate level. Similarly, Çelen (2018) classified senior student teachers as moderate-level critical thinkers. However, Buran (2016) found that students' CT disposition level was positive and Akdere (2010) reported that CT scores of the pre-service teachers were found below average.

There are also some similar studies that have found CR self-efficacy levels at mid level. For instance, Işık (2015) attempted to identify the CR levels of high school students. According to the results of the 'Critical Reading Scale', most of the students were reported to be at moderate level. Unlike the results of this current study, there are also some other studies which found the scores of CR self-efficacy above or below the average. For example, in their descriptive study, Karasakaloğlu (2012) aimed to measure pre-service teachers' CR self-efficacy levels. According to their results, pre-service teachers' CR self-efficacy perceptions were found to be low.

### **Sub-question to R.Q.1. Is there a relationship between Turkish EFL pre-service teachers' CT disposition levels and CR self-efficacy levels?**

Correlation test was administered with an aim to identify the relationship between Turkish EFL pre-service teachers CT dispositions and CR self-efficacy levels. Table 3 displays the mean scores of CR self-efficacy levels and CT disposition levels.

**Table 3.** The Mean Scores of CR Level, Self-Efficacy and CT Dispositions Levels

	Mean	Std. Deviation	N
CRSES_Mean	110.08	11.53	118
CCTDI-T_Mean	219.13	22.71	118

As demonstrated in Table 3 above, the mean scores of all students' answers for CR self-efficacy were found to be 110.08 and the standard deviation was 11.53. The mean scores of the answers in the CT dispositions scale were found to be 219.13 and the standard deviation was 22.71.

Table 4 below shows the relationship between students' CR self-efficacy levels and their CT dispositions.

**Table 4.** The Relationship between Students' CR Self-efficacy and CT 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&lt;.05

In order to identify if there was a relationship between the points of two scales, normality test was first run. Since the data were found to be normally distributed, Pearson correlation coefficient was computed to measure the strength of a linear relationship between the two variables after the mean scores of two scales were obtained. According to this calculation, there was a significant positive relationship between participants' CR self-efficacy levels and CT dispositions ( $p < 0.05$ ) ( $r = .605$ ). This result shows us that the higher Turkish EFL pre-service teachers have their CT disposition levels, the higher their CR self-efficacy levels are. In other words, their CR self-efficacy levels increase in parallel with their CT disposition levels indicating that these levels are closely related to each other. Işık's (2015) study also found a positive but not a significant relationship between students' CT dispositions and their CR levels.

#### ***R.Q.2. How do CT disposition levels and CR levels of Turkish EFL pre-service teachers change in terms of gender, grade level, GPA, and reading frequency?***

With an aim to see if gender had any effect on students' CT disposition levels and reading self-efficacy, independent samples t-test was administered. Since t-test is an inferential statistics, normality test was run and the data were found to be normally distributed. The t-test results of the relationship between prospective English language teachers' CT disposition levels and gender showed that there was no significant difference between students' genders and CT disposition levels ( $p > 0.05$ ). The results of the CCTDI-T scale demonstrated that students' gender did not have a significant relationship with students CT disposition levels. There are also some other studies which could not find a significant relationship between gender, CT dispositions and CR self-efficacy. For instance, Bayındır (2015) investigated CT levels of the students in state secondary schools and remarked that gender did not have effect on students' CT levels. Similarly, Akdere's (2010) study investigated the relationship between secondary students' gender and CT levels and noted that CT levels of students were not affected by their gender. As for the t-test results of the relationship between Turkish EFL pre-service teachers' CR self-efficacy levels and gender, no statistically significant difference was found between students' gender and their CR self-efficacy levels ( $p > 0.05$ ). It can be said that gender did not have a 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 CT disposition levels and CR self-efficacy levels. The t-test results of the relationship between Turkish EFL pre-service teachers' CT disposition levels and grade levels demonstrated that there was statistically no significant difference between students' grade levels and CT disposition levels ( $p > 0.05$ ). In her study, Kürüm (2002) also concluded that there was not a statistically significant relationship between pre-service teachers' CT levels and grade levels.

As for the relationship between CR self-efficacy levels and grade levels, a statistically significant difference was observed between students' grade levels and CR self-efficacy levels ( $p < 0.05$ ). In other words, Turkish EFL pre-service teachers' grade levels had a significant relationship with their CR self-efficacy levels.

To summarize, Turkish EFL pre-service teachers' grade levels were found to have a significant relationship with their CR self-efficacy levels, while their grade levels did not have any significant relationship with their CT dispositions.

This study also aimed to find out whether Turkish EFL pre-service teachers' CT disposition levels and CR self-efficacy levels changed according to their GPAs. One-way Anova variance test was implemented to measure this. According to the results of the relationship between Turkish EFL pre-service teachers' CT disposition levels and their GPAs, no statistically significant difference was found between participants' Gpa scores and their CT disposition levels ( $p > 0.05$ ).

As for the results of the relationship between prospective English language teachers' CT, reading self-efficacy levels and their GPAs, there was statistically no significant difference between students' Gpa scores and CR self-efficacy levels ( $p > 0.05$ ). The participants' GPA scores were assumed to be demonstrative of their success in CR self-efficacy levels. However, there was not a significant relationship between their GPA, CT disposition and CR self-efficacy levels. In other words, it could be stated that CT dispositions and CT self-efficacy levels did not change according to GPA scores. Azar's (2010) study also demonstrated that the CT dispositions did not have an influence on students' academic achievement, which is in line with the findings of the current study. Findings of Emir's (2009) study did not reveal a significant correlation between students' CT and their academic achievement either. Shirazi and Heidari (2019) also found out that students' academic achievement was not determined by their CT levels. However, there are some other studies which found a positive relationship between students' success and CT disposition levels (Abbasi & Izadpanah, 2018; Akdere, 2010; Fong et al., 2017; Ghanizadeh, 2017; Yüksel & Alci, 2012). For instance, the study of Abbasi and Izadpanah (2018) explored whether students' academic achievement in English course can be predicted by their CT levels and the results of their study showed that the CT levels of students could be an indicator of their academic achievement. Similarly, Ghanizadeh (2017) attempted to identify whether university students' academic achievement was affected by their CT levels and concluded that a positive relationship was found between their CT and academic achievement.

Moreover, this study attempted to find out if there was a statistically significant difference between students' reading frequency, CT Disposition Levels and CR Self-Efficacy Levels. One-way Anova variance test was administered again to measure this. The results of the relationship between CT disposition levels and reading frequency showed that there was a statistically significant difference between students' reading frequency and CT disposition levels ( $p < 0.05$ ).

As for the results of the relationship between CR self-efficacy levels and reading frequency, a statistically significant difference was found between Turkish EFL pre-service teachers' reading frequency and CR self-efficacy levels ( $p < 0.05$ ). Namely, Turkish EFL pre-service teachers' CT dispositions and CR self-efficacy levels changed in accordance with 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. Akdere (2010) measured the relationship between pre-service teachers' CT levels and their reading behavior and found out correlation between them, which bears similarities with the findings of this current study.

In contrast to the findings of this study, Işık's (2010) study did not find a significant relationship among reading frequency, CT disposition levels and CR self-efficacy levels.

### **R.Q. 3. What are the participants' perceptions on CT and CR?**

To understand participants' perceptions on CT, reading and writing, their answers to the semi-structured interview were analyzed through the content analysis method.

A qualitative content analysis research approach was adopted to analyze participants' answers.

Interview Question 1: How do you conceptualize "critical thinking"?

**Table 5.** Participants' Perceptions on CT

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 participants associated CT, reading, and writing with "analyzing". It was found to be the most recurring answer among the participants.

*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)*

*Critical thinking means analyzing, looking deeper, and thinking about a text or an idea. (S36)*

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

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

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

Turkish EFL pre-service teachers also noted that CT supports their understanding of texts in a better way. *Evaluation* was found to be the third most frequent answer among students. Six participants stated that CT is related to evaluation skills.

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

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

Besides, Turkish EFL pre-service teachers mentioned their awareness about the evaluation quality of CT. Five participants 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 provided some specific questions to be asked in CT. They are exemplified below:

*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 participants also explained CT with the word "rational."

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

Some ideas recurred three times. For instance, 3 students reported that CT, reading and writing skills help us to find deeper meanings. Moreover, these skills require individuals to find evidence to support their ideas. Likewise, these skills are important for learning languages. The last idea was that CT, reading and writing are all connected with 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 CT, 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 CR and writing as well as CT.

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

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

**Table 6.** 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 skeptical	3
Being good at communication	3

Results of the second interview question showed that “*analyzing*” was the most common characteristic of a critical thinker, according to the participants’ answers. 19 participants answered that critical thinkers should have the ability to analyze.

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

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

Bearing similarities with the analysis of the first interview question, the most recurring answer for this second question was *analyzing*. Turkish EFL pre-service teachers pointed out that analyzing is very important in different CT situations. In addition, being *open-minded* was found to be the second most common answer given by the participants. 13 participants reported that being open-minded is an important 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 thought to be of great importance in terms of being able to think critically. The third most frequent answer was being *objective* (with 12 participants).

*Critical thinkers can stay objective. (S13)*

*They think objectively. (S6)*

Objectiveness was found to be an important requirement for being a critical thinker. According to the findings, 10 participants believed that critical thinkers should be *searching* for necessary information.

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

Besides, doing research was regarded as significant for analyzing texts. Being curious and being able to question were the fourth most common answers (with 9 participants).

*Curiosity is another characteristic of a critical thinker. (S13)*

*They always look at different situations with curiosity. (S24)*

*He or she should be able to ask questions. (S6)*

According to Turkish EFL preservice teachers' perceptions, one should be curious all the time and ask questions in different situations. The fifth common answer among participants was being *creative* and *good at observing* (with 7 participants).

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

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

*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 was *not letting feelings affect one's thinking* and *being a good listener* (with 5 participants).

*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 their thinking and should listen more carefully. Moreover, four participants believed that critical thinkers could 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 evaluate the texts objectively. (S33)*

*A critical thinker is skeptical. (S8)*

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

**Interview Question 3:** Do you think being a critical thinker affects language learning? How?

**Table 7.** The Relationship between CT and Language Learning

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

All the participants believed there is a relationship between CT and language learning. Most of them remarked that learning CT helps and improves language learning. Moreover, seven participants 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 learners are exposed to critical thinking, their learning skills will expand. (S16)*

**Interview Question 4:** What were your thoughts before taking this course and did they change any at all after taking this course?

**Table 8.** Participants' Thoughts about the Critical Reading and Writing 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 participants stated that they thought the Critical Reading and Writing was a difficult course. However, their opinions had changed after taking the course and they gained more awareness related to this concept. For instance, 11 participants pointed out that their performance of CR 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 performance on CR and writing increased with the help of this course. For instance, eight participants reported that they had learned how to prepare a correct reference list in accordance with the APA rules.

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

Participant 29 exemplified one of the contributions of the course by emphasizing his or her awareness toward reference lists. Seven participants considered that the course would be very difficult before taking it. However, most of them pointed out that it was not as difficult as they had expected after taking it.

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

After taking the course, Turkish EFL pre-service teachers changed their opinions in a positive way about the perceived difficulty of CT. Furthermore, they realized that they were able to better understand, interpret, and analyze academic texts by looking from different perspectives 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)*

Moreover, 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 related to the course.

**Interview Question 5:** What kind of a relationship is there between CT and CR and writing?

**Table 9.** Identifying the Relationship between CT and CR 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 participants stated that there is an important relationship among CT, CR and CW.

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

Most of the Turkish EFL pre-service teachers stated their awareness of the relationship among these three concepts. Some of them also explained their reasons for this relationship.

*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 understanding what he/she reads. (S13)*

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

Besides, the second most common answer was to consider CT as necessary for CR and CW (with eight participants).

*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 the Turkish EFL pre-service teachers participating in the semi-structured interview noted a relationship among CT, CR and CW, while only eight of them considered CT more important than CR and CW. The three recurring answers considered CT as *important for everyday life* and two participants stated that there is *a relationship between CT and CR*.

*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 in academic life. Therefore, the value of CT 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 adopt CT into your future lessons?

**Table 10.** Students Opinions on 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 about the importance of CT	4
Creating group works	4
Debates	3
Asking students open-ended questions	3
Teaching how to think from different perspectives	3
Integrating students' interests into lessons	3

In their answers to this question, participants provided some suggestions for use in their future classrooms. The most common answer was to integrate CT 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)*

Communicative skills 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 acquire CT skills. *Teaching questioning* was the second common answer (with seven participants).

*I will teach my students how to question something. (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 with CT and understanding. The third common answer among them was *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)*

Moreover, Turkish EFL pre-service teachers noted their willingness to create situations or problems that would let their students activate CT. One of the fourth most common answers to this question was *letting students research* (with five participants).

*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 to read was thought to be another way of adapting CT into lessons by Turkish EFL pre-service teachers.

*The more students are willing to read, the more critical thinking thanks to getting different ideas and evaluating 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 emphasized the utmost importance of reading. Telling students about the importance of CT and creating group works were the fifth frequent answer given by the participants. Conducting debates, asking open-ended questions, teaching how to think from different aspects, searching on students' interests and including them to activities were the sixth common answers (with 3 participants for each category).

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

*I can encourage students for group work activities about 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 some tasks that require thinking, students will be encouraged to improve their thinking skills. Critical thinking skills will be developed while students are trying to think about different aspects of a given task. (S1)*

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

To sum up, different kinds of suggestions were provided by Turkish EFL pre-service teachers for the last question of the semi-structured interview. These suggestions included a variety of tasks and integrations of different language skills to enrich the teaching of CT. Regarding the participants' perceptions on CT, reading and writing overall, their answers to the interview questions showed that they valued the process of CT in academic as well as daily life and appreciated the importance of this process for the development of CR and writing skills. It was also noteworthy that their opinions had changed in a positive way after taking the Critical Reading and Writing course as they stated that they gained more awareness related to this concept after taking this course.

## 5. Conclusion

This study aimed at finding out the CT disposition levels and CR self-efficacy levels of Turkish EFL pre-service teachers. According to the results of the study, Turkish EFL pre-service teachers had moderate level CT disposition and CR self-efficacy levels. Turkish EFL pre-service teachers' perceived CT competency and self-efficacy levels were not found at an expected level. This could be related to the lack of previous learning experiences of the participants about CT. These levels could be improved with the help of integrating CT into the curriculum beginning from primary school to university. Besides, increasing class hours on CT or CR could help a better understanding and awareness of Turkish EFL pre-service teachers about this concept. In addition, much more time should be allocated to practice CT, CR, or CW skills. Karabay et al. (2015) suggests supporting the curriculum in the faculty of education departments in terms of educating pre-service teachers through CT and reading for their future lessons in their teaching career. All in all, considering students' moderate level CT disposition and CR self-efficacy levels, educators should focus more on improving students' CT and CR levels by finding and implementing novel ways to teach and assess CT and CR.

Two practices of teaching CT were suggested by Schafersman (1991). While the first one is related to integrating CT into teaching and assessment methods, the second one is making use of proper materials and plans based on expert opinions. In this regard, there is a need for developing teaching materials, assessment techniques and designing curricula referring more to CT skills in the field of foreign languages teacher education.

This study has some important implications for prospective teachers, English language teachers, and teacher educators as well. Firstly, teaching and assessing of CT has been an important issue for teacher educators. When they realize the importance of CT and see the benefits of CT on students, they will attach more importance to teaching CT. However, there is also a need to explore how to teach CT. Therefore, there should be further studies to understand the effectiveness of different strategies and methods to teach CT. Thus, more time should be allocated to enhancing the effectiveness of courses on CT, reading or writing. Furthermore, action research can be conducted by researchers and teachers or teacher educators.

CT is considered as an academic activity which is closely associated with reading and writing. As the literature suggests, learning CT enhances students' academic reading and writing skills. In this vein, pre-service teachers could be given extra time and opportunity to apply CT in their practicum or micro-teaching courses. Besides learning and practicing CT skills themselves, they should also know about how to teach CT to their future students. Additionally, workshops, training or online seminars could be organized for both pre-service and in-service teachers in any discipline to raise CT awareness and share their experiences about the teaching of CT. Finally, CT is also very crucial for curriculum designers in their adapting of it into the curriculum or writing coursebooks. In this regard, understanding the necessity of CT can help to effectively integrate it into the curriculum and coursebooks in primary and high schools as well as in all kinds of disciplines at university level.

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