The Relationship Between Academic Achievement, Reading Habits And Critical Thinking Dispositions of Turkish Terttiary Level EFL Learners

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The aim of this study was to describe EFL learners' critical thinking levels and to examine the relationship between participants' critical thinking levels and selected variables such as gender, academic achievement in EFL, subject area, and self-reported reading. The overall design of the study was based on the quantitative research method. Data were collected from 280 students of different faculties attending the School of Foreign Languages using the Turkish adaptation of the California Critical Thinking Disposition Inventory (CCTDI) during the 2015-2016 academic year. Measurements of subscales were also used for diagnostic purposes. The results indicated that participants in this research generally have a low critical thinking disposition. Moreover, they have low critical thinking dispositions in five of the scales - analyticity, inquisitiveness, self-confidence, truth-seeking and systematicity- while they have medium critical thinking disposition in just one subscale - open-mindedness-. It was seen that females had higher scores with respect to analyticity and open-mindedness; successful students were more open-minded; the participants reporting that they read every day had higher scores in inquisitiveness and self-confidence than the other groups and finally it was seen that participants' subject areas did not indicate a significant relationship with any of the subscales. Some recommendations were made in accordance with the findings of the research.

Introduction

Ongoing, enormous advances in science and technology, mean that the world is changing so rapidly and becoming so much complex that it imperative for people to develop and keep up with these advances in all fields of life and to survive in this new era. Due to these developments and changes, a great revolution is needed in education and ways of thinking to encourage and equip the new generation with skills enabling them to meet the higher expectations of the society. Among these skills are problem

solving, decision-making, critical thinking, logical judgment, and creative thinking (Nickerson, 1987). In addition, there is general agreement in the literature that it is crucial to have critical thinking skills in order to meet the demands and the challenges of the current era (Huitt, 1992; Halpern, Pithers, 2000; 2003; Varaki, 2006).

Definition of Critical Thinking

Although critical thinking has been cited as one of the most valuable skills in education and its roots go to the times of Greek Empire (Center for Critical Thinking, 2001), it does not have a clear and unifying definition (Paul, 2004; Kuhn, 1999). Many people have sought to define critical thinking. Socrates, the first of them, described it in his "Socratic Questioning" as not believing in the value of ideas without asking profound questions to find clarity, logical consistency and adequate evidence first (Paul, et. al., 1997). From this first definition, throughout the history, such scholars as Plato, Aristotle, John Dewey, Ludwig Wittgenstein, and Piaget have all contributed to today's understanding of critical thinking (Paul, et. al., 1997).

John Dewey (1910), the pioneer of the modern critical thinking tradition, defined "reflective thinking", another term for critical thinking (Shermis, 1999), 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" (p. 6). In this definition, Dewey emphasizes the importance of prior knowledge and experience in the thinking process of an individual. His definition inspired other scholars attempting to define critical thinking, such as Ennis (1992), who defined it, as "reasonable and reflective thinking that is focused on deciding what to believe or do" (p. 22). Ennis suggests learners can be educated to reach reasonable decisions, which action is the essential product of critical thinking. Atkinson (1997), however, considers critical thinking to be an implicit social practice. He suggests handling the critical thinking in culture and so admits that it can be learned by individuals in their native culture. Richard Paul's contemporary definition differs from

others. He defines critical thinking as thinking about and improving the quality of one's own thinking (1993). He states "critical thinking is the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing and/or evaluating information gathered from, or generated by, observations, experience, reflection, reasoning, or communication, as a guide to belief and action" (p. 1). Paul's definition differs from those previously given in that he emphasizes metacognition, or thinking about thinking (Fisher, 2001). Considering all the definitions above it can be concluded that critical thinking is based on previously accumulated information, that it entails a process of questioning, analyzing, and synthesizing this information through experience, and that the result is a conclusion based on accurate reasoning which leads to an action.

Dimensions of Critical Thinking

In order to make the definition of critical thinking more clearly understandable, two primary dimensions of critical thinking are to be mentioned: the cognitive and the affective dimensions, also called the affective dispositions.

The list of cognitive skills inherent in critical thinking offered by various scholars shows some common features and variations. The variations mostly derive from the complexity of the critical thinking construct, which intensifies the difficulty of differentiating general cognitive skills from the sub-skills. The difficulty of assessing the cognitive skills inherent in critical thinking, moreover, enforces researchers to classify them into as few components as possible. Cheung et al. (2002), for instance, have reduced the cognitive dimension to two components as reasoning and deduction skills; Watson and Glaser (1980) listed five cognitive sub-skills: deduction, recognizing assumptions, inference, interpretation, and evaluating assumptions. As an outcome of a study initiated and guided by Facione (1990a), on the other hand, a panel of experts arrived at a consensus on six general cognitive skills and listed the sub-skills: (1) Interpretation, (categorization, decoding significance, clarifying meaning); (2)

Analysis (examining ideas, identifying arguments, analyzing arguments); (3) Evaluation (assessing claims, assessing arguments); (4) Inference (querying evidence, conjecturing alternatives, drawing conclusions); (5) Explanation (stating results, justifying procedures, presenting arguments); (6) Self-regulation (self-examination, self-correction). A more comprehensive framework has been offered by Paul et al. (1989) with two categorizations as macro cognitive abilities and micro cognitive skills.

The dispositions form another important dimension which is cited by some scholars (Norris and Ennis, 1989) to be as important as the cognitive domain. While some employ the term affective domain or dispositions to refer to habits, others use it to describe motivations or even personality traits. Paul et al. (1989) refer to these affective dispositions as affective strategies, which consist of thinking independently, exercising fair-mindedness, exploring thoughts underlying feelings and feelings underlying thoughts, developing intellectual humility and suspended judgment, developing intellectual courage, perseverance, and confidence in reason. Cheung et al. (2002) divide this dimension into motivational dispositions and behavioral habits with two sub components in each. Motivational dispositions involve truth seeking disposition and inquisitiveness disposition while behavioral habits involve analysis habit and compliance habit (a negative trait).

Recent studies have shown that in addition to cognitive skills, critical thinking involves the use of metacognitive skills, such as planning, monitoring, and revising the progress of cognitive skills and dispositions (Norris, 2003). Paul (2002) refers to the metacognitive dimension as standards needed for the assessment of one's own thinking. Thus, the metacognitive dimension of critical thinking emphasizes the reflective, self-evaluative nature of critical thinking. It is handled in the literature related to critical thinking instruction that the metacognitive skills should be addressed (Dan & Volman, 2004; Halpern, 2003).

Critical Thinking in Education

In the literature, several reasons are mentioned for fostering critical thinking in students (Bailin and Siegel, 2003). First, students should be treated with respect as individuals who are capable of deciding for themselves what to do and what to believe. Students should, therefore, be helped to develop the skills to judge for themselves. Second, education prepares them for adulthood and this cannot be achieved by imposing pre-determined roles on them. They should become self-sufficient, self-directed adults, who can think critically. Third, rational traditions that are at the heart of education, -mathematics, science, literature, art and so forth- have always depended upon critical thinking. Last, democracy requires critical thinking from its citizenry as it relies upon good reasoning about issues such as politics, media and so on. Researchers also believe that critical thinking skills and abilities can be taught in educational settings (Aybek, 2007; Ennis, 1989; Facione et al., 2006; Facione & Facione, 2008; Halpern, 1998; Kennedy et al., 1991). Halpern (1998) showed that there are instructional programs which improve the critical thinking skills of college students. Some college students, for instance, were instructed in a specific type of problem-solving strategy. After instruction, they produced more effective math expressions than the college students who did not get this instruction. Similarly, Kennedy et al. (1991) concluded that instructional interventions aimed to improve students' critical thinking skills have positive results.

Critical Thinking in Foreign Language Learning

Numerous studies conducted on the importance of critical thinking in language learning indicate that language learners who have developed critical thinking skills are more capable of doing activities in language classes (Mahyuddin et al; 2004), are better at writing (Rafi,2011), oral communication abilities (Kusaka & Robertson, 2006), and language proficiency (Liaw, 2007, Shirkani & Fahim, 2011). Chapple and Curtis (2000) and Davidson (1994, 1995) put forward empirical evidence that supports the effectiveness of teaching critical thinking skills along

with the foreign language. According to the results of these aforementioned researches, the reason for this difference obviously stems from several characteristics of language learners who have developed the ability to think critically. Firstly, if language learners can take charge of their own ways of thinking, they can monitor and evaluate their learning approaches more successfully. Second, critical thinking expands the learning experience of the learners and makes the language more meaningful for them. Thirdly, critical thinking has a high degree of correlation with the learners' achievements (Rafi, 2011). Since a significant relationship was found between critical thinking ability and the use of language learning strategies, it can be concluded that using language learning strategies can help students to enhance their way of thinking; to think more critically. It seems that college students studying for a degree in English are in desperate need of course books and materials that invoke critical thinking, since the participants in this study (Rafi, 2011) did not show remarkable results in a critical thinking test. Nikoopour, Farsani, and Nasiri (2011) also determined a significant relationship between the critical thinking ability and using language learning strategies and concluded that utilization of language learning strategies can help students to enhance their way of thinking.

Critical Thinking and Academic Achievement

Language learners become more proficient in a language as real-life tasks, linguistic structures, and vocabulary move toward automaticity and become available for use in a variety of different contexts (Heilenman & Kaplan, 1985). Many scholars believe that learning a foreign language requires critical thinking skills but also hold the belief that it is difficult to teach and develop the critical thinking skills themselves in the classrooms (Sanders, 2006). Helping students, parents, and administrators understand the potential for teaching thinking in the world language classroom, however, can help those stakeholders view language education as more than just a "frill" (Hoch & Hart, 1991). Since the purpose of education, including language

education is to effectively prepare students for real life, (Heining-Boynton & Heining-Boynton, 1992) schools should encourage or require real-life application in academic curriculum to achieve this purpose (Hoch & Hart, 1991). So, it can be concluded that integrating critical thinking into the language classroom reinforces this application by giving students opportunities to apply their language skills to real-world situations and topics. Critical thinking has been shown to facilitate creative, everyday language use, which is a primary goal of language education (Gaskaree, Mashhady, & Dousti, 2010). In his qualitative study with Turkish EFL students, Bedir (2013) suggested that developing critical thinking skills made a meaningful contribution to learners' reading abilities. Akbıyık (2002), however, conducted different research about the relationship between critical thinking disposition of high school students and their academic achievement, and concluded that students' critical thinking dispositions do not differ from their academic achievement in foreign language studies. Similarly, Güleryük (2008) and Çevik (2013) indicated that there is no meaningful relationship between pre-service teachers' critical thinking disposition and their academic achievement.

In brief, the results of the previous studies mostly suggest that students should be equipped with the necessary skills and dispositions that will enable them to solve problems effectively, make sound decisions, and become rational individuals; to think critically and be successful in their language studies (Facione, 1996; Brookfield, 1987; Sternberg, 1986). This review of the literature indicates that limited research exists investigating the association between critical thinking ability and academic achievement in Turkish EFL context. This study, therefore, has been planned and conducted to provide a clear insight into the relationship between critical thinking ability and academic achievement in a School of Foreign Languages where intensive English education is offered to the learners in the first year of their university education. The research focused on the following research questions:

1. What level of critical thinking disposition is shown by the EFL learners at the School of Foreign Languages?
2. Is there a significant relationship between EFL learners' critical thinking dispositions and their gender, subject area, self-reported frequency of reading and their academic achievement?

Method

The overall design of the present study is based on the quantitative research method to investigate the relationship between academic achievement in English language courses, self-reported reading habits and critical thinking dispositions at a state university in Turkey. It also investigates critical thinking in relation to gender and age.

Data Collection Procedure

Data for the study were collected during the 2015-2016 academic year from students of different faculties attending the School of Foreign Languages. Firstly, all the subjects had been verbally informed that their participation in the study was completely voluntary and would not influence their grade in the courses. Following this, they were asked to fill in a questionnaire. At the beginning of the academic year, a total of 550 students enrolled in the program. However, 150 students left the program for various reasons and around 400 students were asked to participate in the study. Only 300 students voluntarily admitted to participate in the research and to fill in the questionnaires. After gathering the data from participants, only 280 of those were included in the final analysis due to missing information or incomplete questionnaires.

Participants

In the university where the research was performed English preparatory education is compulsory for students of the Medical Faculty, the departments of English teacher training (ELT & ELL), two departments of the Engineering Faculty (electrical and electronics engineering, molecular biology and

genetics), one department of the Faculty of Administration (international relations), and one department of the Faculty of Science and Letters (philosophy). The intensive, one-year English language course is optional for all other students at the university.

Courses are offered at beginner, elementary, pre-intermediate and intermediate levels. The students' performance in a Proficiency and Placement exam determines the course that they will take during the year. Instruction takes place over two 14-week semesters, and classes are held five days a week. A daily total of 5 hours (4 hours on Fridays) adds up to 24 hours of instruction per week. The course is comprised of 16 hours Main Course (MC) for basic language skills, grammar and vocabulary practice; 4 hours Reading and Writing (RW) to develop reading and writing skills, and 4 hours Listening and Speaking (LS) to develop oral communication skills.

Of the 280 student participants, 164 (59.2%) were female and 113 (40.8%) were male. They were all freshmen aged between 17 and 28, and came from over 20 different classes in the language school. 92 (33.2%) of them were registered in the Engineering Faculty, 77 (27.8%) in the Faculty of Administration, 75 (27.1%) in the Faculty of Science and Letters, 15 (5.4%) in the Faculty of Medicine and 18 (6.5%) of them were registered on the English teacher training programs (ELT & ELL).

Students who achieve an average grade of 60 or above over the year are considered to have successfully complete their preparatory education. By this standard 204 (73.6%) of the study's participants were successful in their MC course, 73 (26.4%) unsuccessful; 184 (66.4%) were successful in their R&W course, 93 (33.6%) unsuccessful; and 182 (65.7%) of them were successful in their L&S course, 95 (34.3%) unsuccessful.

Research Instruments

To answer research questions, quantitative data were collected through a demographic inventory and the Turkish Adaptation of California Critical Thinking Disposition Inventory (CCTDI). The CCTDI was originally developed by Facione and Facione (1992) and adapted into Turkish by Kökdemir (2003) to

assess students' dispositions of critical thinking in six areas. The questionnaire contained 51 items divided amongst these six areas: 1.Analyticity (10 items), 2.Open mindedness (12 items), 3.Inquisitiveness (9 items), 4.Self-confidence (7 items), 5.Truth-seeking (7 items), and 6.systematicity (6 items). Each item was scored on a 6-point Likert response scale (1=strongly disagree, 2=disagree, 3=partially disagree, 4=partially agree, 5=agree, 6=strongly agree). It should be noted that 22 items (items 5, 6, 9, 11, 15, 18, 19, 20, 21, 22, 23, 25, 27, 28, 33, 36, 41, 43, 45, 47, 49, 50) in the inventory are negatively worded, thus require reverse coding. The Cronbach Alpha reliability coefficient was found to be 0.88 by Kökdemir. In this study the Cronbach Alpha reliability coefficient was found to be 0.84 for the overall scale, which is quite satisfying since the minimum level is recommended to be 0.70 by Pallant (2005).

Data Analysis

A quantitative research methodology was followed and a descriptive survey study was conducted. Data from the completed questionnaires were coded and analyzed through the Statistical Package for Social Science (SPSS17.0). Firstly, descriptive statistics such as frequencies, means, and standard deviations were computed to display the subjects' overall responses to the Turkish Adaptation of California Critical Thinking Disposition Inventory (CCTDI) items. Secondly, t-test and ANOVA were conducted in order to determine if a significant relationship existed between critical thinking dispositions and gender, reading habits, subject area and academic achievement of the EFL learners.

Findings

The critical thinking dispositions of EFL learners at the School of Foreign Languages

As described earlier, a CCTDI-T version survey was used to assess the Critical Thinking Disposition (CTD) levels of EFL learners. Since the survey was comprised of 6-point Likert type 51 questions and divided into six subscales, a score lower than 240 is defined as low critical thinking disposition, a score between 240

and 300 is defined as medium critical thinking disposition, and more than 300 is defined as high critical thinking disposition (Kökdemir (2003). Facione, Facione, and Giancarlo states that those having a score less than 40 for each subscale have a low critical thinking disposition and those with a score above 50 have high critical thinking disposition (cited in Kökdemir, 2003). So, as the score obtained from the scale increases, the critical thinking disposition also increases.

Instead of measuring and using just the participants' overall critical thinking scores in the analyses, measurements of the subscale were also included in the diagnosis. It was thought that by measuring the subscale, EFL learners' area of strengths and weaknesses regarding critical thinking could be detected and addressed. Therefore, in the research, the participants' mean scores for each subscale were calculated separately (Table 1). The total score is the sum of all subscales of critical thinking dispositions. After computing descriptive statistics of means for critical thinking levels, it was observed that the mean score of the whole sample group was 211.85 below 240, indicating that participants in this research have a low critical thinking disposition (Table 1).

Table 1. Mean Scores of critical thinking dispositions of EFL learners

	N	*Minimum*	*Maximum*	*Mean*	*St Deviation*
Analyticity	277	17.00	55.00	38.28	5.96
Open-mindedness	276	26.00	63.00	45.00	7.04
Inquisitiveness	274	11.00	52.00	33.12	6.35
Self-confidence	275	8.00	39.00	23.16	5.24
Truth-seeking	276	7.00	38.00	22.75	4.36
Systematicity	277	8.00	33.00	22.16	4.26
Total	270	96.00	256.00	211.85	22.07
Valid N (listwise)	270				

Mean scores were also calculated for each subscale (Table 1). According to the mean scores seen in the Table, students' critical thinking median scores in five of the subscales - analyticity, inquisitiveness, self-confidence, truth-seeking and systematicity -

are all under 40, while their median score in one subscale -open-mindedness- is over 40 (45.00) the suggested cutting off point for low critical thinking disposition. In analyticity subscale, even if the mean score (38.28) is under the cutoff point, indicating low critical thinking disposition, it is the second highest score after open-mindedness and very close to the cutoff point. The participants got the lowest scores in truth-seeking (22.16), systematicity (22.75), and self-confidence (23.16).

The EFL learners' critical thinking dispositions with regard to their gender, subject areas, reading habits and academic achievement

Some variables have been studied in relation to what makes one high or low in their critical thinking dispositions such as gender, academic achievement, subject area and reading habits of the participants. In order to look into the differences between male and female students, and the affects of academic achievement in the subscales of critical thinking scale, an independent-measures t-test was applied to data and the results indicated that there was a statistically significant difference in analyticity and open-mindedness between males and females. This statistically significant relationship indicated that female participants were apt to be more open-minded and analytical thinkers. Even if there was no statistical difference, females` scores were higher than those of males in all the subscales of critical thinking dispositions (Table 2).

When the relationship between the subscales of critical thinking and academic achievement is considered, it can be seen that the only subscale possessing a statistically significant relationship is open-mindedness. The other sub-dimensions do not seem to have any relationship with academic achievement (Table 3). Participants who are successful in their foreign language studies seem to be more open-minded. In analyticity subscale, although the difference is not statistically significant, successful students had higher scores than unsuccessful students. Interestingly, the scores of both successful and unsuccessful students are almost the same in the other subscale such as inquisitiveness, self-confidence, truth-seeking, and systematicity.

Table 2. The EFL learners' critical thinking dispositions with regard to gender

	Gender	*N*	*Mean*	*SD*	*t/F Value**	*P*
Analyticity	Female	163	39.11	5.54	2.75	**0.006***
	Male	113	37.12	6.38		
Open-mindedness	Female	162	45.63	7.11	1.74	**0.008***
	Male	113	44.13	6.89		
Inquisitiveness	Female	160	33.41	6.28	0.87	0.38
	Male	113	32.73	6.46		
Self-confidence	Female	163	23.33	5.03	0.61	0.54
	Male	111	22.93	5.55		
Truth-seeking	Female	163	22.84	4.33	0.41	0.68
	Male	112	22.62	4.35		
Systematicity	Female	22.3	22.38	4.22	0.98	0.32
	Male	21.86	21.86	4.34		

Table 3. The EFL learners' critical thinking dispositions with regard to academic achievement

	Academic Achievement	*N*	*Mean*	*SD*	*t/F Value**	*P*
Analyticity	Unsuccessful	31	37.70	5.26	-0.54	0.58
	Successful	128	38.43	5.95		
Open-mindedness	Unsuccessful	31	41.67	6.00	-2.77	**0.00***
	Successful	128	45.60	7.28		
Inquisitiveness	Unsuccessful	31	33.74	5.85	0.53	0.59
	Successful	128	33.06	6.51		
Self-confidence	Unsuccessful	31	23.67	2.77	0.30	0.75
	Successful	126	23.36	5.48		
Truth-seeking	Unsuccessful	31	22.22	4.12	-0.87	0.38
	Successful	128	22.95	4.15		
Systematicity	Unsuccessful	31	22.32	4.49	-0.35	0.72
	Successful	128	22.63	4.34		

To study the relationship between the subscales of critical thinking and participants' reading habits and subject area, one-way ANOVA was conducted to data and it was seen that participants' subject areas did not indicate a significant relationship with any of the subscales (Table 4).

Table 4. The EFL learners' critical thinking dispositions with regard to Subject Areas

		Sum of Squares	*Df*	*Mean Square*	*F*	*Sig.*
Analyticity	Between Groups	175.84	4	43.96	1.24	0.29
	Within Groups	9645.04	272	35.46		
	Total	98.20	276			
Open-mindedness	Between Groups	280.01	4	70.00	1.41	0.22
	Within Groups	13.372	271	49.34		
	Total	13652	275			
Inquisitive-ness	Between Groups	175.284	4	43.82	1.08	0.36
	Within Groups	10835.741	269	40.28		
	Total	11011.026	273			
Self-confidence	Between Groups	58.910	4	14.72	0.53	0.71
	Within Groups	7470.05	270	27.66		
	Total	7528.96	274			
Truth-seeking	Between Groups	170.71	4	42.67	2.82	0.06
	Within Groups	5068.53	271	18.70		
	Total	5239.24	275			
Systematicity	Between Groups	24.01	4	6.00	0.32	0.86
	Within Groups	5002.34	272	18.39		
	Total	5026.36	276			

With regard to the participants' reading habits, statistically significant differences were found between the groups in terms of inquisitiveness and self-confidence (Table 5). Descriptive statistics were applied to the data in order to compare group means, and an LSD test was used to find out which group created this difference. It was seen that it was the participants who reported to read every day who created the difference in both the subscales. Students reporting that they read every day differed from both those reporting that they read sometimes, and seldom in terms of inquisitiveness and self-confidence.

Table 5: The EFL learners' critical thinking dispositions with regard to reading habits

		Sum of Squares	Df	Mean Square	F	Sig.	Stat. Dif
Analyticity	Between Groups	155.106	3	51.70	1.46	0.22	
	Within Groups	9620.58	272	35.37			
	Total	9775.69	275				
Open-mindedness	Between Groups	180.82	3	60.27	1.21	0.30	
	Within Groups	13468.99	271	49.69			
	Total	13648.99	274				
Inquisitiveness	Between Groups	332.50	3	110.83	2.83	**0.03***	**1-2****
	Within Groups	10536.87	269	39.17			**1-3****
	Total	10869.38	272				
Self-confidence	Between Groups	219.18	3	73.06	2.73	**0.04***	**1-2****
	Within Groups	7212.60	270	26.71			**1-3****
	Total	7431.78	273				
Truth-seeking	Between Groups	56.40	3	18.80	19.07	0.40	
	Within Groups	5168.70	271	0.98			
	Total	5225.10	274				
Systematicity	Between Groups	55.66	3	18.55	1.01	0.38	
	Within Groups	4970.67	272	18.27			
	Total	5026.33	275				

*P<0.05 **Every day=1, sometimes=2, seldom=3, never=4

Conclusions

Having reported the results of the analyses of the current study, conclusions that can be drawn from the results will be discussed in line with the research questions. Based on the findings regarding the EFL learners' overall scores of critical thinking, it can be claimed that EFL learners mainly do have low levels of critical thinking, which means they are not able to think critically at a sufficient level. With respect to the subscales of critical thinking, they tend to be relatively stronger in being open-minded and thinking analytically while they are inclined to be weak in being curious, self-confident and systematic.

Considering the characteristics of the critical thinkers as suggested by Brookfield (1987), Facione (2000) and, Bailin (2003) EFL learners in this research are expected to be alert to potential problems, to anticipate the consequences, and to approach even challenging problems objectively. They are also expected to be respectful and tolerant towards different opinions and be sensitive to the possibility of one's bias at moderate level to some extent due to their relatively higher scores in analyticity and open-mindedness subscales. However, they obviously lack the intellectual curiosity to learn something new without the promise of some profit, trust to one's own reasoning process and willingness to ask questions to find the truths and opposing ideas since they got low levels of inquisitiveness, self-confidence, truth seeking and systematicity. Moreover, participants tend to draw incorrect or unjustified conclusions from the input available and they can misinterpret arguments, verbal or graphical information. They also tend to lack the disposition to question majority opinion or the credibility of sources, and tend not to question the meanings of concepts or the purposes of actions before expressing a claim, making an argument or a decision.

Even though various instruments have been used to measure critical thinking across studies, it can be still concluded

that the finding concerning the pre-service teachers' critical thinking levels in this study are reasonably consistent with the findings of other studies conducted in Turkey with pre-service teachers (Beşoluk & Önder, 2009; Şen, 2009; Akdere, 2012; Bakir, 2014) and English Preparatory School Students (Dayıoğlu, 2003; Çıkrıkçı, 1993) which reported that EFL learners' critical thinking levels were mostly at a low level. Studies that reported learners at tertiary level having a moderate or average (Cevik, 2013; Karakoc, 2013) and a high (Ozyurt & Ozyurt, 2015) level of critical thinking also exist, but not many. The consistency of the findings of the present research with those reported in the literature in terms of the levels of critical thinking dispositions may stem from the fact that the majority of EFL learners in Turkey share almost the same educational background and experiences in which they are not taught about critical thinking either explicitly or implicitly.

Educators have emphasized the importance of developing higher-order thinking skills in foreign language classrooms (Chamot, 1995; Tarvin & Al-Arishi, 1991) and empirical evidence supports the effectiveness of teaching critical thinking skills along with the foreign language (Chapple & Curtis, 2000; Davidson, 1994, 1995). The points suggested here is that having the dispositions of critical thinking is important to enhance the success in language learning. There are many other investigations, from different countries, that confirm the effectiveness of critical thinking on different aspects of second or foreign language learning (Hughes, 2014). The results of those studies also emphasized that critical thinking should be started and promoted at the early stages. The conventional model of educational habits and traits and even modern ones may not foster critical thinking dispositions if they lack training for it in formal education. In addition, it is widely accepted in literature that critical thinking can be taught and developed through training. Thus, it may not be wrong to conclude that the

educational experiences which the participants of this study have undergone may have lacked any activities to develop their critical thinking dispositions. The English language teaching system in Turkey, which had too little emphasis on critical thinking before 2005, plays an important role in such a result. Although English lessons do start in the 4th Grade, the number of teachers having awareness and experiences about critical thinking is not adequate as proved by the studies conducted with prospective teachers' critical thinking dispositions mentioned above. Nevertheless, between 2005 and 2010, with the implementation of elementary school curriculum reform a series of stresses were made by the ministry of education to enhance the importance of critical thinking during formal education (Ministry of National Education, 2006). Teacher education curriculum also underwent some changes (Tarman, 2010) and an English Language Teaching Department of a state university in Turkey started a specific elective course called Critical Thinking Skills in Foreign Language Education (Oral, 2014). Hopefully, these changes enhance the critical dispositions of future generations. As for the variables, namely, gender, academic achievement, subject area, and reading habits various results were seen. Only the subject area variable did not relate statistically to any subscales of the critical thinking dispositions. In other words, critical thinking was found to be independent of subject area as reported by some other researchers in the literature (Besoluk & Onder 2010; Emir, 2012; Cevik, 2013; Topoglu & Oney, 2013). The results of Leach's study, however, revealed that students within certain academic disciplines perform better in some areas of critical thinking (Leach, 2011). Some studies were conducted to see the difference between learners studying in numeric and verbal fields and indicated differing results in favor of numeric fields (Zayif, 2008; Turan, 2016) and verbal fields (Tumkaya et al., 2009; Semerci, 2010). Furthermore, when Bakir (2014) conducted a

research with pre-service teachers, she found a significant difference between the departments and also reported that students studying English language teaching as their subject area had higher critical thinking dispositions than those of Turkish language teaching department, the art teacher education department and the music education department. Yet, Akbiyik (2002) noted that students having higher critical thinking dispositions were seen to be successful in their mathematics, physics, biology, chemistry, and social sciences courses but not in English course. Eigenberger, et. al., (2001), meanwhile, claimed that students from Arts and Sciences and Social Sciences had higher critical thinking levels when compared to the critical thinking levels of students majoring in other fields including language studies.

Research revealed that women have a tendency to be more critical thinker in terms of being open-minded and analytical than men. Tumkaya, (2011) reported almost the same gender patterns indicating that females were more analytical thinkers whereas males were more open-minded. This finding is consistent with some other studies reported in the literature (Walsh and Hardy, 1999; Srinivasan & Crooks, 2005; Besoluk, & Onder 2010; Cetinkaya, 201; Turan, 2016), contrary to this research, divergent results indicating that men and women did not differ significantly at all (Dayıoğlu, 2003; Tufan, 2008; Ozyurt & Ozyurt, 2015; Bagheri & Ghanizadeh, 2016) or differed in favor of men (Cokluk and Yilmaz, 2005) in their level of critical thinking dispositions were also reported. The difference determined in the current research can best be explained by different cognitive strengths that men and women have from the complex relationship of nature and nurture (Halpern et al., 2007). Halpern et al. reported that women tend to have stronger verbal skills particularly in writing and a better memory for objects, events, words, and activities. Men generally excel in mentally

manipulating objects and the performance of quantitative tasks that require visual symbols. Regarding the fact that critical thinking can be learned through gaining life experiences and through teaching it to others as claimed by Halpern (2003) women, in the current research, seem to practice critical thinking activities to combat with the difficulties as women in their life routines.

In terms of the effects of academic achievement, the only subscale which was found to be related to the academic achievement was open-mindedness while no significant differences were found in any of the other sub-dimensions of the critical thinking dispositions based on the academic achievement. Likewise, Akbiyik and Seferoglu (2006), Guleryuz (2008), Tufan (2008), Bagci and Sahbaz (2012), and Cevik (2013) did not find any significant difference in academic achievement. On the other hand, this finding contradicted with the findings of Tumkaya (2011) and Bakir (2014), who reported a direct link between academic achievement and critical thinking disposition. Consequently, the current study indicates that open-mindedness, as a component of critical thinking helps students achieve more in their studies. Since open-mindedness is an intellectual virtue which motivates learners to find relevant evidence to form and revise their beliefs, it seems to help learners arrive at true conclusions. In this respect, however, Reed & Kromrey`s (2001) study is crucially important in supporting the finding of this research since it determined that although the students who got courses on critical thinking gained critical thinking skills, they did not differ in terms of academic achievement. As it is commonly stated in the literature, enhancing the critical thinking abilities of learners takes a long time. Thus, the finding of the current study can be justified with the notion that university education itself has a strong affect on the improvement of critical thinking as suggested by Nisbett, et. al., (1993). Therefore, an increase could

be expected in the critical thinking dispositions of learners after a qualified university education. In this case, it might be concluded that students in the first year of their university education, as in the case of this research, might not have high critical thinking dispositions even if they achieve well academically in their foreign language studies.

Based on another result of the present study, it could be concluded that learners' reading habits affect their critical thinking dispositions in terms of inquisitiveness and self-confidence. This overlaps with the results of previous studies conducted by Terenzini et al. (1995), Bagci and Sahbaz (2012), Bedir (2013), Kirmizi et. al., (2014), and Bulgurcuoglu (2016) who determined a relationship between reading behaviors and critical thinking skills while it contradicts the study of Tufan (2008) who suggested that reading habits had no affect. The reason for the relationship determined in the current research might be that an individual having regular reading habits is expected to have a high level of confidence and spirit of exploration. Thus, it is not surprising to find that reading habit of learners is a crucial component in fostering inquisitiveness and self-confidence, namely, the ability to question, to recognize different perspectives, and to anticipate many possible conclusions rather than demanding a single correct answer. To conclude, having regular reading habits is helpful to enhance inquisitiveness and self-confidence but seems to be insufficient for the development of overall critical thinking abilities on its own.

The results of the present study lead to the conclusion that EFL learners trained in the traditional, "one size fits all" standardized way of foreign language learning within the classroom do not enhance their critical thinking dispositions unless they are explicitly taught to think critically, and the relevant skills and dispositions are implemented at all levels of education from early years through to higher education. In addition, it

seems that learners need some more training relating to out-of-school learning along with in-class learning. However, the curriculum in Turkey emphasizes the importance of critical thinking; (Ministry of National Education), there is no detailed information, guidance, or training on how to implement critical thinking in the classrooms.

On this basis, the prime suggestion of this study, to students whose courses do not explicitly focus on critical thinking activities would be to develop extensive reading habits, and so enhance their critical thinking skills for themselves. It should be noted that this study was conducted with students in the School of Foreign Languages in a state university. This study should be replicated with the aim of understanding the position in broader populations like other universities and departments. The conflicting results concerning the affects of demographics also call for further investigation.

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