

## **An Investigation on Critical Thinking Tendency of the Turkish Teachers According to Some Variables**

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### **Abstract**

The purpose of the research is to determine whether the critical thinking tendencies of Turkish teachers differ according to various variables. The research group contains 229 Turkish teachers working in Turkey's public schools. In the research survey method was used, which is selected among descriptive research methods. The tendency of teachers was measured by a scale called "The Marmara CTT Scale (CCI)" developed for teachers and administrators by Özgenel and Çetin (2018). The scale involves 6 factors, 28 items and the general reliability coefficient was found to be .91. In the end of the research, it was seen that Turkish teachers were at good level of CTT. It has been determined that there is no significant link between the gender, education level and professional seniority of Turkish teachers and their CTT. Furthermore, it was observed that the frequency of reading had an effect on the CTT of Turkish teachers. Accordingly, as the frequency of reading of the participants increased, the level of their CTT increased, too. The findings were discussed in the light of the studies in the literature and at the end, various recommends were given to the education stakeholders.

**Keywords:** Turkish teacher, Critical thinking, Critical thinking tendency (CTT).

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## Introduction

The ability of thinking is one of the basic skills that human beings have. Recognizing the problems encountered, identifying these problems and solving them is possible by thinking. Again, actions such as speaking, discussing, making various choices, and making decisions emerge with the influence and direction of thinking ability.

In order to keep up with the developments experienced in this period when technology develops and information flows rapidly, and to ensure individual and social development, the thinking ability of the individual, which he or she has from birth, should be developed through education. As a matter of fact, modern education aims to raise effective individuals who think, can put their thoughts into practice, and thus contribute to individual and social development (Kürüm, 2002; Şen, 2009). Again, in this understanding of education, it is the main purpose to raise individuals who can think critically, question the information he encounters, understand the difference between claims and proven facts, test the reliability of the information he has obtained, distinguish unrelated information, approach all kinds of information without prejudice, realize inconsistent judgments, ask effective questions, use oral and written language effectively. (Kökdemir, 2003; Öztürk & Ulusoy, 2008).

The fact that critical thinking varies according to the person and the subject makes it difficult to make a universal definition of critical thinking (Kelly, 2003). While Ennis (1993) defines critical thinking as an individual's thinking rationally and deeply while making a decision about what he does or believes, McPeck (1981) defines it as the tendency or ability to reflect on information about a discipline and the content of that discipline with a skeptical perspective. In addition, Sönmez (2012) describes critical thinking as “a disciplined and self-controlled way of thinking to reveal perfect and complete thinking”. As it can be understood from the definitions, individuals who can think critically can question the problems or issues they encounter, define them logically, reveal their positive and negative sides, make various inferences about these problems or issues, and finally make a healthy and in-depth evaluation by using various high-level thinking skills.

On the other side, individuals with the skill of critical thinking should also have a tendency to think critically in order to use this skill in appropriate situations. Actually, the fact that an individual has the ability to think critically does not indicate that he or she is inclined to use this skill. Therefore, the individual will be able to use that skill only when certain conditions are met or tend to use it (Norris, 1985). CTT is accepted as the beginning of critical thinking and is defined as “the individual's desire and attitude towards forming a systematic and perfect thinking process in the face of events, thoughts and behaviors” (Battal, 2010, p. 175). Based on this definition, it is possible to say the

following: In addition to critical thinking skills, an individual's willingness to use this skill and a positive attitude in this direction are two important basic components for a positive result of the critical thinking process. Ensuring the establishment and development of the two basic components mentioned above in the individual is possible with a planned, programmed and long-term education.

In societies that aim to raise individuals with high-level thinking skills, it is seen that educational programs include goals and achievements for gaining these skills, textbooks are prepared accordingly, and teachers are trained according to these goals. With the adoption of the constructivist approach in education in Turkey, it has been aimed to raise individuals with high-level thinking skills and it has been seen that these issues are included in all the curricula prepared by the Ministry of National Education. In line with the aims of making students love their mother tongue, enabling them to obtain the four basic language skills and mental skills, helping them to develop individually and socially by using these skills, and for similar purposes, the Turkish lesson, which has been included in the curriculum since primary school, aims to provide students with the skills mentioned above. Considering the specific objectives of the 2019 Turkish Lesson Curriculum, the program includes “improving listening, speaking, reading and writing skills”, “ensuring them to express their feelings and thoughts and their opinions or thesis on a subject in an effective and understandable way, verbally and in writing”, “Developing the skills of researching, discovering, interpreting and structuring information in the mind”, “ensuring them to evaluate and question from a critical perspective by understanding what they read” (TDÖP, 2019, p. 8) and it is possible to evaluate these aims as expressions aimed at helping students gain critical thinking skills and improving these skills.

It is known that the teacher has the most important place in acquiring critical thinking skills in the Turkish lesson, as in other lessons (Ennis, 1991). The students' learning to think critically in Turkish lessons and their tendency to use these skills depend on the teachers' having these skills and tendencies. In other words, the existence of well-trained teachers is of great importance in raising individuals who actively participate in the lesson, question, use their knowledge in accordance with its purpose, produce new information, have decision-making and problem-solving skills, and acquire these skills. Because it would not be correct to say critical thinking is a skill that is passed on to a child only through heredity. As Çıtak and Uysal (2012) stated, such high-level thinking skills can be developed with the education of the individual as well as heredity. In this case, it is of great importance to have well-equipped teachers with high-level skills at all levels of education. Consequently, it has a key position to discover the level of CTT of Turkish teachers, who try to make students love their mother tongue and enable them to acquire four basic language skills.

It was seen that in the literature review there were many studies on critical thinking skills and tendencies. The most studies on the subject are related to university students and teacher candidates (Altuntaş, Yılmaz & Turan, 2018; Aybek, 2006; Can & Kaymakçı, 2015; Durnacı & Ültay, 2020; Durukan & Maden, 2010; Emir, 2012; Erdoğan, 2012; Facione & Facione, 1994; Karah, 2012; Kuvac & Koç, 2014; Küçük & Uzun, 2013; Lampert, 2006; McBride, Xiang & Wittenburg, 2002; McDonough, 1997; Ocak, Eğmir & Ocak, 2016; Özgür, 2013; Tümkeya, Aybek & Aldağ, 2009; Yüksel, Sarı Uzun & Dost, 2013). In addition, it is possible to come across many studies examining the CTT of secondary and high school students (Akıllı, 2012; Baydar, 2012; Chaim, Ron & Zoller, 2000; Coşkun, 2009; Ersoy & Başer, 2012; Kandemir & Eğmir, 2020; Korkmaz & Yeşil, 2009; Seferoğlu & Akbıyık, 2006; Yıldırım & Şensoy, 2011), teachers (Alkın Şahin, Tunca, Altinkurt & Yılmaz, 2016; Bal, 2011; Ekinçi & Ekinçi, 2017; İliman Püsküllüoğlu & Altinkurt, 2018; Koç Erdamar & Bangir Alpan, 2017; Korkmaz, 2009; Polat, 2017; Polat & Konaş, 2018; Sulaiman, Kuppasamy, Ayub & Rahim, 2017; Şengül & Üstündağ, 2009) and academicians (Kanbay, Işık, Aslan & Özdemir, 2012). Among these studies, no study examining the CTT of Turkish teachers was found. Herewith, it was considered that it is essential to investigate the CTT of Turkish teachers who have an important place in the child's education life, language development and gaining thinking skills from the first day he/she steps into school, and such a study has been carried out.

### **Purpose of the Research**

The present study aimed to research the CTT of Turkish teachers according to various variables. To reach this purpose, answers to the questions below were investigated:

1. What is the CTT of Turkish teachers?
2. Does the gender variable make a significant difference on the CTT of Turkish teachers?
3. Does the educational status make a significant difference on the CTT of Turkish teachers?
4. Does professional seniority make a significant difference on the CTT of Turkish teachers?
5. Does the frequency of reading books make a significant difference on the CTT of Turkish teachers?

### **Method**

#### **Research Model**

The current study has used the “relational survey method” which is one of the descriptive research models, as it's aim to examine the CTT of Turkish teachers according to gender, educational status, professional seniority and book reading frequency. This is a sort of

method that detects past or present situations as they exist (Karasar, 2015) and is preferred for large samples. In this model, the whole population or a sample selected from it is studied to be able to reach a general opinion about the population (Bailey, 1982). Again, since the results obtained in this model are generalized to the population, care should be taken to ensure that the sample is representative of the population.

### The Participants

The research contains a total of 229 Turkish teachers as study group, 100 women and 129 men, working within the Ministry of National Education. Random sampling technique, which aims to represent the subgroups in the universe in the sample, was used in the study (Balci, 2010). Stratification can be made according to a single criterion (gender, etc.) or more than one criterion (educational status, professional seniority, frequency of reading books, etc.). Then, with simple unbiased sampling, samples are taken from each stratum and sub-samples are combined to represent the entire sample (Judd et al., 1991; cited in Balci, 2010).

The distribution of Turkish teachers, who constitute the study group of the research, according to some variables is shown in the table 1.

Table 1  
*Information about Turkish teachers' gender, education level, professional seniority and reading frequency*

Variable	Subgroup	f	%
Gender	Female	100	43,67
	Male	129	56,33
Education Status	Bachelor's Degree	180	78,60
	Master's Degree	42	18,34
	Doctorate	7	3,06
Professional Seniority	1-5 years	80	34,93
	6-10 years	72	31,44
	11-15 years	40	17,47
	16-20 years	27	11,79
	21 years and more	10	4,37
Reading Frequency	Never	9	3,93
	1 in two months or less	50	21,83
	1 in a month	79	34,50
	2 in a month or more	91	39,74

### Data Collection Instruments

The Marmara CTT Scale, which was developed by Özgenel and Çetin (2018) for teachers and administrators was used as measurement tool in the research. The scale's factor, validity and reliability analyzes were performed. The scale included total of 28 items which consists of 6 factors like reasoning, reaching judgment, seeking evidence, truth-seeking, open-mindedness and systematicity. The general reliability coefficient of the scale was .91, and the total score correlation coefficient was .89.

The data was acquired on Google Forms. The relevant form consists of two parts. The first one includes information about gender, education level, professional seniority and frequency of reading books; the latter is Marmara CTT Scale.

### Statistical Analysis

The data analysis was performed in SPSS 21 package. First of all, the descriptive analysis of the collected data, that is, the sub-dimensions of the scale and the scores obtained from the total, were calculated and their average scores, standard deviations, and minimum-maximum values were examined. Then, it was determined that the data was not in a normal distribution by looking at the assumptions of normality and homogeneity within the groups. From this point of view, for two groups of non-parametric tests, Mann Whitney U; for more than two groups Kruskal Wallis H tests were used.

### Findings

In this part, findings and comments regarding the research questions are given. Table 2 shows the descriptive statistics of Turkish teachers' CTT levels.

Table 2

*Mean scores of participants' CTT levels.*

Sub-dimensions	n	Min.	Max.	Ort.	Ss	Skewness	Kurtosis
Reasoning	229	6	30	25,61	3,028	-1,292	6,673
Reaching Judgment	229	6	30	25,08	3,253	-,899	4,241
Evidence-seeking	229	4	20	17,12	2,266	-1,166	4,213
Truth-seeking	229	4	20	16,70	2,186	-,830	4,042
Open-mindedness	229	4	20	17,10	2,106	-1,114	5,450
Systematicity	229	4	20	17,15	2,106	-1,198	5,918
Total Scale	229	28	140	118,77	12,986	-1,488	9,666

According to Table 2, 229 Turkish teachers participated in the study and it was observed that the teachers could get the lowest 28 and the highest 140 points from the CTT scale. It is seen that Turkish teachers scored an average of 25.61 from the reasoning sub-dimension, 25.08 from the reaching judgment sub-dimension, 17.12 from the evidence-seeking sub-dimension, 14.96 from the truth-seeking sub-dimension, 14.96 from the open-mindedness sub-dimension, 14.96 from the systematicity sub-dimension, and 118.77 from the total scale. Considering the average scores received from the sub-dimensions and the total of the scale, it can be said that the participants have a good level of CTT.

With purpose of examining the CTT of Turkish teachers according to the gender variable, the Mann Whitney U test was conducted and the results are given in Table 3.

Table 3  
*Mann Whitney U test results showing the relationship between participants' CTT and gender variable.*

	Gender	n	Mean Rank	Rank Sum	U	p
Reasoning	Female	100	117,13	11713,00	6237,000	,431
	Male	129	113,35	14622,00		
Reaching Judgment	Female	100	114,17	11416,50	6366,500	,170
	Male	129	115,65	14918,50		
Evidence-seeking	Female	100	116,99	11699,00	6251,000	,408
	Male	129	113,46	14636,00		
Truth-seeking	Female	100	117,26	11725,50	6224,500	,463
	Male	129	113,25	14609,50		
Open-mindedness	Female	100	117,25	11724,50	6225,500	,458
	Male	129	113,26	14610,50		
Systematicity	Female	100	118,43	11843,00	6107,000	,701
	Male	129	112,34	14492,00		
Total Scale	Female	100	115,81	11581,00	6369,000	,163
	Male	129	114,37	14754,00		

According to Table 2, it is clear that there is no significant difference between the sub-dimensions of the CTT scale and the scores they get from the sum of the scale and the gender variable ( $U= 6369,000$ ,  $p>.05$ ,  $p= ,163$ ). Based on this, it can be said that the gender variable does not affect the CTT of the participants.

The Kruskal Wallis H test was used to understand whether the CTT of the participants differed according to their educational status. The findings obtained from the analysis are shown in Table 4.

Table 4  
*Kruskal Wallis H test results showing the relationship between participants' CTT and educational status.*

	Education Status	n	Mean Rank	sd	X <sup>2</sup>	p
Reasoning	Bachelor's Degree	180	113,74	2	,537	,765
	Master's Degree	42	117,79			
	Doctorate	7	130,64			
Reaching Judgment	Bachelor's Degree	180	114,25	2	1,067	,587
	Master's Degree	42	114,01			
	Doctorate	7	140,21			
Evidence-seeking	Bachelor's Degree	180	115,64	2	,202	,904
	Master's Degree	42	111,35			
	Doctorate	7	120,57			
Truth-seeking	Bachelor's Degree	180	114,22	2	,142	,932
	Master's Degree	42	118,40			
	Doctorate	7	114,57			

Open-mindedness	Bachelor's Degree	180	116,15	2	,362	,835
	Master's Degree	42	111,96			
	Doctorate	7	103,57			
Systematicity	Bachelor's Degree	180	113,56	2	,650	,722
	Master's Degree	42	118,44			
	Doctorate	7	131,43			
Total Scale	Bachelor's Degree	180	114,11	2	,291	,864
	Master's Degree	42	116,82			
	Doctorate	7	126,93			

Table 4 demonstrates that there is no significant difference between the sub-dimension's scores and total scores and the variable of educational status ( $X^2= ,291$ ,  $p>.05$ ,  $p=,864$ ). In this respect, it can be said that the educational status of the participants has no effect on their CTT.

Kruskal Wallis H test was conducted to see whether the CTT of the participants differ according to professional seniority. The findings obtained from the analysis are given in Table 5.

Table 5

*Kruskal Wallis H test results showing the relationship between participants' CTT and their professional seniority.*

	Age	n	Mean Rank	sd	X <sup>2</sup>	p
Reasoning	01-5 years	80	124,34	4	7,484	,112
	6-10 years	72	109,44			
	11-15 years	40	96,68			
	16-20 years	27	117,87			
	21 and over	10	145,85			
Reaching Rudgment	1-5 years	80	117,58	4	5,828	,212
	6-10 years	72	103,65			
	11-15 years	40	114,29			
	16-20 years	27	125,76			
Evidence-seeking	21 and over	10	149,85	4	6,897	,141
	01-5 years	80	125,65			
	06-10 years	72	100,51			
	11-15 years	40	111,00			
Truth-seeking	16-20 years	27	121,44	4	5,781	,216
	21 and over	10	132,75			
	1-5 years	80	112,13			
	6-10 years	72	110,33			
	11-15 years	40	109,75			
	16-20 years	27	129,06			
	21 and over	10	154,65			

Open-mindedness	01-5 years	80	110,61	4	5,274	,260
	06-10 years	72	111,83			
	11-15 years	40	114,58			
	16-20 years	27	120,83			
	21 and over	10	158,90			
Systematicity	1-5 years	80	120,84	4	7,278	,122
	6-10 years	72	105,07			
	11-15 years	40	103,80			
	16-20 years	27	128,37			
	21 and over	10	148,50			
Total Scale	1-5 years	80	120,44	4	7,067	,132
	6-10 years	72	105,11			
	11-15 years	40	105,21			
	16-20 years	27	125,54			
	21 and over	10	153,40			

Table 5 shows that there is no significant difference between the scores of the participants in the sub-dimension and total of the CTT scale and the variable of professional seniority ( $X^2= 7.067$ ,  $p>.05$ ,  $p= ,132$ ). In this respect, it can be stated that the professional seniority has no effect on their CTT.

The Kruskal Wallis H test was conducted to understand if the CTT of Turkish teachers differ by the frequency of reading books or not. In Table 5 the findings obtained from the analysis are shown.

Table 6

*Results of Kruskal Wallis H test that show the relationship between participants' CTT and their frequency of reading books.*

	Reading Frequency	n	Mean Rank	sd	X <sup>2</sup>	p	Difference
Reasoning	Never (1)	9	164,67	3	16,825	,001	
	1 in two months or less (2)	50	92,97				
	1 in a month (3)	79	106,15				
	2 in a month or more (4)	91	129,88				
Reaching Judgment	Never (1)	9	117,94	3	6,903	,075	
	1 in two months or less (2)	50	98,61				
	1 in a month (3)	79	110,46				
	2 in a month or more (4)	91	127,66				
Evidence-seeking	Never (1)	9	116,44	3	9,032	,029	
	1 in two months or less (2)	50	94,68				
	1 in a month (3)	79	112,06				
	2 in a month or more (4)	91	128,58				
Truth-seeking	Never (1)	9	129,11	3	6,057	,109	
	1 in two months or less (2)	50	98,67				
	1 in a month (3)	79	111,87				
	2 in a month or more (4)	91	125,30				

Open-mindedness	Never (1)	9	143,83	3	8,730	,033
	1 in two months or less (2)	50	100,81			
	1 in a month (3)	79	106,47			
	2 in a month or more (4)	91	127,35			
Systematicity	Never (1)	9	129,61	3	4,765	,190
	1 in two months or less (2)	50	99,72			
	1 in a month (3)	79	113,34			
	2 in a month or more (4)	91	123,40			
Total Scale	Never (1)	9	137,44	3	9,427	,024
	1 in two months or less (2)	50	95,74			
	1 in a month (3)	79	109,45			
	2 in a month or more(4)	91	128,18			

According to Table 6, a significant difference is seen between the CTT of the participants and the frequency of reading books, in some sub-dimensions of the scale and in the total. When it comes to sub-dimensions of the scale, it is seen that there is a significant difference between the scores like that: reasoning sub-dimension ( $X^2= 16,825$ ,  $p<,05$ ,  $p=,001$ ), evidence-seeking sub-dimension ( $X^2= 9,032$ ,  $p<,05$ ,  $p=,029$ ), open-mindedness sub-dimension ( $X^2= 8,730$ ,  $p<,05$ ,  $p=,033$ ), and the total ( $X^2= 9,427$ ,  $p<,05$ ,  $p=,024$ ). Therefore, as the average rank of the participants' reading frequency increased, the level of their CTT also increased. However, there is no significant difference between the scale of the participants' judgment ( $X^2= 6.903$ ,  $p> ,05$ ,  $p= ,075$ ), truth seeking ( $X^2= 6.057$ ,  $p> ,05$ ,  $p= ,109$ ) and systematicity ( $X^2= 4.765$ ,  $p> ,05$ ,  $p=,190$ ) sub-dimensions and CTT.

## Discussion and Conclusion

This study explores the CTT of Turkish teachers in respect of some variables. For this purpose, it has been tried to determine the level of CTT of Turkish teachers, whether there is a significant difference according to gender, education level, professional seniority and book reading frequency variables. This study reveals the conclusion that Turkish teachers had a good level of CTT. Previous studies have reached the different results about CTT of teachers. For example, teachers' CTT are above medium or high (Ekinci & Ekinci, 2017; Iliman Püsküllüoğlu & Altinkurt, 2018), some are moderate (Korkmaz, 2009), and some are low (Alkın Şahin et al., 2016; Koç Erdamar & Bangir Alpan, 2017; Polat, 2017; Şengül & Üstündağ, 2009). The studies of Iliman Püsküllüoğlu and Altinkurt (2018) and Ekinci and Ekinci (2017) coincide with the findings of this research. However, the same results are not seen in other studies. There may be several reasons for this discrepancy between studies. First of all, it can be said that it originates from the sample group. Because in some studies, classroom teachers and in others teachers from different branches constitute the sample group. The sample group of this study is Turkish teachers. It can be seen as a normal situation that the CTT of teachers in different branches are different from each other. In addition, the different measurement

tools used in the studies may have paved the way for the emergence of these results. The California CTT Scale was the main scale in most of the studies in which the CTT was determined to be low. In studies where this scale is used, if the participant's score from the scale is less than 240, CTT is interpreted as low, and if it is more than 300, it is interpreted as high (Kökdemir, 2003). On the other part, considering that CTT is an individual characteristic, it should be considered normal that different results emerge in studies on the subject.

Research findings show that gender does not affect Turkish teachers' CTT. Korkmaz (2009), with teachers and lecturers working at various levels; Bal (2011) with preschool teachers, and Polat and Kantaş (2018) with classroom teachers, concluded that there is not any significant relationship between teachers' CTT and their genders. These studies support the result and findings of the research.

It can be inferred from study that education level and professional seniority did not affect the CTT of Turkish teachers. Similar findings were obtained in studies examining the effects of education status and professional seniority on teachers' CTT (Bal, 2011; Ekinci & Ekinci, 2017; Iliman Püsküllüoğlu & Altınkurt, 2018; Korkmaz, 2009). Besides, Sulaiman et al. (2017) revealed in their study that as the professional seniority increases, their CTT decrease. Polat and Kantaş (2018), on the other side, found that as the professional seniority of classroom teachers increases, their CTT also increase. These results make it difficult to say that professional seniority has no effect on CTT and to make such a generalization on this issue. It is thought that a meta-analytical study on the issue will contribute to the literature.

The findings obtained from the research show a significant relationship between the CTT of Turkish teachers and the frequency of reading books. Accordingly, as the frequency of reading of the participants increases, their CTT also increase. There have been similar studies supporting this result such as Polat and Kantaş (2018) who determined a significant relationship between the CTT of classroom teachers and the number of books they read. According to the study, teachers who read a lot of books have higher CTT than teachers who read less or not at all. Akkaya, İşci, and Susar Kırmızı (2018), in their study with Turkish and classroom teacher candidates, revealed that pre-service teachers who read a large number of books had higher critical thinking attitudes when the number of books they read in a year was taken into account.

## **Recommendations**

In order for Turkish teachers, who have been teaching since the first years of secondary school and have an important place in students' language development and learning to think at a higher level, learn to think critically and have high-level skills;

- Numerous activities should be included in the courses to be given to students and teacher candidates in all educational institutions from primary education to higher education, and the lessons should be student-centered.
- Teachers' personal development should be given importance when they step into the profession, courses, seminars, etc., where they will actively participate and work to develop their high-level thinking skills. In-service training activities should be given priority.
- It is important for students to acquire the habit of reading from primary school, in their development and in having high-level skills. Studies should be included in schools to acquire the habit of reading books, rich libraries should be created and students should be provided with positive feelings towards books and reading. By acquiring this habit, qualified Turkish teachers who can think critically can be trained, and individuals who can think healthy and critically can be trained by these teachers.

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