



Bayraktar, E., Yalçınkaya, M., Eytmiş, A.M. (2021). Examination of emotional intelligence and problem-solving skills of teachers working in secondary education institutions. *International Online Journal of Education and Teaching (IOJET)*, 8(4). 2228-2247.

Received : 18.05.2021  
Revised version received : 13.07.2021  
Accepted : 27.07.2021

## **EXAMINATION OF EMOTIONAL INTELLIGENCE AND PROBLEM-SOLVING SKILLS OF TEACHERS WORKING IN SECONDARY EDUCATION INSTITUTIONS**

*(Research article)*

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# EXAMINATION OF EMOTIONAL INTELLIGENCE AND PROBLEM-SOLVING SKILLS OF TEACHERS WORKING IN SECONDARY EDUCATION INSTITUTIONS

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## Abstract

The aim of this research includes examination of emotional intelligence and problem-solving skills of teachers working in Anatolian High Schools, which are secondary education institutions. Its sample consists of 246 teachers selected by random sampling. The research is a descriptive, quantitative study in the general screening model. “Personal Information Form”, “Trait Emotional Intelligence Questionnaire – Short Form (TEIQue-SF)” and “The Social Problem-Solving Inventory-Short Form (SPSI: S) scales have been used as a data collection tool. As a result of the research, according to emotional intelligence trait scale-SF, statistically significant differences have been found between men and women in subjective well-being subscale. According to emotional intelligence other scale scores and the social problem-solving scale, significant difference has not been found among the variables of gender, age, education, professional seniority. Positive linear meaningful relationship has been found between emotional intelligence and problem-solving. The higher emotional intelligence score, the more problem-solving skill and the more problem-solving skill, the more emotional intelligence.

*Keywords:* Emotional Intelligence, problem-solving skills, Anatolian High Schools

## 1. Introduction

During the day, we all experience many emotions such as happiness, pain, restlessness and anger both in our daily life and in our business life. That's why emotion control takes an important place in our lives. It is important to recognize emotions in their formation stage, master them, and resolve them before they become huge problems. Social life is getting complicated day by day. We live in a world where technology is changing rapidly, new inventions are being found every day, standards of living are getting better and we are alienated from each other as human beings (Aydın, 2017). People who can recognize and control their emotions can find better solutions in their lives. It is stated that individuals having high emotional intelligence are happier and more productive in their lives (Yolcu, 2019).

Emotional intelligence is defined differently by different theorists. According to Sharma (2008), the concept of emotional intelligence extends from 17. century researchers to Spinoza

(1677). Spinoza asserted that emotion and intelligence contribute to the measurement of cognition. According to Spinoza, cognition has three layers: emotional cognition, intellectual cognition, and intuition ability. And Thorndike (1920) put forward the concept of social intelligence divided into two as emotional intelligence and motivational intelligence (Sharma, 2008, Channel: Kelsay, 2010). The concept of emotional intelligence was first used by Van Ghent (1961) and Leuner (1966) in the 1960s and become a current issue by means of Payne's PhD dissertation writing in 1986 but did not publish (Kelsay, 2010).

Solving the problem is defined as the process of realizing various alternatives to deal with the problematic situation and choosing the most effective option among these alternatives (D'Zurilla and Chang, 1995, Channel: Ergin, 2009). Social Problem-solving Model has two dimensions; "Problem Orientation" and "Problem-solving Styles". Problem Orientation is the person's first perception when encountering a problem. Problem-solving styles include doing realistic research in problem-solving. Problem Orientation and Problem-solving Styles are divided into constructive and non-constructive. Rational Problem-solving is functional-constructive. Inattentive/Impulsive Style and Avoidant Style are functional-non-constructive. Problem orientation consists of two dimensions: positive problem orientation and negative problem orientation. Positive problem orientation is perceived the problem situation as an opportunity, believed in the solvability of problems (optimism), has self-confidence in problem-solving and constructive attitude towards problem-solving (Maydeu-Olivares & D'Zurilla, 1996). It is a dysfunctional and inhibiting attitude including negative problem orientation, pessimism, lack of self-confidence in problem-solving, anger and sadness in problem situations. Rational problem-solving, rational, clear and effective problem-solving, careless approach, dysfunctional problem-solving pattern in problem-solving and the avoidant approach is also a dysfunctional problem-solving attitude in the form of procrastination, passivity, and dependence (D'Zurilla, Nezu & Maydeu-Olivares, 2002). It is aimed to develop rational problem-solving skills, to increase the positive problems orientation and the ability to apply the solution, to prevent an avoidant problem-solving style, to reduce negative problems orientation and careless/impulsive problem-solving style for individuals to gain social problem-solving skills (Çekici, 2009).

Human is defined as a "social being" producing working, creating value and culture, learning, knowing, can be trained and wanting freedom (Şişman, 2013). And business life changes continuously as well as constantly developing technology. This age of constant change and development requires people to improve themselves. With the development of emotional intelligence, individuals should gain the ability to be themselves, to make their own decisions, to empathize with the other person, to find appropriate solutions to the problems, they encounter, and to be able to look at events critically. The attitudes of school administrators and teachers educating individuals on this issue are effective on students. Therefore, it is important for educators to get to know themselves, to understand others, to find appropriate solutions to problems, and to remediate, if any (Yerli, 2009). It is important for school administrators and teachers, constantly setting their students an example, to improve themselves, recognize their feelings, and produce appropriate solutions to problems. This study is important because it will contribute to the education system in terms of accepting students in every aspect, combining the mind and heart and bringing a vision to the education system. Students raised by teachers having high emotional intelligence and problem-solving skills will increase their academic success rates as well as their self-confidence, empathy skills, skills of understanding and listening to others and problem-solving skills.

Stadler, Becker, Gödker, Leutner, and Greiff (2015) found a meaningful and significant correlation between complex problem-solving and intelligence in their studies and smart people to solve complex problems more successfully. In Gawaii's (2012) study examining the relationship between emotional intelligence and coping with stress in pre-service teachers, it was determined that individuals, having high emotional intelligence scores, also got high scores in coping with stress, problem-solving and interpersonal relations skills.

Chow, Chiu, and Wong (2011) reached these following materials; there is a significant relationship between problem-solving skills and emotional intelligence in their studies with university students and problem-solving skills play a mediating role in the relationship among emotional intelligence, satisfaction with life, and depression. Kafetsios and Loumakou (2007) researched the relationship among emotional intelligence and emotion regulation in teachers, emotions experienced at work and satisfaction with job. In the study, it was determined that the "general mood" dimension of emotional intelligence significantly predicted the emotions experienced at work and regulation of emotions significantly predicted emotions experienced at work and satisfaction with job. Heppner and Anderson (1985) found a significant relationship between individuals' problem-solving skills and their psychological adjustment.

In the study of Yolcu (2019), a positive and significant relationship was found among the problem-solving skills of primary school students and their emotional intelligence. Tetik and Açıkgöz (2013) reached the material whose individuals, having high emotional intelligence levels, also have high problem-solving skills. In the research of Güler (2006), a significant relationship was found between the Emotional Intelligence and Problem-solving Skills of teachers working in primary schools. There are studies whose examine teachers' emotional intelligence with various topics such as organizational trust, burnout, and personal orientations (Ören, 2011; Turan, 2015; Ismayılov, 2019). Problem-solving skills were examined with various groups such as nurses, high school administrators, and children attending preschool institutions (Özdil, 2008; Çağşırılı, 2019; Toprak, 2019). When the literature is examined, it has been seen that there is a limited number of studies on teachers working in Anatolian high schools and these studies consisted of studies aimed at examining the relationship among self-confidence and organizational silence, perceptions of school culture, professional burnout and organizational commitment and satisfaction with job (Tan, 2003; Yanar, 2011; Irmak, 2017; Dallı, 2018; 7).

Emotional intelligence and problem-solving skills have been discussed with different teachers and different occupational groups, however, when the relevant literature is scanned, it is seen that it is not discussed for Anatolian high school teachers in the extent of the available resources. Anatolian high schools are an important secondary education step. Therefore, this situation adds originality to this study. This study, examining the emotional intelligence levels and problem-solving skills of teachers working in Anatolian high schools, is important in terms of being the first study on emotional intelligence and problem-solving skills of teachers working in Anatolian high schools. It has been observed that there is not a great number of studies on teachers working in Anatolian high schools and these researches consist of studies to examine the relationship between self-confidence and organizational silence, school culture perceptions, job burnout and organizational commitment and job satisfaction of being talked about teachers (Dallı, 2018; Irmak, 2017; Yanar, 2011; Tan, 2003). The study is important because it will contribute to the education system in terms of accepting the student in all aspects in schools, combining the mind and the heart and bringing a vision to the education system. Self-confidence, ability to empathize, ability to understand

and listen to others, and problem-solving skills, as well as the academic success of students educated by teachers having high emotional intelligence and problem-solving skills, will increase. Teachers were able to work in Anatolian high schools after had been taking exams for many years and passing the exams. At the same time, those going to Anatolian high schools are the students passing the exams and enrolling in schools and having high academic goals and success levels. That's why it is thought that this research will contribute to the literature and will be a source for future studies. In this context, the purpose of this study is to examine the emotional intelligence and problem-solving skills of teachers working in secondary education institutions. For this purpose, the research seeks answers to the following sub-problems:

1. Do the emotional intelligence levels of the teachers working in Anatolian High Schools of Secondary Education Institutions differ significantly according to the variables of gender, age, education level and seniority in the profession?
2. Do problem-solving levels of teachers working in Anatolian High Schools of Secondary Education Institutions differ significantly according to the variables of gender, age, education level and seniority in the profession?
3. Is there a significant relationship between emotional intelligence and problem-solving skills of teachers working in Anatolian High Schools of Secondary Education Institutions?

## **2. Method**

### *2.1. The Model of the Research*

The research model is the arrangement of the necessary conditions for the collection and analysis of data in accordance with the purpose of the research (Karasar, 2005). The subject of the research, in other words, the subject-object, is tried to be defined as it exists in its own conditions, without any effort to change or influence. General survey models are the scanning arrangements made on the whole population or the sample from which is taken in order to make a general judgment about the population in a population with many elements (Karasar, 2005). Research is a descriptive, quantitative study in general survey model.

### *2.2. Population-Sample/Study Group*

The population of the research consists of 13 Anatolian High Schools and 663 teachers working in these schools from the secondary schools who works in secondary schools of a province in the Aegean region province in the 2019-2020 academic years. And the sample consists of 7 Anatolian High Schools selected by random sampling method from Anatolian High Schools districts and 298 teachers working in these schools (MEM, 2020) (MEM: provincial directorates of national education).

**Table 1.** Demographic Characteristics of Participants

Factor	Groups	F	%
Gender	Female	171	69,5
	Male	75	30,5
Seniority	0-11 Month/months	4	1,6
	1-5 Years	9	3,7
	6-10 Years	12	4,9
	11-15 Years	17	6,9
	16-20 Years	30	12,2
	21-25 Years	80	32,5
	26-30 Years	65	26,4
	31+ Years	29	11,8
Education	Bachelor's degree	212	86,2
	Master's degree	32	13,0
	PhD	2	,8
Years	20-25 Years	5	2,0
	26-30 Years	11	4,5
	31-35 Years	9	3,7
	36-40 Years	23	9,3
	41-45 Years	51	20,7
	45 and +45	147	59,8

When table 1 is examined, it is seen that 69.5% of the teachers putting together the sample are female teachers and 30.5% of these are male teachers; when the ages of the participants are examined, 59.8% is aged from 45 to over 45, 20.7% is aged from 41 to 45, 9.3% is aged from 36 to 40, 4.5% is aged from 26 to 30, 3.7% is aged from 31 to 35, 2% is aged from 20 to 25; when their seniority is examined, 32.5% is in the range of 21-25 working years, 26.4% is in the range of 26-30 working years, 12.2% is in the range of 16-20 working years, 11.8% is in the range of 31 and more working years, 6.9% is in the range of 11-15 working years, 4.9% is in the range of 6-10 working years, 3.7% is in the range of 1-5 working years, 1.6% is in the range of 0-11 month/months working time; when looking at the demographic distribution of education level; while 86.2% has bachelor degree, 13.0% has master degree and 0.8% has PhD.

### 2.3.Data Collection Tools

In the research, Personal Information Form, Trait Emotional Intelligence Questionnaire-Short Form (TEIQue-SF) and The Social Problem-solving Inventory-Short Form (SPSI: S) scales have been used in order to data collection. In order to use the scales in practice, permission has been obtained via e-mail.

#### 2.3.1. Personal Information Form

The Personal Information Form consists of items such as the age, gender, education level, branch and professional seniority to obtain information of the teacher. While creating the research form, domestic and foreign literature on the subject was scanned. The scales to be used in the research consist of 5-point Likert propositions (1 I completely disagree, 2 I

disagree, 3 I am undecided, 4 I agree and 5 I completely agree). In order to determine the attitudes of the participants on the subject, the propositions were translated from English to Turkish, taking into account the expert opinion.

### 2.3.2. *Trait Emotional Intelligence Questionnaire-Short Form (TEIQue-SF)*

Trait Emotional Intelligence Questionnaire-Short Form (TEIQue-SF) scale was developed by Petrides and Furnham (2003) and validity and reliability studies were carried out by Deniz, Özer and Işık (2013). It is a 7-point Likert type measurement instrument (refers to 1: I totally disagree, 7: I totally agree) measuring total trait emotional intelligence. Subscales of the scale; Subjective well-being; self-awareness, a strong and positive foresight, understanding of emotions, happiness and positive emotions; self-control; self-management, the ability to control destructive emotions, adaptation to changes, take initiative; emotionality; empathize, understanding others' feelings; sociability; is considered as cooperation, maintaining relationships and good communication (Deniz, Özer & Işık, 2013).

Trait Emotional Intelligence Questionnaire – Short Form (TEIQue-SF): Validity and reliability study was conducted by M. Engin Deniz, Esin Özer, Erkan Işık on 464 students attending Ahmet Keleşoğlu Faculty of Education in Necmettin Erbakan University in 2011-2012 academic years. Students have been randomly selected and participated in the study voluntarily. 323 (30.5%) of the participants have been girls and 141 (69.5%) have been boys. The mean age of the study group has been between 20 and 23, and their age ranged from 17 to 32. The language validity and equivalence of the scale have been supported by the positive correlation among the scores obtained from the English and Turkish forms. In the Explanatory Factor Analysis performed to examine the construct validity of the scale, a four-factor structure consisting of 20 articles has been obtained. The results of the Confirmatory Factor analysis carried out to understand whether this obtained structure complies well with the sample data has indicated that the scale has complied well with the sample to which it has been applied. It has been found that the internal consistency reliability coefficient of (TEIQue-SF) is .81 for the full scale, test-retest reliability coefficient is .86. These results indicate that the Turkish version of (TEIQue-SF) is a valid and reliable measurement tool. This form, aiming to determine the level of perception of emotional competence, can be applied individually or as a group. It indicates that individuals having high score on the total scale perceive their emotional competence to be high. It indicates that individuals having high scores in the total scale perceive high emotional competence, while those having low scores perceive low competence (Deniz, Özer, Işık, 2013).

### 2.3.3. *The Social Problem-solving Inventory-Short Form (SPSI: S)*

In the study, Social Problem-solving Inventory-Short Form developed by D 'Zurilla at al. (2002) and whose adaptation, validity and reliability studies were carried out Çekici (2009), was used. The form consists of two dimensions; “problem orientation” and “problem-solving styles”. There are two subscales in the problem orientation dimension— positive problem orientation and negative problem orientation. The problem-solving style dimension consists of three subscales— rational problem-solving, careless/impulsive style, and avoidant style. While among the subscales, Positive Problem Orientation and Rational Problem-solving represent “constructive (functional) approach” in problem-solving, Negative Problem Orientation, Careless/Impulsive Style, and Avoidant Style represent the “non-constructive (non-functional) approach”. Positive Problem Orientation— positive perspective that problems can be overcome/solved; Negative Problem Orientation— Regarding problems as

threats, not believing that problems can be solved; Rational Problem-solving— Defining problems, creating alternatives to the solution systematically and realistically, determining on the appropriate solution option and putting the solution into practice; Impulsive/Inattentive Style— impulsive, careless, rushed, unexamined behavior; Avoidant Style— Consists of behaviours such as delaying the problem, being passive, not reacting, not taking responsibility (Çekici,2009).

The scale has been translated from its original English form into Turkish by Çekici during the adaptation process. Expert opinions have been taken into account to evaluate the translation of the scale about whether its Turkish equivalents have been appropriate. Validity and reliability studies have been carried out and the reliability coefficient of the scale has been found to be .85. According to this value obtained, it can be said that the scale can measure very decisively and consistently depending on time (Çekici, 2009).

#### 2.4.Data Analysis

In the analysis of Personal Information Form, Trait Emotional Intelligence Questionnaire-Short Form (TEIQue-SF) and The Social Problem-solving Inventory-Short Form (SPSI: S) scales, average, standard deviation, frequency and percentage values have been used in the descriptive statistics of the data. Independent sample t-test has been used for variables with normal distribution. The relationship of quantitative data (scale scores) with each other has been evaluated with Spearman's Rho coefficient. Regression analysis has been performed to model the relationship between emotional intelligence score and Social Problem-solving Inventory score.

**Table 2.** Scale core values

Faktors	Item	Skewness	Kurtosis	A.M.	SD	Crombach Alpha
Subjective well-being (SWB)	4	-,86	,85	5,26	1,09	,72
Self-control	4	,19	-,24	4,87	1,16	,57
Emotionality	4	,54	-,08	4,88	1,07	,58
Sociability	4	,30	,29	5,13	1,42	,64
Total TEIQue	20	1,01	1,86	5,03	0,95	,85
Total SPSI	25	,45	,56	3,95	0,55	,65

Cronbach alpha for internal consistency of the scales and confirmatory factor analysis for internal structure validity have been performed. Statistical analyses have been performed by using IBM SPSS Statistics 25.0 (IBM SPSS Statistics for Windows, Version 25.0. Armonk, NY: IBM Corp.) And LISREL v. 8.72 package programs. The significance level has been determined at 0.05 in all analyses.

### 3. Findings

It has been checked whether the scale sub-dimensions and total scores have been normally distributed for gender, age, education and seniority groups and the assumption of normality has been provided. Normality should provide a parabolic distribution with  $\pm 2$  deviations from the sample mean in 95% confidence interval. Mean deviations should be evaluated according to the kurtosis and steepness values and should provide the normal distribution,

one of the fundamental conditions of parametric analysis (George, Mallery, 2016). Therefore, whether there is a statistically significant difference among these groups in terms of scale scores has been tested with the independent t-test and ANOVA test.

#### 4.1. Materials Related to Emotional Intelligence Levels of Participants

In order to determine the demographic characteristics of the target audience included in the research, descriptive questions were asked. The findings are reported in the table 3.

**Table 3.** Descriptive statistical materials of the Emotional Intelligence Scale regarding the gender variable of the participants

Statistics of the groups					
Scale	Gender Distribution of Participants	F	A.M.	SD	S error
Subjective well-being (SWB)	Female	171	<b>5,40</b>	1,08	,08
	Male	75	<b>4,96</b>	1,06	,12
Self-control	Female	171	4,93	1,17	,09
	Male	75	4,71	1,12	,13
Emotionality	Female	171	4,89	1,23	,09
	Male	75	4,81	1,15	,13
Sociability	Female	171	4,84	1,08	,08
	Male	75	4,51	,99	,11
Addition Features to Total	Female	171	5,06	1,15	,09
	Male	75	4,96	1,12	,13
Total TEIQue	Female	171	5,04	,95	,07
	Male	75	4,85	,84	,09

Table 3 contains descriptive statistics data regarding the gender variable of the participants. When the averages of the participants' self-control, emotionality and sociability subscales are examined, it is seen that the values are close to each other. It was observed that while the mean score in the subjective well-being subscale was 5.40 for women, it was 4.96 for men. Thanks to these materials, the participants declare that their subjective well-being feelings are quite strong. The Independent Samples t-test, conducted to determine whether there is no difference in subjective well-being levels of women and men, is given table 4.

**Table 4.** Emotional Intelligence Scale independent samples t-test materials relating to the gender variable of the participants

	Levene's Test Results		unpaired t-test results		
	F	Sig.	t	df	Sig. (2-tailed)
Subjective well-being (SWB)	,816	,367	2,962 2,982	244 143,452	<b>,003</b> <b>,003</b>
Self-control	1,371	,243	1,352 1,377	244 147,561	,178 ,171
Emotionality	1,073	,301	,487 ,498	244 149,682	,627 ,619
Sociability	1,069	,302	2,259 2,332	244 152,495	,025 ,021
Addition Features to Total	,159	,690	,601 ,608	244 145,504	,549 ,544
Total TEIQue	2,115	,147	1,426 1,498	244 159,068	,155 ,136

When Table 4 is examined, in the Emotional Intelligence Scale's Self-control ( $p=,178>0,05$ ), Emotional ( $p=,627>,05$ ), Sociability ( $p=,025>,05$ ) and Total TEIQue ( $p=,155>0,05$ ) variables, there has been no difference in evaluation between men and women. When Table 3 subjective well-being subscale is examined, it is seen that the variances are equally distributed according to the Levene Test for Equality of Variances ( $p=,367>,05$ ). A statistically significant difference has been found between men and women in terms of subjective well-being subscale scores of the Trait Emotional Intelligence Scale- Short Form ( $p=,003<,05$ ). In this subscale, women have more well-being thoughts than men. However, significant difference has not found among genders in terms of other scale scores ( $p>,05$ ).

**Table 5.** Emotional Intelligence Scale ANOVA Test Findings Regarding the Age Variable of the Participants

		Sum of squares	df	Mean square	F	Sig.
Subjective well-being (SWB)	Between Groups	4,938	3	1,646	1,388	,247
	Within Groups	287,081	242	1,186		
	Total	292,020	245			
Self-control	Between Groups	10,054	3	3,351	2,554	,056
	Within Groups	317,538	242	1,312		
	Total	327,591	245			
Emotionality	Between Groups	1,617	3	,539	,368	,776
	Within Groups	354,845	242	1,466		
	Total	356,462	245			
Sociability	Between Groups	6,225	3	2,075	1,841	,140
	Within Groups	272,795	242	1,127		
	Total	279,020	245			
Total TEIQue	Between Groups	3,953	3	1,318	1,568	,198
	Within Groups	203,373	242	,840		
	Total	207,326	245			

In ANOVA test results for the age variable of the participants, it has been found that there was no significant difference in the scores of sub-scales of subjective well-being, self-control, emotionality, sociability, and total TEIQue ( $p > .05$ ). (In total TEIQue score, those aged from 46 to over 46 ( $\bar{x} = 5,05$ ), those are aged from 41 to 45 ( $\bar{x} = 4,97$ ) and those are aged from 36 to 40 ( $\bar{x} = 4,94$ )).

#### 4.2. Materials Relating to Social Problem-solving Skills of Participants

When the independent samples t-test materials relating to the differences in the Social Problem-solving Inventory regarding the gender variable of the participants are examined, in Positive Problem Orientation of Social Problem-solving Scale ( $p = .094 > .05$ ), Negative Problem Orientation ( $p = .690 > .05$ ), Rational Problem-solving ( $p = .439 > .05$ ), Inattentive/Impulsive Style ( $p = .163 > .05$ ), Avoidant Style ( $p = .074 > .05$ ) subscales and and Total Social Problem-solving ( $p = .499 > .05$ ), there has been no significant difference in evaluation between men and women.

As a result of the differences in the Social Problem-solving Inventory relating to age variable of the participants, the evaluations of ANOVA test materials, the independent samples t-test materials for the education level variable, and the ANOVA test materials for the professional seniority variable, significant difference has not been found among the groups ( $p > .05$ ).

**Table 6.** Correlation Analysis Regarding the Relationship between Emotional Intelligence and Problem-solving Skills- Spearman's Rho Coefficients and Significance Values

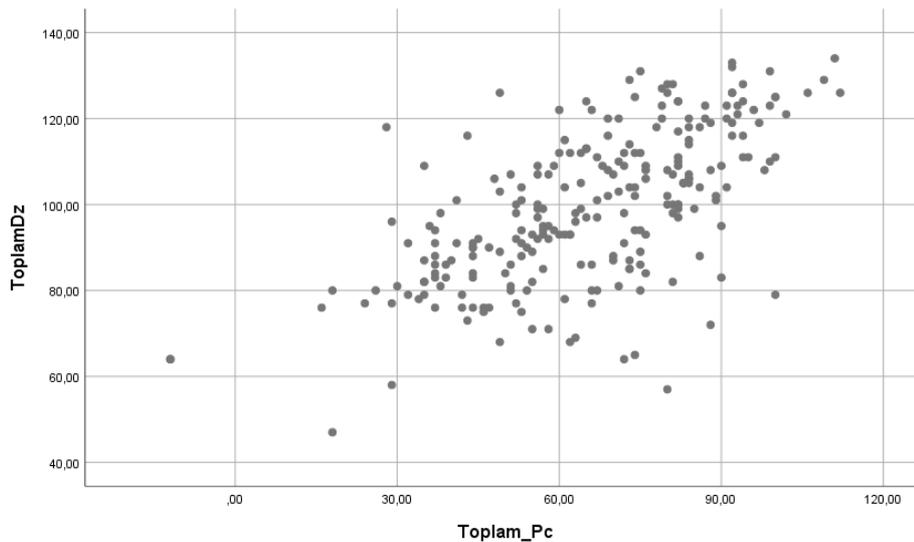
	PPO	NPO	Rational problem-solving	Careless/Impulsive style	Avoidant Style	SPSI	Well-being	Self-control	Emotionality	Sociability
ppo	1									
npo	-0,39**	1								
Rational problem-solving	0,59**	-0,19**	1							
Careless/impulsive style	-0,24**	0,44**	-0,38**	1						
Avoidant style	-0,42**	0,54**	-0,47**	0,51**	1					
SPSI	0,69**	-0,71**	0,68**	-0,72**	-0,81**	1				
Well-being	0,34**	-0,34**	0,26**	-0,26**	-0,33**	0,40**	1			
Self-control	0,23**	-0,34**	0,27**	-0,37**	-0,37**	0,44**	0,42**	1		
Emotionality	0,30**	-0,41**	0,25**	-0,47**	-0,46**	0,52**	0,40**	0,47**	1	
Sociability	0,34**	-0,41**	0,30**	-0,33**	-0,38**	0,49**	0,37**	0,48**	0,41**	1
Total TEIQue	0,41**	-0,50**	0,38**	-0,49**	-0,51**	0,63**	0,67**	<b>0,77**</b>	0,73**	0,75**

N=246 \*\* $p < 0,001$

The correlation coefficient takes values between -1 and +1. The closer the correlation coefficient to the extreme values (-1 and +1), the stronger the linear relationship between the two points. The strength of the linear relationship weakens at values close to zero.

In Table 6, there is a strong positive relationship between the Total Emotional Intelligence score and the Total Problem-solving score of the teachers participating in the research, this relationship is meaningful ( $r = .772$ ;  $p < .001$ ). According to this material, it can be concluded that the higher problem-solving skill score, the higher emotional intelligence score.

In other words, it can be stated that the higher emotional intelligence score, the higher problem-solving skill score. It can be said that teachers having a high level of emotional intelligence in schools will produce effective solutions to the problems they encounter in a shorter time, they can see alternative options for a solution, they can choose the most appropriate solution for the situation, and they will improve their students' emotional intelligence levels as an example to their students. Likewise, teachers having high problem-solving skills will be able to manage the process effectively due to their high emotional intelligence in the solution process and will enable their students to develop in this matter.



(In the table: total Emotion Intelligence, total\_Problem-solving)

**Figure 1.** Total Emotional Intelligence and Total Social Problem-solving

The higher Total Trait Emotional Intelligence Questionnaire-Short Form score, the higher Total Social Problem-solving Inventory Short Form score. There was a significant linear relationship among all scale scores.

**Table 7.** Regression Model

		Unstandardized Coefficients		Standardized Coefficients	t	P
		B	Std. Error	Beta		
Model	(Constant)	65,718	2,796		23,506	0,000
	Total TEIQue	0,512	0,040	0,630	12,660	0,000

Dependent: SPSI

The total SPSI score was statistically significant in estimating the total TEIQue score ( $p < 0.001$ ). The obtained  $R^2 = 0.396$  for this model. In other words, the model explains approximately 40% of the variance in the total CIAS-SF score.

#### 4. Discussion and Conclusion

It has been determined that there is a significant and in the same direction between the Emotional Intelligence levels of the teachers working in Anatolian high schools and their Problem-solving Skills. The higher problem-solving skill score, the higher emotional intelligence scores, moreover the higher problem-solving skill score, the higher emotional intelligence score.

When the evaluations of Trait Emotional Intelligence Questionnaire-Short Form (TEIQue-SF), subjective well-being, self-control, emotionality and sociability sub-subscales are examined according to the gender variable, a statistically significant difference has been found between men and women in terms of subjective well-being subscale scores ( $p=,003$ ). In this subscale, women have more well-being thoughts than men. When the scores of other self-control, emotionality and sociability subscales of the scale are examined, because it has been determined as  $p>,05$ , there has been no significant difference between the genders. The conclusion has obtained supports previous studies. There are studies in which women have higher scores than men in emotional intelligence levels (İşmen 2001; İsyapan 2015; Türkmenoğlu, 2019). Akgül (2011) found that the emotional intelligence scores of primary school teachers according to the gender variable reached a significant difference in the sub-dimensions of interpersonal skills and coping with stress. Certel, Çatıkkaş & Yalçinkaya (2011) recorded that the average of girls in emotional intelligence scores is higher than the average of boys. Moreover, Arlı, Altunay, and Yalçinkaya (2011) found significant differences in the emotional intelligence levels of pre-service teachers according to the gender variable in favour of males. When the relevant literature is examined, there are also studies where no significant difference has been found between emotional intelligence levels and the gender variable (Kahraman, 2013; Yalın, 2015; Kalyoncuoğlu, 2018). Canbulat (2007) determined that the emotional intelligence sub-dimension averages of men and women are very close to each other.

In Trait Emotional Intelligence Questionnaire-Short Form (TEIQue-SF) scores, no significant difference has been found among age groups ( $p>,05$ ). It has been determined that mean scores of the subjective well-being of all age groups have been higher than their self-control, emotionality and sociability scores and there is an increase with increasing age, although the mean levels of emotional intelligence are close to each other. Based on these materials, although there has been no significant difference among the age groups of the teachers, it can be stated that the mean score of emotional intelligence increases thanks to passing years, the ability to recognize the emotions of the self and the other person and the ability of showing empathy thanks to experiences, the ability to control emotions thanks to passing years improve. The conclusion has obtained supports previous studies. Akgül (2011) found no significant relationship between the emotional intelligence sub-dimension scores and ages of the teachers in her study. In the studies of İşmen (2001), Aslan & Özata (2008), Nazlı (2013), no significant difference was found among age groups. However, when the relevant literature is examined, studies having a significant relationship between emotional intelligence levels and the age variable were found (Güler, 2006; Güllüce & İşcan, 2010; Kalyoncu, 2011).

When the conclusions of all subscales of the emotional intelligence scale according to the variable of the education level (bachelor's degree, master degree or PhD) of the teachers working in Anatolian high schools have been examined, no significant difference has been found among the evaluations of the teachers having bachelor's and master's degree/PhD

( $p>0,05$ ). In the studies of Yükcü (2017) and Akgül (2011), it is clear that there is no significant difference according to education levels. However, Güllüce & İşcan (2010) determined that managers with a high level of education have higher average emotional intelligence. In the study of Kalyoncu (2011), it was determined that the higher education level, the higher emotional intelligence. According to these materials, although there is no significant difference between the emotional intelligence levels of teachers and their education levels, it can be said that the higher the education level of the teachers working in Anatolian high schools, the higher emotional intelligence levels—they have a positive attitude, and their attitudes are constructive and realistic, when the averages are examined.

No significant difference has been found in terms of emotional intelligence between Trait Emotional Intelligence Questionnaire Scale and professional seniority groups ( $p>0,05$ ). It has been observed that scores of subjective well-being, self-control, emotionality and sociability sub-dimensions of the participants have been the highest and their self-control and emotionality scores have been equal according to their professional seniority. When the teachers are evaluated according to their seniority, it can be said that they recognize their emotions, they can control them, and they can evaluate the other person in her/his own situation. The conclusion has obtained supports previous studies. Canbulat (2007) shows that there is no significant difference among the total emotional intelligence levels of employees according to their working hours. In the study of Akgül (2011) and Güler (2006), the emotional intelligence sub-dimension scores of teachers do not differ from their seniority. However, there are also studies in which were found a significant difference in terms of emotional intelligence among seniority groups (Yerli 2009; Kahraman (2013).

When emotional intelligence subscales are evaluated, although there is a significant difference in gender in subjective well-being subscale, it has the highest average in age, seniority and education levels. Based on these materials, it can be said that the teachers working in Anatolian high schools have a positive attitude, recognize their emotions and have feelings such as compassion and mercy.

No significant difference has not been found between male and female teachers in the sub-dimensions of the social problem-solving inventory of the participants ( $p>0,05$ ). In the studies of İnel, Evrekli, and Türkmen (2011), Karahan (2018), Özgün (2018), no significant difference was found in problem-solving inventory scores according to gender. However, Yolcu (2019) found a significant difference in the problem-solving skills of primary school students and Ersan and Alan (2017) special education teachers according to their gender. According to these materials, it can be said that whether problem-solving skills differ from gender according to the sample group.

No significant difference has been found between the social problem-solving inventory scale scores of the participants and age groups ( $p>,05$ ). Bilgin (2010), Güneş (2011) found that students' perceptions of problem-solving skills did not show a statistically significant difference according to the age group variable. Yalın (2015) found that the age variable does not differ in problem-solving skills. However, there are also studies in which were found a significant relationship between problem-solving and the age variable (Nazlı, 2013; Güler, 2006; İşyapan, 2015).

No significant difference has been found between the social problem-solving inventory scale scores of the participants and their level of education -bachelor's degree, master degree or Phd ( $p>,05$ ). In Özgün's (2018) and Tekin's (2019) studies, Güneş (2011), no significant

difference was found among parents' attitudes, problem-solving skills and education levels. In addition, Yalçın, Tetik and Açıkgöz (2010) found a significant difference in problem-solving skills in their study with college students, Genç and Kalafat (2010) and pre-service teacher according to their educational level. According to the materials, it can be said that Anatolian high school teachers do not avoid problems, have a positive perspective in problem-solving, and evaluate the problems appropriately and realistically and solve them.

No significant difference has been found between the social problem-solving inventory scale scores of the participants and their professional seniority ( $p>,05$ ). In Yerli's (2009) study, no significant difference was found among problem-solving and seniority variables of high school principals, Ersan and Alan (2017), special education teachers. However, there are also studies in the relevant literature in which a significant difference was found between the seniority variable and problem-solving skills (Güler, 2006; Nazlı, 2013; İşyapan, 2015).

Among the problem-solving styles, positive problem orientation got the highest value according to the variables of gender, age and education, and the variable of rational problem-solving seniority. Avoidant style problem-solving has the lowest value in all groups. The aim of developing problem-solving skills is to increase positive orientation to the problem, to improve rational problem-solving, to prevent avoidant style problem-solving, to reduce negative problem orientation and careless impulsive style problem-solving. According to these materials, it can be said that teachers in Anatolian high schools can produce effective solutions, manage the solution process well, have a positive attitude towards solving problems, and do not avoid problems when they encounter a problem.

In this study, a significant and in the same direction was found between the Emotional Intelligence scores and the Problem-solving Skill scores of the teachers working in Anatolian high schools. According to these materials, it has been concluded that the higher problem-solving skill score, the higher emotional intelligence score, and the higher emotional intelligence score, the higher problem-solving skill score. The conclusions are compatible with the literature. Chow, Chiu, and Wong (2011) found a significant relationship between problem-solving skills and emotional intelligence in their studies with university students. Gawali (2012) determined that individuals with high emotional intelligence scores get high scores in coping with stress, problem-solving, and interpersonal relations skills. Heppner and Anderson (1985) determined a significant relationship between individuals' problem-solving skills and their psychological adjustment. In the primary school students' study of Yolcu (2019), Yerli (2009) found a relationship that is considered significant in terms of emotional intelligence and problem-solving characteristics of school administrators. Yalın (2015) determined that there is a positive linear relationship between emotional intelligence and problem-solving. Tetik and Açıkgöz (2013) observed in their research with Vocational School Students that the higher problem-solving skills, the higher emotional intelligence. According to these materials, it can be said that as the emotional intelligence levels of teachers increase, they become more aware of themselves and their environment, they are able to evaluate problems according to their process, and their problem-solving skills also increase. Emotional intelligence defined as the ability to recognize your own emotions, to give importance to others' emotions, to put yourself in someone's shoes, to look through others' eyes, to regulate their emotions, can be learned and developed (Goleman, 2016). While emotional intelligence is developing, problem-solving skills are also developing. Because emotions, attitudes and values are important in problem-solving process, developing emotional intelligence can cause to manage the problem-solving process well and produce effective and creative solutions.

Individuals face different problems throughout their lives. Surviving is to be able to solve problems. The basis of having a happy and healthy life is to produce effective solutions to the problems. The more the emotional intelligence level of individuals, the more their problem-solving skills—. Emotional intelligence consists of the ability to be aware of one's own emotions, to be aware of others' emotions, to establish good relationships, to produce flexible, realistic and effective solutions in problem situations, to control stress, and to enjoy life. It is important for teachers to be aware of their own physical and psychological conditions, to develop their emotional intelligence skills, to increase the productivity of their students in their learning life, and to develop their problem-solving skills. Developing students' problem-solving skills in schools will enable them to make healthy decisions, establish healthy relationships and exhibit healthy attitudes throughout their lives (Yolcu, 2019). Teachers, administrators and parents can be more effective in developing their students' emotional intelligence by being educated on emotional intelligence. For this reason, it should be aimed to inform teachers about emotional intelligence and to set an example for their students (Yeşilyaprak, 2001). One of the aims of modern education is to develop the problem-solving skills of the individual. Developing teachers' emotional intelligence, being aware of their problem-solving skills, including emotional intelligence and problem-solving skills within the scope of the training given to students will increase the quality of education.

## **5. Recommendations**

According to the materials of this research, it can be said that as the emotional intelligence levels of teachers increase, they become more aware of themselves and their environment, they can evaluate the problems according to their process, and their problem-solving skills also increase. Recognizing your own emotions, giving importance to others' emotions, putting yourself in someone's shoes, looking through others' eyes, regulating their emotions, can be learned and developed. While emotional intelligence is developing, problem-solving skills are also developing. Because emotions, attitudes and values are important in problem-solving process, developing emotional intelligence can cause to manage the problem-solving process well and to produce effective and creative solutions. In this direction, the recommendations are given below:

Studies such as courses and conferences improving the emotional intelligence competencies of teachers models for their students in every aspect can be carried out at the school (emotion management, emotional awareness, empathy, problem-solving, etc.). Emotional intelligence and problem-solving skills can be attached importance in teacher in-service trainings and teacher seminars of the Ministry of National Education. Emotional intelligence and problem-solving skills can be taught to pre-service teachers in their trainings and they can be taught how to be a model for students and what activities they can do in their lessons.

Scientific studies ensuring the development of emotional intelligence and the regulation of new teaching programs can be emphasized. The research is based on teachers working in Anatolian High Schools located in two districts of İzmir province. The materials of this study should be evaluated with their limitations. In order to generalize the results of the research, a similar research can be conducted in larger groups in provinces apart from İzmir. The research can be conducted more comprehensively with the mixed method. Because Anatolian high schools have an important place in secondary education institutions, more studies can be made, similar to those in Anatolian high schools.

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