

Appraisal of emotional intelligence skills of university students in terms of different variables

Banu Dikmen Ada¹, Asude Balaban Dağal²

¹Department of Preschool Teacher Education, Eskişehir Osmangazi University, Eskişehir, Turkey

²Department of Preschool Teacher Education, Marmara University, Istanbul, Turkey

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ABSTRACT

This research investigated whether the emotional intelligence skills of first- and fourth-grade university students differ according to the departments they are enrolled in and other factors. In this research, the 87-item Bar-On Emotional Quotient Inventory was used. In the intrapersonal, interpersonal, and adaptability sub-dimension a significant difference was found in favor of those who attended Mathematics and Pre-school Education departments. When the 'interpersonal' and 'adaptability' subscales were examined, the results were observed to be in favor of Environmental Engineering Department. When the independent group t-test results were examined with respect to gender variable, the significance of 'interpersonal' and 'adaptability' subscales was in favor of male students.

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Corresponding Author:

Banu Dikmen Ada

Department of Preschool Teacher Education, Faculty of Education, Eskişehir Osmangazi University

Meşelik Campus Eskişehir/26480, Turkey

Email: bdada@ogu.edu.tr

1. INTRODUCTION

The term 'emotional intelligence' (EI), one of the positive psychological concepts, was coined by Yale University psychologist Salovey and New Hampshire University psychologist Mayer [1], [2]. Salovey and Mayer considered EI conceptually and defined it as 'the sum of many abilities that facilitate the care of the individual and others and success in his or her own life' [3]. In general, emotional intelligence can be defined as the ability to use one's emotions in a cogent, sensitive, useful and wise manner. It has recently acquired a preeminent position in psychological research because of the increase in academic research, dissemination of best-seller texts and frequent media coverage [4]. The emergence of emotional intelligence is associated with the studies conducted on human intelligence.

Earlier, emotions and intelligence were contemplated as opposing concepts, and children with high IQ scores who achieved varying levels of success garnered attention to the power of emotions. Research concerning the impact of emotions on life success has enabled the concept of emotional skills to gain acceptance [5]. Emotional intelligence is an important concept for the creation of a healthy society by enabling individuals to know and make sense of themselves, lead a life in peace with themselves, perform useful actions in the society and maintain a cordial relationship with the people around them [6]. The ability to understand, use and manage emotions in cognitive processes forms the basis of emotional intelligence [7]. Goleman remarked that emotional intelligence is the most accurate expression of the individuals' intelligence and is an indispensable requirement for the success of individuals, and an individual with a high level of emotional intelligence can attain notable heights in their careers [8]. Considering that people who can manage their emotions well can be happier and make wiser decisions, with the increase in emotional

intelligence of a person, it is expected that he or she will experience greater satisfaction in life [4]. Seligman and Csikszentmihalyi stated that the concept of emotional intelligence is included in the field of positive psychology, which focuses on the features that make the person happy and add value to her or his life [1].

Reuven Bar-On defined emotional intelligence as a combination of rational abilities and skills that affect a person's capacity to cope with and overcome environmental demands [9]. In other words, emotional intelligence is the ability of an individual to use their emotions in a rational, sensitive, useful and wise manner. Broadly, it encompasses abilities in five areas namely self-awareness, regulating emotions, self-activation, understanding others' emotions, and social skills [2]. Emotional intelligence assessments help predict important educational and professional criteria and are used in estimating general intellectual skills [4]. When the importance of emotional intelligence in explaining success was investigated, it was observed that it garnered attention from researchers in educational fields as well [2]. Supporters of emotional intelligence assert that if individuals become aware of their own and other people's emotions, they begin to regulate these emotions effectively and can live their lives to the fullest [4]. Individuals with high emotional intelligence have high levels of both psychological well-being and life satisfaction [10].

A number of emotional intelligence models have been proposed in the literature with different fundamental dimensions involving different abilities and skills. The model created by Mayer and Salovey is the ability-based emotional intelligence model. The models created by Bar-On, Goleman, Cooper and Sawaf constitute mixed models of emotional intelligence [11]. In the talent-based emotional intelligence model developed by Mayer and Salovey, emotional intelligence is 'the ability to perceive, evaluate and express emotions correctly'. It is defined as the ability to fuse thoughts with emotion, to understand and analyze emotions, and control the same. The basic dimensions of the model are: i) Perceiving, evaluating, and expressing emotions (understanding and expressing one's own and others' emotions, full expression of emotions and communication of needs, distinguishing different emotional expressions); ii) Use of emotions (emotions direct attention and enable thinking; mood changes one's perception; iii) Understanding and judging emotion (qualifying emotions and describing the relationship between different emotions and their meanings, understanding the content of emotions and the knowledge of their interrelationships, interpreting complex emotions and understanding the composition of different emotions and understanding the transitions between emotions); iv) Emotion management and regulation (being open to pleasant and unpleasant emotions and able to distinguish emotions; managing the emotions of oneself and others by reducing the effect of negative emotions and increasing the effect of positive emotions) [11].

In the mixed emotional intelligence model developed by Reuven Bar-On, emotional intelligence is defined as 'the index of personal, emotional and social competences and skills that will help the individual to cope successfully with the pressures and demands coming from his environment'. The basic dimensions of the model are: i) Personal skills (emotional self-awareness, self-confidence, self-esteem, self-actualization, independence); ii) Interpersonal skills (interpersonal relations, social responsibility, empathy); iii) Adaptability, problem solving, reality test, flexibility; iv) Dimension of coping with stress (stress tolerance, impulse control); v) General mood (happiness, optimism) [11].

In the mixed emotional intelligence model developed by Goleman, emotional intelligence is defined as 'The ability to recognize our own and others' feelings, motivate ourselves, and manage emotions well within ourselves and in our relationships'. The basic dimensions of the model are: i) Personal competence (self-awareness, i.e., emotional awareness, self-assessment, self-confidence), self-direction (self-control, reliability, conscientiousness, adaptability, innovation), motivation (achievement, commitment, initiative, optimism); ii) Social competence empathy (understanding others, developing others, being service-oriented, leveraging diversity, political awareness), social skills (influence, communication, conflict management, leadership, change catalyst, bonding, cooperation and solidarity, team abilities) [11].

In the mixed emotional intelligence model by Cooper and Sawaf, emotional intelligence is 'the ability to sense, understand, and effectively use the power and rapid perception of emotions as a source of human energy, knowledge, relationships and influence'. The basic dimensions of the model are: i) Learning emotions (emotional honesty, emotional energy, emotional feedback, practical intuition); ii) Emotional vitality (self-asset, circle of confidence, constructive discontent, resilience and renewal); iii) Emotional depth (authentic potential and purpose, devotion, experiencing integrity, effect without authority); iv) Emotional alchemy (intuitive flow, mental time shift, perceiving opportunity, creating the future) [11].

It is noteworthy that emotions and emotional intelligence are related to almost all areas of life and affect the success and happiness of individuals according to the models and approaches developed heretofore. Several studies conducted among university students regarding the concepts that emotional intelligence affects. Previous researchers [12] studied the effects of psychological workshops on the emotional intelligence of university students. Ergin [13] investigated about emotional intelligence and academic success, emotional intelligence levels and problem solving skills. Other studies [14], [15] explored the relationship between pre-service teachers' emotional intelligence and their problem-solving approaches.

There are other studies examining the emotional intelligence of university students. Jan and Anwar [16] investigated the association between emotional intelligence, library-use and academic achievement among undergraduate university students. Korkman and Tekel [17] studied the mediating role of empathy in the relationship between emotional intelligence and thinking styles. Kartol and Erçevik [1] explored the mediating role of meaning in life in the relationship between emotional intelligence and life satisfaction. Kant [18] explained that male and female university students differ significantly from each other on emotional intelligence over the general sample. Yabancı *et al.* [19] discussed the role of emotional self-awareness in predicting emotional intelligence. Tatar *et al.* [20] revealed the relationship between emotional intelligence levels and creativity levels. Büyükşalvarcı and Gündoğan [21] found the relationship between emotional intelligence and creativity. Yıldızbaş [22] studied the relationship between pre-service teachers' emotional intelligence levels and teacher leadership styles and academic achievements. Reisoğlu and Yazıcı [23] investigated the relationship between students' subjective well-being and emotional intelligence. Büyükbeşe, Direkçi, and Erşahan [24] explored the effect of university students' emotional intelligence on their communication skills and individual innovativeness levels. Yıldız [25] examined the relationship between emotional intelligence and life satisfaction and depression variables. Another study [26] depicted the relationship between emotional intelligence and life satisfaction.

Emotional intelligence has become important in most areas of our lives in recent years, especially in terms of increasing the quality of professional life. Especially in business life, emotional intelligence is one of the primary issues of interest to both managers/employers and employees. Indisputably, all these efforts are made in order to increase the quality and efficiency of the workforce. However, while the basic elements of emotional intelligence have begun to be used to increase the quality of education in western countries, emotional intelligence studies in Turkey are discussed within the theoretical field rather than in practice [27]. Age, family environment and gender are among the most important factors that affect the development of emotional intelligence [28]. Goleman examined the relationship between performance and success by using the emotional intelligence model [5]. Emotional intelligence is also said to have a significant effect on academic achievement [29]. Reuven Bar-On focused on the relationship between emotions and social skills. He defined emotional intelligence as 'the individual's ability to understand himself and others, to establish relationships with people, and to adapt to the immediate environment in order to overcome environmental demands successfully'. He categorized emotional intelligence components under intrapersonal, interpersonal, adaptability, stress control, and general mood [5].

The importance of the current research is to draw the attention of educators and students to the issue of emotional intelligence by examining the emotional intelligence levels of university students, who have a very short time to start their professional life and examining them in the context of various variables that may be effective in the differentiation of their emotional intelligence levels. This research has vital importance in terms of preventing emotional intelligence from remaining only on the agenda and as just another topic of discussion and making it a critical subject that deserved adequate research and examination. This research is also of particular importance with regard to enabling faculty members to educate their students' regarding emotional intelligence and guiding them for developing their own emotional intelligence skills. At this point, the aim of the research is to identify any difference between the emotional intelligence of first- and fourth-grade students in various departments. The another aim of this study is to determine whether there is a difference in the emotional intelligence levels of the students who continue their education according to their department, class, gender, reading habits, hobbies, and participation in activities.

2. RESEARCH METHOD

In this study, a survey method and a correlational survey method were used. Survey method aims to describe a past or present situation as it exists and define the subject of the study (individual or object) as it is and in its own conditions. Correlational survey method aims to determine the existence of and/or the degree of correlation between two or more variables [30].

2.1. Study group

The study group for this research was chosen by random sampling method among first and fourth grade university students. The study group of the study consists of students from the Art and Craft Teacher Education, Pre-school Teacher Education, Music Teacher Education, Biology Department, Mathematics Department, and Environmental Engineering Department. Table 1 shows that most of the participants in the study group (42.9%) are students from the Art and Craft Teacher Education, whereas students from the environmental engineering department are the smallest participating group (7.9%). The biggest group of the participants according to the age variable are students aged 23 and over (42.3%), and the smallest group (17.8%) are the students aged between 17 and 19. According to the data on the hobbies of the participants,

36% read books, 31.7% liked to “travel”, 47.7% were fond of “listening to music”, 32% enjoyed “playing sports”, 39.3% liked to participate in concert events, 22.4% preferred cinema events, 10.6% participated in exhibition events, 13.6% enjoyed going to sports events.

Table 1. Frequency percentage distributions of the demographic data of the sample

		Frequency	%
Departments	Pre-school Teacher Education	74	22.4
	Environmental Engineering	26	7.9
	Art and Craft Teacher Education	142	42.9
	Music Teacher Education	31	9.4
	Biology	31	9.4
	Mathematics	27	8.2
	Total	331	100.0
Class	1 th class students	138	41.7
	4 th class students	193	58.3
	Total	331	100.0
Gender	Female	264	79.8
	Male	67	20.2
	Total	331	100.0
Age	17-19 ages	59	17.8
	20-22 age	131	39.6
	23 years and older	140	42.3
	Total	330	99.7
	Missing data	1	0.3
	Total	331	100.0
Hobby: Book reading	Not reading	212	64.0
	Reading	119	36.0
	Total	331	100.0
Hobby: Traveling	No traveling	226	68.3
	Traveling	105	31.7
	Total	331	100.0
Hobby: Listening music	Not listening	173	52.3
	Listening	158	47.7
	Total	331	100.0
Hobby: Sports	Do not have a hobby of sports	225	68.0
	Have a hobby of sports	106	32.0
	Total	331	100.0
Have a hobby	Do not to have a hobby	169	51.1
	Have a hobby	162	48.9
	Total	331	100.0
Attending concert events	Does not attend concert events	201	60.7
	Participates in concert events	130	39.3
	Total	331	100.0
Cinema events	Does not go to the cinema	257	77.6
	Goes to the movies	74	22.4
	Total	331	100.0
Attending exhibitions	Non-attendee	296	89.4
	Attendee	35	10.6
	Total	331	100.0
Sporting events	Does not participate in sporting events	286	86.4
	Participates in sporting events	45	13.6
	Total	331	100.0
Other events	Not participating in other activities	164	49.5
	Participate in other events	167	50.5
	Total	331	100.0

2.2. Data collection tools

The study employed 87-item Bar-On Emotional Quotient Inventory test and personal information form, adapted into Turkish with validity and reliability studies by Acar [31]. Bar-On Emotional Quotient Inventory is the first scientific emotional intelligence test developed by Reuven Bar-On in 1997. This scale is used to measure emotional intelligence dimensions. It has five main dimensions under which fifteen emotional intelligence sub-dimensions are grouped. The dimensions of this intelligence test are: intrapersonal, interpersonal, adaptability, stress control, and general mood [32]. The intrapersonal scale is measured with five sub-dimensions, namely emotional self-awareness, assertiveness, self-regard, self-actualization, and independence. The interpersonal scale consists of three sub-dimensions, which are empathy, social responsibility, and interpersonal relationship. The adaptability scale consists of: reality testing, flexibility, and problem solving. Stress control scale consists of stress tolerance and impulse control

sub-dimensions. General mood scale consists of optimism and happiness sub-dimensions. The Cronbach Alpha coefficient for the total scale is .92. Cronbach's alpha coefficient for personal abilities and general mood, interpersonal, adaptability, stress control, and intrapersonal dimensions were found to be .83, .77, .65, .73, and .75, respectively. For all dimensions, these values are at an acceptable level [31].

2.3. Collection of the data

The requisite permissions were obtained from the respective heads of departments and lecturers of the faculties in question. Subsequent to the class taken by the lecturer, the researchers of this study contacted the students. As remarked earlier, the data for this research were collected by applying the Bar-On Emotional Quotient Inventory [1] which consists of 87 items. Furthermore, the personal information form prepared by the researchers for the first and fourth grade students who complied with the criteria of the research and were willing to participate in the research.

2.4. Data analysis

To determine whether the considered dimensions of emotional intelligence of the university students participating in the study differed according to the variables namely department they attend, age, gender, grade, hobbies of the students and the activities they participate in. The acquired data were analyzed by the researchers using a statistical analysis package program. Kruskal–Wallis, independent groups t-test and Mann–Whitney U tests were conducted in accordance with the structure of the groups and the characteristics of the variables. In cases where the data were not normally distributed and the analyses did not meet the assumptions, the Kruskal–Wallis test was performed.

Prior to the analysis, the reliability levels of the scales were re-evaluated on the study group in question. Cronbach's alpha coefficient values obtained for the sub-dimensions of the scale as a result of the reliability analyses were .86, .78, .78, .74 for the interpersonal, stress control, intrapersonal, and adaptability, respectively. Then, Kolmogorov–Smirnov normality analysis was performed to understand whether the data were distributed parametrically or non-parametrically. Through the analysis, it was found that the data were normally distributed ($p > .05$). As the scores were observed to be normally distributed, the independent group t-test was performed for two-category discontinuous variable analysis. However, because of the limitation of having at least 30 data values for each variable, another parameter of parametric analyses, i.e., the Kruskal–Wallis test was used for the three categories of discontinuous variables. All analyses were tested at a significance level $p < .05$.

3. RESULTS

In this part of the study, the analysis of the sub-dimensions, interpersonal, stress control, intrapersonal, and adaptability of emotional intelligence are included. Table 2 shows that a significant difference was found in the interpersonal, intrapersonal, and adaptability sub-dimensions of emotional intelligence with regard to the variable departments. A result in favor of Mathematics and Pre-school Teacher Education in interpersonal dimension was observed as presented in Table 3 as the averages of the Mathematics and Pre-school Teacher Education departments are higher than the others. When the averages for the intrapersonal sub-dimension were examined, it was concluded in favor of Environmental Engineering department, and when the adaptability sub-dimension was analyzed, the results were in favor of Environmental Engineering department.

Table 4 concludes that the class of the students does not make any difference in the sub-dimensions of the emotional intelligence scale. As shown in Table 5, the results of independent groups t-test according to the gender variable were observed to be related to the sub-dimensions of emotional intelligence. A significant difference was found in the intrapersonal and adaptability sub-dimensions. When the averages in the same table are examined, it is seen that the significance is in favor of men in the intrapersonal and adaptability dimensions.

Table 2. Kruskal–Wallis test of the study group according to the sub-dimensions of emotional intelligence regarding the variable departments

	Interpersonal	Stress control	Intrapersonal	Adaptability
Chi-square	16.411	10.794	15.084	14.045
Degrees of freedom	5	5	5	5
p	.006	.056	.010	.015

$p < .05$

Table 3. Average rank values of the study group according to the sub-dimensions of emotional intelligence regarding the variable departments

	Department	N	Mean rank	Chi-square	Degrees of freedom	p score
Interpersonal	Pre-school Teacher Education	67	169.87	16.411	5	.006
	Environmental Engineering	22	116.73			
	Art and Craft Teacher Education	120	141.66			
	Music Teacher Education	29	110.14			
	Biology	29	152.03			
	Mathematics	26	173.81			
	Total	293				
Stress control	Pre-school Teacher Education	69	160.96	10.794	5	.056
	Environmental Engineering	23	121.52			
	Art and Craft Teacher Education	129	168.72			
	Music	30	143.07			
	Biology	31	124.97			
	Mathematics	27	150.48			
	Total	309				
Intrapersonal	Pre-school Teacher Education	69	131.25	15.084	5	.010
	Environmental Engineering	24	205.94			
	Art and Craft	124	154.08			
	Music Teacher Education	28	139.82			
	Biology	30	140.47			
	Mathematics	27	167.37			
	Total	302				
Adaptability	Pre-school Teacher Education	69	131.25	14.045	5	.015
	Environmental Engineering	23	209.48			
	Art and Craft Teacher Education	127	156.81			
	Music Teacher Education	30	158.55			
	Biology	31	153.27			
	Mathematics	27	147.43			
	Total	307				

Table 4. Independent groups t-test results of sub-dimensions of emotional intelligence according to the 'class' variable of the study group

	Class	N	Mean	Standard error	t score	p score
Interpersonal	1 st Class	126	4.0452	.55940	.051	0.96
	4 th Class	167	4.0419	.53198		
Stress control	1 st Class	132	3.8056	.68985	0.647	0.527
	4 th Class	177	3.7580	.59933		
Intrapersonal	1 st Class	128	2.5065	.66549	-0.517	0.606
	4 th Class	174	2.5508	.82070		
Adaptability	1 st Class	130	2.0500	.80839	-.818	0.414
	4 th Class	177	2.1285	.84825		

p<.05

Table 5. Independent groups t-test results of sub-dimensions of emotional intelligence according to the 'gender' variable of the study group

	Gender	N	Mean	Standard error	t score	p score
Interpersonal	Female	237	4.0821	.55068	2.539	0.12
	Male	56	3.8791	.47979		
Stress control	Female	247	3.7740	.67914	-.304	.761
	Male	62	3.7957	.44805		
Intrapersonal	Female	238	2.4713	.75379	-2.751	.007
	Male	64	2.7578	.73579		
Adaptability	Female	243	1.9938	.80447	.427	.000
	Male	64	2.4805	.82412		

p<.05

As can be seen in Table 6, the hobby of reading or not reading books made a significant difference in the intrapersonal and interpersonal sub-dimensions of the study group in question. It is worth noting that this difference in the interpersonal dimension is in favor of those who read books, whereas in the intrapersonal sub-dimension, it is in favor of those who do not read books. Table 7 shows that having or not having different hobbies in the intrapersonal sub-dimension of emotional intelligence creates a significant difference in favor of those who do not have certain hobbies.

Table 6. Independent group t-test results of the emotional intelligence sub-dimensions of the study group according to 'book reading and not reading behaviors'

Hobby: Book reading		N	Mean	Standard error	t score	p score
Interpersonal	Reading	110	4.1238	.49744	1.976	.049
	Not reading	183	3.9950	.56444		
Stress control	Reading	112	3.8646	.57801	1.796	.073
	Not reading	197	3.7293	.66754		
Intrapersonal	Reading	110	2.2697	.66206	-4.906	.000
	Not reading	192	2.6823	.76996		
Adaptability	Reading	113	1.9779	.76149	-1.897	.061
	Not reading	194	2.1637	.86375		

p<.05

Table 7. Independent groups t-test results for the 'other hobbies' variable of the emotional intelligence sub-dimensions of the study group

Other hobbies		N	Mean	Standard error	t score	p score
Interpersonal	Yes	146	4.0711	.57394	.873	.383
	No	147	4.0157	.51088		
Stress control	Yes	149	3.8177	.70133	1.045	.297
	No	160	3.7417	.57456		
Intrapersonal	Yes	144	2.4120	.67849	-2.674	.008*
	No	158	2.6414	.81045		
Adaptability	Yes	151	2.0546	.78999	-.842	.400
	No	156	2.1346	.86992		

p<.05

Table 8 shows that the behavior of individuals regarding attending or not attending exhibitions makes a difference in the 'adaptability' dimension of emotional intelligence but not in other sub-dimensions. The table reveals that results are in favor of those who do not attend exhibitions. Table 9 reveals a significant difference in the stress control and intrapersonal sub-dimensions of emotional intelligence in terms of participating and not participating in other activities. When the averages in Table 9 are examined, a difference can be seen in the 'stress control' sub-dimension in favor of those who participate in other activities. When the averages regarding intrapersonal sub-dimension were analyzed, results were noted to be in favor of those who do not participate in the activities.

Table 8. Independent group t-test results for the 'Attending Exhibitions' variable of the emotional intelligence sub-dimensions of the study group

Attending exhibitions		N	Mean	Standard error	t score	p score
Interpersonal	Attendee	30	4.0923	.37868	.521	.603
	Non-attendee	263	4.0377	.55895		
Stress control	Attendee	33	3.8283	.51113	.475	.635
	Non-attendee	276	3.7723	.65305		
Intrapersonal	Attendee	32	2.4375	.66364	-.745	.457
	Non-attendee	270	2.5432	.76867		
Adaptability	Attendee	34	1.8603	.45723	-2.805	.007
	Non-attendee	273	2.1245	.86260		

p<.05

Table 9. Independent group t-test results of the emotional intelligence sub-dimensions of the study group regarding 'participating and not participating' in other activities

Other activities		N	Mean	Standard error	t score	p score
Interpersonal	Participating	148	4.1065	.54861	2.024	.440
	Not participating	145	3.9788	.53135		
Stress control	Participating	154	3.9026	.61973	3.469	.001
	Not participating	155	3.6548	.63567		
Intrapersonal	Participating	147	2.4286	.71567	-2.327	.021
	Not participating	155	2.6301	.78571		
Adaptability	Participating	151	2.0116	.82832	-1.741	.830
	Not participating	156	2.1763	.82853		

p<.05

When the other findings obtained from the study are examined, it can be seen that grade and age variables of the students in all groups in the sub-dimensions of the emotional intelligence scale do not lead to any marked difference in any of the sub-dimension. In addition, it appears that the state of participating or not participating in activities such as travelling, listening to music, playing sports, attending a concert, going to the cinema, and attending sport activities does not make a difference in the sub-dimensions of emotional intelligence.

4. DISCUSSION

A significant difference was observed in the interpersonal, intrapersonal, and adaptability sub-dimensions of emotional intelligence according to the 'departments' students attended. In the interpersonal dimension, the result was noted to be in favor of students who attended Mathematics and Pre-school Teacher Education departments. In intrapersonal and adaptability sub-dimensions, conclusions can be drawn in favor of students enrolled in the Environmental Engineering department. The study by Kant [18] showed that all university students have a high level of emotional intelligence. The study also shows that all of the Faculty of Education students have a high level of emotional intelligence when compared to the Law and Management School students.

Gündüz [33] noted that the emotional intelligence of the students varied according to their educational fields. It was determined that there is a significant difference between the emotional intelligence of students in the departments of Health Sciences, Science and Social Sciences. Yıldızbaşı [22] examined the relationship between teacher candidates' emotional intelligence levels, teacher leadership styles and academic achievements; it was seen that pre-service teachers attained the highest average score from the sub-dimensions of emotional intelligence in the dimension of optimism and more than half of the pre-service teachers had a semi-autocratic teacher leadership style. It was noted that there is a positive, moderately significant relationship between the optimism dimension and teacher leadership styles, which is one of the emotional intelligence sub-dimensions, and a negative, moderately significant relationship in the expression of emotions dimension. As a result of the study conducted by Aslan [14], it was determined that pre-service teachers' emotional intelligence and problem-solving scores were at an adequate level. In addition, it was found that there was a significant positive relationship between emotional intelligence and problem solving, and emotional intelligence explained 14% of problem solving, and problem-solving approaches were explained by emotional intelligence dimensions.

Ergin *et al.* [13] examined the relationship between the emotional intelligence levels of engineering students and their problem-solving skills in terms of gender, class, department, university and academic success variables. They determined that the emotional intelligence levels and problem-solving skills of engineering students increased academic success and showed a low predictive value. Suleman *et al.* [15] revealed that there is a strong positive relationship ($r=.880$) between emotional intelligence and academic achievement among undergraduate students. Their findings confirmed that the emotional intelligence of undergraduate students can be further developed and, thus, their academic performance can be further improved. Jan and Anwar [16] investigated the association between emotional intelligence, library-use and academic achievement among undergraduate university students in Pakistan. Results revealed that students with comparatively higher emotional intelligence score frequently visited their university library. A positive significant relationship was found between emotional intelligence and academic achievement of these students. Results revealed that students with comparatively higher emotional intelligence score frequently visited their university library. A positive significant relationship was found between emotional intelligence and academic achievement of these students.

Yabancı *et al.* [19] determined that the online privacy anxiety and emotional intelligence levels of university students differ significantly according to the age and perception of academic achievement. In addition, in the study conducted by Erginsoy [34], wherein the emotional intelligence levels of university students and their interpersonal relationships, and the effect of age, gender, education level and department variables on the subject were examined, it was found that there was a relationship between the emotional intelligence levels of university students and their interpersonal relationship styles. In a study conducted by Beceren [35] on the development of emotional intelligence, it was explained that enhancing problem-solving skills contributed to the development of emotional intelligence. Looking at the results obtained in this study, it can be seen that the students of the 'Mathematics' department achieved positive results in the 'interpersonal' dimension. This suggests that when taking the departments into account, this may be due to the high level of problem-solving skills of the students studying in this department. In addition, it can be concluded that Pre-school Teacher Education department students have lessons on communication skills and drama in their curriculum, which makes a difference in the 'interpersonal' sub-dimension of emotional intelligence.

Beceren [35] remarked that communication skills can affect emotional intelligence in a positive way. In addition, in the interpretations of the research conducted by Radford [36], it was stated that activities such as drama and role-playing could help students talk and think about emotions and learn to recognize the emotions experienced by others. On the basis of the interpretations of the research conducted by Radford, it can be said that the difference in favor of Pre-School Teacher Education department students in the 'interpersonal' dimension of emotional intelligence is due to the drama lessons included in that program.

A significant difference was noted according to the gender variable in intrapersonal and adaptability dimensions. It was stated that there is a difference in favor of men in these sub-dimensions. In the study conducted by Zahedi *et al.* [37], it was concluded that the emotional intelligence levels of the students differed significantly according to their gender, and the highest difference was in male students. In the study conducted by Ergin [38], in terms of the relationship between emotional intelligence and gender, the sub-dimensions of being aware of emotions, managing and motivating their emotions were found to be different according to the gender, and it was revealed that this difference was in favor of males. Both studies' findings are congruent with each other and evidenced a significant difference in favor of males in the sub-dimensions of emotional intelligence. There are also studies in the literature showing that there is a noteworthy difference in favor of female students. For example, in the study by Kant [18], male and female students differ significantly from each other on emotional intelligence over the general sample. Female students were found to have more emotional intelligence with a high mean value.

Büyüksalvarcı and Gündoğan [21] determined that the highest difference in all sub-dimensions of emotional intelligence was in favor of female students. In Akkan's study, it was determined that there was a significant difference in the sub-dimensions of optimism and benefiting from emotions in female students, but it was concluded that there was no significant difference in the expression of emotions sub-dimension [21]. In a few other studies in the literature [6], [21], [25], [26], [33], [34], [39]–[45] when the mean scores of emotional intelligence of the participants were examined according to gender, a difference was found in favor of female students in the studies. In addition, in previous studies [46], [47], emotional intelligence scores in favor of women drew attention. Previous researchers [48]–[52] concluded that emotional intelligence does not change with gender.

In the sub-dimensions of the emotional intelligence, it is revealed from the findings of the research that the grades in which the students are in do not cause any difference. Yıldız [25] noted that the class levels of the students did not have a distinctively significant effect on life satisfaction, emotional intelligence and depression. There are few studies in the literature that do not support this finding. For example, in the study conducted by Erginsoy [34] on the emotional intelligence levels and interpersonal relationships of university students, it was concluded that the education level of university students (being in the first or fourth grade) partly affected their emotional intelligence and interpersonal relationship styles.

When emotional intelligence sub-dimensions of the study group were examined according to the age variable, no significant difference in any of the sub-dimensions was observed. According to the results of the study conducted by İşmen [53], which investigated the relationship between non-thesis graduate students and university students' emotional intelligence and problem-solving skills, the level of emotional intelligence in the age groups of 19 years old and under 26 years old and over did not differ according to age. Likewise, Gündüz [33] and Yılmaz [54], it was found that the emotional intelligence of the students did not differ according to the age variable. Emotional intelligence is not a condition that changes and develops with the advancement of age. It finds an opportunity to develop and change with the choices and efforts of the individual [55]. Öztürk's statement supports the finding obtained from the research.

Whether the participants in the study group were travelling or not, listening to music or not, and exercising or not, did not make any difference in any sub-dimension. However, it was determined as a result of the analysis that having or not having different hobbies made a difference in the sub-dimension of the intrapersonal sub-dimension of emotional intelligence creates a significant difference in favor of those who did not have a hobby. When other studies were examined, it was seen that emotional intelligence areas related to personal hobbies were not examined. As it can be deduced from Öztürk, the effectiveness of hobbies is also reviewed in the literature on the basis of the fact that emotional intelligence can develop with the wishes and pursuits of an individual. However, there was a significant difference only in the intrapersonal field with regard to 'having different hobbies' variable.

The reason why the difference is in favor of those who do not have a hobby may be due to the fact that individuals with a hobby are interested more in outside world rather than themselves. Follow innovations and are in contact with people with similar hobbies may affect their own style. It is seen that the hobby of reading or not reading books makes a significant difference in the intrapersonal sub-dimension of the participants in the study group. It turns out that the difference is in favor of those who read books. This finding overlaps with the concept of information literacy, access to correct information, critical thinking and analysis, which have been emphasized recently. Especially when we evaluate this finding with the definition

of emotional intelligence in the pertinent literature, we can say that it is extremely wrong to read without analyzing it, and it makes sense when we combine the publications and books we read with our own environment and experiences, and the progress and development take place thereafter. Emotional situations affect the experience. The process of learning something from this experience and thus the final learning outcomes brought by this experience are also affected [9].

When the findings regarding participation in activities are examined, it can be seen that attending or not attending a concert, behavior of going to the movies or not, participating or not participating in sports activities do not make a difference in the sub-dimensions of emotional intelligence. However, it has been revealed that the behaviors of individuals whether or not to go to exhibitions make a difference in the 'adaptability' dimension of emotional intelligence but not in other sub-dimensions. When the averages were analyzed, a result was found in favor of 'not participating in exhibitions' variable. It can be said that typically the people who participate in exhibitions are art lovers. It is a common perception in our society that these individuals alienate themselves from others and keep their emotions and feelings within themselves. In this case, the reason why the subjects who participate in exhibitions make a difference in the 'adaptability' dimension may be because they are defined as less compatible in the society.

At the same time, a significant difference was found in stress control and intrapersonal sub-dimensions. When the averages were examined, a difference was found in the stress control sub-dimension in favor of those subjects who attended other activities. When the averages with regard to intrapersonal dimension were analyzed, it was deduced to be in favor of 'not participating in activities' variable. In the stress control sub-dimension, the reason for the positive outcome for 'participation in activities' can be explained by the fact that when individuals attend events (festivals, seminars and congresses), they meet more people and improve their stress-control skills. Kartol and Erçevik [1] examined the mediating role of meaning in life in the relationship between emotional intelligence and life satisfaction in university students and noted that the existence of meaning in life, one of the dimensions of meaning in life, is a fully mediating variable in the relationship between emotional intelligence and life satisfaction. According to these results, it was deduced that university students with a high level of emotional intelligence have high scores for the existence of meaning in life and life satisfaction. Öztürk and Deniz [55] affirmed that there is a direct proportion between stress management and emotional intelligence. Göçet [56] found that emotional intelligence supports stress management. Likewise, there was a similar effect observed in the study conducted by Zeidner *et al.* [4]. In this case, we can say that while participating in activities positively affects stress control, it contributes to emotional intelligence.

5. CONCLUSION

In consonance with the findings obtained in this study, some suggestions can be made for guiding future studies. A similar study can be done such that it includes all universities and at the same time where all departments participate in the research. When the results related to the findings are evaluated, new studies can be planned to investigate the relationship between emotional intelligence and experience and maturation. In the findings obtained, it can be seen that there are courses on problem-solving skills in the program of the Mathematics Department and it thus differs between the departments in the interpersonal dimension and the Environmental Engineering Departments in the intrapersonal dimension. It is seen that there are lessons for drama and communication skills in the program of the Pre-school Teacher Education Department, where there is a difference in the interpersonal dimension.

At the same time, the relationships of the emotional intelligence dimension with the sub-dimensions can also be implemented through planning different studies. Considering the difference between findings of this research and other studies because of the use of different sample groups, repeating the sample from more specific profiles in such studies can help attain clearer results. The habit of reading books differed in inter- and intrapersonal dimensions. In this case, teacher candidates can be given lessons to encourage reading; book-reading days can be planned or book-reading meetings can be organized. In addition, studies that could highlight the effects of reading books on emotional intelligence and monitor the change of emotional intelligence with reading books can be conducted. If you have a hobby, it has been observed that emotional intelligence makes a difference when it is intrapersonal, and participation in other activities makes a difference in the dimension of stress control. University students can be encouraged to have hobbies and engage in different activities during their university life, and incentives can be provided by asking students to prepare a portfolio as soon as they enter the university. At the same time, the grade level of the research included here is limited to first- and fourth-grade students. The effect of experience on emotional intelligence can be evaluated by conducting longitudinal studies in different studies.




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BIOGRAPHIES OF AUTHORS



Banu Dikmen Ada    is an assistant professor Faculty of Education, Department of Primary Education, Preschool Teacher Education/Early Childhood Education, Eskişehir Osmangazi University, Turkey. Her research interests include educational sciences, teacher education, early childhood education, education management, leadership, creative leadership, values education. She can be contacted at email: bdada@ogu.edu.tr; banudikmen@gmail.com; b.d.a.ogu.edu.tr@gmail.com.



Asude Balaban Dağal    is an associate professor Faculty of Education, Department of Primary Education, Preschool Teacher Education/Early Childhood Education, Marmara University, Turkey. Her research interests include social and humanities, psychology, educational sciences, teacher education, early childhood education, education management, leadership, creative leadership, values education. She can be contacted at: asudebd@marmara.edu.tr or asudebd@gmail.com.