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World map of Mahmud al-Kashgari, oriented with East at the top, is from the unique manuscript of al-Kashghari entitled *Diwan Lugat at-Turk* [The Compendium of the Turkic Dialects]. Al-Kashghari was a Turkish grammarian of the 11th century A.D. whose world map appears as an illustration to his Turkish grammar.

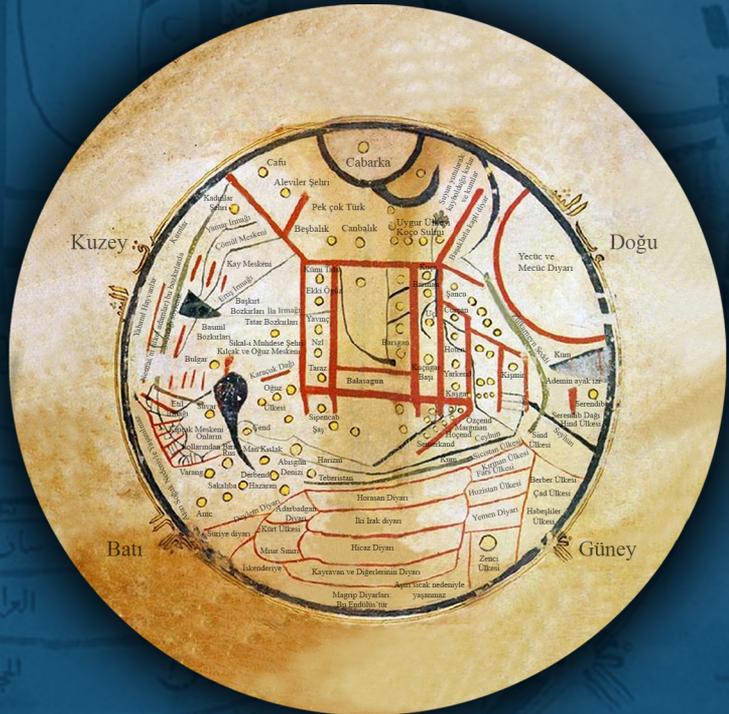
The individual elements of the map, symbols, and so forth, are all very much the same as those that appear on any other Islamic map, but its concept is most unusual.

Although it is a map of the world, it is centered on the Turkish-speaking areas of Central Asia, with other countries receding from them toward the circumference of the world circle. In addition the scale seems to be reduced as one gets nearer the edge of the map, so that one has the impression of a fish-eye representation of the globe with Turkestan magnified in the center.

The colors are described in the original as gray for rivers, green for seas, yellow for deserts and cities, the rivers are blue and the mountains are red.

Turkic cities were placed accordingly, the four directions were indicated in accordance with the traditional Turkic system used in the *Orkhun Inscriptions*.

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## Determination of the effectiveness of İstanbul strait-blue belt movement project

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**ABSTRACT** The purpose of this study is to improve students' knowledge and awareness regarding the scale of pollution that has engulfed the İstanbul Strait as well as the general threats faced by the ecosystem. Towards this end, 2310 1-12 grade students were sampled from schools in İstanbul to serve as study participants. To collect the research data, two different instruments namely Personal Information Questionnaire and Information Tests developed by the researchers were used. When the data collected with the questionnaire was examined, it was observed that students' knowledge concerning marine pollution generally came from their teachers and the Internet. Students who took most information from the Internet were those in the high school. The least source of information to students however was civil society organizations. With respect to the courses at school, the students reported taking most information regarding pollution of the sea from their science and social studies' textbooks. When it comes to the results obtained using the tests administered, it was observed that the average scores for posttest were higher than the average scores for pretest across all the levels. In order to examine whether or not the difference between the posttest average scores and the pretest average scores is significant, a t-test analysis was performed; and the results revealed that across all the levels, the differences observed between the average scores for posttest and pretest are significant. These findings and results provide concrete supports for the success of the educational training implemented in the study.

**Keywords** *Marine pollution, Ecosystem, Sustainable energy, Assessment and evaluation, Blue Belt Movement, TURMEPA, MITSUI*

## İstanbul boğazı-mavi kuşak hareketi projesi'nin etkililiğinin belirlenmesi

**ÖZ** Bu çalışmanın amacı öğrencilerin İstanbul Boğazı'ndaki deniz kirliliğine ve ekosistemin karşılaştığı tehditlere yönelik bilgi ve farkındalık düzeylerini geliştirmektir. Çalışma İstanbul ilindeki 1-12. sınıf düzeyinde öğrenim gören 2310 öğrenci üzerinde yürütülmüştür. Çalışmanın verileri araştırmacılar tarafından geliştirilen kişisel bilgi anketi ve bilgi testleriyle toplanmıştır. Anketten elde edilen bulgular incelendiğinde, öğrenciler deniz kirliliğiyle ilgili çoğunlukla öğretmenlerinden ve internetteki bilgi aldıklarını belirtmişlerdir. İnternetteki bilgi alma oranı en yüksek olan grup lise öğrencilerdir. Öğrencilerin en az bilgi edindikleri kaynak ise sivil toplum kuruluşlarıdır. Öğrenciler denizlerin kirlenmesiyle ilgili daha çok fen ve sosyal bilgiler derslerine ait kitaplardan bilgi aldıklarını ifade etmişlerdir. Bilgi testi sonuçlarına göre tüm gruplarda son test puan ortalamaları ön test puan ortalamalarından yüksek bulunmuştur. Ön test ve son test puan ortalamaları arasındaki farkın manidarlığını test etmek amacıyla yapılan ilişkili örneklem için t-testi sonucunda; her bir sınıf düzeyi için ön test ve son test puanları arasında manidar bir farklılık olduğu görülmüştür. Elde edilen bulgular ve sonuçlar, yürütülen eğitimin başarısını destekler niteliktedir.

**Anahtar Kelimeler** *Deniz Kirliliği, Ekosistem, Sürdürülebilir Enerji, Ölçme ve Değerlendirme, Mavi Kuşak Hareketi, TURMEPA, MITSUI*

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## INTRODUCTION

In our world of today, the question “what kind of world do we want?” is considered an important question to ask on behalf of both humanity and nature. In response to this question, most countries in the world have considered the creation of societies, which can guarantee the prosperity of the next generations to be the foremost priority. However, in order to achieve this, there is the need to have individuals with developed consciousness and decisive spirit, two qualities that can only be acquired through education. This is why the period between 2005 and 2014 was announced by the UN as a Development-Focused and Sustainable Education Period. The approach of the Development-Focused and Sustainable Education is to sensitize individuals about developing a sustainable lifestyle and accordingly societal transition in the long term.

Carson (1962) touched on the subject of sustainable development officially and tried to bring the attention of the world towards sustainable life by means of a book titled “Silent Spring” (Güler, 1974). Following this development, in 1987, the concept of sustainability was handled comprehensively in the report “Our Common Future”, published by the UN World Commission on Environment and Development. This report contains social, economic, cultural and environmental subjects as well as global solutions to these issues. In addition, a platform, in which application-oriented principles are shared, was formed (Brundtland Report, 1987; IISD, 2012). In the UN Sustainable Development Summit held in New York, global targets for post 2015 were discussed and the agenda for 2030 was determined. Based on this, sustainable development goals, which are expected to be applied until 2030, were grouped under 17 thematic subtitles. The themes are as follows; Ending Poverty, Ending Hunger, Healthy Individuals, Quality Education, Societal Gender Equality, Clean Water, Hygiene and Societal Health, Accessibility to Clean Energy, Humanitarian Work and Economic Growth, Industry, Innovation and Infrastructure, Decreasing Inequalities, Sustainable City and Life, Responsible Consumption and Production, Actions regarding the Climate, Aquatic Life, Terrestrial Life, and Partnership for Peace and Justice Goals (United Nation [UN], 2015). Similarly, the subject covered within the “Blue Belt Movement - İstanbul Strait Project” is of relevance to all the subjects in the world agenda, especially “Clean Water, Hygiene and Societal Health”.

Turkey as a country with water resources needs to give particular importance to the protection of all water bodies and their sustainability. Including this subject in educational programmes and applications and making it a central theme is thus of great importance (Kutlu, 2007; Öğülmüş, Babadoğan, Kutlu, Çakır & Altındağ, 2007a, 2007b, 2008, 2009a, 2009b; Kutlu, 2008; Babadoğan, 2008a, 2008b; Kutlu & Babadoğan, 2010; Kutlu & Öğülmüş, 2010; Kutlu, Babadoğan, Kumandaş & Altıntaş, 2016; TURMEPA, 2017; Ergene, Babadoğan, Atık, Atmaca & Öztürk, 2017). With their potential temperature, chemical features, streams and living creatures, oceans render the globe livable for the people. It is thus vital to balance the climate changes and manage biotic sources efficiently. Over 3 billion people depend on marine and coastal bio-diversity in order to make their living. However, 30% of the fish stock is currently below the level of providing sustainable products due to excessive fishing. Moreover, oceans absorb 30% of carbon dioxide produced by humans.

Yet, since the Industrial Revolution, there has been an increase by 26% in ocean acidification. In addition to this, marine pollution caused by terrestrial sources is at an alarming rate. For instance; on the average, there are 130,000 parts of plastic waste in each square kilometer of the ocean. However, sustainable development goals aim to manage sea and coastal ecosystems sustainably in order to protect them against pollution and also reduce the effects of ocean acidification (UN, 2015). Thus, it is essential to protect water sources, to realize the necessities and priorities of the societal health and to carry out activities to raise application-oriented awareness. Within this context, awareness creation programs may be considered as a tool for politics but also an interaction tool among stakeholders in the society.

The most viable way to create awareness regarding protection of the seas against pollution is to have activities aiming at improving individuals’ knowledge, attitude and behavior. However, in designing these attitude change programs, rather than merely providing information, elements, which can influence community rules and also help in ensuring effective public awareness, should be included. Within this context, it is thought that awareness programs, which are designed and implemented to change the society’s point of view towards seas, need to give more importance to feelings and values.

Today's children and youth will be the ones who are going to make a decision on the management and the use of the seas. Thus, an encouraging educational method needs to be embraced so as to raise a generation that uses the seas wisely. Capturing these subject areas in the educational objectives targeting primary, middle and high school students is very critical. According to a study carried out by Derman (2015), each country has different practical methods for dealing with environment-related topics. Some countries include those attainments in their objectives whereas some do not. In this respect, it will be beneficial for Turkey to revise its educational programs within the concept of sustainable development goals and to enrich its curriculum with the water and water-life related subjects. Tanrıverdi (2009) confirmed in a study that the design of primary school programs has largely focused on the promotion and the protection of the places where we live rather than raising awareness of environmental sustainability. In his study which analyzes primary school students' attitudes towards the environment, Rasim (2008) found out that the students who attended the eco-related clubs were more sensitive to environmental related issues than the ones who did not.

In Turkey, various associations, charities and organizations implement environment education programs in order to raise public awareness on sustainable development and environmental education. Blue Flag Programme, Eco-Schools Programme, TÜRÇEV, FEE-Foundation for Environmental Education and Green Pack are some of those programmes.

DenizTemiz/ TURMEPA, a civil society movement formed with the aim of protecting the coasts and the seas of Turkey and leaving behind clean seas and a livable Turkey for the next generations, was founded by Rahmi M. Koç (as the founding chairman), The Chamber of Shipping and a few sea lovers. TURMEPA, which is known with its projects nationally and internationally, became the leading sea-oriented civil society organization of Turkey within 20 years. When first set up, the association had 29 members. Today, TURMEPA which has approximately 1000 members, 350 of which are judicial members, carry out its works along the coastline from Hopa to Iskenderun, a distance of around 8333km, in order to keep the seas clean. In order to increase public awareness on water and sea related matters, TURMEPA implemented the following projects: Limitless Blue, Blue Belt Movement, Let's not Lose Lake Van, Let's Protect Saroz, Clean Water, Clean Turkey, Before it is Too Late for Black Sea, Çanakkale Sea Lovers, Blue Step for Çanakkale, Blue Coasts and Ergene Basin (TURMEPA, 2016). "Blue Belt Movement-Istanbul Strait Project" is one of the most important movements of Turkey. İstanbul Strait is a natural beauty admired by not only Turkey but also different countries. It has been polluted by various activities for years. It is important to take some precautions in order to prevent pollution of İstanbul Strait and Marmara Sea. A comprehensive scientific definition of "marine pollution" was made in a meeting on pollution which was held in 1970 by the UN. According to this definition, "Marine pollution is a major issue which will give harm to marine environment including bays and biological sources; restrict the opportunities of taking advantage of seas; pose threat to human life and give harm to the quality of the water owing to vocational activities (Artüz, 1992). As it can be understood from the definition, marine pollution is a comprehensive problem.

Istanbul Strait is one of the exceptional straits as it separates Asia and Europe: it is the only strait of the Black Sea connecting the other seas and it is located in İstanbul, an industrial, trade and the population center of Turkey. İstanbul Strait has become the magnet with its natural beauty; its vital role in the national and global economy; its historical and cultural importance. İstanbul Strait is under multi-directional pollution. The sources of this pollution are the following: air pollution, wastes of spacecraft, domestic wastes, solid and liquid wastes of industries, tourism activities, maritime transportation, ship wastes, seafood production, improper hunting, maritime accidents, dirty ballast water, washing tank trucks, sewage water and waste flowing from the rivers (Peker, 2007).

Lots of studies were carried out to draw attention to the pollution in İstanbul Strait and Marmara Sea. As a result, some recommendations were made (Yüksel et al., 2006; Peker, 2007; Büyükgüngör, 2011; Koç, 2012; Kahraman, 2013). Most of those studies were carried out in the form of thesis, book, article, symposium, conference or congresses. The first study to develop a programme on İstanbul Strait for 1-12 graders was carried out under the "Blue Belt Movement - İstanbul Strait Project". This study was carried out with the cooperation of Association of DenizTemiz/TURMEPA and Ankara University Assessment and Evaluation, Application and Research Center and with the sponsorship of Mitsui&Co.Ltd.

"Blue Belt Movement - İstanbul Strait Project" implemented by DenizTemiz/TURMEPA was first lunched in October 2013. Teaching modules and assessment tools used in the project were prepared

under the management of 3 instructors working in Ankara University and 1 instructor working in Artvin Çoruh University. The teaching modules designed for 1-12 graders were transferred to computer system thanks to IMPARK. Furthermore, in April 2014, subtitles were added to the modules for the hearing impaired.

Modules- User trainings were held in 9 centers in 2014. In those trainings, 715 teachers from 500 different schools in 11 towns were reached. After the trainings, 111 teachers from 81 different schools introduced the project to their students from March to May. The project trainings were implemented in 32 schools with 5137 students with the support of 25 project volunteers of the universities. The project was introduced, and awareness trainings were provided to the students and their teachers. A survey reflecting students' personal information as well as pretest and posttest scores was successfully conducted using volunteers from this student group. Information used in this research included findings and data collected in the year 2015.

## METHODOLOGY

In this research, an educational training programme was designed within the framework of the İstanbul Strait Blue Belt Movement Project. Like in any other educational study, in this study, the group that received the educational training was also expected to be successful at having a grasp of the issues covered. Moreover, in every training programme, a desired success is measured by the programme's ability to transform a group with limited knowledge before the programme into one with in-depth knowledge after the programme. In addition, leading countries in educational area equally acknowledge that success in educational programme is proper applications of obtained data during trainings to real life situations (Kutlu, Doğan & Karakaya, 2017). Within this concept, the current research was prepared by having a group undergo both pre-test and post-test. Below is information related to this group, data collection tools and the information on identified solutions.

### Tested Group

In this research, data was collected from a total of 2310 volunteer student studying at 21 schools, 10 of which are primary schools, 7 of which are middle schools and 4 of which are high schools. Data collection was done using the Personal Information Questionnaire (PIQ) and Knowledge Tests and the results are displayed below.

Table 1.

Distribution of tested group according to different grades.

Grade	Number of the Students	
	Pre/Post Test	PIQ
1-4	397	200
5-8	779	133
9-12	244	110
Total	1420	443

As can be seen in Table 1, there are some missing data during the implementation stage. However, the collected data is efficient to give significant result. As a conclusion, scores from pre-test, post-test and Personal Information Questionnaire, which were implemented on 200 primary school, 133 middle school and 110 high school students were matched to one another.

### Data Collecting Tools Used in the Research

In the research, a multiple-choice knowledge test was applied to 1-12 graders and a Personal Information Questionnaire whose aim is to determine their characteristic features were used. In this way, the effect of the training on the group was examined multi-directionally.

### Personal Knowledge Survey

In order to be able to reach the conclusion of whether the training was successful, collected data from the participant groups is important. Characteristics of the groups are significant in developing different

stages of the training. Thus, in this research, some students' characteristics were determined by means of a questionnaire. In the questionnaires, students' opinions about themselves, their families, schools and seas were collected.

### Knowledge Tests

In the research, in addition to the questionnaires, knowledge tests made up of multiple-choice questions, were prepared separately for primary schools (1-4 grades), middle schools (5-8 graders), and high schools (9-12 grades). In the preparation process of the items, the programme objectives were taken into consideration. The reason for preferring multiple-choice questions is the limited number of the students and preference to analyze the test results statistically. For this reason, for the primary school, tests made up of 10 items and for middle school and high school, tests made up of 15 items were prepared.

Tests relevant to each grade were used as pre-tests and post-tests before the students started the training. Questions aimed at testing current knowledge of the students and to test the correlation between the real-life examples and to-be-learned information were formed. Pre-tests were used at the beginning while post-tests were used at the end of the training. The difference between the scores of each group provided information about the success of the training.

### Data Analysis

Figures (frequency) and the percentages were mostly used in the analysis of the data received from the questionnaires. Tables and graphics were used in the data summary. T-Test was used to find out if there is a significant difference between pre-test and post-test results.

## FINDINGS

Here are the findings and comments on the data analysis of the tested group:

### Distribution of the Students According to Their Genders

Table 2 indicates the distribution of the students according to their genders.

Table 2.

Distribution of the Students According to Their Genders

Grade	Gender of the Students			
	Female		Male	
	f	%	f	%
1-4	88	43.8	112	56.2
5-8	79	59.2	54	40.8
9-12	44	40.2	66	59.8
Total	211	47.6	232	52.4

Table 2 shows gender distribution in the grades of 1 - 4 and 9 - 12 is similar to each other. However, in 5 - 8 grades, percentage of female students is higher than male students.

### Distribution of the Students According to the Education of Their Parents

Table 3 shows the distribution of the students according to the educational level of their parents.

Table 3.

Distribution of the students according to the education of their parents

Grade	Education Level	Parents of the Students	
		Mother %	Father %
1-4	Unschoolled	0.0	0.0
	Primary	0.0	0.0
	Middle	0.0	0.9
	High	10.3	3.7
	University	89.7	93.4
5-8	Unschoolled	6.2	0.4
	Primary	20.0	19.7
	Middle	27.7	29.9
	High	32.3	33.8
	University	13.8	16.2
9-12	Unschoolled	0.9	0.9
	Primary	28.6	17.0
	Middle	17.8	17.0
	High	33.9	37.5
	University	18.8	27.7

According to Table 3, 5 - 8 and 9 - 12 graders' parents are mostly primary, middle and high school graduates whereas 1-4 graders are mostly university graduates.

### Distribution of the Students According to Their Facilities at Home

Table 4 summarizes the distribution of the facilities which the students have at home.

Table 4.

Distribution of the students according to their facilities at home

Grade	Facilities at Home	Available (%)	Unavailable (%)
1-4	Studying Desk	97.2	2.8
	Studying Room	84.7	15.3
	Bookshelf	98.8	1.2
	Internet Connection	97.9	2.1
	Computer	99.6	0.4
5-8	Studying Desk	96.9	3.1
	Studying Room	83.8	16.2
	Bookshelf	89.2	0.8
	Internet Connection	98.7	1.3
	Computer	99.2	0.8
9-12	Studying Desk	95.5	4.5
	Studying Room	82.1	17.9
	Bookshelf	98.8	1.2
	Internet Connection	91.1	8.9
	Computer	100.0	0.0

According to Table 4, the values are similar to each other. The students have facilities such as studying desk, room, bookshelf, internet connection and computer.

### Distribution of the Students' Having Resources at Home

Table 5 shows the distribution of the students who have facilities at home except course books.

Table 5.

Distribution of the students' having facilities at home

Grade	Number of Books	%
1-4	1-50	14
	51-100	17
	101-150	12
	151-200	12
	200 and more	45
5-8	1-50	42
	51-100	28
	101-150	14
	151-200	8
9-12	200 and more	8
	1-50	39
	51-100	34
	101-150	9
	151-200	6
	200 and more	12

According to Table 5, the percentage of students having 200 books or more in 1-4 graders is higher than the other grades.

### Distribution of the Students Having Facilities at School According to Each Grade

Table 6 shows distribution of the students having facilities at school according to each grade.

Table 6.

Distribution of the students having facilities at school according to each grade

Grade	Facilities at School	%
1-4	Math's Atelier	39.3
	Library	98.8
	Gym	98.3
	Internet Connection	97.1
	Map Room	46.7
	Auditorium	97.5
	Science Laboratory	97.1
	Computer Laboratory	98.1
	Math's Atelier	30
5-8	Library	79.2
	Gym	80.8
	Internet Connection	83.1
	Map Room	72.3
	Auditorium	81.5
	Science Laboratory	96.9
9-12	Computer Laboratory	96.3
	Math's Atelier	26.8
	Library	87.5
	Gym	81.3
	Internet Connection	79.5

Map Room	61.6
Auditorium	79.3
Science Laboratory	92.0
Computer Laboratory	99.5

According to Table 6, school facilities are one of the factors, which enhance students' improvement.

**Distribution of the activities done by the students and the frequency of them according to each grade.**

Table 7 summarizes distribution of the activities done by the students and the frequency of them according to each grade.

Table 7.

Distribution of the activities done by the students and the frequency of them according to each grade.

Grade	Activities	Never (%)	Rarely (%)	Occasionally (%)	Often (%)	Always (%)
1-4	Watching TV	1.7	7.3	46.3	30.2	14.5
	Reading Newspaper	2.9	8.7	28.9	32.9	26.6
	Receiving Private Tuition	28.1	14.8	15.3	15.4	26.4
	Going to the Cinema	2.1	23.1	45.9	19.4	9.5
	Making Research	6.5	17.9	32.2	27.7	15.7
	Attending the Events	31.0	29.8	17.7	8.7	12.8
5-8	Watching TV	0.8	10.4	50.0	29.6	9.2
	Reading Newspaper	3.1	14.3	30.0	36.4	16.2
	Receiving Private Tuition	37.7	12.9	13.8	15.6	20.0
	Going to the Cinema	16.9	28.5	33.2	13.7	7.7
	Making Research	4.5	17.8	32.2	27.3	18.2
	Attending the Events	26.2	23.1	28.2	12.5	10.0
9-12	Watching TV	0.9	14.3	33.9	35.7	15.2
	Reading Newspaper	1.8	16.1	41.1	28.5	12.5
	Receiving Private Tuition	47.3	22.3	14.4	8.0	8.0
	Going to the Cinema	8.9	24.1	34.8	17.9	14.3
	Making Research	4.5	26.8	39.3	25.9	3.5
	Attending the Events	39.3	31.3	22.3	6.3	0.8

When the Table 7 is examined, it is understood that the answers concentrate on the occasional option.

**Distribution of the frequency of obtaining information about marine pollution in each grade**

Table 8 displays the distribution of the frequency of obtaining information about marine pollution in each grade.

Table 8.

Distribution of the frequency of obtaining information about marine pollution in each grade

Grade	Obtaining Information	%
1-4	Civil Society Organizations	16.1
	Family	50.8
	Computer	48.7
	Teachers	66.1
	Newspaper	30.6
	Encyclopedia	25.6
	Course Books	46.3
5-8	Civil Society Organizations	19.3
	Family	53.8
	Computer	65.3
	Teachers	61.5

	Newspaper	37.7
	Encyclopedia	17.7
	Course Books	42.3
	Civil Society Organizations	14.3
	Family	30.3
	Computer	60.0
9-12	Teachers	36.7
	Newspaper	25.9
	Encyclopedia	13.4
	Course Books	25.0

Table 8 contains a surprising finding, which is; the students receive information from their teacher's family and the computer more than the other sources. Students were asked which sources they use in order to obtain information. According to the given answers, it is clear that they use all kinds of sources. Students said only "most of the times" and "always" not "never", "rarely" and "occasionally" about the sources. This is a very important research finding. In recent years, most seas in the world have been getting dirtier. This will not only give great harm to the aquatic species but also land-living species. Thus, the number of the sources and their efficiency is highly important.

Table 9.

The distribution of the lessons which they mostly use as a source of information

Grade	Course	%
1-4	Turkish	40.0
	Math	21.0
	Science	42.0
	Social Studies	45.0
5-8	Turkish	32.0
	Math	10.0
	Science	60.0
	Social Studies	62.0
9-12	Turkish	9.0
	Math	8.0
	Science	32.0
	Social Studies	31.0

Table 9 displays the students' opinions about the courses, which they mostly use as a source of information. Science and Social Studies courses seems as an important information source in all grades. Table 10 shows the descriptive statistics collected from those students who participated in the "Blue Belt Movement - Istanbul Strait Project".

Table 10.

Descriptive statistics collected from the tests according to each grade

Grade	Test	Number of the students	Average	Standard Deviation
1-4	Pre	397	46.45	18.98
	Post	397	58.87	24.33
5-8	Pre	779	46.19	25.68
	Post	779	60.15	35.15
9-12	Pre	244	52.30	21.25
	Post	244	70.04	27.81

Within the framework of the study, a pre-test was given at the beginning of the training and a post-test at the end of the training. In order to find out if there was a significant difference between the tests, t-test was administered. Test results were given in Table 11.

Table 11.

Analysis of the results taken from pre-test and post-test

Implementation	Grade	t	df	p
Pre-Test – Post-Test	1-4	-8.48	396	0.00
	5-8	-13.55	778	0.00
	9-12	-11.31	243	0.00

According to the analysis results, there is a significant difference between pre-test and post-test scores in each grade.

The average scores for pre-test and post-test based on gender were given in Table 12.

Table 12.

Distribution of the average scores for pre-test and post-test according to gender

Grade	Test	Gender of the Students	
		Female (%)	Male (%)
1-4	Pre	47.9	44.7
	Post	58.2	59.7
5-8	Pre	39.0	41.1
	Post	54.0	57.8
9-12	Pre	38.3	39.0
	Post	53.9	54.7

When we look into Table 2, an important increase is seemed in favor of post-test in the terms of gender.

## DISCUSSION & CONCLUSIONS

Students have facilities such as studying desk, room, bookshelf, internet connection and computer. The older the students, the less studying rooms they have. The study desks, which the students seem to have, are not in their own room. The studies indicate that having a private study desk is an important factor in determining success (Kaya, Bal, Sezek & Akin, 2005; Unutkan, 2007). With the improvement in the computer-based technology, most students started having internet connections at home. This is an indicator that they can reach information about natural beauties such as İstanbul Strait, which has environmental problems, easily and quickly if they are guided efficiently.

The percentage of students having 200 books or more in 1-4 graders is higher than the other grades. From 5-8 and 9-12 grades, the number of the books is mostly 0-100 except course books. This shows that schools give more importance to reading in 1-4 grades than 5-8 and 9-12 grades. Studies also indicate that with the exception of course books, books such as novels, short stories, poems, articles and etc. improve their cognitive skills and level of knowledge.

Examining Table 6, it could be seen that the group is in a good condition from the respect of having facilities except for math atelier and map room.

Another striking element in the research is that the high schools have fewer facilities than the other schools. What is expected is that the level of awareness will increase progressively when the students grow older. Having limited facilities may decrease the success rate of the students and TURMEPA trainings. Studies indicate that the more facilities the schools have, the more successful the students become (Richard, 1986; Özdemir et al., 2010).

Examining Table 7, a striking data was collected from the group that participated in the “Blue Belt Movement -İstanbul Strait Project”. The Table 7 shows there is a similar distribution in each level. The most striking data collected from Table 7 is that the number of the students who participated the events held by the environmental organizations was too low. Approximately 30-40% of the students have never participated in those events. It changes from 50% to 70% when the proportion of the students who said “rarely” and “never”, were combined. This situation indicates how important the trainings held by TURMEPA/DenizTemiz to promote “clean sea” concept are.

Another significant finding is that the number of the students who make research is low in each grade. The students who said “never”, “rarely” and “sometimes” about researching is around 50% in each grade even though high school is slightly higher than the rest. This shows the schools do not include sufficient

research-based studies in their programmes. This finding is parallel to the results of Şahin and Altınay's (2009) research.

It is known that permanent learning occurs mostly by means of research-based studies. It is vital that the teachers assign research-based studies to students on pollution in İstanbul Strait, outstanding natural beauty of Turkey and the world and encourage them to think what should be done with findings based on research.

Another important finding is that the proportion of students going to the cinema is low. In each grade, about 70% or more students do not go to the cinema. Cinema is a magical art which develops the feelings of empathy and helps people not only to understand themselves but other people as well. It will help us to understand both human beings and other species in nature. Furthermore, cinema is important for people to develop higher order thinking skills (analytical, creative thinking and critical thinking skills). While discussing Table 7 it can be understood that the students mostly read newspapers and watch TV in almost all levels. Since no question was asked about the kinds of programmes the students watch, it is impossible to comment on this. However, it is known that the number of the documentaries and discussion programmes is few. Students' reading of newspaper is important as it gets them informed about current events. Television channels broadcasting television programmes on pollution in İstanbul Strait and newspapers publishing relevant news will contribute to raising students' awareness on the subject. Within the study of İstanbul Strait, handling questions and understanding problems are correlated directly with higher order thinking skills.

Another finding shows that receiving private tuition is on the decline. Shutting down the courses can be said to have been effective in this.

Even though the scores are low, school is still an important source to be familiar with the concept of marine pollution. However, the score of school is very low in 9-12 graders. One of the most important reasons for this could be based on the fact that both schools and students have an attitude of placing more importance on university exams.

Computer has become a very important and a fast source of information for everybody in recent years. Analyzing Table 7, 1-4 graders could be said to have not taken sufficient information via the internet. For this level of students, it is normal. Nonetheless, it is significant to encourage those students to use computer in order to obtain information.

Within the scope of the study, another finding is that the students learn about marine pollution from their parents. Hence, it will be beneficial to inform parents about the subject. 9-12 graders getting a percentage score as low as 30% can be said to be normal because as already known, friends and social environment are more important to this age group.

Using newspaper as a source of information is less for all groups. The reason for this may be the lack of importance given to this topic in the newspapers. Course books are not that efficient to bring the attention of the students to the subject. It is important to cooperate with the Ministry of Education (MEB) on the inclusion of marine pollution-related topics in the books. Furthermore, encyclopedias, which used to be very important in education, don't provide any information about the subject anymore.

Within this study, another important finding is that the students obtain nearly no information from civil society organizations. Thus, the role of civil society organizations like DenizTemiz/TURMEPA was very important.

Analyzing Table 9, information related to marine pollution and protection of the seas is mostly obtained from the science and social sciences course books. Furthermore, little information is obtained by means of Math and Turkish courses.

The most important source that the students can get information is course books. According to the answers taken from the participants, the ways of getting information from courses like Turkish and Math and especially Science and Social Sciences are limited. One of the most important reasons for this is that reasons for the marine pollution and the precautions, which can be taken against marine pollution, are not included in the course objectives. Furthermore, not including relevant reading passages in the Turkish course books can be another reason. However, it should not be forgotten that Turkish lesson is the most important lesson in which students can read about relevant topics and interact with reading passages via higher order thinking skills. Data collected from PISA and TIMS exams shows that the students can solve formulaic problems more than real-life problems. This shows that at schools, Math is taught mostly with formulaic problems in Turkey. If the teachers include seas and sea-related problems in their courses, this can increase the students' awareness level.

Another source of the problem is the teaching faculties of the universities. In teaching faculties, mostly environment-related topics, especially marine pollution, and sample situations need to be taught. Participation of the students in marine pollution and sea protection activities will help the teachers enrich their courses with those kinds of activities in the future.

When the data in the Table 10 are analyzed, they show that average scores of the post-tests are higher than the ones in the pre-tests. Thus, implemented activities were shown to be effective in raising the students' level of knowledge and accordingly, it gives clues about the success of the "Blue Belt Movement - İstanbul Strait Project". However, what is more expected is that the average be over 70 out of 100. For this reason, it will be vital to do some studies on increasing the efficiency of the training. Looking at Table 13, it is seen that each grade has similar average score for both gender.

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## GENİŞLETİLMİŞ TÜRKÇE ÖZET

# İstanbul boğazı mavi kuşak hareketi projesi'nin etkililiğinin belirlenmesi

### Kavramsal Çerçeve

2005-2014 yılları arasındaki dönem Birleşmiş Milletler tarafından sürdürülebilir Gelişme Odaklı Eğitim Dönemi olarak ilan edilmiştir. Sürdürülebilir Gelişme Odaklı Eğitim yaklaşımı, öncelikle sürdürülebilir bir yaşam biçiminin nasıl etkin kılınabileceği konusunda bireylerin duyarlılık kazanmasını ve bilgi sahibi olmasını, bu yolla da uzun vadede toplumsal dönüşümlerin gerçekleşmesini hedeflemiş, 2015 sonrası dönem için küresel hedefler tartışılmış ve 2030 yılının gündemi belirlenmiştir. Buna göre gerçekleştirilmesi beklenen on yedi sürdürülebilir gelişme hedeflerinden dördü; İstanbul Boğazı Mavi Kuşak Hareketi Projesi kapsamında ele alınan temiz su, hijyen ve halk sağlığı ile sudaki yaşam olduğu görülmektedir (United Nations [UN], 2015). Konunun eğitim programları ve uygulamalarına dahil edilmesi ve özellikle temel eğitimde kilit bir tema olarak yer alması son derece önemlidir (Kutlu, 2007; Öğülmüş, Babadoğan, Kutlu, Çakır ve Altındağ, 2007a, 2007b, 2008, 2009a, 2009b; Kutlu, 2008; Babadoğan, 2008a, 2008b; Kutlu ve Babadoğan, 2010; Kutlu ve Öğülmüş, 2010; Kutlu, Babadoğan, Kumandaş ve Altıntaş, 2016; TURMEPA, 2017; Ergene, Babadoğan, Atik, Öztürk ve Atmaca, 2017). DenizTemiz Derneği/TURMEPA, ülkemiz kıyı ve denizlerinin korunmasını ulusal bir öncelik haline getirmek ve gelecek nesillere temiz denizlerin kucakladığı, yaşanabilir bir Türkiye bırakmak amacıyla kurulmuş ve geçen yirmi yıl içinde Türkiye'nin önde gelen deniz odaklı sivil toplum kuruluşu (STK) haline gelmiştir. İstanbul Boğazı/Mavi Kuşak Hareketi” projesi, Türkiye'nin önemli çalışmalarından biridir. İstanbul Boğazı yalnızca Türkiye'nin değil dünya ülkelerinin de çok beğendiği doğal bir güzelliştir. Boğaz uzun yıllardır çeşitli etkenler nedeniyle kirlenmektedir. İstanbul Boğazı'nın dolayısıyla Marmara Denizi'nin kirlenmesini engellemek ve bunun için çalışmalar yapmak son derece önemlidir. İstanbul Boğazı ve Marmara Denizi'ndeki kirliliğe dikkat çeken birçok çalışma yapılmış ve bu çalışmalar sonucunda çeşitli önerilerde bulunulmuştur (Yüksel ve diğerleri, 2006; Peker, 2007; Büyükgüngör, 2011; Koç, 2012; Kahraman, 2013). Bu çalışmaların çoğu tez, kitap, makale, panel, sempozyum, konferans ya da kongreler şeklinde olmuştur. İstanbul Boğazı konusunda 1-12. sınıf düzeyinde öğrenim gören öğrenciler için bir eğitim programı geliştirme çalışması ilk kez İstanbul Boğazı/Mavi Kuşak Hareketi” projesi adı altında gerçekleştirilmiştir. Bu çalışma, *Mitsui & Co. Ltd., DenizTemiz Derneği/TURMEPA, Ankara Üniversitesi Ölçme ve Değerlendirme Uygulama ve Araştırma Merkezi* işbirliği çerçevesinde gerçekleştirilmiştir.

Deniz Temiz Derneği/TURMEPA tarafından gerçekleştirilen “İstanbul Boğazı/Mavi Kuşak Hareketi” projesi, 2013 yılının Ekim ayında başlamıştır. Projede kullanılan öğretim modülleri bir yazılım firmasıyla yürütülen işbirliği sayesinde bilgisayar ortamına aktarılmıştır. Projede yer alan öğretim materyallerinin 2014 yılında, 9 merkezde kullanıcı eğitimleri düzenlenmiştir. Bu eğitimlerde 11 ilçedeki 500 farklı okuldan 715 öğretmene ulaşılmıştır. Eğitim sonrası 81 farklı okuldan 111 öğretmen aynı yıl Mart-Mayıs ayları arasında projeyi öğrencileriyle buluşturulmuştur. Proje eğitimleri 25 üniversite proje gönüllüsü desteğiyle, 1-12. sınıf düzeyinde toplam 32 okulda ve 5137 öğrenciyle yürütülmüş, öğrencilere proje tanıtılmış ve öğretmenleriyle birlikte farkındalık eğitimleri verilmiştir. Eğitim öncesi ve sonrasında bu öğrenci grubundan gönüllü olanlara, verilen eğitimle ilgili başarı testi ve kişisel bilgilerinin yansıtan anket uygulanmıştır. Bu araştırmada kullanılan bilgiler 2015 yılı boyunca toplanan verilerden elde edilen bulguları içermektedir.

### Yöntem

Bu araştırmada ele alınan proje kapsamında önce bir öğretim programı hazırlanmıştır. Çalışmada; öğrencilerin bazı kişisel özelliklerini belirlemeyi hedefleyen anket ile 1-12. sınıf öğrencilerine uygulanan çoktan seçmeli maddelerden oluşan bilgi testi kullanılmıştır. Bu yolla yürütülen eğitimin grup üzerindeki etkisi çok yönlü olarak belirlenmeye çalışılmıştır. 1-12. sınıf düzeyindeki katılımcı öğrenciler için ilkökul (1-4. sınıflar), ortaokul (5-8. sınıflar) ve lise (9-12. sınıflar) ayrı ayrı olmak üzere çoktan seçmeli maddelerden oluşan bilgi testleri hazırlanmıştır. Testte yer alan maddelerin hazırlanmasında, programın *öğrenme çıktıları (kazanımlar)* dikkate alınmıştır. Çoktan seçmeli maddelerin tercih edilme nedeni ise, uygulama yapılacak öğrenci sayısının çok olması, uygulamanın ve

istatistiksel çözümlenmelerinin kısa sürede yapılmak istenmesi düşüncesidir. Bu amaçla ilkokul için 10, ortaokul için 15 ve lise için 15 maddelik testler hazırlanmıştır. Ardından 10 ilkokul, 7 ortaokul ve 4 lise olmak üzere toplam 21 okulda öğrenim gören toplam 2310 gönüllü öğrenciden veri toplanmıştır. Anketten toplanan verilerin çözümlenmesinde ağırlıklı olarak sayı (frekans) ve yüzdelerden yararlanılmıştır. Bulguların özetlenmesinde ise tablo ve grafikler kullanılmıştır. Ön test ve son test sonuçları arasında manidar bir fark olup olmadığına ilişkili örneklem t-testiyle bakılmıştır.

### **Tartışma, Sonuç ve Öneriler**

Bu araştırmaya katılan 1-4. sınıf düzeyindeki öğrencilerin 200 ve üzeri kitap sayısının büyük sınıflara göre daha fazla olduğu göze çarpmaktadır. 5-8. ve 9-12. sınıf düzeylerinde ise ders kitabı dışındaki kitapların ağırlıklı olarak 0-100 arasında toplandığı görülmektedir. Bu durum Türkiye’de özellikle küçük sınıf düzeylerinde kitap okumaya okulların daha fazla dikkat çektiğini göstermektedir. Araştırmalar, öğrencilerin ders kitabı dışında roman, öykü, şiir, deneme vb. kitapları okumalarının onlarda hem bilgi hem de bilinç düzeyini arttırdığını göstermektedir (TIMSS, 2011; Özer ve Anıl, 2011). Araştırmada dikkat çekici diğer bir durum ise, lise grubunda yer alan öğrencilerin, okullarının belirtilen olanaklar açısından diğer sınıf düzeylerine göre çoğunlukla daha geride olduğudur. Beklenen durum öğrencilerin bilgi ve bilinç düzeylerinin ilerleyen sınıflarda, alt sınıflara göre artarak devam etmesidir. Ancak okul olanaklarının lise düzeyinde zayıflaması öğrencilerin yalnızca okul başarılarının değil, TURMEPA tarafından yürütülen eğitimlerdeki başarının istenen düzeyde gerçekleşmesine engel olabilmektedir. Yapılan araştırmalarda okullardaki olanakların ve bu olanaklara erişimin arttığı durumlarda öğrenci başarılarının da olumlu şekilde arttığı vurgulanmıştır (Richard, 1986; Özdemir ve diğerleri, 2010).

“İstanbul Boğazı/Mavi Kuşak Hareketi” projesi kapsamında yürütülen eğitime katılan grup açısından ilginç bulgulara ulaşılmıştır. Elde edilen en çarpıcı bilgi, 1-12. sınıf düzeyindeki öğrencilerin çevre kuruluşları tarafından düzenlenen etkinliklere katılma yüzdelerinin çok düşük olmasıdır. Öğrencilerin yaklaşık %30-40’ı bu tür etkinliklere hiç katılmadığıdır. Hiç yanıtı veren öğrencileri nadiren katılıyorum diyen öğrencilerle birleştiren bu değer %50 ile %70 arasında değiştiği görülecektir. Bu durum TURMEPA/Deniz Temiz Derneği’nin denizlerin temiz kalmasıyla ilgili yaptığı eğitim çalışmalarının ne kadar değerli olduğunun bir göstergesidir. Önemli bulgularından bir diğeri ise, öğrencilerin araştırma yapma yüzdelerinin tüm sınıf düzeylerinde düşük olduğudur. Araştırma yapma konusunda hiç, nadiren ve ara sıra şeklinde yanıt veren öğrencilerin lise düzeyi daha yüksek olmak üzere her sınıf düzeyinde yaklaşık %50 civarında olduğu görülmektedir. Bu durum okulların araştırma yapmaya dayalı çalışmalarını öğrencilere yeterince vermediklerini göstermektedir. Bu bulgu Şahin ve Altınay’ın (2009) araştırma sonuçlarıyla da paraleldir. Öğrencilerde kalıcı öğrenmelerin araştırmaya dayalı çalışmalarla daha çok gerçekleştiği bilinmektedir. Okulların ve öğretmenlerin Türkiye’nin ve dünyanın gözde güzelliği olan İstanbul Boğazı’ndaki kirliliğe dikkat çekici çalışmalar yaptırması ve temiz kalması için neler yapılması gerektiği konusunda öğrencilerin araştırmaya dayalı bulgularla düşündürülmesi son derece önemlidir.

Bir başka dikkat çeken önemli bir bulgu ise, öğrencilerin sinemaya gitme yüzdelerinin düşük olmasıdır. Sinema, insanlarda özellikle üst düzey düşünme süreçlerinin (analitik, eleştirel, yaratıcı düşünme gibi) gelişmesinde rol oynamaktadır. Hemen hemen her sınıf düzeyinde öğrencilerin çoğunlukla televizyon seyrettikleri ve gazete okudukları görülmektedir. Televizyon programları içerisinde tartışma ve belgesel program sayısının çok az olduğu bilinmektedir. Öğrencilerin gazete okumaları ise güncel haberleri almaları konusunda önemlidir. Bu durum hem televizyon kanallarının hem de gazetelerin çevre ve bu çalışma özelinde İstanbul Boğazı’ndaki kirliliğin nedenleri ve çözüm yolları üzerinde duran programlar yapması öğrencilerin bilgilensine ve bilinçlenmesine katkı sağlayacaktır. “İstanbul Boğazı/Mavi Kuşak Hareketi” projesi kapsamında ele alınan sorunların ve çözüm yollarının anlaşılması bireyde üst düzey düşünme süreçleriyle yakında ilgilidir.

Dikkat çeken dağılım öğrencilerin, öğretmenlerinden ve bilgisayarlardan daha çok bilgi aldıkları yönündedir. Yüzde değerleri düşük olsa da hala 1-4. ve 5-8. sınıf öğrencileri için okul, denizler hakkında bilgi edinilen önemli bir kaynak olmaktadır. Ancak 9-12. sınıf düzeyindeki öğrenciler için deniz kirliliği hakkında bilgi edinmede okuldan alınan bilginin yüzde olarak çok azaldığı dikkat çekmektedir. Bu durumun en önemli nedenlerinden biri, okulların ve öğrencilerin üniversite sınavlarına daha çok önem veren bir yaklaşım içinde olmaları olabilir. Bununla beraber deniz kirliliği gibi önemli bir konuda öğrencilerin bilgisayara yönlendirilmesi yerinde olacaktır. Çünkü öğrenciler, deniz kirliliğinin ulaştığı

çarpıcı boyutları görsellere ve güncel bilgilere bilgisayarlar üzerinden internet aracılığıyla daha rahatlıkla ulaşılabilecektir.

Proje kapsamında elde edilen verilerden ulaşılan bir diğer bulgu ise öğrencilerin denizlerin kirlenmesiyle ilgili bilgilerini ailelerinden elde ettikleri yönündedir. Bu noktada aileleri deniz kirliliği konusunda bilgilendirici çalışmaların yapılması yerinde olacaktır. 9-12. sınıf öğrenciler için yüzdenin düşük değerinde (%30) olması normal karşılanabilir. Bu yaş grubu öğrenciler için arkadaşların ve sosyal çevrenin daha fazla önemli olduğu bilinmektedir.

Çalışmanın çarpıcı bir bulgusu ise deniz kirliliği konusunda gazetelerden bilgi elde etme yüzdesinin her üç sınıf düzeyi için de çok düşük olmasıdır. Bu durumun nedeni gazetelerin yeteri kadar deniz kirliliği konusuna yer vermemeleri olabileceği gibi öğrencilerin yeteri kadar gazete okumamaları da olabilir. Ders kitaplarının deniz kirliliği konusunda öğrencilerin dikkatini çekmede yeterince rol oynamadığı bulunmuştur. Ders kitaplarında denizlerin kirliliğine yönelik daha fazla bilginin yer alması konusunda Milli Eğitim Bakanlığı (MEB)'le bilgi alışverişi içinde olmak yerinde olabilir. Ayrıca bir dönem eğitim sürecinde önemli yere sahip olan ansiklopedilerin denizlerdeki kirlilik hakkında bilgi vermekten uzak bir kaynak olması da dikkat çekicidir.

Proje kapsamında elde edilen bir diğer önemli bulgu ise, öğrencilerin deniz kirliliği konusunda sivil toplum kuruluşlarından neredeyse yok denecek kadar az bilgi aldıklarıdır. Bu noktada özellikle Deniz Temiz Derneği/TURMEPA gibi STK'lara çok büyük görevler düştüğü görülmektedir.

Öğrencilerin deniz kirliliğinin nedenleri ve denizleri korumanın yolları konusunda bilgi alabilecekleri en önemli kaynak ders kitaplarıdır. "İstanbul Boğazı/Mavi Kuşak Hareketi" projesine katılan öğrencilerin verdikleri yanıtlar incelendiğinde Türkçe ve matematik dersi başta olmak üzere fen bilimleri ve sosyal bilimler derslerinde de bilgi edinme yolları sınırlı görünmektedir. Türkçe ve matematik derslerindeki bu çarpıcı durumun en önemli nedenlerinden biri derslere ilişkin kazanımlarda deniz kirliliğine yol açan etkenlerle, denizleri korumaya yönelik alınabilecek önlemlere yeterince yer verilmemiş olmasıdır. Ayrıca Türkçe ders kitaplarında yer alan okuma metinlerinde bu tür okuma parçalarının seçilmemiş olması da bir diğer önemli eksiklik olabilir. Oysa Türkçe dersi öğrencilerin, bu tür konularda okumalar yapmalarını ve bu tür metinler üzerinde üst düzey düşünmeyi gerektiren sorularla etkileşmelerini sağlayacak en önemli derslerden birisidir. Bunun yanında matematik derslerine ilişkin PISA ve TIMSS gibi öğrenci başarısını belirleme sınavlarının bulguları, öğrencilerin çoğunlukla işlem düzeyindeki problemleri yapabildiklerini günlük yaşamla ilişkili problemleri ise ne yazık ki yapamadıklarını göstermektedir. Bu durum Türkiye'deki okullarda matematik derslerinin ağırlıklı olarak işlem gerektiren problemlerle yapıldığını göstermektedir. Öğretmenlerin problem durumlarında denizler ve sorunlarıyla ilgili materyalleri de kullanmaları öğrencilerin bu konudaki bilgilenme düzeylerinde bir artışa yol açabilecektir.

Öğretmen yetiştiren programlarda ağırlıklı olarak çevre konusunda özel olarak da denizlerin kirliliği konularında örnek olayların ve durumların daha çok kullanılması gerekmektedir. Öğrencilerin ders alanlarıyla ilişkilendirebilecekleri deniz kirliliği ve denizleri koruma süreçleriyle ilgili etkinliklerle karşılaşmaları onların ilerde hem ders işleme biçimlerini hem de öğrencilerine denizlerle ilgili sorunlara dikkat çekecek etkinlikleri kullanma yollarını zenginleştirecektir.

Tüm gruplarda son test puan ortalamaları ön test puan ortalamalarından daha yüksek bulunmuştur. Bu açıdan yapılan etkinliklerin öğrencilerin bilgi düzeyinde manidar bir artışa neden olduğu yorumu yapılabilir. Bu durum "İstanbul Boğazı/Mavi Kuşak Hareketi" projesi kapsamında yürütülen eğitimin başarısı hakkında önemli ipuçları vermektedir. Ancak yürütülen eğitimin etkisinin nasıl daha fazla arttırılabileceği üzerinde çalışmalar yapmak yerinde olacaktır.

## Teacher training system: According to the views of academicians and teacher candidates

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**ABSTRACT** The primary purpose of this study is to determine the remarks of the academicians and teacher candidates of the faculty of education about teacher training system. The research is an embedded single case study, one of the qualitative research methods. The study group of this research consists of 46 academicians working in the Faculty of Education in Mersin University and 60 fourth grade teacher candidates in the 2015-2016 school year. The data of the research were obtained by means of two different forms which were developed by researchers and applied to academicians and teacher candidates. Content analysis, one of the qualitative data analysis techniques, was used to analyze the data in the study. According to the findings obtained in the research, the academicians and teacher candidates evaluated teacher training system generally in terms of curriculum, learning-teaching process, physical conditions, student-academician profile and of the process of entry to the profession.

**Keywords** *Teacher, Teacher candidate, Teacher training system*

## Öğretim elemanı ve öğretmen adaylarının görüşlerine göre öğretmen yetiştirme sistemi

**ÖZ** Bu çalışmanın temel amacı, eğitim fakültesi öğretim elemanlarının ve öğretmen adaylarının öğretmen yetiştirme sistemine ilişkin görüşlerini belirlemektir. Araştırmanın çalışma grubu, 2015-2016 eğitim-öğretim yılında, Mersin Üniversitesi Eğitim Fakültesinde görev yapan 46 öğretim elemanı ve dördüncü sınıfa devam eden 60 öğretmen adayından oluşmaktadır. Araştırmanın verileri araştırmacılar tarafından geliştirilen, öğretim elemanı ve öğretmen adaylarına uygulanan iki ayrı form kullanılarak elde edilmiştir. Araştırmada verilerin çözümlenmesinde, nitel veri analizi tekniklerinden içerik analizi kullanılmıştır. Araştırmada elde edilen bulgulara göre eğitim fakültesi öğretim elemanları ve öğretmen adayları öğretmen yetiştirme sistemini genel olarak eğitim programı, öğrenme-öğretme süreci, fiziksel koşullar, öğrenci-öğretim elemanı profili ve mesleğe başlama süreci açısından değerlendirmektedir.

**Anahtar Kelimeler** *Öğretmen, Öğretmen adayı, Öğretmen yetiştirme sistemi*

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## INTRODUCTION

Developments in science and technology in the 21st century has led to the consideration of the information as the primary element in every field. Possession of knowledge and production of information are the key criteria for advancement. There have been significant developments and changes in the fields of culture, literature, art, social life and economy, which constitute the existence of a society by means of science and technology within the framework of these criteria. In this context, the importance of training a qualified workforce for societies in order to pursue their existence and take essential roles, especially on an international scale, is a commonly held belief in the scientific community. To achieve this, it is a must to have a modern qualified education system that is open to development and change. This education system should be based on up-to-date information and technologies, embrace the culture and values of the society within itself, and also meet the demands of the world regarding workforce.

Primary function of the education is to achieve socialization of individuals, and to contribute to developing their knowledge, skills and capacity (Caliskan, 2007). Education is considered as one of the constituents of the economic growth, development and advancement when regarded as a system that provides training for individuals forming the workforce (Yalcin Incik & Akay, 2015). Its value in terms of training qualified workforce was appreciated even more especially in the last quarter of the twentieth century. It is a commonly held fact in science world that the process of development encompassing economic growth, social transformation and democratization is a matter of education (Saracaloglu, 1992). Success of a training system can be explained through the examination of various different factors. Some of these factors that can be addressed in the examination of the system are education policies, training management, curriculum, characteristics of individuals in the system, the socio-cultural structure of society, resource and financing, physical structure and equipment of education and training settings, the quality and accessibility of educational tools, the effective use of information and communication technologies.

A legal basis for teaching profession in Turkey is the Basic Law of National Education numbered 1739, and this profession is defined as "A field of specialization that undertakes education, training and related administrative duties given by the state" (Ministry of Education, 2014-article 43). It can be observed that the status of teachers in the education system is highly important in terms of the implementation of state's education policies, influencing these policies with the outcomes of practice, making use of studies and researches for specialization in education, taking active part in these studies and resourcing them (Varış, 1973). It is because vocational competence of a teacher is a factor that directly influences the quality of education and training process. Therefore, it is extremely important to train qualified teachers who can successfully fulfill their duties in order to achieve a targeted success in the education system. According to Goodson and Hargreaves (2005), the teaching profession is one of the primary occupations in the sense that it takes on the responsibility of training the workforce required by the knowledge-based society. In this regard, the teacher training system should have an innovative and even proactive system mentality that can renovate itself; that is, it can successfully adopt itself to changing conditions. In order to make this possible, the facts of the country should be examined in the light of current scientific data, and necessary transformation and reform should be carried out in accordance with the obtained data. When the studies in the body of literature conducted on the education system is examined, it is observed that especially the matter of teacher training occupies an important place (Atanur Baskan, Aydin, & Madden 2006; Dogan, 2005; Kartal, 2013; Kosterelioglu & Bayar, 2014; Kutlu Abu, Bacanak, & Gokdere 2016; Saylan, 2014; Tasgin & Sonmez, 2013; Yesil & Sahan, 2015; Yildirim & Vural, 2014; Yilmaz & Altinkurt, 2011). It is also an undeniable fact that researches on this subject, the dissemination of the researches into the entire process, and determining the opinions and suggestions of the individuals taking part in the system will make a significant contribution to the success and applicability of reform studies regarding the system. In this sense, the opinions of academicians who are implementers themselves and teacher candidates who assume the student role are considered important for the assessments regarding the teacher training system and making suggestions aimed at developing the system. From this point of view, the primary objective of this study is to determine the remarks of the academicians and teacher candidates of the faculty of education about the teacher training system. In accordance with this purpose, answers to the following questions were sought:

How do the academicians and teacher candidates evaluate the overall teacher training system?

What should be purposes of the teacher training system with reference to the opinions of the academicians and teacher candidates?

What are the parts that should be changed in the teacher training system with reference to the opinions of the academicians and teacher candidates?

## **METHODOLOGY**

### **Research Design**

This research is an embedded single case study, one of the qualitative research methods (Yin, 2011, pp.46-50). Embedded single case study is a case study containing more than one sub-unit of analysis. In an embedded case study, the case is split in multiple units of analysis (Yin, 2003). In this context multiple units of this study, in which teacher training system discussed, are departments for academicians and programmes for teacher candidates. Opinions of the academicians of the faculty of education and teacher candidates regarding the teacher training system are determined in the research through the analysis of the qualitative data composed of the answers given to open ended questions in compliance with the model.

### **Study Group**

Study group of the research consists of 46 academicians working in the Faculty of Education in Mersin University and 60 fourth grade teacher candidates in the 2015-2016 school year. Among the academicians participating in the study group, there are 4 professors, 17 associate professors, 20 assistant professors, 3 teaching assistants and 2 lecturers. 18 of the academicians work in the Department of Primary Education; 16 in the Department of Educational Sciences; 4 in the Department of Turkish Education; 3 in the Department of Foreign Languages Education; 1 in the Department of the Secondary Education Social Studies; 4 in the Department of Computer and Instructional Technologies Education. Ensuring maximum variation of teacher candidates by department is taken as a basis in the selection of teacher candidates composing the study group. Therefore, 10 teacher candidates each studying in Preschool Teaching, Classroom Teaching, Turkish Teaching, English Teaching, Elementary Mathematics Teaching and Science Teaching are asked to deliver their opinions. Fourth grade students were studied on in order to assess the teacher training education programme for teacher candidates.

### **Data Collection Tools**

Data of the research were obtained by means of two different forms which were developed by researchers and applied to academicians and teacher candidates. The academicians and teacher candidates were asked three open-ended questions in the forms in order to determine their opinions on the teacher training system. In these open-ended questions, they were asked about their considerations on teacher training system, what the future purposes of the system should be and the parts that need to be changed in the system. The open-ended question forms were submitted to 3 academicians in total; 2 specialists in the field of developing curriculum and instruction programmes, and 1 specialist in the field of educational administration and economics in order to determine content validity. The specialists assessed the data collection tool in terms of expediency of the research and clarity of regulations, content and response format. Following the feedbacks given by specialists, necessary adjustments were made and the forms were distributed.

### **Data Collection and Analysis**

The assessment tool prepared to collect research data was applied to the academicians and teacher candidates forming the study group in the spring semester of the 2015-2016 school year. Content analysis, one of the qualitative data analysis techniques, was used to analyze the data in the study. The data obtained through the open-ended questions were analyzed in four stages; coding data, finding the themes, organizing the codes and themes, and describing and interpreting the findings. The answers given by the academicians and teacher candidates to open-ended questions were coded individually and organized by researchers and a specialist of education programmes and training. Coded data were examined and classified by their similarities and differences. The codes associated with each other were brought together, thus forming topics and sub-topics (Yildirim & Simsek, 2005). In this process, codes indicating agreement and those indicating difference of opinion were determined, and the consistency

between codes was calculated by means of Miles and Huberman (1994) reliability formula. Information regarding the consistency rates is specified in Table 1.

Table 1.  
*Consistency Rates of Research Questions*

	Consistency Rate	
	Academician	Teacher Candidate
Question 1	.87	.82
Question 2	.92	.90
Question 3	.90	.88

As it is seen in Table 1, 70% or a higher rate of consistency demonstrates that reliability in codes is at a sufficient level.

The findings obtained are indicated with frequency distribution and direct references. Opinions with higher frequency are included more in direct references. Real names of the participants are not indicated. Codes such as A1, A for academicians and T.C.1, T.C for teacher candidates are preferred.

## RESULTS

In the study, general considerations of the academicians and teacher candidates about the teacher training system are investigated, and their answers to open-ended questions are presented in Table 2.

Table 2.  
*Remarks on the Teaching Training System*

	Academician	f	Teacher Candidate	f
Curriculum	Professional values are missing	14	Insufficient teaching practice	44
	Inconsistent course content and hours	12	Courses in the system are necessary and sufficient	7
	Formation	9	Course contents	1
	Insufficient programme evaluation	9	Training a standard type of teacher	1
	Missing 21st century skills and being close to innovation	9	Formation	1
	A well-organized and successful system	4	Unnecessary internship	1
	A sufficient programme	1		55
The Process of Learning & Teaching	Lack of practice	19	Traditional education	12
	Performing the traditional education	4	Teaching practice is not supervised	2
	Recitation through presentation by students	1		
The Profile of the Student/Academician	Students with low academic achievement	12	Academicians with insufficient knowledge on the field	6
	A low profile academician	8	Student selection-placement system	2
	Student selection-placement system	1		
Physical Conditions	Inadequate physical conditions	11	Insufficient education and training setting	3
	Crowded classes	5	Crowded classes	1
	Lack of technological equipment	3		
Entry to the Profession	Appointment system	5	Appointment system	6

According to Table 2, the answers of the academicians and teacher candidates are grouped under the topics named "Curriculum", "Learning-Teaching Process", "The Profile of the Student-Academician", "Physical Conditions", and "Entry to the Profession".

It is observed that the opinions of academicians and teacher candidates regarding the topics are mostly negative. Considering the issues the academicians have agreed upon the most, the teacher training system is a system in which the curriculum lacks in terms of providing professional values (14); course contents and course hours are not in conformity (12); formation has a negative effect (9); programme evaluation is insufficient (9); there is no 21st century skills (9), and the programme is close to innovation

(9); there is lack of practice in the learning-teaching process (19); students have low academic achievement (12) with regard to student-academician profile; the academicians are low profile (8); the physical conditions are inadequate (11); teacher candidates have an assignment problem as for the entry to the profession (5). Some of the remarks of academicians regarding teacher training system are as follows:

*"I find the current teacher training system unsuccessful. One of the most significant problems of the system is the fact that teacher candidates are subjected to a four-year process based on examination, and practice is kept in the background. More importantly, the candidates graduate without adopting the values of the profession they are going to exercise in the future, even without creating a certain level of awareness of their profession."* (A.28)

*"I don't believe this system is sufficient. It is because some courses are useless and weekly course hours for some classes are not enough."* (A.10)

*"I think it is very difficult to train students that have the required 21st century skills with the teacher training system provided in the university now. The teacher candidates have been trained in a programme that has more theory but less observation in the current system. However, the teaching profession is a profession that is developed through practice. It is based on teaching the existing information in the best possible way, not on knowing a lot. That is, the teaching profession is contextual and the levels of problem solving should be increased by training teachers in only certain contexts."* (A.5)

*"There are multipart programmes. Teaching is a professional field that requires specialization training. Self-help programmes and those carried out with the sense of non-formal education (such as formation) damage this concept."* (A.32)

*"This system is a complete failure in terms of student selection, training and assessment. The teacher training process becomes entirely problematic with the fact that students go to university with really low grades they get from the current examination systems. It is because all these students with very low academic achievement who have not actually adopted the professional values are registered to faculties as candidates."* (A.6)

*"Classes are too crowded. The faculty has poor physical conditions. It is behind the times and insufficient for the teacher candidates to take an effective education and training."* (A.29)

Considering the issues, the teacher candidates have agreed upon the most, the teacher training system is a system in which teaching practice is inadequate (44) but there are necessary and sufficient courses in the curriculum (7); there is lack of practice with regard to learning-teaching process (12); the academicians have poor performance in terms of field knowledge (6) concerning the student-academician profile; there is an assignment problem as for the entry to the profession (6). Some of the remarks of teacher candidates regarding the teacher training system are as follows:

*"While the current teacher training system doesn't improve the creativity of the students, it also creates a standard type of teachers. I believe it is a must to concentrate on the practice more and to keep theory part brief and to the point."* (T.C. 40)

*"In general, I think the courses given are necessary and sufficient for this field. However, internship that we do in practice schools is inadequate and not supervised enough so I do not think it is efficient."* (T.C. 27)

*"I don't think the system is satisfying. The students are approved to the faculty only owing to their scores. Furthermore, the education which is given -or rather, cannot be given- in the school is useless. The teachers have been using traditional methods."* (T.C. 8)

*"Teacher training system is not so bad, I think. Nevertheless, there are some deficiencies. That some academicians do not have enough field knowledge causes teacher candidates to be trained lacking the knowledge on their own field."* (T.C. 28)

*"My views on the teacher training system are negative especially because of the Public Personnel Selection Examination we had to take. It is an extremely bad situation that the teachers are assigned with the score they get from Public Personnel Selection Examination and the number of assignments is very limited, thousands not assigned take the exam every year, and there are also many people taking*

*this exam with no degree from the faculty of education but who have only received formation training."* (T.C.31)

In the second sub-problem of the research, the participants have been asked to define the necessary future purposes of the teacher training system. Their answers are presented in Table 3.

Table 3.

*Remarks Concerning the Purposes That Should Be Included in the Teacher Training System*

	Academician	f	Teacher Candidate	f	
Characteristics of the Programme	Training qualified teacher	14	Constructivist learning approach	10	
	Containing 21st century skills	12	Training qualified teacher	8	
	Practice-based	6	Practice-based	8	
	Flexible	5	Professional awareness	3	
	Mostly vocational course	1	Master's Degree	1	
Curriculum	Social values	8	Social values	10	
	Using the scientific researches as base	2			
	Independent Council of Higher Education and Ministry of Education from the politics	2			
	Village Institute Model (Köy Enstitüsü)*	1			
Implementation of the Programme	Ministry of Education - Academy collaboration	5		-	
	8-semester formation	1		-	
The Qualifications of the Teacher Candidate	Thinking scientifically, Being Creative	18	Thinking scientifically	13	
	Attaching importance to professional values	9	Innovative	13	
	Innovative	9	Questioner	5	
	Good problem solving skills	5	Good communication skills	5	
	Having universal values	4	Self-confident	4	
	Good communication skills	4	Abiding by Ataturk's principles and reforms	2	
	Self-confident	3	Good problem solving skills	1	
	Abiding by Ataturk's principles and reforms	2	Democratic	1	
	Democratic	1	Idealist	1	
	The Process of Learning & Teaching	Open to technological change	8	Having field knowledge	5
		Doing an interdisciplinary work	3	Good command of technology	5
		Having field knowledge	3	Good command of learning-teaching process	4
	Knowing the Students	Loving the students	2	Guiding	5
Guiding		1	Knowing the characteristics of the students	4	
			Loving the students	1	

\*The Village Institutes embody an educational attempt made in Turkey between 1937 and the mid-1940s which aim to raise talented children living in the village, who will be a teacher in their own village, to make village expertise by educating them in every field of both individual and social life (Karaomerlioglu, 1998; Kartal, 2008).

According to Table 3, answers of the academicians and teacher candidates are mostly grouped under the themes named "Curriculum" and "Characteristics of Teacher Candidates". The sub-themes "The Characteristics of the Programme", "The Process of Improving the Programme" and "The Implementation of the Programme" are listed under the main theme Curriculum while the sub-themes "Personal and Professional Values", "Learning-Teaching Process" and "Knowing the Student" are listed under the main theme The Qualifications of the Teacher Candidate.

It was observed that with regard to the purposes which should be included in the teacher training system, academicians and teacher candidates delivered opinion mostly about the sub-theme personal and professional values under the qualifications of the teacher candidates, and on characteristics of the

programme under the curriculum theme. In the sub-theme of characteristics of the programme, academicians principally agreed on the fact that a programme including qualified teacher training (14) and 21st century skills should be aimed (12). The teacher candidates, on the other hand, discussed that a constructivist learning approach should be adopted (10); qualified teacher training (8) and a practice-based programme should be aimed (8).

In the sub-theme personal and professional values, academicians discussed that teacher candidates who have the capacity to think scientifically, be creative (18), attach importance to professional values (9), be innovative (9), and have good problem solving skills (5) should be trained while teacher candidates discuss that candidates who have the capacity to think scientifically (13), be innovative (13) and questioner (5), and have good communication skills (5) should be trained. The remarks of academicians and teacher candidates on these sub-themes are as follows:

*"A system promoting skills development rather than information should be targeted." (A.5)*

*"It should be aimed to train teachers who are innovative, investigative, good at building social relationships, capable of building close and healthy relationships with students." (T.C. 42)*

*"Educating teachers who understand the importance of teaching profession and who are aware of the role of this profession in the development of society should be aimed." (A.6)*

*"Teacher training system should aim to bring the skills of the 21st century knowledge-based society. The system should encourage critical thinking, research, questioning, and effective use of the technology, good command of communication skills, creativity, and improving the problem solving skills." (A.35)*

Further remarks referring to this sub-problem are presented in the sub-theme improving the programme. Academicians and teacher candidates point out that the purposes should be determined within the framework of the social values taken in consideration (academician (f=8); teacher candidate (f=10)) during the programme development process. Remarks of academicians concerning this sub-theme are as follows:

*"The main purpose of teacher training system should be raising individuals in line with social values. ... It is aimed to educate individuals based on national culture and values." (A.36)*

*"The primary purpose of the teacher training system should be taking the social values into consideration and fulfilling the needs of the society." (T.C.38)*

*"Educating teachers who protect universal values and respect social and cultural values should be taken as a basis." (A.24)*

In the third sub-problem of the research, the participants were asked to define the parts that should be changed in the teacher training system. Their answers are presented in Table 4.

Table 4.  
Remarks Concerning the Parts That Should Be Changed in the Teacher Training System

	Academician	f	Teacher Candidate	f
Curriculum	The programme should be entirely revised	18	Teaching practice should be increased	40
	Teaching practice should be increased	7	Contents of the courses on field knowledge should be increased	6
	Period of study should be increased up to five and a half years	5	One semester should be used only for practice education	4
	Improvement of the Programme			
	Collaboration of Ministry of Education and Council of Higher Education should be improved	3	Culture courses should be added	2
	An assessment should be made every 2 years with the participation of shareholders	3	Internship should be abolished	1
	Education models of different countries should be taken as basis	1	Village Institute Model should be applied	1
	Formation			
	Formation should be abolished	7	Formation should be abolished	2
	Formation should be given for 8 semesters	1	Formation system should be changed	2
Characteristics of the Programme	Critical thinking skills should be improved	2	Constructivist learning approach	5
	Personal and social development should be supported	2	Multicultural life skills	4
	Conformity with the multicultural education	2	Professional awareness should be increased	3
	A flexible and scientific educational system should be established	1		
Implementation of the Programme				
Academy- Ministry of Education Collaboration	3	Academy- Ministry of Education Collaboration	4	
Pre-Education	Requirements for Admission to the Faculty of Education			
	Student Selection Criteria	14	Student Selection Criteria	2
	A quota in accordance with the country's need for teachers	11		
	Practice of teacher training high school	3		
Education Process	Educational Setting and Resource			
	Qualifications of academicians	9	Educational setting should be improved	5
	Educational setting should be improved	7	Microteaching labs should be opened	3
	Technological support should be provided	2	Living environment should be improved	2
	Practice schools should be opened	2		
	Number of academicians should be increased	2		
Learning-Teaching Process	Teaching method that keep the students active	2	Social activities should be increased	3
	An alternative assessment	1	Theory and practice should be in parallel with each other	2
	Academicians active in courses for school experience	1		
Post-Education	Conditions of Entry to the Profession			
	Assignment system should be changed	5	Assignment system should be changed	6
	Public Personnel Selection Exam in conformity with the field/vocational courses	3	Public Personnel Selection Exam in conformity with the field/vocational courses	2
			Performance-based placement	2

According to the Table 4, the answers of the academicians and teacher candidates are mostly grouped under four main themes; "Curriculum" and "Pre-Education", "Education Process" and "Post-Education". Under the main theme Curriculum, there are the sub-themes "Improvement of the Programme", "Formation", "Characteristics of the Programme" and "Implementation of the Programme" while there

are "Educational Setting and Resource" and "Learning-Teaching Process" sub-themes under the Education Process theme.

It was observed that the remarks of the academicians and teacher candidates concerning the parts that should be changed in the system were mostly centered upon the process of the improvement of the programme. In this sub-theme, the academicians delivered their opinions on such requirements as revising the entire programme (18), increasing training for teaching practice (7), increasing the period of study to 5.5 years by giving the teacher candidates the opportunity to do a non-thesis master's degree (5). Teacher candidates, on the other hand, delivered their opinions about increasing the training for teaching practice (40), increasing content of the courses on field knowledge (6), and providing at least one semester of practice training before being a candidate teacher (4). Some of the remarks of academicians and teacher candidates on this sub-theme are as follows:

*"Currently existing programmes are not well enough to meet the needs of teachers. The programmes should be revised and re-established in order to educate teachers who can address future generations in accordance with the updates required by the information age." (A.33)*

*"Teaching practice system should be revised, and applied starting from the first grade because teaching is a profession that can be developed through practice, and thus, period of teaching should be increased to 5.5 years with the non-thesis master's degree." (A.5)*

*"It is highly important to make changes in a way to increase the awareness of what the teaching profession is and how serious it is. To this end, necessary steps should be taken to ensure more teaching practice." (T.C.27)*

*"The contents of our courses on field knowledge should be increased. These courses should also include practice. The contents should not be given only theoretically in a shallow way." (T.C.49)*

As for the other parts that should be changed in the system, academicians mostly discussed about the sub-themes the conditions for placement to the faculty of education, and educational setting and resource. With regard to placement conditions, the academicians agreed that the student selection criteria should be reviewed (14), and a quota in compliance with the country's teacher needs should be determined for faculties (11). As for the educational setting and resource, the participants expressed that qualifications of the academicians (9) and the educational setting should be improved (7). Some of the remarks of academicians concerning these sub-themes are as follows:

*"Criteria for selecting students to the faculty of education should be re-determined; an evaluation and placement system that is only based on university entry score should be deemed invalid." (A.19)*

*"Teaching profession is not a field of occupation that requires examining only success-oriented (cognitive) behaviors. Therefore, it is a must to question if candidates applying or selected to the faculty of education have the vocational attitudes and qualifications in affective and psychomotor domains, as well." (A.42)*

*"For a successful teacher training, it is essential to assign qualified academicians who attach utmost importance to educating teacher candidates who think in a more flexible and scientific way, rather than only deciding what to teach or how to get students memorize information. To this respect, qualifications of the academicians working in the faculties of education should be assessed, and studies concerning this matter should be carried out." (A.3)*

With regard to the other parts that should be changed in the system, the teacher candidates mostly discussed about the sub-themes the characteristics of the programme, educational setting and resource, and entry to the profession. They were of the opinion that changes should be made in order to improve constructivist learning approach (5), multicultural life skills (4) and professional awareness (3). As for the educational setting and resource, the participants have stated that the educational settings should be improved (5); micro-teaching labs should be opened (3) and living environments in the faculties should be improved (2). The teacher candidates also put emphasis on the conditions of entry to the profession. They believed systems of assignment (6), selection and placement (2), and also the content of Public Personnel Selection Examination (2) should be changed. It was observed that the views of academicians and teacher candidates were parallel with each other. The academicians, as well, stated that the existing assignment system should be changed (5), and Public Personnel Selection Examination must be in

conformity with the field/vocational courses (3). Some of the remarks of teacher candidates concerning these sub-themes are as follows:

*"It is highly important to carry out studies in order to raise awareness of what the teaching profession is and how serious it is." (T.C.27)*

*"I strongly defend that microteaching should be conducted in a real environment. I also believe there should be advanced educational settings with microteaching laboratories." (T.C.24)*

*"Campuses and faculties of education should be reorganized according to the educational environments suitable for providing students with face-to-face experience and practice, and constructivism. Academicians should also be provided with a system that can follow their improvement. They should also keep up with the times." (T.C.35)*

*"First, educational settings should be rearranged. I don't think the resources are so well. The educational environment should be brought up to a sufficient level for a better use of technology. The students should be provided with the opportunities that help them improve themselves." (T.C.7)*

*"I find it so pointless that teacher candidates are trained for such useless examinations as Public Personnel Selection Examination which is memorized in a year and forgotten after getting assigned. Nonetheless, I think practice and interview are fundamental." (T.C.55)*

*"First of all, Public Personnel Selection Examination should be abolished in order to reduce the assignment anxiety of the teacher candidates, and the candidates should be assessed within the process." (T.C.1)*

## **DISCUSSION and CONCLUSION**

According to the findings obtained in the research, the academicians and teacher candidates evaluated the teacher training system generally in terms of curriculum, learning-teaching process, physical conditions, student-academician profile and process of entry to the profession. While the academicians thought the curriculum lacked both in terms of course contents and giving the values of the teaching profession, the teacher candidates pointed out the gap in the programme regarding teaching practice. The academicians were of the opinion that practice in the learning-teaching process is insufficient; and the teacher candidates were not in favor of the traditional education during this process. When the body of literature on this topic is examined, it is seen that there are existing studies supporting this finding obtained through the research. In the study conducted by Akdemir (2013) discussing the history and problems of teacher training programmes in Turkey, it is emphasized that the internship opportunity provided to teacher candidates in practice schools is far from being efficient and considered only as a course. In the study conducted by Atanur Baskan et al. (2006), the teacher training system implemented in Turkey is compared with the systems existing in different countries, and the practice gap in the teacher training system of our country is highlighted.

It is concluded in the study that the academicians described the academic achievements of teacher candidates placed in faculties of education as low. It is quite striking to have identified problems in parallel with this finding in the field studies addressing the problems in the teacher training system in the 1980s and 90s (Ataunal 1987; Karagozoglu, 1987; Ozer, 1990; Sozer, 1989), included in the body of literature. In these studies, it is emphasized that the teacher candidates who are educated in the teacher training programmes consist mostly of students who have not necessarily chosen this profession and have had low academic success during the secondary education. It is also found in the study that the academicians regarded the academician profile, as well, as low. The teacher candidates, on the other hand, stated that the academicians were inadequate on the field knowledge. In his study on the programmes of training classroom teachers, Dogan (2005) emphasizes the importance of attracting successful students to the profession and qualifications of the academicians giving the education in enhancing the quality of teaching profession.

The findings obtained in the research showed that both academicians and teacher candidates agreed that the system of assigning teacher candidates was not favorable. It has been observed that there are negative criticisms regarding the assignment system and especially Public Personnel Selection Examination in different studies on this topic, and that this examination negatively affects the attitudes towards the profession (Basturk, 2007; Eraslan, 2004; Gundogdu, Cimen, & Turan, 2008; Sezgin-Nartgun, 2008; Sezgin & Duran, 2011). As for future purposes of teacher training system, the participants commented

mostly on the characteristics of the programme and the qualifications of the teacher candidates. All the participants agreed that the purpose of the teacher training system should be educating qualified teachers. Furthermore, they also expressed that the 21st century qualifications should be identified and a programme that successfully includes these qualifications should be developed. The qualifications that the teacher candidates should have are defined in terms of personal and professional values and learning-teaching process. According to remarks of the academicians and teacher candidates, the objective of teacher training system should be training teacher candidates who have the capacity to think scientifically, be creative and innovative, attach importance to professional values, have good problem solving and communication skills, have the field knowledge, open to technological changes and have good command of technology. In connection with these findings, regarding the conditions that should be changed in teacher training system, the participants delivered their opinions on such matters as revising the entire programme, increasing the practice training, increasing period of study to 5.5 years by giving the teacher candidates the opportunity to do a non-thesis master's degree, abolishing the teaching formation, improving the educational environment of the faculties, rearranging student selection criteria, and determining a quota in accordance with the demands for teacher in the country. Teacher candidates expressed their views on enhancing the content of teaching practice and field knowledge courses, using a constructivist learning approach, ensuring school-academia cooperation, improving educational environment of the faculties, and changing the assignment system. There are studies in the body of literature on this topic, supporting the findings of this research. It was found in the analysis of these studies that they brought suggestions regarding revision of teacher training system in accordance with the 21st century conditions (Atanur et al., 2006; Saylan, 2014; Sahin & Kartal, 2013; Turkish Education Association, 2009) and focusing on the quality (Akyuz, 2000; Saylan, 2014), ameliorating the physical infrastructure and establishing educational environments equipped enough to ensure skills for an effective use of technology (European Commission, Directorate-General for Education and Culture, 2010; Rots, Aelterman, Vlerick, & Vermeulen 2007; Seferoglu, 2004; Turkish Education Association, 2009; Yavuz, Ozkaral, & Yildiz, 2015), reorganization of the system of selection and assignment of teacher candidates considering the supply-demand balance (Akdemir, 2013; Atanur Baskan et al., 2006; Aydin, Sarier, Uysal, Aydogdu-Ozoglu, & Ozer, 2014, Bilir, 2011; Dogan, 2005; Kavcar, 2002; Kulekci & Bulut, 2010), giving up traditional learning-teaching approach in the learning-teaching process and adopting a student-centered system (Kartal, 2013; Turkish Education Association, 2009; Yavuz et al., 2015).

As a result, it is believed that some certain factors have a significant influence on the success of teacher training system such as the fact that the programmes conducted are up-to-date in conformity with needs of the era and compatible in terms of the objectives and content; qualifications of the academicians; theory and practice are carried out in parallel during learning-teaching process; change and improvement in subject focus are taken into consideration in learning-teaching process; academic readiness of educational environments and teacher candidates. On the other hand, it is possible to point out that it is extremely important and necessary to evaluate the applied programmes in an effective and continuous manner having regard to the current data obtained from education and training practices, changing individual, social and economic needs, and developments in science and technology.

### **Recommendations**

Following suggestions can be made in the light of the findings obtained in the research:

In order to establish a more qualified programme reflecting the opinions, suggestions and expectations of all people affected by the programmes, it is highly valuable to present the programmes to opinions and suggestions of all stakeholders, and attentively assess the contributions provided by them. Therefore, the opinions of all stakeholders (teacher candidates, teachers, academicians, Ministry of Education, Council of Higher Education, students, parents, NGOs, unions, policy makers and the society) should be taken into consideration during the update and evaluation process of the programme. One of the essential conditions of training qualified teachers in faculties of education is keeping the level of qualifications of academicians high. Thus, it is deemed inadequate only to focus on the number of academicians and faculty members in developed countries in the higher education policies for faculties of education. The policies concerning qualifications should also be reviewed. However, faculties of education can also determine, within themselves, the criteria which will ensure that qualifications of

teaching staff (fields of study / area of academic expertise / knowledge etc.) and course contents are compatible with each other in assignment of courses.

The principal expectation from the teaching programmes is to educate teacher candidates who have strong background knowledge on teaching profession, have the skills, awareness and field knowledge related to their profession, and who are creative, innovative, researchers, questioners, and have characteristics to renew and improve themselves. The theoretical training given in the pre-service training process can be adequate to acquire basic knowledge necessary for fulfilling these expectations. However, it is obvious that it is not enough to build awareness of profession skills and the professional itself. Therefore, the teacher candidates should be provided with more practice opportunity where they can observe what is done how and why, and where they can develop their own ideas and understandings. It can be ensured, in this way, that the teacher candidates are not passive anymore and take active roles. To this end, activities of teaching practice can be initiated in the second grade and spread to longer periods of time. In the meantime, it is advisable to create environments which require cooperation of specialist teachers, academicians and teacher candidates, and make it possible for them to build more communication and share their ideas. McAllister and Irvine (2000) also highlighted, in their study, the positive effect of the support given by the specialists in schools and faculties to teacher candidates in solving educational problems they experienced. Another way that can help teacher candidates get active roles in pre-service training process is action research. Action researches to be conducted with the collaboration of practice schools and faculties of education can contribute to diversification and enrichment of professional knowledge and experience of teacher candidates by filling the gap between theory and practice.

It is possible to create the teaching environments needed for our era by eliminating physical facility and technological equipment deficiencies such as classes, labs etc. in faculties of education. In this regard, Rots et al. (2007) states in their research that the support provided to teachers in faculties of education is a significant element in professional orientation of teachers.

When studies and policies on teacher training system are examined, it is seen that more emphasize has been put on teacher training programs and academicians in order to increase the quality but the qualifications of students who are the main subjects have been ignored in this process. However, success of an educational programme depends not only on the programme itself, its implementation and the implementers but also on students studying the programme and on the entry conditions they are subjected to. It is thought to be inadequate for the candidates to be placed in faculties of education only by succeeding in an exam where they only answer multiple-choice questions. Therefore, the student selection system for faculties of education can be reorganized. For this reason, only students showing an outstanding success in Undergraduate Placement Exam can be given the right to choose faculties of education. To this end, some prerequisites can be determined as well. Another effective practice can be bringing back the practice of teacher training high schools in order to increase the readiness and academic levels of teacher candidates up to the expected levels.

Pedagogical formation program is a program at the center of discussions on qualifications of graduate teacher candidates for raising the number of teacher candidates waiting to be assigned. For this reason, a process of evaluation and decision making for the future of pedagogical formation programmes can be initiated, and policies can be revised in respect to training qualified teachers. A new arrangement for Public Personnel Selection Examination may be introduced. In these examinations, performance and academic achievements of teacher candidates in education and training process can be considered as criteria.

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## GENİŞLETİLMİŞ TÜRKÇE ÖZET

### Öğretim elemanı ve öğretmen adaylarının görüşlerine göre öğretmen yetiştirme sistemi

Bir eğitim sisteminin başarısı, farklı pek çok faktör incelenerek açıklanabilir. Eğitim politikaları, eğitim yönetimi, eğitim programı, sistem içerisindeki bireylerin özellikleri, toplumun sosyo-kültürel yapısı, kaynak ve finansman, eğitim-öğretim ortamlarının fiziksel yapısı ve donanımı, eğitsel araç-gereçlerin kalitesi ve erişilebilirliği, bilgi ve iletişim teknolojilerinin etkin kullanımı sistemin incelenmesinde ele alınabilecek faktörlerden birkaçıdır.

Türkiye’de öğretmenlik mesleğinin hukuki dayanağı 1739 sayılı Milli Eğitim Temel Kanunu’na dayanmakta ve öğretmenlik “Devletin eğitim, öğretim ve bununla ilgili yönetim görevlerini üzerine alan özel bir ihtisas mesleği” (MEB, 2014-madde 43) olarak tanımlanmaktadır. Devletin eğitim politikasını uygulamaya koyma, uygulama sonuçları ile bu politikaları etkileme, eğitimde uzmanlık çalışmalarından ve araştırmalardan yararlanma ve bu çalışmalarla iç içe olup onlara kaynak sağlamadaki konumu (Varış, 1973) düşünüldüğünde, öğretmenlerin eğitim sistemi içerisindeki yerinin ne kadar önemli olduğu görülmektedir. Çünkü öğretmenin mesleki yeterliliği, eğitim ve öğretim sürecinin kalitesini doğrudan etkileyen bir faktördür. Dolayısıyla, eğitim sisteminde hedeflenen başarıya ulaşabilmek için rolünü başarılı bir şekilde gerçekleştirecek nitelikli öğretmenlerin yetiştirilmesi son derece önemlidir. Goodson ve Hargreaves (2005)’e göre de öğretmenlik mesleği bilgi toplumunun gerektirdiği insan gücünü yetiştirme sorumluluğunu üstlenmesi açısından en temel mesleklerden birisidir. Bu bağlamda, öğretmen yetiştirme sistemi, kendini sürekli yenileyebilen yani değişen koşullar karşısında adaptasyon yeteneği yüksek, inovatif ve hatta proaktif bir sistem mantığına kavuşmalıdır. Bunu gerçekleştirebilmek için güncel bilim verileri ışığında ülke gerçeklerinin incelenmesi, elde edilen veriler doğrultusunda gerekli değişim ve reform çalışmalarının yapılması gerekmektedir. Bununla birlikte sisteme ilişkin reform çalışmalarının amacına ulaşip uygulanabilir olmasında konuyla ilgili yapılan araştırmaların, araştırmaların sürecin tamamına yayılmasının, sistem içerisinde yer alan bireylerin görüş ve önerilerinin belirlenmesinin önemli katkılar sağlayacağı da yadsınamaz bir gerçektir. Bu bağlamda öğretmen yetiştirme sistemine ilişkin yapılacak değerlendirmelerde ve sistemin geliştirilmesine yönelik önerilerin sunulmasında bizzat uygulayıcı konumunda olan öğretim elemanlarının ve öğrenci rolünü edinen öğretmen adaylarının görüşlerinin önemli olduğu düşünülmektedir. Buradan hareketle bu çalışmanın temel amacı, eğitim fakültesi öğretim elemanlarının ve öğretmen adaylarının öğretmen yetiştirme sistemine ilişkin görüşlerini belirlemektir. Bu amaç doğrultusunda aşağıdaki sorulara yanıt aranmıştır: Öğretim elemanları ve öğretmen adayları öğretmen yetiştirme sistemini genel olarak nasıl değerlendirmektedirler?

Öğretim elemanlarının ve öğretmen adaylarının görüşlerine göre öğretmen yetiştirme sisteminin amaçları neler olmalıdır?

Öğretim elemanlarının ve öğretmen adaylarının görüşlerine göre öğretmen yetiştirme sisteminde değiştirilmesi gereken durumlar nelerdir?

Araştırmada, nitel araştırma yöntemlerinden iç içe geçmiş tek durum deseni kullanılmıştır. Araştırmanın çalışma grubu, 2015-2016 eğitim-öğretim yılında, Mersin Üniversitesi Eğitim Fakültesinde görev yapan 46 öğretim elemanı ve dördüncü sınıfa devam eden 60 öğretmen adayından oluşmaktadır. Araştırmanın verileri araştırmacılar tarafından geliştirilen, öğretim elemanı ve öğretmen adaylarına uygulanan iki ayrı form kullanılarak elde edilmiştir. Araştırmada verilerin çözümlenmesinde, nitel veri analizi tekniklerinden içerik analizi kullanılmıştır. Öğretim elemanlarının ve öğretmen adaylarının açık uçlu sorulara verdikleri yanıtlar, araştırmacılar ve bir eğitim programları ve öğretim uzmanı tarafından ayrı ayrı kodlanarak düzenlenmiştir. Kodlanan veriler incelenerek benzerlik ve farklılıklarına göre gruplandırılmış, birbiriyle ilişkili olan kodlar bir araya getirilerek temalar ve alt temalar oluşturulmuştur. Bu süreçte görüş birliği ve görüş ayrılığı olan kodlar belirlenmiş ve Miles ve Huberman (1994) güvenilirlik formülü kullanılarak kodlayıcılar arasındaki uyum hesaplanmıştır. Araştırmada elde edilen bulgulara göre eğitim fakültesi öğretim elemanları ve öğretmen adayları öğretmen yetiştirme sistemini genel olarak eğitim programı, öğrenme-öğretme süreci, fiziksel koşullar, öğrenci-öğretim elemanı profili ve mesleğe başlama süreci açısından değerlendirmektedir. Öğretim elemanları eğitim programını öğretmenlik mesleği değerlerini vermektен yoksun ve ders içerikleri açısından eksik bulurken öğretmen

adayları programdaki öğretmenlik uygulaması eksikliğine dikkat çekmektedir. Öğretim elemanları eğitim fakültelerine yerleştirilen öğretmen adaylarının akademik başarılarını düşük görmektedir. Alan yazında yer alan ve 1980 ve 90'lı yıllarda öğretmen yetiştirme sistemindeki sorunları ele alan çalışmalarda da elde edilen bu bulgu ile paralellik gösteren sorunların tespit edilmesi oldukça dikkat çekicidir (Ataünal 1987; Karagözoğlu, 1987; Özer, 1990; Sözer, 1989). Öğretim elemanı ve öğretmen adaylarının görüşlerine göre öğretmen yetiştirme sisteminde bilimsel düşünebilen, yaratıcı, yenilikçi, mesleki değerlere önem veren, problem çözme ve iletişim becerisi yüksek, alan bilgisine sahip, teknolojik gelişmeler açık ve teknolojiye hakim öğretmenler yetiştirmek amaçlanmalıdır. Bu bulgularla bağlantılı olarak öğretmen yetiştirme sisteminde değiştirilmesi gereken durumlara yönelik olarak öğretim elemanları öğretmen yetiştirme sisteminde; programın yeniden gözden geçirilmesi, uygulama eğitiminin artırılması, öğretmen adaylarına tezsiz yüksek lisans imkanı verilerek eğitim süresinin 5,5 yıla çıkarılması, formasyon programının kaldırılması, fakültelerin alt yapılarının iyileştirilmesi, öğrenci seçme ölçütlerinin yeniden düzenlenmesi ve arz-talep dengesine göre kontenjan belirlenmesi hususlarında görüş belirtmişlerdir. Çalışmanın ortaya koyduğu bulgular ışığında şu öneriler geliştirilebilir:

Öğretmen adayları için hazırlanacak eğitim programları 21. yüzyıl koşullarına uygun biçimde geliştirilerek halen kullanılmakta olan programlar bu doğrultuda yeniden gözden geçirilebilir. Programların oluşturulması ve değerlendirilmesi sürecinde bütün paydaşların görüşleri dikkate alınabilir. Eğitim fakültelerinde öğretmenlik mesleği uygulamaları için daha çok zaman ayrılabilir. Bunu sağlayabilmek için öğretmenlik uygulaması faaliyetleri 2. sınıfta başlayabilir. Ayrıca öğretmenlik uygulaması derslerinin daha işlevsel bir şekilde gerçekleştirilebilmesi için alanda çalışan uzman öğretmenlerin rehberlik yapması sağlanabilir.

## The examination of teacher burnout in Turkey: A meta-analysis

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**ABSTRACT** The purpose of this study is to determine the effect of gender, marital status, subject matter, school type, educational status and seniority variables on teacher burnout. In this regard, a meta-analysis was conducted for the studies on teacher burnout in Turkey. The effect size analyses were performed with 100 studies for gender, 73 for marital status, 17 for subject matter, 15 for school type, 34 for educational status, and 54 for seniority variables. In the study, the possibility of a publication bias was examined. The results of the study conducted with a random effects model revealed that gender, marital status, subject matter, and educational status had a very low effect on teacher burnout, whereas this effect was very low or low for seniority, and low or medium for school type variables. Besides, the variance among the studies for study-type, grade-level, and region moderators did not differ significantly apart from gender variable.

**Keywords** *Teacher, Effect size, Emotional exhaustion, Depersonalization, Personal accomplishment*

## Türkiye’de görev yapan öğretmenlerin tükenmişliklerinin incelenmesi: Bir meta analiz çalışması

**ÖZ** Bu çalışmanın amacı cinsiyet, medeni durum, branş, okul türü, öğrenim durumu ve kıdem değişkenlerinin öğretmen tükenmişliği üzerindeki etkisini belirlemektir. Bu amaç doğrultusunda, öğretmenlerin tükenmişlikleri ile ilgili Türkiye’de yapılan araştırmaların meta analizi yapılmıştır. Araştırmada genel etki büyüklüğü analizleri, cinsiyet değişkeni için 100, medeni durum değişkeni için 73, branş değişkeni için 17, okul türü değişkeni için 15, öğrenim durumu değişkeni için 34, kıdem değişkeni için ise 54 çalışma ile yapılmıştır. Araştırmada yayın yanlılığının durumu incelenmiştir. Rastgele etkiler modeli ile hesaplanan etki büyüklüğü analizleri sonucunda, cinsiyet, medeni durum, branş ve öğrenim durumunun öğretmen tükenmişliğini çok düşük; kıdem çok düşük veya düşük, okul türünün ise düşük veya orta düzeyde etkilediği belirlenmiştir. Ayrıca yayın türü, öğretim kademesi ve araştırmanın yapıldığı bölge ara değişkenleri için çalışmalar arası varyans, cinsiyet değişkeni dışında anlamlı olarak farklılaşmamaktadır.

**Anahtar Kelimeler**

*Öğretmen, Etki büyüklüğü, Duygusal tükenmişlik, Duyarsızlaşma, Kişisel başarı*

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## INTRODUCTION

The number of studies conducted on burnout in social sciences has shown a substantial increase since the 1980s. When considered specific to educational organizations, the number of empirical studies on burnout has been increasing with each passing year in Turkey, as well. In addition to this increase, some differences could be encountered among the studies which have been conducted independently from one another. Particularly in terms of demographic variables, the studies regarding teacher burnout have revealed inconsistent results both in the size and the direction of difference between groups. Hereby, meta-analysis studies come into prominence in order to combine the results of such inconsistent studies and hence to attain more generalizable information through combining these results. In this regard, a meta-analysis study investigating teacher burnout in terms of demographic variables was required to be conducted.

The concept of burnout was defined by Bradley (1969) for the first time in literature as a psychological fact observed in employees. With reference to Bradley's (1969) study, Freudenberger (1974) also described burnout with such concepts as depressed mood caused by job-related stress, cynicism, and despondency. The concept of burnout, defined with a clinical view by Freudenberger, was investigated through a socio-psychological perspective by Maslach (Gold & Roth, 1993). In this sense, Maslach and Jackson (1981) defined burnout as a condition involving physical, emotional and cognitive dimensions, observed mostly in employees working in professions that require face-to-face interaction with individuals.

Expressing the concept of burnout in terms of working life, Maslach and Jackson (1986) have identified that the so-called concept should never be conceptualized in a one-dimensional way, but in a multi-dimensional structure consisting of emotional exhaustion, depersonalization and personal accomplishment, all of which are empirically related in spite of being conceptually different from one another. First of these dimensions, emotional exhaustion is described as a decrease in energy, intensification of negative feelings, and one's feeling that his emotional resources have been depleted (Maslach & Jackson, 1984). This refers to a condition of prostration emerging as a result of excessiveness of psychological and emotional demands related to the individual (Huberman & Vandenberghe, 2009). Together with the fact that this dimension of burnout is the beginning, center, and most important component of burnout (Çelikkaleli, 2011), it is not sufficient to express this phenomenon on its own (Maslach, 2003a). The other dimension of burnout, depersonalization, is individuals' demonstrating unfeeling behaviors and attitudes towards whom they serve (Maslach & Jackson, 1986). This dimension comes into prominence due to the fact that employees behave the individuals they serve as if they were objects. Thereby, depersonalization is regarded as a strategy to cope with the emotional exhaustion (Lewin & Sager, 2007). As to the third dimension of burnout, reduced personal accomplishment refers to a gradually emerging failure an individual feels for his job (Huberman & Vandenberghe, 2009; Maslach & Jackson, 1984). According to Maslach (2003b), emotional exhaustion is considered as a cause of depersonalization, along with depersonalization as a reason of reduced personal accomplishment. That's why, emotional exhaustion is asserted to cause the perception of reduced personal accomplishment together with the mediation effect of depersonalization (Lewin & Sager, 2007). Hence, this aforementioned three-dimensional structure is frequently utilized in order to define the burnout in literature.

Just like in all organizations where human relations are intensive, burnout is regarded as a problem field in educational organizations, as well. Considering that teaching profession is regarded as one of the professions requiring devotion, emotional labor, and strong intrinsic values (Yorulmaz, Altinkurt, & Yılmaz, 2015), it might be asserted that teachers have a disadvantageous position in depleting their emotional resources. In this respect, teachers might be claimed to experience burnout in most phases of their working lives. In literature, there are many studies identifying that organizational or social factors have an impact on revealing burnout. These studies indicate that organizational discrimination (Çelik, 2011), mobbing (Alkan, 2011; Ergel, 2014), undesirable student behaviors (Hastings & Bham 2003; Özdemir, 2009), and external control (Byrne, 1994; Huberman, 1993; Sürgen, 2014) enhance teacher burnout whereas organizational commitment (Akgül, 2014), organizational trust (Çağlar, 2011), organizational justice and positive organizational climate (Çakır, 2009), effective and democratic classroom management (Özdemir, 2007; Tümkaya, 2005), and perceived social support (Karataş, 2009) reduce it.

When examined in terms of personal factors, studies demonstrate that job satisfaction (Diri, 2015; Kılıç & Yazıcı, 2012; Umay, 2015), occupational professionalism (Çelik, 2015), professional competence (Çelikkaleli, 2011), self-efficacy perception (Friedman, 2003), and positive personal characteristics (Yılmaz, 2014) decrease teacher burnout, while anxiety for authority use (Hoşgörür, & Apikoğlu, 2013), and extensive anger conditions (Ekinci, 2013) increase burnout. These studies have indicated that personal characteristics of teachers sometimes enhance burnout whereas they occasionally reduce burnout and its effects. Especially demographic features are frequently given place in such studies with the assumption that personal factors might be determinants on a concept like burnout. Hereby, the effect of such demographic variables as gender, marital status, subject matter, school type, educational status, and seniority on burnout is aimed to be determined in many studies, the results of which are inconsistent in terms of both in the size and the direction of difference between groups. In such a critical matter, the existence of such inconsistent results might complicate the determination of the primary reasons of teacher burnout (Purvanova & Muros, 2010). From this perspective, a meta-analysis study investigating teacher burnout in terms of demographic variables has been required to be conducted to identify whether demographic variables are the real determinants of teacher burnout and to produce generalizable and up-to-date information.

In literature, there are various meta-analysis studies regarding the burnout of employees working apart from educational organizations (Alarcon, Eschleman, & Bowling, 2009; Alarcon, 2011; Lee, Kuo, Chien, & Wang, 2016; Maricuțoiu, Sava, & Butta, 2016; You, Huang, Wang, & Bao, 2015) and at educational organizations (Aloe, Amo, & Shanahan, 2013; Aloe, Shisler, Norris, Nickerson, & Rinker, 2014; Edmonson, 2000a; Halbesleben, 2006; Yorulmaz, Çolak, & Altinkurt, 2017). These studies are oriented at determining the relationships between burnout and various individual or organizational variables. However, the number of meta-analysis studies aiming at determining the effect of demographic variables on the burnout of employees is limited. In these studies, it was determined that gender (Purvanova, & Muros, 2010), seniority, and age (Brewerd & Shaphard, 2004) had a low effect on burnout. Similarly, the meta-analysis studies examining the burnout of employees in educational organizations (Kış, 2014, 2015) indicated that gender and marital status had a very low effect on educational stakeholders' (teachers, administrators, supervisors or academicians) burnout.

When considering teachers specifically, it was reached a limited number of meta-analyses examining the burnout in terms of demographic variables. In Weng's (2004) doctoral dissertation, gender, marital status, educational status, seniority, grade level, age, and service time at the current school were determined to have a very low effect on burnout. Additionally, Edmonson's (2000a, 2000b) studies revealed that gender, seniority, and age had a low effect on burnout. The studies with reference to Turkish context also indicate that gender and marital status variables had a very low or low effect on teacher burnout (Çoğaltay, Anar, & Karadağ 2017; Doğuyurt, 2013). However, these studies are limited mostly to gender and marital status variables. In this regard, the purpose of this study is to determine the effect of gender, marital status, subject matter, school type, educational status, and seniority variables on teacher burnout with its recent findings. In accordance with this general purpose, the questions to what level the aforementioned variables have an effect on emotional exhaustion, depersonalization and reduced personal accomplishment of teachers, and how the moderator effects of study-type, grade level and region variables on the effect sizes computed for the aforementioned variables were sought a response.

## METHODOLOGY

In this study, the effect of gender, marital status, subject matter, school type, educational status, and seniority variables on teacher burnout in Turkey was identified with a meta-analysis design. Meta-analysis is a statistical method to combine the data of several independent studies with the aim of drawing overall conclusions based on a pooled data (Jak, 2015).

### Data Collection Procedure

First, a literature review by searching ULAKBIM, Google Academic, EBSCOhost, Web of Science, and Higher Education Council's Thesis Center of Turkey (HEC) with such keywords "burnout, emotional exhaustion, depersonalization, (reduced) personal accomplishment and Maslach" and their Turkish equivalents was performed in January 2016. For the theses with restricted-access in HEC, their authors

and supervisors were tried to be reached. In this regard, a total of 118 articles, 169 master's theses, and 11 doctoral dissertations were obtained. In cases where articles were reproduced from theses, these were included in the meta-analysis due to including more data. After examining the studies obtained through the databases, some specific criteria were determined for the inclusion of the studies in the meta-analysis. These criteria were as follows: 1) Master's theses, doctoral dissertations or articles were required to be published between the years 2005 to 2015. 2) The studies should be oriented at determining the burnout of pre-school, elementary, lower and upper secondary teachers working in Turkey. 3) The data of the primary studies should be collected with Maslach Burnout Inventory (MBI) and be including findings regarding emotional exhaustion, depersonalization, and reduced personal accomplishment dimensions. 4) The findings of the studies should provide sample size, arithmetic mean, standard deviation, *t* or *p*-values or the other statistics required for computation of the effect sizes. 5) The studies should provide the *p*-value in case non-parametric statistics are used in the related findings. The third criterion related to MBI was not a criterion at the beginning of the study. However, it was not possible to obtain a total score through MBI and its dimensions were not empirically fitted with other measurement tools being used to determine the burnout. Moreover, among 298 studies examined, only in 19 studies, the burnout was measured with a data collection instrument except for MBI. That's why, the data's being collected with MBI was decided to be an inclusion criterion.

### **Coding the Studies**

Before computing effect sizes, a coding form was created for determining the characteristic of any obtained studies and for excluding the studies with inappropriate data. The coding form provided information about authors, publication/completion years, subjects, designs (qualitative, quantitative, mixed, theoretical), regions conducted, sample groups and sizes, developers and validity proofs of data collection instruments, and the grouping and availability of data related to gender, marital status, subject-matter, school type, educational status and seniority variables. Through this coding key, studies not meeting the inclusion criteria were determined. In this regard, out of 298 researches in terms of all independent variables examined for the meta-analysis, 7 were excluded thanks to having a qualitative design, 2 to having a theoretical design, and 5 to having a mixed design. In addition, 105 of them were excluded as their sample were not compatible with the inclusion criteria. Out of the remained 179 researches, 79 were excluded for gender, 106 for marital status, 162 for subject matter, 164 for school type, 145 for educational status, and 125 for seniority variable since they did not include data concerning the relevant variables. Meeting the inclusion criteria, 100 studies for gender, 73 for marital status, 17 for subject matter, 15 for school type, 34 for educational status, and 54 for seniority variables were determined to be included in the meta-analysis. Thereafter, a second coding key was prepared, which was comprised of data on the sample sizes, arithmetic means, standard deviations, *t* and *p* values of the included studies. Then, the findings were combined through meta-analysis.

### **Heterogeneity**

In the meta-analysis, heterogeneity tests were conducted prior to computing effect sizes. The heterogeneity of the combined effect sizes is mostly determined with the *Q* test. In what level the *Q* value is required to be is identified through the test for null hypothesis with the distribution of  $\chi^2$  (chi-square) and degree of freedom (*k*-1) (Borenstein, Hedges, Higgins, & Rothstein, 2009). If the *Q* exceeds the critical  $\chi^2$  value based on the degree of freedom and a specified level of significance, then, the effect sizes are identified to be heterogeneous (Card, 2011). However, the *Q* statistics and significance test is not able to explain the level of heterogeneity. On the other hand, *I*<sup>2</sup> value is interpreted as heterogeneity ratio of the total variance among effect sizes (Higgins & Thompson, 2002; Huedo-Medina, Sánchez-Meca, Marín-Martínez, & Botella 2006) and is not directly influenced by the number of studies in meta-analysis (Borenstein et al., 2009; Cooper, Hedges, & Valentine 2009) when compared to the *Q* statistics. For this reason, the *I*<sup>2</sup> value was used as another criterion for identifying the heterogeneity level. *I*<sup>2</sup> values' equal to or lower than 25% was interpreted as low, equal to 50% as medium, and equal to or higher than 75% as a high level of heterogeneity (Cooper et al., 2009; Higgins & Thompson 2002; Huedo-Medina et al., 2006; Pigott, 2012).

### Model Selection

Before the computation of effect sizes in the meta-analysis, one of the fixed or random effects models is selected. Based on a homogeneity assumption, fixed effects model assumes that all studies included in meta-analysis share a common (true) effect size, which implies that all factors influencing the effect sizes are presumed as the same and there is no variance among all studies (Borenstein et al., 2009). If the mean of the effect sizes is computed based on the fixed effects model, it is asserted that the variance among studies stems from the sampling error (Pigott, 2012). In the case when the random effects model, which is based on a heterogeneity assumption, is selected for the computation of effect sizes, it is presumed that true effect sizes vary from one study to the next (Higgins & Green, 2008). The purpose of the random effects model, when compared to the fixed effects model, is not to estimate one true effect, but to estimate the mean of a distribution of effects (Borenstein et al., 2009). With regards to the model selection in the meta-analysis, Borenstein et al. (2009) suggest using random effects model if the included studies are selected from the published literature. Moreover, it is stated by Başol (2016) that the use of random effects model is more appropriate when the included studies vary in terms of design, scope, sample and examined variables. Furthermore, it is suggested to make an a-priori decision about model selection in such cases. Considering all of these, the heterogeneity tests were performed to provide proof regarding heterogeneity, but the effect sizes were computed based on the random effects model. The analyses within the scope of this current study were performed through *comprehensive meta-analysis* software.

### Publication Bias

In the study, the possibility of a publication bias was also examined before computing the effect sizes. Publication bias refers to the presumption that studies finding null (absence of statistically significant effect) or negative (statistically significant effect in opposite direction expected) results are less likely to be published than studies finding positive effects (statistically significant effects in expected direction) (Card, 2011). Publication bias above a specific level influences the mean effect size to be computed and lead it to seem higher than it is (Borenstein et al., 2009). However, meta-analyses are required to include all studies conducted in the related subject in order for synthesized studies to present a reliable level of information. With this in mind, all studies within the frame of the inclusion criteria were tried to be reached, and the possibility of a publication bias was examined using funnel plots, Orwin's Fail-Safe N analysis, Duval and Tweedie's Trim and Fill, and Egger's regression test. Funnel plots concerning the effects of all variables on teacher burnout were examined, and the funnel plots related to the effect of gender variable on emotional exhaustion (EE), depersonalization (DP) and (reduced) personal accomplishment (PA) of teachers were exemplified in Figure 1.

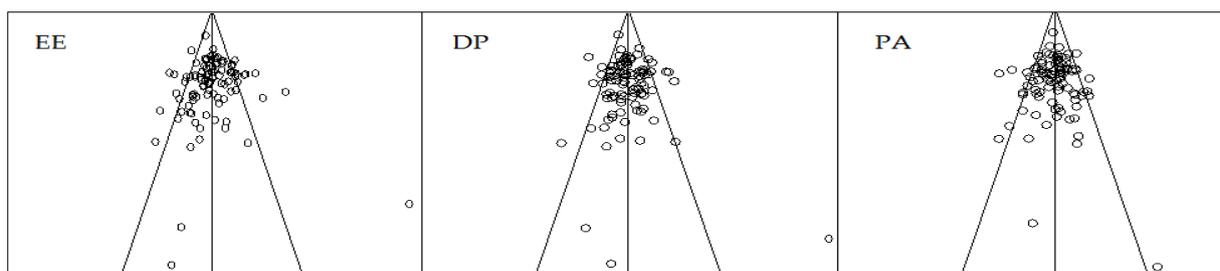


Figure 1. Funnel plots related to the effect of gender on EE, DP, and PA of teachers

When the funnel plots were examined, it was seen that the studies were nearly symmetrically scattered around the vertical line signifying the general effect size and the studies were mostly accumulated in the upper part of the funnel plots. The funnel plots visually expressed that there was no publication bias. Nevertheless, these visual expressions were statistically supported by Orwin's fail-safe N analysis, Duval and Tweedie's trim and fill, and Egger's regression test, as well. The results of these tests are indicated below in Table 1.

Table 1.

*The results of publication bias tests*

Variable		Orwin's Fail-Safe N	Duval and Tweedie		Egger's Test ( <i>p</i> )
		Studies Required (for +/- .01 S.M.D)	Trimmed Studies	Observed/Filled	
Gender	EE	578	19	.068 (.123)	.853
	DP	699	15	-.074 (-.031)	.230
	PA	74	7	-.016 (-.041)	.307
Marital Status	EE	126	1	-.019 (-.017)	.398
	DP	369	0	-.059 (-.059)	.865
	PA	135	7	-.027 (-.053)	.599
Subject Matter	EE	27	2	-.017 (-.033)	.175
	DP	2	1	.037 (.012)	.084
	PA	71	0	.049 (.049)	.773
School Type	EE	441	0	.205 (.205)	.073
	DP	336	2	.158 (.223)	.162
	PA	534	2	.307 (.402)	.488
Educational Status	EE	123	0	-.021 (-.021)	.078
	DP	110	5	-.039 (-.072)	.149
	PA	66	2	-.042 (-.068)	.508
Seniority	EE	60	14	-.001 (-.119)	.281
	DP	419	13	.119 (.012)	.182
	PA	8	0	-.012 (-.012)	.927

According to Table 1, Orwin's fail-safe N analysis revealed that it was not necessary to include more studies in the meta-analysis in order to reduce the standardized mean difference (S.M.D) under the "trivial" +/- .01 value. However, Orwin's fail-safe N analysis did not provide sufficient proof in terms of subject matter variable, especially for DP, and of seniority variable, especially for PA. For this reason, the results of Orwin's test were supported by Duval and Tweedie's trim and fill analysis and Egger's regression tests. According to Duval's test, when the researches leading to an asymmetry in the funnel plots were trimmed, the new (filled) effect sizes did not considerably differ from the observed effect sizes, which refers to the absence of a publication bias in the meta-analysis. Furthermore, the results of Egger's regression test were not significant ( $p > .05$ ) in terms of all variables, which verified the absence of a publication bias in the meta-analysis. After determining that there was no publication bias in the study, effect size computations were performed.

### Data Analysis

In the study, Cohen's *d* coefficient was used for the effect size computations. In all computations regarding the effect sizes, 95% confidence level was presumed. The effect size classification with regards to Cohen's *d* coefficient was as follows (Cohen, 1988):  $d < .20$  (low effect);  $.20 < d < .50$  (medium effect);  $.50 < d < .80$  (high effect). However, effect sizes lower than .10 were considered as a very low effect (Yılmaz, Altinkurt, & Yıldırım 2015).

In the study, women teachers were considered as experimental group and male teachers as control group for gender variable; married as experimental and single as control group for marital status variable; class teachers as experimental and subject teachers as control group for subject matter variable; teachers working at public schools as experimental and teachers at private schools as control group for school type variable, teachers with 10 years or less seniority as experimental and teachers with 11 years or more seniority as control group for seniority variable, and teachers with undergraduate (BA) degree as experimental and teachers with graduate (MA or Ph.D.) degree as control group for educational status variable. In terms of all variables, positive effects were presumed to be in the direction of the experimental group, while negative effects in the direction of the control group. Among the included studies, seniority was classified in various ways such as 5 years of intervals (5 years or less, 6-10 years, 11-15 years, 16-20 years) and 10 years of intervals (1-10 years, 11-20 years). Similarly, educational status was classified in different ways such as MA graduate, Ph.D. graduate, and graduate (both for MA and Ph.D.). Since it was not possible to separate the seniority in 10 years of intervals or transform them into 5 years of intervals, seniority was classified as 10 years or less and 11 years or more seniority. In a

similar way, MA graduate and Ph.D. graduate teachers were combined and considered as graduate teachers.

In terms of the researches considered for inclusion in the meta-analysis, the number of studies which investigate the difference between groups for the grade-level variable is very limited. In this regard, the characteristics of the included studies' sample groups were examined and the moderator effects of the grade-level, region, and study-type variables on the effect sizes computed for gender, marital status, subject matter, school type, educational status, and seniority were determined through the Q test. Moderators are independent variables presumed to have a possible impact on the findings and are used in meta-analyses for determining the level of such impact on findings (Card, 2011). Therefore, the impacts of study-type (article, thesis), grade-level (pre-school; elementary; lower secondary; primary and lower secondary; upper secondary; primary, lower and upper secondary), and region (Mediterranean, Aegean, Marmara, Central Anatolia, Black Sea, Eastern Anatolia, Southeastern Anatolia, and researches conducted on more than one region) moderators on the effect sizes computed for the aforementioned variables were identified in the study.

## FINDINGS

The purpose of this study was to determine the effect of gender, marital status, subject matter, school type, educational status and seniority variables on teacher burnout. In this regard, the effects of aforementioned variables on the emotional exhaustion (EE), depersonalization (DP), and reduced personal accomplishment (PA) of teachers were examined. Tables below show the results of heterogeneity tests and effect size computations for these variables.

Table 2.

*The effect of gender on teacher burnout*

	k	n	ES <sub>avr</sub>	p	z	Q	I <sup>2</sup>	S <sub>error</sub>	ES <sub>low</sub>	ES <sub>up</sub>
EE	100	29094	.068	.000	3.092	269.080	63.208	.021	.024	.107
DP	99	28481	-.074	.000	-3.575	249.190	60.673	.021	-.115	-.034
PA	98	28337	-.016	.428	-.792	240.369	59.645	.021	-.057	-.024

k: Number of studies included in the meta-analysis; n: Total sample size, ES<sub>avr</sub>: Average effect size; Q, I<sup>2</sup>: Heterogeneity; S<sub>error</sub>: Standard error; ES<sub>low</sub>- ES<sub>up</sub>: ES lower and upper limits

According to Table 2, Q statistics indicated that the included studies were heterogeneous in terms of all three dimensions ( $p=.00$ ). Being the other criterion for heterogeneity, I<sup>2</sup> values also verified that the included studies had a higher than middle level of heterogeneity for EE, DP, and PA. According to the results of the meta-analysis comprised of 100 studies for EE, 99 for DP and 98 for PA, the effect size of gender variable, computed with the random effects model, on EE was .068 ( $p<.05$ ), on DP -.074 ( $p<.05$ ), on PA -.016 ( $p>.05$ ). The computed values identified that the effect of gender on teacher burnout was very low. Although these effects were very low, they revealed that female teachers experienced more emotional exhaustion when compared to males, while male teachers experienced depersonalization and (reduced) personal accomplishment more than females.

Table 3.

*The effect of marital status on teacher burnout*

	k	n	ES <sub>avr</sub>	p	z	Q	I <sup>2</sup>	S <sub>error</sub>	ES <sub>low</sub>	ES <sub>up</sub>
EE	72	19298	-.019	.518	-.647	207.082	65.231	-.029	-.076	.038
DP	70	18611	-.059	.087	-1.712	265.153	73.600	.034	-.126	.008
PA	71	18930	-.027	.242	-1.171	121.356	41.495	.023	-.071	.018

According to Table 3, Q statistics revealed that the included studies were heterogeneous in terms of all three dimensions ( $p=.00$ ). I<sup>2</sup> values also approved that the included studies had close to a high level of heterogeneity for EE and DP, and close to a medium level of heterogeneity for PA. According to the results of the meta-analysis comprised of 72 studies for EE, 70 for DP, and 71 for PA, the effect size of marital status variable on EE was -.019 ( $p>.05$ ), on DP -.059 ( $p>.05$ ), and on PA -.027 ( $p>.05$ ). The computed values identified that these effects were very low. Even though these effects were very low,

they indicated that single teachers experienced more emotional exhaustion, depersonalization and (reduced) personal accomplishment than married teachers.

Table 4.

*The effect of subject matter on teacher burnout*

	k	n	ES <sub>avr</sub>	p	z	Q	I <sup>2</sup>	S <sub>error</sub>	ES <sub>low</sub>	ES <sub>up</sub>
EE	17	5061	-.017	.686	-.404	30.022	46.706	.042	-.100	.066
DP	16	4693	.037	.603	-.358	71.833	79.118	.070	-.101	.174
PA	16	4657	.049	.434	.782	57.168	73.162	.063	-.074	.173

According to Table 4, Q statistics identified that the included studies were heterogeneous in terms of all three dimensions ( $p=.00$ ). Besides, I<sup>2</sup> values verified that the included researches had close to a medium level of heterogeneity for EE, and a high level for DP and PA. According to the results of the meta-analysis comprised of 17 studies for EE and 16 for DP and PA, the effect size of subject matter variable on EE was -.017 ( $p>.05$ ), on DP .037 ( $p>.05$ ), and on PA .049 ( $p>.05$ ). The computed effect sizes revealed that these effects were very low. However, these effects indicated that subject teachers experienced emotional exhaustion more than class teachers had, while class teachers experienced depersonalization and (reduced) personal accomplishment more than subject teachers.

Table 5.

*The effect of school type on teacher burnout*

	k	n	ES <sub>avr</sub>	p	z	Q	I <sup>2</sup>	S <sub>error</sub>	ES <sub>low</sub>	ES <sub>up</sub>
EE	15	3786	.205	.033	2.138	70.700	80.198	.096	.017	.392
DP	15	3786	.158	.091	1.691	67.031	79.114	.093	-.025	.340
PA	15	3786	.307	.017	2.386	129.626	89.200	.129	.055	.558

According to Table 5, Q statistics indicated that the included studies were heterogeneous in terms of all three dimensions ( $p=.00$ ). Along with this, I<sup>2</sup> values approved that the included studies were heterogeneous at a high level for EE, DP, and PA. According to the results of the meta-analysis comprised of 15 studies for EE, DP, and PA, the effect size of school type variable on EE was .205 ( $p<.05$ ), on DP .158 ( $p>.05$ ), and on PA .307 ( $p<.05$ ). The computed effect sizes identified that these effects were medium for EE and PA and low for DP. Furthermore, these effects revealed that the teachers working at public schools experienced emotional exhaustion, depersonalization, and (reduced) personal accomplishment more than the teachers working at private schools.

Table 6.

*The effect of educational status on teacher burnout*

	k	n	ES <sub>avr</sub>	p	z	Q	I <sup>2</sup>	S <sub>error</sub>	ES <sub>low</sub>	ES <sub>up</sub>
EE	34	8374	-.021	.678	-.415	69.326	52.399	.050	-.120	.078
DP	34	8374	-.039	.288	-1.062	37.897	12.921	.036	-.110	.033
PA	34	8374	-.042	.420	-.806	74.205	55.529	.052	-.144	.060

According to Table 6, Q statistics revealed that the included researches were heterogeneous in terms of all three dimensions ( $p=.00$ ). Additionally, I<sup>2</sup> values verified that the included studies had close to a high level heterogeneity for EE and PA, a low level heterogeneity for DP. According to the results of the meta-analysis comprised of 34 studies for EE, DP, and PA, the effect size of educational status variable on EE was -.021 ( $p>.05$ ), on DP -.039 ( $p>.05$ ), and on PA -.042 ( $p>.05$ ). The computed values identified that these effects were very low for EE, DP, and PA. Though they were very low, they indicated that the teachers with a graduate degree experienced emotional exhaustion, depersonalization, and (reduced) personal accomplishment more than the teachers with an undergraduate degree.

Table 7.

*The effect of seniority on teacher burnout*

	k	n	ES <sub>avr</sub>	p	z	Q	I <sup>2</sup>	S <sub>error</sub>	ES <sub>low</sub>	ED <sub>up</sub>
EE	54	16602	-.001	.984	-.020	269.123	80.306	.040	-.078	.077
DP	51	15580	.119	.001	3.298	195.542	74.430	.036	.048	.190
PA	51	15562	-.012	.779	-.280	279.425	82.106	.043	-.097	.073

Lastly in Table 7, Q statistics refers to a heterogeneity in terms of all dimensions ( $p=.00$ ).  $I^2$  values also approved the high level of heterogeneity for EE, DP, and PA. As to the results of the meta-analysis comprised of 54 studies for EE, 51 for DP, and PA, the effect size of seniority on EE was  $-.001$  ( $p>.05$ ), on DP  $.119$  ( $p<.05$ ), and on PA  $-.012$  ( $p>.05$ ). The computed effects identified that these effects were very low for EE and PA and low for DP. However, these values revealed that the teachers having 11 years or more seniority experienced more emotional exhaustion and (reduced) personal accomplishment than the teachers having 10 years or less seniority, while the teachers having 10 years and less seniority experienced more depersonalization when compared to the teachers having 11 years or more seniority. The very last purpose of this study was to determine the moderator effect of study-type, grade-level, and region variables on the effect sizes computed for gender, marital status, subject matter, school type, educational status, and seniority. The results of moderator analyses identified that the variance among studies for study-type, grade-level and region moderators did not differ significantly except for gender variable ( $p>.05$ ). Furthermore, the variance among studies for study-type moderator according to gender variable was statistically significant in only depersonalization ( $Q=4.057$ ,  $p<.05$ ). The studies' being thesis or article changed the effect of gender variable on depersonalization of teachers. The effect of articles ( $d: -.152$ ) was higher than thesis ( $d: -.052$ ).

## DISCUSSION and CONCLUSIONS

The current study intended to determine the effect of gender, marital status, subject matter, school type, educational status, and seniority variables on teacher burnout by a meta-analysis of the studies conducted in the educational organizations. Meeting the inclusion criteria, 100 studies for gender, 73 for marital status, 17 for subject matter, 15 for school type, 34 for educational status, and 54 for seniority variable were included in the meta-analysis. The increase in the number of studies about teacher burnout as of the year 2005 was found as remarkable. 27 publications per year in average between 2005 and 2015 were identified to be conducted with regards to burnout. Almost all of these studies were in a quantitative design. Along with these, a few studies in qualitative, theoretical and mixed designs were encountered in literature. The total sample size of this meta-analysis study ranged from 28.337 to 29.094 for gender, 18.611 to 19.298 for marital status, 4.657 to 5.061 for subject matter, and 15.562 to 16.602 for seniority. The total sample size was identified as 8.374 for educational status and 3.786 for school type. Furthermore, the data of the included studies were determined to be obtained from all geographical regions of Turkey, which was considered to contribute the generalizability of the data.

As a result of this study, the effect sizes of gender variable were determined to be very low. Though these effects were very low, female teachers were found to experience more emotional exhaustion than males whereas male teachers had more depersonalization and reduced personal accomplishment feeling when compared to females. In related literature, such a difference between gender groups is explained by the fact that females have a higher possibility to work in the professions requiring face-to-face interaction and males need more social support due to their lower numbers at schools (Gold & Roth, 1993; Maslach & Jackson, 1985). However, the number of female and male teachers are approximately equal in Turkey according to the 2015/2016 statistics of the Ministry of National Education-MNE (2016). Therefore, such a difference between gender groups might be explained by societal stereotypes specific to gender. According to Altinkurt and Yılmaz (2012), both the sexist perspective dominating in the society and also the maternity and child minding roles imposed on females are some of the invisible obstacles they encounter in working life. Moreover, sexist values related to females are also adopted by females along with the males, which complicates the progress of females in the organizations (Zel, 2002). Such factors might lead females to experience more emotional exhaustion. Besides, Hofstede (2005) claims that Turkey has a collectivist culture demonstrating feminine characteristics. In such collectivist cultures, the relations are warm and intimate, but the emphasis on individualism and professionalism is quite less. In such cultures with a paternalistic social structure as Turkey, the fact that teaching profession is perceived as a female job might be a reason for males to experience more depersonalization and perception of reduced personal accomplishment.

When the included studies were examined singly, the effect sizes were identified as high only in a few studies in terms of emotional exhaustion (Aydemir, 2014; Deryakulu, 2005; Kurtoğlu, 2011; Sezer, 2012), depersonalization (Bağcı & Karagül, 2013; Deryakulu, 2005; Kurtoğlu, 2011), and reduced personal accomplishment (Aslan, 2009; Deryakulu, 2005; Kurtoğlu, 2011); and as medium in a few

studies (Arslan & Aslan, 2014; İnce, 2014; Yeğin, 2014; Yıldız, 2011) for all three dimensions. However, the effect sizes were low or very low in the most of the studies. Similar meta-analysis studies examining teacher burnout (Çoğaltay et al., 2017; Doğuyurt, 2013; Edmonson, 2000b; Weng, 2004) also identified that gender had a very low or insignificant effect on teacher burnout.

Analyses also revealed that grade-level and region moderators had not a significant impact on the effect sizes computed for gender variable. However, study-type moderator was found to have a significant impact on the effect size computed for gender variable in terms of depersonalization. The effect size of articles was higher than theses. Considering the effect size of the studies on a single basis, a thesis (Deryakulu, 2005) and an article (Kurtoğlu, 2011) whose effect sizes were the highest were deducted and the moderator analysis was repeated. Then, the impact of the moderator variable disappeared ( $Q=2.97, p>.05$ ). Nevertheless, the effect size of the articles was still higher than the theses. The reason for this finding might be that the possibility to publish studies with statistically significant differences in journals is higher (Card, 2011) or it might also stem from the perceptions of researchers in this aspect. Considering this aspect, the inclusion of theses into the meta-analysis might have provided more reliable information by decreasing the publication bias. However, study-type, grade level, and region moderators did not have an effect on teacher burnout in terms of marital status, subject matter, school type, educational status, and seniority variables.

In the meta-analysis study, the effect sizes of marital status were identified as very low. In spite of their low level, single teachers had more emotional exhaustion, depersonalization and reduced personal accomplishment when compared to married teachers. The reason for this finding might be that single teachers are generally given more responsibility when tasks are shared in schools within the scope of Turkey's social structure. This finding might also be resulting from the fact that single teachers have more individual responsibility outside the working life and their work-life balance is weaker when compared to married teachers. On the other hand, the favorable family experiences of married teachers might reduce their burnout. When the included studies were investigated one by one, the effect sizes were identified to be medium or high in a few studies in terms of emotional exhaustion (Ataç, 2015; Aydemir, 2014; Bağcı & Karagül, 2013; İğneler, 2015), depersonalization (Altinkurt, Ertürk, & Yılmaz, 2015; Diri, 2015; İğneler, 2015), and reduced personal accomplishment (İnce, 2014; Kurtoğlu, 2011; Öztürk, 2015). Nevertheless, the effect sizes were low or very low in most of the included studies. The meta-analysis studies investigating burnout in specific to teachers (Çoğaltay et al., 2017; Doğuyurt, 2013; Weng, 2004) also indicated that marital status had a very low effect on burnout.

According to the meta-analysis study, the effect sizes of subject matter variable were also very low for all three dimensions. What was remarkable was that subject teachers had more emotional exhaustion when compared to class teachers, while class teachers had more depersonalization and reduced personal accomplishment when compared to subject teachers. The reason why subject teachers experienced more emotional exhaustion might be that they work with students at an older age group and they deal with problems such as adolescence. In addition, class teachers' experiencing relatively lower emotional exhaustion might result from that they have more intimate and friendly educational environment due to the close relations with their students. Nonetheless, class teachers' higher reduced personal accomplishment might arise from that they are regarded to be responsible for their students' achievements or failures on their own since they carry out nearly all the courses of their students. This condition might reveal their depersonalization correspondingly. However, there is a great need for further studies to determine the reasons for this finding. Any meta-analysis or meta-evaluation studies investigating teacher burnout in terms of subject matter could not be broached. That's why the discussion of the research results is carried out with the included studies. Out of these, the effect sizes were determined to be high or medium in a few studies in terms of emotional exhaustion (Arslan & Aslan 2014; Seferoğlu, Yıldız, & Avcı-Yücel, 2014), depersonalization (Çelik, 2011; Karataş, 2009), and reduced personal accomplishment (Çelik, 2011) whereas it was at a low or very low level in most of the included studies.

In terms of school type variable, the effect sizes were low for depersonalization and medium for emotional exhaustion and reduced personal accomplishment. The teachers working at public schools had more emotional exhaustion, depersonalization, and reduced personal accomplishment when compared to the teachers working at private school. When the included studies were investigated, the effect sizes were low or very low in a few studies (Ayvaz, 2015; Yılmaz, 2010) and medium or high in most of the studies (Bümen, 2010; Kuvan, 2009; Otacıoğlu, 2008) in terms of emotional exhaustion.

For depersonalization, effect sizes were medium or high in a few studies (Ayvaz, 2015; Kuvan, 2009; Otacıoğlu, 2008) and low or very low in most of the studies (Uğurlu, 2012; Yıldız, 2011; Yılmaz, 2010). In terms of reduced personal accomplishment, the effect sizes were low or very low in a few studies (Uğurlu, 2012; Yalçın, 2011) and medium or high in the most of the included studies (Ayvaz, 2015; Bayramoğlu, 2008; Karataş, 2009). The meta-analysis study conducted by Doğuyurt (2013) also stated that school type had a low level effect on teacher burnout and, similar to the current study, the teachers at public schools experienced more burnout than the teachers at private schools. This finding is remarkable since teachers at public schools would have been expected to experience less burnout due to their job assurance when compared to the teachers at private school. The reason for this finding might be that the teachers working at public schools in Turkey are exposed to more political repressions and patronage relations when compared to teachers in the private schools. Another reason might be that the appointment of administrators and promotion of teachers are not always carried out based on their qualifications. In this sense, Hofstede (2005) states that Turkey is a society whose power distance is quite high, the characteristics of which are centralization and non-equal distribution of the power. According to Hofstede (1980, 1983), the perception of high power distance might cause the inequalities in the society to be regarded as a normally and naturally adopted phenomenon. Hence, the administrators' not requiring legitimization when using power might as well be a reason for teachers at public schools to experience more burnout. However, the discussions are related to the foresight of the researchers. Hereby, conducting further studies regarding the reasons for this finding might contribute substantially to the related literature.

Educational status is another demographic variable whose effect on teacher burnout was investigated. The effect of educational status on teacher burnout was very low. Most of the included studies also identified that these effects were at a low or very low level except a few studies which asserted that the effect sizes were high or medium terms of emotional exhaustion (Çelik, 2011; Seferoğlu et al., 2014; Umay, 2015), depersonalization (Ataç, 2015; Aydemir, 2014; Umay, 2015), and reduced personal accomplishment (Cinay, 2015; Iliman-Püsküllüoğlu, 2015; Sürgen, 2014). The results of this meta-analysis identified that the teachers with a graduate degree had more emotional exhaustion, depersonalization, and reduced personal accomplishment than the teachers with an undergraduate degree. What was remarkable was that the teachers with a graduate degree had higher reduced personal accomplishment. This might result from that the more the teachers have higher awareness, the more they notice their insufficiencies. Furthermore, that having a graduate education in Turkey does not reflect on teachers' careers and income status at an adequate level (or not at all) might be a reason for the increase of depersonalization. In also Weng's (2004) meta-analysis study conducted on teachers, educational status was determined to have a very low effect on teacher burnout, but unlike this current meta-analysis, it was identified that the more educational status increased, the more depersonalization also increased but emotional exhaustion and reduced personal accomplishment decreased.

Finally, the effect size of seniority was very low for emotional exhaustion and low for depersonalization and reduced personal accomplishment. The teachers with 11 years or more seniority had more emotional exhaustion and reduced personal accomplishment when compared to the teachers with 10 years or less seniority. However, the difference in terms of emotional exhaustion was very close to the point of indifference. The teachers having 10 years or less seniority had more depersonalization than the teachers having 11 years and more seniority. The teachers with 11 years or more seniority had more reduced personal accomplishment was a striking finding since experienced teachers would have been expected to have this emotion lower than their less experienced colleagues. A similar result was obtained for the teachers with a graduate degree, as well. The reason for this finding might be that experienced teachers' level of awareness is relatively higher, or the other way round, they consider themselves insufficient in accessing information and using information technologies. Nevertheless, it is obvious that further studies are needed to be conducted. Besides, the fact that teachers with 10 years or less seniority experienced more depersonalization might result from that they feel their expectations do not correspond with the reality and they could not comply with the organizational structure yet. Moreover, teachers' being exposed to ideological and political repressions, ever-changing educational systems, the absence of a strong performance evaluation system, and these teachers' having relatively higher awareness might be another reason for the teachers in this seniority group to experience more depersonalization. In also the different meta-analysis studies examining the burnout in specific to teachers (Edmonson, 2000a; Weng, 2004), seniority variable was identified to have a low or very low effect on burnout. When the

included studies were examined one by one, the effect sizes were high or medium in a few studies in terms of emotional exhaustion (Çolakoğlu, 2014; Diri, 2015), depersonalization (Altinkurt et al., 2015; Iliman-Püsküllüoğlu, 2015), and reduced personal accomplishment (Ayvaz, 2015; Çelik, 2015; Kurtoğlu, 2011) of teachers, and low or very low in most of the included studies.

When the results of the study are evaluated as a whole, it could be identified that gender, marital status, subject matter, educational status, and seniority have a very low, and school type variable has a low effect on teacher burnout. These results mostly coincide with the results of meta-analysis studies oriented at the effect of demographic variables on teacher burnout. Burnout draws attention as one of the topics on which the highest number of studies is conducted in the recent years. However, researchers' deficiencies in reporting the necessary statistics for meta-analyses reduce the generalizability of meta-analysis studies. In this regard, researchers are required to be more attentive in reporting the necessary statistics in order for their studies to be included in further meta-analysis studies. All in all, it has been identified through this study that the effect of demographic variables on teacher burnout is limited. In further studies, researchers are recommended to conduct meta-analyses oriented at determining the relationships between different personal or organizational variables and the burnout of teachers, or the effect of these variables on the burnout of teachers.

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## APPENDIX A

## Studies Included in the Meta-analysis

- Acun, M. (2010). *The investigation of the biology teachers occupational burnout levels according to some variables* (Master's thesis). Dicle University, Diyarbakır.
- Adiloğulları, G. E. (2013). *Examination of relation between emotional intelligence levels and professional burnout levels of physical education teachers* (Master's thesis). Kahramanmaraş Sütçüimam University, Kahramanmaraş.
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## GENİŞLETİLMİŞ TÜRKÇE ÖZET

### Türkiye’de görev yapan öğretmenlerin tükenmişliklerinin incelenmesi: Bir meta analiz çalışması

1980’li yıllardan itibaren tükenmişlik konusunda sosyal bilimler alanında yapılan çalışmaların sayısı ciddi oranda artış göstermektedir. Eğitim örgütleri özelinde de, Türkiye’de tükenmişlik üzerine yapılan ampirik araştırmaların sayısı gün geçtikçe artmaktadır. Bilgi üretimi noktasındaki bu artış, araştırma sonuçlarının birleştirilmesi gerekliliğini de beraberinde getirmektedir. Ancak, çalışma sayısındaki artışa rağmen birbirinden bağımsız olarak yürütülen araştırmaların sonuçları arasında farklılıklara rastlanabilmektedir. Özellikle demografik değişkenler açısından, öğretmen tükenmişliği üzerine yapılan çalışmalar, hem gruplar arası farklılığın boyutu hem de yönü konusunda tutarlı olmayan sonuçlar ortaya koymaktadır. Bu tip araştırma sonuçlarının bütünleştirilebilmesi ve bilginin genellenebilirliğine katkı sağlaması noktasında ise meta analiz çalışmaları devreye girmektedir. Bu sebeple, öğretmen tükenmişliğini demografik değişkenler açısından inceleyen bir meta analiz çalışması yapılmasına gereksinim duyulmuştur.

Bu çalışma ile cinsiyet, medeni durum, branş, okul türü, öğrenim durumu ve kıdem değişkenlerinin öğretmen tükenmişliği üzerindeki etkisinin belirlenmesi amaçlanmıştır. Bu amaç doğrultusunda, tükenmişlik ile ilgili Türkiye’de yapılan araştırmaların meta analizi yapılmıştır. Çalışmada yer alan araştırmalara ulaşmak için ULAKBİM, Google Akademik, EBSCOhost, Web of Science ve YÖK Ulusal Tez Merkezi veri tabanlarından yararlanılmıştır. Bu çerçevede, 118 makale, 169 yüksek lisans ve 11 doktora tezine ulaşılmıştır. Veri tabanlarından elde edilen çalışmalar incelendikten sonra, çalışmaların meta analize dâhil edilmesine ilişkin bazı ölçütler belirlenmiştir. Bu ölçütler 1) Araştırmaların 2005-2015 yılları arasında tamamlanmış yüksek lisans ve doktora tezleri veya hakemli dergilerde yayınlanmış makaleler olması; 2) Türkiye’de görev yapan okul öncesi, ilköğretim, ortaokul, ilköğretim okulu ya da lise öğretmenlerinin tükenmişliklerini belirlemeye yönelik olması; 3) Verilerin “Maslach Tükenmişlik Ölçeği” ile toplanmış olması ve ölçeğin “duygusal tükenmişlik, duyarsızlaşma ve kişisel başarısızlık algısı” boyutlarına ilişkin bulguların yer alması; 4) Araştırma bulgularında örneklem büyüklüğü, aritmetik ortalama, standart sapma, t veya p değerlerinin yer alması ya da bunların hesaplanabilmesi için gerekli değerlerin verilmiş olması ve 5) Parametrik olmayan testler yapılmışsa, ilgili bulgulara ait p değerlerinin verilmiş olması şeklindedir.

Meta analiz çalışması dâhil edilme ölçütlerine uygun toplam 114 araştırma ile gerçekleştirilmiştir. Ancak bütün araştırmalarda aynı değişkenler ele alınmadığı için değişkenler açısından meta analize dâhil edilen çalışma sayısı farklıdır. Bu nedenle, araştırmada genel etki büyüklüğü analizleri, cinsiyet değişkeni için 100, medeni durum değişkeni için 73, branş değişkeni için 17, okul türü değişkeni için 15, öğrenim durumu değişkeni için 34, kıdem değişkeni için ise 54 çalışma ile yapılmıştır. Araştırmaya dâhil edilen çalışmaların toplam örneklem büyüklükleri tükenmişliğin boyutları açısından, cinsiyet değişkenine göre 28.337 ile 29.094, medeni durum değişkenine göre 18.611 ile 19.298, branş değişkenine göre 4.657 ile 5.061, kıdem değişkenine göre 15.562 ile 16.602 aralığındadır. Öğrenim durumu değişkenine göre 8.374, okul türü değişkenine göre ise 3.786’dır.

Meta analize dâhil edilen çalışmalar heterojen yapıdadır. Meta analiz çalışmasında etki değerlerinin hesaplanmasında heterojenlik varsayımına dayanan rastgele etkiler modeli kullanılmıştır. Araştırmada yayın yanlılığının durumu huni saçılım grafikleri, Orwin’in Güvenli N hesaplaması, Duval ve Tweedie’nin Kırpma ve Doldurma testi ve Egger’in doğrusal regresyon testi ile incelenmiştir. Elde edilen değerler, meta analizde yayın yanlılığının olmadığını doğrulamaktadır. Araştırmada, etki değeri hesaplamalarında Cohen’in *d* katsayısı kullanılmıştır. Etki değerine ilişkin tüm hesaplamalarda güven düzeyi %95 olarak kabul edilmiştir.

Araştırma sonuçlarına göre, cinsiyet, medeni durum, branş ve öğrenim durumu değişkenleri öğretmen tükenmişliğini çok düşük düzeyde, kıdem değişkeni tükenmişliğin boyutları açısından çok düşük veya düşük düzeyde, okul türü değişkeni ise düşük veya orta düzeyde etkilemektedir. Etkilerin yönü açısından, kadın öğretmenler erkeklere göre daha fazla duygusal tükenmişlik, erkekler ise kadınlardan daha fazla duyarsızlaşma ve kişisel başarısızlık yaşamaktadır. Medeni durum değişkeni açısından, bekâr

öğretmenlerin tükenmişlikleri evlilere göre daha fazladır. Branş öğretmenleri sınıf öğretmenlerine göre daha fazla duygusal tükenmişlik, sınıf öğretmenleri ise branş öğretmenlerine göre daha fazla duyarsızlaşma ve kişisel başarısızlık yaşamaktadır. Okul türü değişkeni açısından, devlet okullarında görev yapan öğretmenlerin tükenmişlikleri özel okullarda görev yapanlara göre daha fazladır. Öğrenim durumu değişkeni açısından, lisansüstü öğrenim görmüş öğretmenler, lisans mezunu öğretmenlere göre daha fazla tükenmişlik yaşamaktadır. Son olarak kıdem değişkeni açısından elde edilen bulgular, 11 yıl ve üzerinde kıdeme sahip öğretmenlerin 10 yıl ve altında kıdeme sahip öğretmenlere göre daha fazla duygusal tükenmişlik, 10 yıl ve altında kıdeme sahip öğretmenlerin ise 11 yıl ve üzeri kıdeme sahip öğretmenlere göre daha fazla duyarsızlaşma yaşadığını göstermektedir.

Meta analiz çalışmasında cinsiyet, medeni durum, branş, okul türü, öğrenim durumu ve kıdem değişkenlerine göre hesaplanan etki değerlerine, araştırma türü, öğretim kademesi ve araştırmanın yapıldığı yer değişkenlerinin ara değişken etkisi incelenmiştir. Ara değişken analizi sonuçları, meta analize dâhil edilen çalışmaların makale ya da tez olmasının cinsiyet değişkenine göre öğretmenlerin duyarsızlaşmasına ilişkin etki büyüklüğünü değiştirdiğini göstermektedir. Makalelerin etki büyüklüğü tezlerden daha fazladır.

Tükenmişlik, Türkiye’de son yıllarda en fazla sayıda araştırma yapılan konulardan biri olarak dikkat çekmektedir. Ancak, yapılan çalışmalarda, araştırmacıların meta analiz yapılabilmesi için gerekli istatistikleri raporlama konusundaki eksiklikleri meta analiz çalışmalarının genellenebilirliğini düşürmektedir. Bu noktada, araştırmacıların yaptıkları çalışmaların ileride yapılabilecek meta analiz çalışmalarına dâhil edilebilmesi için, gerekli istatistikleri raporlama konusunda daha titiz davranmaları gerektiği düşünülmektedir. Ayrıca, bu araştırma ile demografik değişkenlerin öğretmenlerin tükenmişlikleri üzerindeki etkisinin sınırlı olduğu görülmektedir. Bu nedenle, bundan sonraki çalışmalarda çeşitli kişisel veya örgütsel değişkenler ile tükenmişlik arasındaki ilişkileri veya bu değişkenlerin tükenmişliğe etkisini belirlemeye yönelik meta analiz çalışmaları yapılması önerilmektedir.