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Using Fermi Problems to Motivate 4th Grade Primary School Students in Math Lessons

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Abstract

The concept of motivation is described as a broad structure that includes all the internal and external conditions that affect how behavior is prompted, maintained and controlled. Math motivation is described as love of mathematics, an interest in it, and a high level of motivation with respect to this lesson, a wish to take part in math lessons and an interest in math both in and out of school. Mathematical problems can be varied as problems with different ways of solving them to routine problems with only one correct answer and open-ended, non-routine problems that every individual can interpret differently and whose outcomes vary from person to person. There is no single correct answer to open-ended problems, and these kinds of problems, which are also called non-routine problems, are important parts of the mathematics teaching program. Furthermore, non-routine problems are forms of problem that require students to use their imagination and that encourage them to think creatively and critically. For this reason, it can be said that these types of problems are educational in that they teach the students how to overcome the problems that they will encounter throughout their lives. Fermi problems can be regarded as examples of open-ended problems. Fermi problems are open-ended, non-routine problems that require students to make systematic guesses by making assumptions before starting on a solution using simple calculations. They are the kinds of problems that can be solved in different ways, that have no single correct answer and that students can only solve by making assumptions. The goal of this study is to influence 4th-grade primary school students' math motivation by using Fermi problems. To this end, a total of 40 4th grade students in a state-run school in the central district of Tokat Province were divided into one test and one control group, and their math motivation levels were measured. Afterwards, a four-week implementation was carried out using the test group during which the students were made to solve Fermi problems. The math motivation levels for both groups were tested again after this implementation was over. The first and last tests were compared in the light of the data obtained. According to the research results, while no change was observed in the math motivation levels of the control group, which was taught mathematics using traditional methods, a development was seen in the math motivation levels of the test group. Therefore, it is suggested that Fermi problems may be used to increase interest and motivation in math classes.

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Introduction

It is seen that in curriculum studies aimed at overcoming the perception of mathematics lesson being a boring and toilsome lesson, skills such as problem solving, critical thinking and creativity are prioritized in line with the constructivist approach. Yücel, Karadağ, and Turan (2013) have stated that although there have been changes and developments in all these elements compared to the past, according to the current questions of PISA, which measures the level of mathematics literacy, and TIMSS, where mathematics success averages are determined, there is still no significant success in this field. With the renewed mathematics curriculum (2005), action was taken in line with the understanding that "every child can learn mathematics". Being active participants of the students in the mathematical process is among the main goals of the new mathematics program. According to Ersoy (2006, p.33), classrooms should be equipped with mathematical materials in order for students to form abstract mathematical thoughts; necessary tools and equipment should be used in activities. Thus, students notice the necessary information by using the model and have the opportunity to examine and solve problems. In the updated mathematics curricula, it was stated that verbal expression of students' thoughts in the mathematics learning-teaching process has an important place in the internalization, understanding and structuring of mathematical concepts, and that students should be encouraged to establish individual and interpersonal communication during the teaching process (MEB, 2018).

The difficulties of primary school students' experiences when dealing with real-world word problems in mathematics are widely known. Many people believe that there is the only one correct way to solve a mathematics problem (NCTM, 2000; cited from Gökbulut, 2006, p. 275). However, for many problems, people can find appropriate reasoning forms and solutions for their own characteristics (Gökbulut, 2006, p. 275). Problem-solving ability is one of the most basic skills required for human to continue their existence. Due to its role in coping with difficulties in every field, one of the main goals of school mathematics programs is related to the development of this ability (Altun, Dönmez, İnan, Taner, and Özdilek, 2001, p. 212). The abstract nature of the problems can be shown among the reasons for students' mathematical failure. Preventing this failure is possible by concretization of abstract problems. For this purpose, problems should be able to be associated with real life and concretized with the help of materials.

The absence of problems which are open-ended, that do not direct the student, that are not routine and that enable students to study by thinking about real life situations shows that the mathematics curriculum has a significant deficiency (Taşova and Delice, 2012, p. 75) The role of problem solving, which is the basic building block of mathematics education, is undeniable at all ages and levels of education. Problem solving, which leaves its mark on the age we are in, is among the aims of all lessons. It should be known that the contribution of problem solving to 21st century teaching situations is great. For this reason, the problem, the structure of the problem solving and increasing the success in problem solving are the topics studied by many educators and psychologists (Kılıç and Samancı, 2005, p.100). This method, which is frequently preferred by mathematics educators in terms of the student's mental development, thinking and questioning, and producing various solutions, is also a way that is referred for providing many gains to the student.

Stating that the problem should not be perceived as a research or question whose solution is previously known, Pesen (2008, p.65) has stated that in order for a mathematical situation to be a problem, the way to reach a solution should not be clear and the student should use his existing knowledge and reasoning skills. Mathematical problem solving; argues that problems should include situations ranging from routine mathematical problems to complex problems whose answers are not immediately apparent, and open-ended research using related mathematical thinking processes (Akay, Soybaş, and Argün, 2006, p.129). Based on these views, having no single solution, being cannot be predicted of its answer immediately, and encouraging the student to question and think creatively can be considered as the basic characteristics that should be found in a mathematical problem.

Mathematical problems can be diversified as routine problems with different solutions and a single correct answer, and open-ended non-routine problems, where each individual can make a different interpretation and its result may vary from person to person. Open-ended problems do not have a single correct answer and such questions, which are also called non-routine problems, are the

most important parts of the mathematics curriculum (Keskin, 2008, p. II). By pointing out that not making students solve problems other than routine problems is an "unforgivable mistake" and doing so deprives students of "imagination and judgment", Polya shows the importance he attaches to non-routine problems (Yazgan and Bintaş, 2005, p. 211). Routine problems, also called closed problems, are those that are clearly formulated and well-structured in terms of tasks, in which the correct answer can be determined in some simple ways and the necessary information is given in the problem statement (Akay, Soybaş, Argün, 2006, p. 132).

While students are trying to solve non-routine problems, they do not use the operations rotely, they learn to use them because the operations are required by problems (Olkun, Şahin, Akkurt, Dikkartin, Gülbağcı, 2009, p.67). Based on this statement, it can be concluded that non-routine problems are types of problem that requires the student to use their imagination and leads them to creative and critical thinking. For this reason, it can be said that such problems are educational tools for students to overcome the problems they will face throughout their lives. Non-routine problems are also called open-ended problems. In open-ended problems, since there is no formulation that guarantees a correct and complete solution, such problems are also referred to as poorly structured problems (Akay, et al., 2006, p.133).

The Fermi Problems, put forward by the famous physicist Enrico Fermi (1938), are examples of non-routine problems. Fermi problems involve making assumptions, making estimations about quantities that are unlikely to be calculated with a systematic way of thinking and limited information (Arleback, 2009, p.332). Taplin (2007) has explained Fermi problems as follows: "It is the type of problem that encourages students to be more creative and that enough information is not given. When people see Fermi Problems, they first think they need more information to solve them. In fact, although common ideas and experiences make acceptable solutions possible, the solution of these problems is based on the sum of the knowledge and experiences of the students. These problems are not deterrent and can be solved in a collaborative environment" (Hıdıroğlu, 2012, p.44).

According to Arleback (2009), Fermi problems are open-ended, non-routine problems that require students to make systematic predictions and making assumptions before starting solutions with simple calculations. Below are a few questions that may serve as examples of Fermi problems:

- How much money in total is spent in your school canteen in one day?
- How many liters of water on average is used in your home in a week?
- What is the total distance you have walked in a year?
- How many kilos of garbage does a family throw out on average in a year?

As it can be understood from the examples, Fermi problems are the types of problems that are solved based on assumptions and do not have a single correct result, which lead students to question, think and creativity. The purpose of solving these problems is to enable the student to think multi-faceted and to obtain as many assumptions as possible. In this context, it would be appropriate to use this type of problem to increase the interest and motivation for mathematics lesson. It can be said that students may be able to see the fun side of mathematics and realize that this lesson is not just about reaching correct results.

Loving, understanding and learning mathematics starts with getting to know it correctly, above all. If mathematics is a support that facilitates our life, paves us the way for logical and rational thinking to deal with the problems that we encounter at every moment in our daily life, enables us to evaluate events more consistently and objectively, and makes our lives colorful and fun, trying to understand it becomes a responsibility rather than a choice (Yenilmez and Can, 2006, p. 48). Motivation, which determines the amount of energy that an individual can directly spend to achieve their goal (Ginsberg and Wlodkowski, 2009), is one of the important components affecting learning (Cabı, 2009; cited from Balantekin, Oksal, 2014, p. 103). Martin and Briggs (1986; cited from Yaman, Dede, 2007, p.616) define motivation as a broad structure that includes all of the internal and external conditions that affect the arousal, maintenance and control of behavior. The concept of motivation has been included in the literature as internal and external. External motivation arises as a result of the effect of external reinforcers. Studying their lesson or fulfilling a given task of a student in order to

avoid the reaction of the teacher or to gain his/her praise and appreciation can be an example of this. Internal motivation, on the other hand, is the individual's reactions to internal needs. The need to be competent, to know, to understand can be given as an example of this (Akbaba, 2006, p. 345). The concept of mathematical motivation, which corresponds to the situations of liking and being interested in mathematics, having a high level of motivation towards this lesson, the desire to participate in the mathematics lesson, and being related to mathematics at school and outside of school, has been examined and researched by many researchers in the literature. Some of the studies on measuring motivation in the relevant literature are summarized below;

In the study conducted by Yaman and Dede (2007) the difference in the motivation of secondary school students towards mathematics and science and technology lesson according to gender, grade level and favorite course variables has been examined. For this A Questionnaire for Motivation toward Science Learning developed by Dede and Yaman has been used. The questionnaire has been applied to 740 students who were selected on a voluntary basis and were studying at 6th, 7th and 8th grades in secondary school in Sivas city center in the 2005-2006 academic year. As a result of the analysis of the data, it has been determined that the motivation levels of secondary school students differ significantly according to gender, grade level and favorite lessons. In addition, when the analysis results have been examined, it has been seen that the motivation groups were correctly separated at medium level in terms of predicted variables.

In the study conducted by Balantekin and Oksal in 2014, it has been aimed to develop a scale to determine the motivation levels of primary school 3rd and 4th grade students in mathematics lesson. The draft scale, prepared in a five-point Likert style and consisting of 41 items, has been applied to 308 students. As a result of this study conducted to determine the validity and reliability of the scale, it has been seen that the scale was at an acceptable level in terms of validity and reliability. In the study of Tahiroğlu and Çakır in 2014, it has been aimed to develop a valid and reliable measurement tool that measures the motivation of primary school 4th grade students towards learning mathematics. During the scale development process, a draft scale has been prepared according to the 5-point Likert-type agreement degree. After the changes made in line with the opinions of the experts, the scale has been applied to 67 primary school 4th grade students. Analysis results have shown that the scale was sufficiently valid and reliable.

In this study, it was aimed to affect the motivation of primary school 4th grade students towards mathematics lesson by using Fermi problems. For this purpose, solutions were also sought for the following sub-problems;

      1. What is the motivation level of the experimental group towards the mathematics lesson before the application?

      2. What is the motivation level of the experimental group towards the mathematics lesson as a result of the application?

      3. Is there a significant difference between the pre-test results before the application and the post-test results after the application of the control group?

      4. Is there a significant difference between the pre-test results before the application and the post-test results after the application of the experimental group?

Mathematics education provides individuals with a wide range of knowledge and skills to help them understand the physical world and social interactions. It also facilitates creative thinking and provides aesthetic development. In addition, it accelerates the development of individuals' reasoning skills by creating environments where various mathematical situations are examined (Gökbulut, Yangın and Sidekli, 2008; p. 214). The acquisition of these skills is possible by using the variety of methods used in mathematics teaching, associating them with daily life and using real life problems. Fermi problems include these gains (Yanbıyık, 2016). Non-routine problems that have been tried to be applied in primary school in recent years encourage the student to be creative and think critically. Based on the assumption that these problems are applied effectively, it is thought that the acquisition of targeted skills will be facilitated by popularizing the use of Fermi problems. At the same time, an increase in students' interest and motivation in mathematics can be ensured. Based on this situation, it

reveals the importance of this study, which is aimed to examine whether Fermi problems affect the motivation towards mathematics lesson in primary school 4th grade.

Method

In this study, which aims to examine the effect of Fermi problems on motivation towards mathematics lesson in primary school 4th grade students, an experimental design with pretest posttest experimental-control groups was used. The experimental design is defined as research designs that are used to explore cause-and-effect relationships between variables.

Study Group

The study group of the study consists of a total of 40 students from the 4th grade students of a state school from the central primary schools of Tokat, from two classes with similar academic achievements. In the experimental group, there were a total of 18 students, including 10 girls and 8 boys, and in the control group, there were a total of 22 students, including 14 girls and 8 boys. Homogeneous sampling method, one of the purposeful sampling methods, was used in the selection of the study group. The purposeful sampling method is to select information-rich situations in the context of the purpose of the study in order to conduct in-depth research. Homogeneous sampling, on the other hand, is the creation of the sample from a similar subgroup or situation in the universe related to the problem of the research (Büyüköztürk, Çakmak, Akgün, Karadeniz, and Demirel, 2014, p. 91).

Data Collection Tool

In the data collection process of the research, a Likert type scale developed by Dede and Yaman (2008) was used to measure the motivation of primary school 4th grade students towards mathematics lesson. During the data collection process, after the application of the scale to the experimental and control groups, Fermi problems were solved with the experimental group in one lesson each week, and the control group continued their mathematics lessons with traditional methods. At the end of a total of 4-week application period, the motivation scale was applied to the students again.

Before the data collection process, a pilot study was conducted with a different group to solve the Fermi problem. After the pilot application, the experimental group was divided into small groups, the week's problem was written on the board, and then the groups were allowed to solve the problem for one lesson hour. The researcher served as a guide in the solution of the questions and did not interfere with the solution of the questions. The Fermi problems addressed to students in the lessons in which the applications were made are as follows:

- How many vehicles are there on a 500 m road?
- What is the total weight of all students in your school in kg?
- How many liters of water is spent in your home a month?
- How much money in total is spent in your school canteen in one day?

Each of the questions was solved by the groups under the guidance of the researcher in a total of 160 minutes, covering a mathematics lesson on a day of each week. After 4-week Fermi problem solutions, the motivation scale was applied to the students in the experimental and control groups. The effect of Fermi problems on motivation towards mathematics lesson was examined by comparing the pre-test and post-test results obtained. In the process, what expected from the student is to act with assumptions for the solution of the Fermi problem, to think about as many possibilities as possible, to make calculations with logical inferences and to reach the result of the problem. In addition, since the aim of the research was to affect motivation, whether the students found the answer was not taken into account. Below are a few examples of the students' solution to Fermi problems in order to create a mental scheme for the application process:
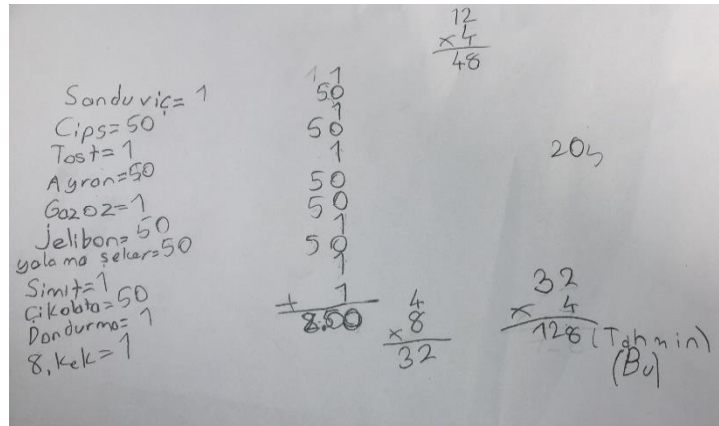
Figure 1: Student Answers to Fermi Problems 1

In Figure 1, in line with the answer given to the question "How much money in total is spent in your school canteen in one day?", it was seen that students calculated the possible prices of all food and beverages sold in the school canteen and also calculated how many of these products were sold and act in accordance with the solution of Fermi problems.
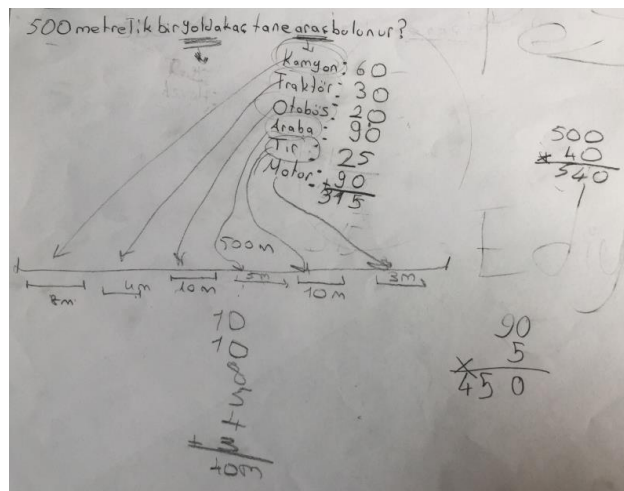
Figure 2: Student Answers to Fermi Problems 2

In Figure 2, in line with the answers given to the question "How many vehicles are there on a 500 m road?", all possible vehicles that can be found on a highway were written and their lengths were estimated. Afterwards, drawings were made by modeling and necessary calculations were made.
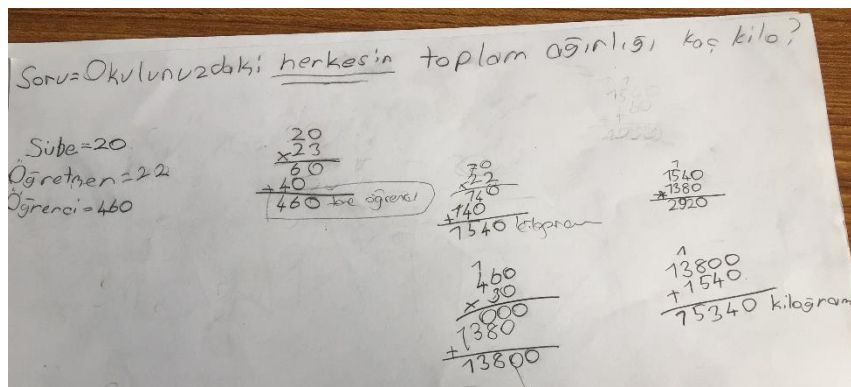
Figure 3: Student Answers to Fermi Problems 3

In Figure 3, in line with the answers given to the question "What is the total weight of all students in your school in kg?", the number of students and teachers in the school was calculated,

other employees were not included. In this case, only the possible weights of teachers and students were calculated and the result was reached.
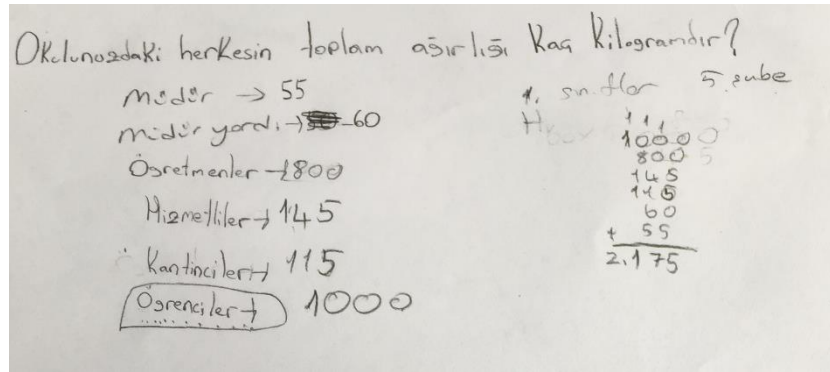
Figure 4: Student Answers to Fermi Problems 4

In Figure 4, in line with the answers given to the question "What is the total weight of all students in your school in kg?", the students estimated their possible weight by including all the staff and students in the school building. As a result of the obtained predictions, they reached the solution of the Fermi problem.

Data Analysis

The pre-test and post-test frequency distributions in the collected data were determined using the SPSS 18 package data program and the motivations of the experimental and control groups determined from primary school 4th grade students towards mathematics lesson were examined. After the application to affect the motivation of the experimental group towards the mathematics lesson, the data obtained from the measurement tool applied to both groups were compared with the t test application. The results obtained were interpreted in terms of the effect of Fermi problems on motivation towards mathematics lesson.

Findings

The findings obtained from the data collection process of the study were interpreted in line with the sub-problems.

1.   *Findings Regarding the Experimental Group's Mathematical Motivation Level Before the Application*

According to the findings obtained before the application, information about the average, maximum and minimum values of the scores obtained by the experimental group from the scale consisting of 23 items were given in Table 1:

Table 1: Average Scores of the Experimental Group before the Application

	N	Minimum Score	Maximum Score	Average
Success Score	18	1.39	4.09	3.4239

When Table 1 is examined, it is seen that the experimental group obtained minimum 1.39 and maximum 4.09 points from the scale applied. In addition, the average score obtained by the students in the experimental group from this test was measured as 3.4239.

2.   *Findings Regarding the Experimental Group's Mathematical Motivation Level After the Application*

According to the findings obtained after the application, information about the average, maximum and minimum values of the scores obtained by the experimental group from the scale consisting of 23 items were given in Table 2:

Table 2: Average Scores of the Experimental Group after the Application

	N	Minimum Score	Maximum Score	Average
Success Score	18	2.96	5.00	4.3652

When Table 2 is examined, it is seen that the experimental group obtained minimum 2.96 and maximum 5.00 points from the measurement tool applied. In addition, the average score obtained by the students in the experimental group from this test was measured as 4.3652.

3. *Findings Regarding Pre Test-Post Test Results of Control Group*

The information on whether there is a significant difference between the scores of the control group obtained from the scale before and after the traditional mathematics lessons was given in Table 3:

Table 3: Pre Test-Post Test Results Applied to the Control Group

N: 20	N	Pre-test		Post-test				
		$\bar{x}$	sd	$\bar{x}$	sd	t	sd	p*
Mathematical Motivation	22	3.59	0.80	3.64	0.71	0.433	19	.670

*p>0.05

When Table 3 is examined, no significant difference is seen between the pre-test and post-test scores of motivation of students in the control group towards mathematics lesson (t(19)= - 0.433, p>0.05). When the average scores of the students according to the application performed using traditional methods were examined, it was seen that the pre-test scores were x̄= 3.59, and the post-test scores were x̄= 3.64. This result can be interpreted as that the traditional methods applied on the control group did not have any effect on increasing students' motivation level towards mathematics lesson.

4. *Findings Regarding Pre-Test-Post-Test Results of the Experimental Group*

Information on whether there is a significant difference between the scores of the experimental group obtained from the scale before and after the application was given in Table 4:

Table 4: Pre Test-Post Test Results Applied to Experimental Group

N: 20	N	Pre-test		Post-test				
		$\bar{x}$	sd	$\bar{x}$	sd	t	sd	p*
Mathematical Motivation	18	3.42	0.69	4.36	0.54	5.701	19	0.000

*p<0.05

When Table 4 is examined, no significant difference is seen between the pre-test and post-test scores of motivation of students in the control group towards mathematics lesson (t(19)= - 5.701, p<0.05). When the average scores of the students according to the application performed using Fermi problems were examined, it was seen that the pre-test scores were x̄= 3.42, and the post-test scores were x̄= 4.36. The increase in the average motivation towards mathematics lesson reveals that Fermi problems are effective in increasing the mathematical motivation level of students.

Discussion, Conclusion, and Recommendations

Fermi problems appear as a type of problem that is studied but has a low application rate in teaching environments. It can be said that supporting non-routine problems and using them in learning environments has become a matter in our country and in the world, however, Fermi problems are not a type of problem that is frequently preferred in classroom environments, educational environments, or scientific studies. When the literature was reviewed, it was seen that the studies on Fermi problems were associated with mathematical modeling skills, and not aimed at interest and motivation towards mathematics (Peter-Koop (2005), Ärlebäck (2009), Abay and Gökbulut (2017)). In this study, applications were made using Fermi problems after the motivation scale applied to two different groups, and at the end of the process, it was seen that mathematics lessons with Fermi problems increased students' motivation towards mathematics.

In Peter-Koop's (2005) study titled "Fermi Problems in Primary School Mathematics Classrooms: Interactive Modeling Processes of Students", Fermi Problems have been directed to 3rd and 4th grade students in order to improve their modeling processes and solution analyses has been made. As a result of the study, it has been observed that many students could not develop a solution plan and a positive development was observed in modeling processes. Considering the use of Fermi Problems in the development of modeling processes, and the state of increasing the motivation level towards the lesson in this study, it can be said that the study findings are parallel.

In his study titled "Using Fermi Problems in the Application of Mathematical Modeling", Ärlebäck (2009) has used Schoenfeld's Mathematical Modeling Diagram (MAD) to apply mathematical modeling to students above secondary education level. Ärlebäck has directed Fermi Problems to three groups of students and made their solution analysis using the Mathematical Modeling Diagram. Mathematical models are frequently encountered in students' solutions. The use of Fermi Problems in the application process of this study is similar to the application process of this study, and there is no similarity in terms of findings.

In their study conducted in 2017, Abay and Gökbulut aimed to describe the mathematical modeling situations of classroom teacher candidates in Fermi problems, and for this purpose, classroom teacher candidates were solved Fermi problems. Considering the obtained results, it was seen that the mathematical modeling skills of the classroom teacher candidates in Fermi problems were not at a sufficient level. The use of Fermi Problems in the process of determining the mathematical modeling skill level is similar to the application process of this study.

When the literature is reviewed, there is no scientific study encountered in which Fermi problems are used to provide or increase motivation. In this context, it can be suggested that researchers should conduct research using Fermi problems in order to increase interest in mathematics or to improve mathematical attitude. According to the results of the study, the following suggestions were made to the curriculum experts, teachers and researchers:

- It can be suggested that while preparing education and training programs, the inclusion of Fermi problems in the mathematics curriculum of primary school 3rd and 4th grades in terms of gaining creativity, critical thinking and problem solving skills and associating mathematics with daily life,
- Adding Fermi problem solving practices to the applications of teachers in order to increase interest in mathematics lesson,
- Researchers should work on the effects of Fermi problems on students' academic achievement, mathematical attitude, and the association of mathematics with daily life.

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The Opinions of Preschool Teachers on Values Education

Tuğçe GÜZELYURT[1]

Abstract

Coupled with the changing living conditions, serious problems have been experienced in society in terms of moral and social aspects. Failure to resolve the problems experienced shows that the awareness of the common values of society has not come into existence yet. Therefore, it is deemed necessary to include values education at every level of education system. Preschool period is the period in which the foundation of the child's feelings, thoughts, behaviors and attitudes is laid. The attitudes and behaviors acquired in this period also form the basis of the future life of the child. For this reason, it is important to provide values education to children starting from an early age. In the provision of values education, the content of the program and the competence of teachers are among the effective elements in teaching the targeted skills. In accordance with this information, the aim of the study is to determine the opinions of preschool teachers on values education. The study group of the study consists of 50 preschool teachers working in preschool education institutions in Silopi district of Şırnak province, affiliated to the Ministry of National Education, in the 2018-2019 academic year. The data in the study were collected using an interview form designed by the researchers. The data obtained were analyzed by the methods of descriptive analysis and content analysis. As a result, it was determined that preschool teachers should be supported in terms of the scope of values education and how it should be implemented.

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Introduction

Education is the process of systematically bringing children to the determined goals in order to successfully convey the whole of the beautiful and positive behaviors desired to be realized and to establish relationships (Demirel and Kaya, 2017; Uzun and Köse, 2017). In this process, the child gains knowledge, skills, behaviors and values. These acquired knowledge, skills, behaviors and values were systematically transferred to diversify, change and sociologically improve society (Ergün, 1994). The concept of value can be defined as the message to be given to the thought and emotion system that directs and motivates human behavior and affects the decision-making process (Cihan, 2014). Values education is not only the mechanism that enables us to control our behavior; however, it is the system that allows us to clearly see the good and the bad, the right and the wrong, and increase our awareness, as well (Aydın and Akyol Gürler, 2012). This system comes into prominence day by day and is incorporated in education life. The fact that it is incorporated in education life shows that teachers have an important role in teaching values (Temur and Yuvacı, 2014). Our values, which have many functions, are very important in making sense of our lives and directing our feelings (Okumuş, 2010). Values education, which enables us to have a strong character while guiding, also makes us gain several concepts such as ethics, morality, love, and respect (Howard, Berkowitz and Schaffer, 2004). The formation of this character for an individual takes place in the first years of life. Teachers are the people who support the child in the first years of life besides the family (Balcı and Yelken, 2013). Because of this reason, preschool teachers who are at the first stage of education circle should be well educated and equipped in this regard (Çağlar, 2005). With the education received, transferring values such as morality, accepting the differences and being a society in a systematic and programmed manner is in the interest of society (Uzunkol, 2014).

At the beginning of the 20th century, schools in many countries, particularly in the United States of America, provided education in accordance with their values and designed programs in accordance with this (Uyanık-Balat and Balaban Dağal, 2006). Therefore, the importance of preschool education and teachers of this field in transferring knowledge, skills, behaviors and attitudes about values education to the child should not be ignored (Uzun and Köse, 2017). There are three dimensions of an individual: mental, social-emotional and behavioral. Qualified education perceives the person as a whole with all dimensions. For this reason, teachers should support the social-emotional and behavioral areas of the child as well as the mental field (İşcan, 2007). Since values education is included in the affective dimension, it is an important factor for the child that both family members and teachers at school know how to present values (Samur-Öztürk and Deniz 2014). Research has also revealed that educational institutions and preschool teachers are effective in teaching values (Erden, 1998; Ogelman and Sarıkaya, 2015). Şen (2012) concluded in his study that the values education given in the preschool period should not only be teacher-centered, and that the inclusion of the child in this process in the classroom environment by living and doing is effective for the child to gain values. On the other hand, in the study they conducted with a program that included values education, Dereli-Iman (2014) took children between the ages of 5 and 6 in an experimental study and stated that as a result of the provided education, the problem-solving ability, motor skills and social development of children who received education resulted faster and more positively than those who did not. Similarly, Samur-Öztürk and Deniz (2014) state that the implementation of the values education program is effective in teaching values. This situation shows that preschool education and teachers have an important role in teaching values (Fidan, 2009; Ulusoy and Dilmaç, 2018). In parallel with this information, the purpose of the study is to examine the opinions of preschool teachers about values education. It is thought that the results to be revealed in the research will contribute in terms of guiding teachers and encouraging researchers to make new researches in the field of values education. In this research, answers to the following questions were sought;

1. How do preschool teachers define values education?

2. What are the values (in order of importance) that should be taught in the preschool period according to preschool teachers?

3. According to the opinions of preschool teachers, which issues are faced with difficulties in teaching values education?

Methodology

Research Model

In this study, which aims to determine the opinions of preschool teachers related to values education, semi-structured interview technique, one of the qualitative research techniques, was used and face-to-face interviews were made with the participants. The interview took place at the time when the participants were available and made an appointment. The interview was transcribed and lasted an average of 15-20 minutes. In the interview technique, it was aimed to reveal the experiences of the individuals with respect to the subject being investigated and how they make sense of these experiences (Büyüköztürk, Çakmak Kılıç, Akgün, Karadeniz and Demirel, 2015).

Study group

In the selection of the participant group, teachers working in preschool education institutions affiliated to the Ministry of National Education in the province of Silopi in the 2018-2019 academic year were reached with the maximum sampling method from the purposeful sampling method. The study group consists of 50 preschool teachers, 48 of whom are female and 2 of whom are male, who voluntarily agree to participate in the research. Participants are in the age range of 20-25 (f =28), 26-30 (f =14), 31-35 (f =4), 36-40 (f =2), 41 and over (f =2). Participants received associate degree (f =25), undergraduate (f =24) and graduate (f =1) education. The professional experience of the participants is 0-3 years (f=37), 4-6 years (f =8), 7-10 years (f =4), and 11-more (f=1) years.

Data Collection Tool

In order to collect data in the study, firstly the literature on the research subject was searched in depth. Afterwards the questions raised were presented to a field expert and the final version of the interview form was designed. The interview form included four questions on demographic characteristics and three questions on values education. A pilot study was conducted with 10 preschool teachers before the data collection process. After the application, it was determined that the questions were understandable and no changes were made. The final version of the interview form was applied to preschool teachers after obtaining necessary permissions. During the interviews, the names of the preschool teachers were expressed as T1, T2, and T3 as required by ethical rules.

Data Analysis

The data obtained in the study were analyzed by the descriptive analysis method and the content analysis method. In the descriptive analysis method, the data are presented within the scope of predetermined questions or themes. In addition, direct quotations of the participants are included in the study to effectively reflect the opinions of participants (Büyüköztürk et al., 2015; Merriam, 2013). In this respect, the subject of researching through the descriptive analysis technique was accepted as the theme. Content analysis is the association, grouping and interpretation of the data obtained (Büyüköztürk et al., 2015). In the research, themes were determined based on the interview questions. Codes, on the other hand, were determined as a result of the analysis of the participants' opinions on the research questions using the content analysis method. Within the scope of the research, the data were examined by the researchers and codes were created by bringing together similar opinions. In order to determine the reliability of the determined codes, another field expert independent of the researchers examined the data and determined the codes. In order to determine the consistency between the codes determined by the researchers and the codes determined by the field experts, the reliability formula of Miles and Huberman (1994) [Reliability = Consensus (21) / (Consensus (21) + Disagreement (4))] was used. It has been determined that there is .84 consistency between the codes. Within the scope of the reliability formula, a ratio of .70 and above shows that codes are reliable. In this context, it can be mentioned that the codes determined in the study are reliable. The determined theme and the codes are shown in the tables and their frequencies are specified. Some sentences summarizing the opinions of the participants are presented with direct quotations.

Results

In this section the determined themes and codes are expressed in frequency (f).

Theme 1: The Definition of Values Education

In the research teachers' opinions on the question "*How would you define the values education?*" were collected under this heading. The codes for this theme are given in Table 1.

Table 1. Findings regarding the definition of values education

	Frequency (f)
Bringing children social values	26
Bringing children positive behavior (affection, respect, cooperation, etc.)	17
Getting to know different cultures and societies	8

Teachers define values education as bringing children social values (f =26), bringing children positive behaviors such as affection, respect and helping each other (f =17) and getting to know different cultures and societies (f =8). Some of the teachers' opinions on the subject are as follows:

"...It is the universal values education required for a better livable future." **(T2)**

"...Values education is to bring children the facts such as love, respect, cleanliness, responsibility, patriotism, benevolence, honesty and morality during activities." **(T9)**

"...Values education is the education given to raise individuals who are sensitive and know social and cultural values." **(T17)**

Theme 2: Values Targeted to Teach

In the research teachers' opinions on the question *"What do you think are the values (in order of importance) that should be given to children in preschool period?"* were collected under this heading. The codes for this theme are given in Table 2.

Table 2. Findings regarding the importance order of values

	Frequency (f)
Respect	39
Affection	38
Toleration	25
Helpfulness	24
Taking responsibility	18
Honesty	17
Patriotism	12
Justice	9
Empathy	7
Mercy	6
Patience	4
Friendship	2
Hospitality	2
Peace	1
Protecting nature and living things	1
Kindness	1

According to the teachers, respect (f =39), love (f =38), tolerance (f =25), helpfulness (f =24), taking responsibility (f =18), honesty (f =17), patriotism (f = 12), justice (f =9), empathy (f =7), mercy (f =6), patience (f = 4), friendship (f =2), hospitality (f =2), peace (f =1), protecting nature and living things (f =1) and kindness (f =1) values should be taught. Some of the teachers' opinions on the subject are as follows:

"... I think the values that should be given to the child at an early age are moral values (love, respect, cooperation)." **(T3)**

"... I try to give the value of love first. Unless love is on the basis of everything, nothing can be succeeded. But kids have difficulty understanding me. Love is a well-known value, but since the

children here do not receive much love from their families, it is very difficult for them even to perceive love." **(T37)**

"... Children do not realize that there are other people and other creatures. We raise selfish kids who lack empathy. First of all, it is necessary to help children acquire to protect nature, other living beings and to live with them in peace" **(T41)**

Theme 3: Difficulties Encountered in the Implementation of Values Education

In the research teachers' opinions on the question *"Are there any difficulties in applying values education? If so, what are they?"* were collected under this heading. The codes for this theme are given in Table 3.

Table3. Findings on the reasons for the difficulties encountered in the implementation of values education

	Frequency (f)
Values taught are not supported in practice	17
Limited activities	10
Values remaining abstract	8
Children's knowing very little Turkish	8
Families' not being supportive	7
Failure to provide classroom management	2

According to the teachers, providing values education is getting difficult due to the following reasons: values taught are not supported in practice (f =17), limited activities (f =10), values remaining abstract (f =8), children's knowing very little Turkish (f =8), families' not being supportive (f =7) and failure to provide classroom management (f =2).

Some of the teachers' opinions on the subject are as follows:

"...When trying to explain values, I have difficulty in explaining values because they are abstract." **(T5)**

"...Yes there is. Since the children do not know Turkish, I cannot get feedback even though I explain the importance of the issue. I try to give it with drama and story." **(T13)**

"...Values remain very abstract. I find it difficult to embody the values while telling children about them. If there were suggestions for activities, maybe I could convey them more easily." (T21)

"...We say respect, love, but when children go home, nothing is left. They come back to class as if we had never told them about those values. If they received support from their families at home, their learning would be more permanent. When there are many children, parents don't want to take care of their children. Families do not know Turkish well, and that prevents them. This process is not a process that teachers can do alone, families should definitely participate in the process." **(T44)**

Discussion, Conclusion and Suggestions

In this study, which was conducted to determine the opinions of preschool teachers about values education, providing children social values has been the most stated definition of values education. On the other hand, the limited number of opinions they stated such as helping children gain positive behavior (love, respect, etc.) and get to know different cultures and societies suggests that it would be beneficial to support them in terms of values education. Within the scope of values education, the concepts of gaining positive behavior, recognizing differences and adapting to social processes are emphasized. This situation makes us think that values education remains only at the knowledge level and values are not transferred to practice. Erden (1998) stated that educational institutions and teachers have an important role in systematically teaching children the values, attitudes and behaviors accepted by the society. According to Şen (2012), while teaching values to children in the preschool period, attention should be paid to the developmental characteristics of the child and it should be aimed to support all developmental areas. Presenting values education to

children in this way is considered important in terms of children's easy understanding, internalization and interpretation of values.

When the opinions of preschool teachers about the values aimed to teach and the order of importance of the values are examined, it has been observed that teachers prioritize the value of respect and love the most. However, it has been determined that preschool teachers do not prioritize values such as kindness, protecting nature and living things. Erkuş (2012) stated in his research that preschool teachers primarily teach the values of love and respect; however, they also think that values such as tolerance, cooperation, sharing and kindness should be taught. Türk (2009), on the other hand, stated in his research that teachers attach more importance to the value of respect, and that it is not enough to teach this value alone. When the studies conducted were examined, it was determined that values such as respect, love, tolerance and helpfulness were mentioned first within the scope of values education, but values such as kindness, protecting nature and living things were stated after many values and by a small number of participants.

When the opinions of preschool teachers about the difficulties they face in the application of values education are examined, it has been determined that there are many situations arising from teachers, family and environmental conditions. Difficulties in delivering values education are defined as values' not being supported in practice, failure to provide classroom management, limited activities, lack of support from families and children's knowing little Turkish. Yuvacı, Şafak, and Şirin (2013) stated that values education in the preschool period should be supported in the family and that including values in daily life would be effective in internalizing values. Similarly, Thonberg and Oğuz (2013) stated that teachers should combine values with practices in life and when examined from this aspect, it is stated that teachers do not have enough knowledge about values education and practices. These studies support the research findings.

As a result, it was determined that preschool teachers in the study should be supported about the scope of values education, how it should be implemented and with which activities it should be presented.

In parallel with this information, recommendations are listed as follows.

• The number of in-service trainings given to preschool teachers on value education can be increased.

• In order for the values to be permanent and intertwined with daily life, it can be ensured that families take an active role in the values education program.

• Preschool education program activity book can include comprehensive activity suggestions for values education.

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Analysis of the 5th Grade Social Studies Course Book in Terms of Interdisciplinary Approach

Elif ALADAĞ[1], Cansu SERT[2]

Abstract

Interdisciplinary instruction is the conceptual integration of a concept across different disciplines. This integration allows students to learn topics in connection with different courses and in a meaningful manner. Interdisciplinary instruction is an approach which helps students combine and integrate pieces of information existing in different fields and enables students, through concepts, to focus on thoughts at the level of analysis and synthesis. The inclusion of interrelations in curriculum into course book is important to reaching achievements set forth in these programs. This research aimed to reveal that establishing relations between courses (Turkish Language, Mathematics and Science) referred to in social studies instruction program happened to be the case in the 5th grade social studies course book in what sense and through which elements. By using the criterion sampling, the 5th grade, the grade level at which the establishment of relationships between courses was the most common, and achievements for establishing relationships were selected in the study. In the study, qualitative research method was employed. Data were collected through document analysis and evaluated through content analysis. In the data analysis process, firstly, achievements which established relationships with other courses were identified. For the data analysis, a table of criteria was created, and the analysis process was launched in light of the categorization of images, written materials and questions which were presented on this table. Codes were created as to how achievements which established relationships with courses of Turkish language, mathematics and science were included in social studies course book, and codes considered to be related to each other were synthesized and categorized into themes. Also, a social studies teacher who was experienced in qualitative research was included into the analysis process, and it was checked if researchers and social studies teacher had consensus on the access to codes and themes. As per research results, in social studies curriculum for the 5th grade of primary schools, three achievements were proposed for establishing relationships with Turkish language course and relationships for all three achievements were included in the social studies course book, one achievement was proposed for establishing relationship with science course and this relationship was included in the social studies course book, five achievements were proposed for establishing relationships with mathematics course and all relationships for achievements, except one achievement, were included in social studies course book. Relationships between courses were established through questions, written materials or images in social studies course book. At the end of the research, recommendations were presented for specialists, practitioner teachers and researchers in charge of preparing course books.

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Introduction

One of the objectives of education is to enhance students' skills in high level thinking and to raise individuals with the capability to look at cases from different perspectives. In the stage which is called as the information society, raising individuals who just memorize some pieces of information and use this information base in examinations offers neither individual nor societal benefit. Therefore, it is essential to transfer what is learnt at school to the daily life. This, however, can be made possible only through the establishment of relationships between information learnt in different courses at schools. The arrangement of a multi-disciplinary teaching & learning environment will empower students to look at cases or situations from a holistic perspective (Karakuş & Aslan, 2016; Kılcan, 2005). This, in return, necessitates placing the focus more on interdisciplinary instruction.

Interdisciplinary instruction is the conceptual integration of a concept across different disciplines (Duman & Aybek, 2003, p. 5, cited from Erickson, 1995). Interdisciplinary instruction is an approach which helps students combine and integrate pieces of information existing in different fields and enables them, through concepts, to focus on thoughts at the level of analysis and synthesis. Interdisciplinary instruction is not the case of studying mathematics in a part of the school hour, Turkish language and science in other parts of the same school hour (Yıldırım, 1996). In the interdisciplinary approach, it is essential that programs have flexibility, interrelated topics be combined, emphasis be placed on theme-based units and student groups be created upon the analysis of various resources (Yarımca, 2011).

The field of social studies is an area composed via the integration of literature, arts and social sciences through an interdisciplinary approach so as to equip students with qualifications essential to citizenship. In the instruction program, the field of social studies offers a systematic and cooperative area of study distilled from proper and relevant contents of archeology, economics, anthropology, geography, philosophy, law, political science, psychology, religion, sociology & arts, literature, mathematics and natural sciences (Doğanay, 2002, p.16, cited from NCSS, 1993). Students who are highlighted in the definition and are desired to be raised are creative and questioning individuals who are endowed with skills and values appertaining to social sciences and also capable of incorporating different sciences in a systematic manner so as to produce new information.

Of the three basic approaches in the instruction of social studies, the reflective teaching approach is significant as it establishes connections between courses and places problems at the center. As per this approach, rather than teaching the chronology of cases or contents of diverse disciplines, an instruction program placing the focus on problems and topics is more valuable to the promotion of effective citizenship (Aslan, 2016, p. 40, cited from Barr, Barth & Shermis, 1978). It will be discerned that establishing relationships with other courses and adopting a holistic perspective in social studies instruction coincide with objectives of reflective teaching since interdisciplinary instruction is based on cases or problems.

There exist references to connections between courses in social studies curriculum first prepared in 2005 and then updated in 2018. In the part introducing the application of social studies curriculum, the following references to relationships are made: Teacher is faced with three types of relationships across the program, that is, relationships established between units inside the course, relationships established with other courses and relationships established with interdisciplines (Ministry of National Education of Turkey/MNET, 2005). In social studies curriculum updated in 2018, even though there is no direct reference to the establishment of relationships between courses, there exist suggestions which allow the establishment of relationships with other courses under the titles of skills and competencies that should be taught in social studies course. Basic skills covered by achievements which were included in curriculum were addressed on the basis of Turkish Qualifications Framework (TQF). Of eight key qualifications which each individual is supposed to obtain in the context of life-long learning according to the TQF, education in mother tongue necessitates the establishment of relationships with Turkish language course and the subject title called Mathematical Qualifications requires the establishment of relationships with mathematics course (MNET, 2018).

Course books are utilized as the most fundamental materials in Turkey as in the case of several other countries, and, on the basis of these course books, teachers plan numerous activities to be

performed in the classroom (Kılıç & Seven, 2008). If factors such as skills, values and relationships between courses which are emphasized in the course instruction program are not sufficiently addressed in course books, the course program will fail to reach its objective precisely. Moreover, studying topics covered under social studies course by establishing relationships is essential to meaningful learning as long as these relationships coincide with achievements of other courses. In this regard, the inclusion of relationships between courses into course books is important to meaningful learning.

The goal of this research was to reveal that establishing relations between courses which were referred to in social studies curriculum was the case in social studies course book in what sense and through which elements. To this end, below questions are addressed to sub-goals of this study:

1. How is the relationship with Turkish language course reflected in the 5th grade social studies course book?
2. How is the relationship with mathematics course reflected in the 5th grade social studies course book?
3. How is the relationship with science course reflected in the 5th grade social studies course book?

Methodology

This is a qualitative study in which social studies course books are analyzed in terms of their interdisciplinary approach. In the research, document analysis was employed. Document analysis covers the analysis of written materials which include information on phenomena and cases intended to be studied (Yıldırım & Şimşek, 2005; Karasar, 2014, p.183). In the study, the book which was acknowledged as the course book for the 5th grade of Turkish primary schools for five years as of the school year of 2016-2017 upon the decision by the Board of Instruction and Education of the Ministry of National Education of Turkey (Decision Date: May 25, 2015, Decision No: 34) was analyzed (MNE, 2015).

Research Sample

Of purposive sampling techniques, the criterion sampling was utilized in the study. Purposive sampling offers the opportunity to undertake deep analysis of cases which are considered to be rich in information. Therefore, it is useful for the exploration and description of phenomena and cases. In criterion sampling, the researcher identifies sampling units in the context of a series of criteria specified previously (Yıldırım & Şimşek, 2005, cited from Patton, 1987). As indicated in Table 1, the reason for the selection of the 5th grade in the research pertains to the fact that the number of relationships established with other courses is the highest in this grade. This study analyzed the parts which included achievements establishing relationships with other courses in the 5th grade social studies course book.

Table 1. Number of Relationships Established with Other Courses in Social Studies Curriculum of 2005 by Grade Year

Grade year	Turkish	Math	Science	Total
5	3	6	1	10
6	-	2	3	5
7	2	1	3	6
Total	5	9	7	21

Data Collection Tool and Analysis

As the data collection tool, a criteria table was prepared. In the organization of the table of criteria, each item was created with attention paid to all elements (activity, annotation, images, questions and so on.) used for establishing relationships between courses and literature on interdisciplinary instruction. These items were arranged on the basis of views of a measurement & evaluation specialist and a specialist of social studies instruction, and the course book was analyzed as per this table of criteria. In Table 2, a sample of the table of criteria was presented.

Table 2. A sample of the table of criteria for identifying whether relationships with science course were inserted into social studies course book

	Yes	No
Relationships with Science Course was established through the following:		
1- Images		
2- Written elements		
3- Questions		
……		

Data analysis pertains to the organization of collected data so as to develop an understanding of experiences and lessons learnt from experiences (Glesne, 2015). In this research, content analysis was employed for the examination of data. Content analysis can be utilized to reveal themes and highlight relationships between these themes which cannot be observed in collected data but can be perceived through conceptual coding and categorization, in other words, to find answers to questions of 'why' and 'how' (Yıldırım & Şimşek, 2005). In this study, social studies course book for the 5th grade of primary school was addressed. The study was performed in the school year of 2016-2017. The path to be taken in content analysis is as follows: Firstly, achievements which established relationships with other courses (Turkish language, mathematics and science) in social studies curriculum were identified. The researchers embarked on the analysis process by calling attention to the categorization of images, written elements and questions which were presented on the table of criteria. Codes were created as to how achievements establishing relationships with courses of Turkish language, mathematics and science were included in social studies course book, and codes considered to be related to each other were synthesized and categorized into themes. As themes were not specified in advance, but designated later during the analysis process by the researcher, content analysis was employed. A social studies teacher who was enrolled in graduate program of social studies instruction and took the course on qualitative research methods participated in the process of content analysis. During the phase of analysis, it was checked if researchers and social studies teacher had consensus on the access to codes and themes. Data obtained through research were presented in detail and submitted in their original forms as findings.

Findings

Findings on the 1st Sub-Goal

In the research, attempts were made in order to identify how relationships with Turkish language course were included in social studies course book in the context of the 1st sub-goal. Findings on this sub-goal were presented below:

Findings Obtained from Social Studies Course Book in Relation to Turkish Language Course

Table 3. Elements in which relationships with Turkish language course were established in the 5th grade social studies course book

Interrelated Achievements of Social Studies and Turkish Language Courses		Findings on Relationships in Social Studies Course Book
Turkey Step By Step 5. By presenting proofs, it compares the daily life in Turkey before and after the introduction of revolutions of Atatürk, the founder of the Republic of Turkey.	☐ For the 5th achievement, area of learning of 'Visual Reading' of Turkish language course (2nd, 3rd and 6th achievements)	Images Table and chart Inquisitive question
World of All of Us 3. It discusses the effect of communication and transportation technology on economic relations between countries.	☐ For the 3rd achievement, area of learning of 'Speaking', speaking well-suited to types, methods and techniques (2nd achievement)	Preliminary question Inquisitive question Evaluation question
Dreams Coming True 5. It recognizes and follows up periodicals which are related to science & technology and well-suited to student's development level.	☐ For the 5th achievement, area of learning of 'Reading', reading well-suited to types, methods and techniques (9th achievement)	Preliminary question Poster images Text content

As per information on Table 3, the topic of 'Modernizing Turkey' of the unit titled 'Turkey Step By Step' is on pages 42-45 of the course book. The relationship of this topic was established with the learning area of 'Visual Reading' of Turkish language course. 10 images, one table and one chart which exist in social studies course book reflect the relationship supposed to be established with

Turkish language course. Of questions in the course book, an inquisitive question is relevant to the reading of data in the chart and table. In comparison to other topics covered by the course book, there are a large number of images for this topic. This can also be considered as the reflection of the establishment of relationship.

The topic of 'Communication and Transportation in International Trade' of the unit titled 'World of All of Us' is on pages 164-165. The relationship of this topic was established with the learning area of 'Speaking' of Turkish language course. One preliminary question, one evaluation question and one inquisitive question on the topic at the bottom of the page exist in social studies course book. The presence of various questions on this topic in the course book motivates students to have discussions on the topic. As this situation is likely to enable students to express their own views verbally, it is deduced that the relationship was established with learning area of 'Speaking'.
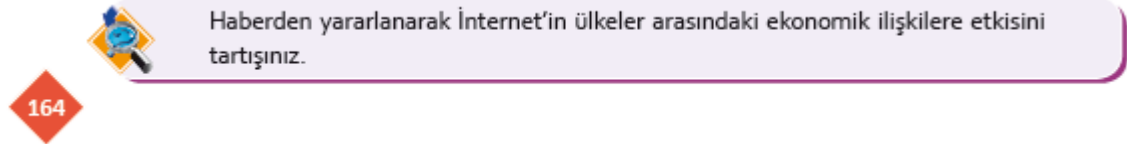
Please discuss the effect of internet on economic relations between countries by utilizing the news.

Figure 1. Example of the establishment of relationship with learning area of 'Speaking' of Turkish language course in social studies course book

The topic of 'Trip to the Science World Through Journals' of the unit titled 'Dreams Coming True' is on page 112. At the beginning of the topic, in the form of a preliminary question, there is a question on the uses of reading journals appropriate to the development level. It was concluded that the relationship was established by this question with Turkish language course in social studies instruction program. Again, two poster images capture attention as visual elements related to journals which are supposed to be read by students.

Findings on the 2nd Sub-Goal

In the research, attempts were made in order to identify how relationships with mathematics course were included in social studies course book in the context of the 2nd sub-goal. Findings on this sub-goal were presented below:

Findings Obtained from Social Studies Course Book in Relation to Mathematics Course

Table 4. Elements in which relationships with mathematics course were established in the 5th grade social studies course book

Interrelated Achievements of Social Studies and Mathematics Courses		Findings on Relationships in Social Studies Course Book
Turkey Step By Step 5. By presenting proofs, it compares the daily life before and after the introduction of Atatürk's revolutions	⬚ For the 5th achievement, learning sub-area of 'Line Chart' of mathematics course (1st and 2nd achievements)	Table and chart Inquisitive question
Let's Get Acquainted With Our Region 3. It establishes relationships between locations which are densely populated by human beings residing in the region and region's geographical characteristics.	⬚ For the 3rd achievement, learning sub-area of 'Summation Operation With Natural Numbers' of mathematics course (4th achievement) ⬚ For the 3rd achievement, learning sub-area of 'Subtraction Operation With Natural Numbers' of mathematics course (4th achievement)	Preliminary question Inquisitive question Map legend
What We Produce 4. It offers an evaluation on the place of region's economic activities in country's economy.	⬚ For the 4th achievement, sub-area of learning of 'Line Chart' of mathematics course (1st and 2nd achievements)	Chart Inquisitive question
Once Country, One Flag 1. It recognizes the existence and importance of laws regulating the societal life.	⬚ For the 1st achievement, sub-area of learning of 'Probability' of mathematics course (3rd achievement)	-
World of All of Us 4. It gives examples of elements of common heritage existing across several countries.	⬚ For the 4th achievement, sub-area of learning of 'Geometrical Objects' of mathematics course (1st achievement)	Images Text content

The topic of 'Modernizing Turkey' of the unit titled 'Turkey Step By Step' whose relationship is established with sub-area of learning of 'Line Chart' of mathematics course is on pages 42-45 of the course book. In the course book, there existed a chart and again a table concerning the topic. Also, an inquisitive question likely to help the interpretation of chart and table is at the bottom right-hand corner of table and charts. Departing from these findings, it was deduced that the establishment of relationship was reflected in the course book.
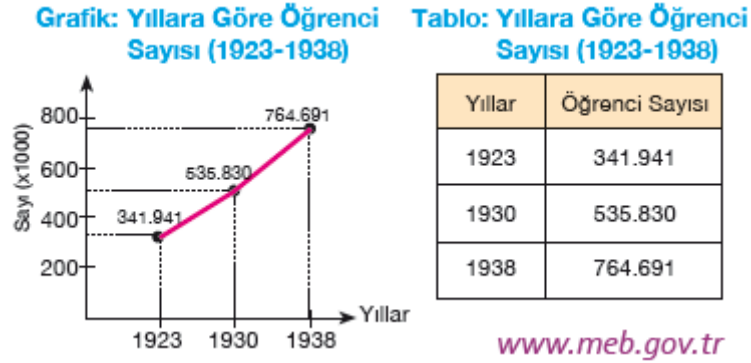
Chart: Number of Students by Year (1923-1938)
Table: Number of Students by Year (1923-1938)
Figure 2. Example of the establishment of relationship with sub-area of learning of 'Line Chart' of mathematics course in social studies course book

The topic of 'Locations Where Human Beings Reside' of the unit titled 'Let's Get Acquainted With Our Region' is on pages 60-61 in social studies course book. The relationship of this topic was established with sub-areas of learning of 'Summation Operation With Natural Numbers' and 'Subtraction Operation With Natural Numbers' of mathematics course. Under the topic title, one question on the population density was asked as the preliminary question for the unit. A map showing the approximate population density of Turkish provinces in numbers was provided in a way to cover two pages of the course book. There is a legend on the map in order to indicate the value of population density in numbers expressed by symbols. It can be asserted that, on the basis of map legend, the relationship offered in the curriculum is reflected in the course book, even though indirectly, via teacher directions. At the bottom left-hand corner of the map, the most populous provinces and their populations according to the available information were provided via a table. Moreover, there is an inquisitive question on the image. So that the student can read the map, table and charts, he/she will be obliged to carry out mathematical operations with natural numbers. Departing from these findings, it is concluded that relationships with sub-areas of learning of 'summation with natural numbers' and 'subtraction with natural numbers' of mathematics course were indirectly reflected in the course book.
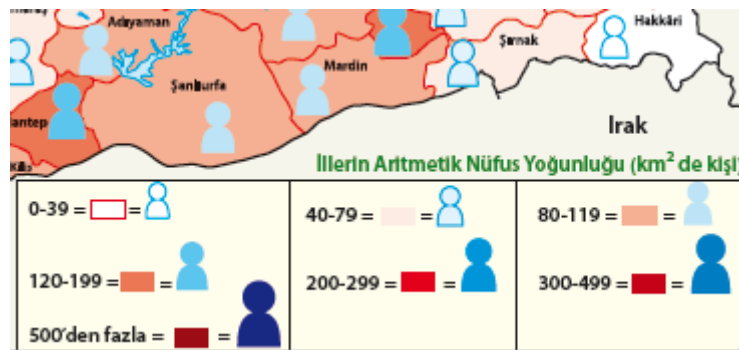
Figure 3. Example of the establishment of relationship with mathematics course in social studies course book

The topic of 'Place of My Region's Economy in the Country' of the unit titled 'What We Produce' whose relationship is established with sub-area of learning of 'Line Chart' of mathematics course is on pages 88-89 in social studies course book. This topic is quite rich in terms of both its content and its images & charts in the course book. Pie charts, column charts and line charts present statistics about the topic.   Departing from this point, it is deduced that the achievement whose

relationship was established with mathematics course in social studies curriculum was reflected in the course book.

The topic of 'In Order To Live Together' of the unit titled 'One Country, One Flag' is on pages 136-139 in social studies course book. The relationship of this topic was established with the sub-area of learning of 'Probability' of mathematics course in social studies curriculum. However, in the course book, there existed no relationship established with this topic.

The topic of 'Common Heritage of Humankind' of the unit titled 'World of All of Us' is on pages 166-169 in social studies course book. The relationship of this topic was established with sub-area of learning of 'Geometrical Objects' of mathematics course. There exist 12 images about the topic in the course book. By asking students to examine some of these images, it is possible to establish relationship with geometrical objects in social studies curriculum. For instance, students can be asked to make comments about the shape of pyramids through the image of Egyptian pyramids, and so relationship with mathematics course can be established. Furthermore, the text just above images of Egyptian pyramids is well-suited to the establishment of relationship with mathematics course. In other words, the establishment of relationship depends on the teacher. Therefore, it is deduced that images partially provided the establishment of relationship.

Mısır Piramitleri, firavunların mezarı olarak inşa edilmiş, yüzeyleri üçgensel bölgelerden oluşan piramit şeklindeki yapılardır. Aşağıdaki görselde dünyanın en büyük piramidi olan Keops'un yer aldığı Gize Piramitleri görülmektedir.

Gize Piramitleri, Mısır

Figure 4. Example of the establishment of relationship with sub-area of learning of 'Geometrical Objects' of mathematics course in social studies course book, p. 166.

Findings on the 3rd Sub-Goal

In the research, attempts were made in order to identify how relationships with science course were included in social studies course book in the context of the 3rd sub-goal. Findings on this sub-goal were presented below:

Findings Obtained from Social Studies Course Book in Relation to Science Course

**Table 5**. Elements in which relationships with science course were established in the 5th grade social studies course book

Interrelated Achievements of Social Studies and Science Courses		Findings on Relationships in Social Studies Course Book
Let's Get Acquainted With Our Region 2. It explains the effect of climate which is dominant in the region on human activities by giving examples from daily life.	⬭ For the 2nd achievement, unit titled 'Change of Matter and Its Identification' of Science and Technology Course (1. 1 achievements)	Preliminary question, Image, Annotation

The topic of 'Climate and Human Life' of the unit titled 'Let's Get Acquainted With Our Region' is on pages 58-59 in social studies course book, and the relationship of this topic was established with the unit titled 'Change of Matter and Its Identification' of Science and Technology

Course. One of the preliminary questions pertains to air temperature and is important as it prepares the student for the relationship to be established with science topics. In the section reserved for annotation which presents the most essential information on the topic, there exists one annotation for the achievement, the relationship of which is established with science as per the social studies instruction program. This annotation is about a science term, and its presence in social studies course book reflects the establishment of relationship.
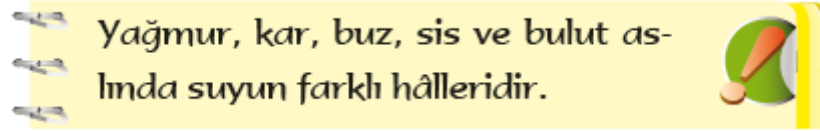
Figure 5. Example of the establishment of relationship with the unit titled 'Change of Matter and Its Identification' of Science and Technology Course in social studies course book

Discussion, Results and Recommendations

In this research, the 5th grade social studies course book was analyzed in terms of interdisciplinary approach which is well-suited to the modern understanding of education. As per research results, in social studies curriculum for the 5th grade of primary school, three achievements were proposed for establishing relationships with Turkish language course and relationships for all three achievements were included in the social studies course book. One achievement was proposed for establishing relationship with science course and this relationship was included in the social studies course book. Five achievements were proposed for establishing relationships with mathematics course and relationships for all achievements, except one achievement, were included in social studies course book. Relationships between courses were established through questions, written materials or images in social studies course book.

Interdisciplinary relationship which is intended to be established between the topic of 'Modernizing Turkey' of social studies course and the area of learning of 'Visual Reading' of Turkish language course is included in social studies course book. Elements establishing the relationship on this topic are images, table & charts and inquisitive questions. In courses like social studies course which frequently necessitates the delivery of content verbally, content which is delivered with images is likely to be more practical and long-lasting for students. Therefore, visual reading is an area for establishing relationship with Turkish language course. Visual reading is the area which gets progressively more important and receives acknowledgement as the fast development of tools such as TV and computer changes the learning style of individuals, and most people prefer acquiring information through visual instruments to reading written documents. Along with the thinking that this would be more common in the future, Visual Reading and Visual Presentation were for the first time addressed as a separate area of learning in Turkish Language Curriculum of 2005 for the 1st to 5th grades (Güneş, 2013).

Interdisciplinary relationship which is intended to be established between the topic of 'Trip to the Science World Through Journals' of social studies course and the area of learning of 'Reading' of Turkish language course is included in social studies course book. Elements establishing the relationship on this topic are the preliminary question, poster images and text content. One of the reasons for students not to be interested in activities conducted for the enhancement of language skills pertains to that such activities are performed in isolation from other areas. It is inconceivable to anticipate success in such activities or courses in which students adopt negative attitudes. In this situation, the way to make students enjoy such activities is to incorporate language activities into other areas, and it will be reasonable to make attempts to encourage students to like activities that they dislike by establishing connections with different courses and receiving support from other courses enjoyed by them (Öztürk, Keskin & Otluoğlu, 2014). As it is likely that the establishment of relationships between Turkish language and social studies courses will raise the interest of students in these courses, including such activities in course books becomes crucial.

Interdisciplinary relationship which is intended to be established between the topic of 'Communication and Transportation in International Trade' of social studies course and the area of learning of 'Speaking' of Turkish language course is included in social studies course book. Elements

establishing the relationship on this topic are the preliminary question, inquisitive question and evaluation question. Achievements of social studies course pertain to processes such as reading, understanding and comprehending, and these achievements can be attained via proficiency in language skills. Skills in Turkish language such as reading, speaking and writing are important to the development of competencies like expressing yourself under the topic of communication in social studies course. Moreover, upon the review of primary school instruction programs, it is discerned that the skill covered by all courses is the skill in successful and effective use of Turkish language. The basis of this is about understanding the mother tongue perfectly and thus developing the capability to understand all that are lectured in each course. Just as Turkish language course is addressed in relationships established with other courses, addressing it in a relationship to be established with social studies course is important (Kanatlı & Çekici, 2013).

Interdisciplinary relationship which is intended to be established between the topic of 'Modernizing Turkey' of social studies course and the sub-area of learning of 'Line Chart' of mathematics course is included in social studies course book in the form of charts and inquisitive questions. However, charts and tables are small in size and this situation makes it difficult to analyze the charts. Even if this is all about the physical feature of the course book, it is referred to as a finding because it affects the content and research topic. This chart and table pertain to both the relationship established with mathematics course and the relationship established with visual reading in Turkish language course. That is why, the examination of images is quite important hereby. In the study by Aladağ and Şahinkaya (2013), almost half of prospective social studies and primary school teachers reported that it was difficult to establish relationship between the achievement which stated that "By presenting proofs, it compares the daily life in Turkey before and after the introduction of Atatürk's revolutions." and the achievement obtained from the sub-area of learning of 'Line Chart' of mathematics course. Thus, so as to facilitate the establishment of relationship, it is thought that it is important to include activities which will assure the establishment of this relationship between mathematics and social studies courses in course books and student workbooks.

The relationship between the topic of 'Locations Where Human Beings Live' of social studies course and sub-areas of learning of 'Summation Operation with Natural Numbers' and 'Subtraction Operation with Natural Numbers' of mathematics course is established in social studies curriculum. However, it is deduced that this relationship is indirectly included in the course book which is analyzed.

Interdisciplinary relationship which is intended to be established between the topic of 'Place of Region's Economy in the Country' of social studies course and the sub-area of learning of 'Line Chart' of mathematics course is included in social studies course book. The relationship on this topic was established with chart and inquisitive questions. The relationship between the topic of 'In Order to Live Together' of social studies course and the sub-area of learning of 'Probability' of mathematics course is established in social studies curriculum. However, in the course book, there was no finding indicating the establishment of relationship between these achievements.

Elements which are supposed to establish the relationship between the sub-area of learning of 'Geometrical Objects' of mathematics course and the topic of 'Common Heritage of Humankind' of the unit titled 'World of All of Us' are partially available in social studies course book. Elements establishing the relationship on this topic in the course book are images about Egyptian pyramids and texts providing explanations on images. Information on Egyptian pyramids is presented in the text. Teacher can emphasize that students learnt characteristic features of pyramids in mathematics course or can raise questions which will enable students to use their existing knowledge base on pyramids. Thus, students will perceive that knowledge base they developed in a course would be useful in another course and throughout entire life. Teacher's role, experiences and the level of knowledge are highly important hereby.

Interdisciplinary relationship which is intended to be established between the unit titled 'Change of Matter and Its Identification' of science course and the topic of 'Climate and Human Life' of social studies course is included in social studies course book in the form of a preliminary question and annotation. The relationship between achievements of science and social studies courses can be established on several topics not only on the topic referred to in social studies curriculum. Area of learning of 'Science, Technology and the Society' of social studies course and most parts of science

course are related to each other. Achievements regarding scientific process and achievements regarding science, technology and society are components of both courses (Bektaş &Çakal, 2006). In the instruction of topics addressed within the area of learning of 'Science, Technology and the Society' of social studies course, the lecturing of topics with references to science course through various examples to be given from science course is important to ensuring a meaningful learning process (İmamoğlu & Çeken, 2011). The topic of 'Climate and Human Life' in social studies course is a unit which includes information relevant to the discipline of geography. The geography is one of the most suitable disciplines, by its nature, for the establishment of interdisciplinary relationships. Geography exists just in the middle of natural sciences and social sciences and plays a connective role. The design of new primary school instruction programs was based on the interrelationship of primary school courses, and geography course was evaluated from this perspective. On the basis of its natural and human processes, geography is a discipline establishing links between natural sciences and social sciences. This situation gave rise to the inclusion of several concepts into topics covered by the science of geography. A highly large vocabulary came into existence along with the use of terms unique to both this science and other sciences. This is the basis of lecturing geography topics in courses of life sciences, natural sciences and social studies in accordance with primary school curricula (Kızılçaoğlu, 2006; Turan, 2002; Engin, Akbaş & Gençtürk, 2003). Therefore, topics and concepts such as the climate, temperature, precipitation and evaporation which make up the content of geography course are linked with science course and so both social sciences and natural sciences need to use the terms and findings of each other. The teacher who lectured on topics of geography also needs to talk about science as the discipline of geography is structured in a way directly requiring the establishment of relationships with other courses.

Recommendations

In this part, recommendations were presented for specialists, practitioner teachers and researchers in charge of preparing course books.

The area of learning of 'Reading' in Turkish language curriculum was presented as a skill supposed to be developed for succeeding in other courses and areas. Teachers of social studies and other courses should pay attention to this recommendation in their instruction programs and must guide their lectures by being aware that the development of this skill is not only the responsibility of teachers of Turkish language, but also the duty of all teachers. Besides, even if it is found that there are elements which are likely to focus the attention of students on reading in course books, there should be recommendations of books to be read by students on topics in course books. Other reading suggestions can also be made by teachers themselves.

Relationships referred to in social studies curriculum were included in the course book. Nevertheless, the establishment of most of these relationships depends solely on the emphasis to be placed on the topic by the teacher and the way in which the teacher addresses the topic. For instance, the relationship of the achievement asserting that "The student evaluates the place of region's economic activities in the economy of country." was established with the sub-area of learning of 'Line Chart' (1st and 2nd achievements) of mathematics course. These are achievements alleging that "The student creates the line chart." and "The student interprets the line chart.". Even if line charts are addressed in the course book, it is necessary for teachers to be aware of this relationship and to create a setting in which students will draw line charts in the context of the topic. It is essential that teacher challenge students with guiding questions, illustrative cases or problem situations to encourage them to make comments about these charts. In other words, just including relationships in the course book is not alone satisfactory, but how the course book is utilized by the teacher as a material is also crucial. As guide books were removed from the curriculum along with the update introduced in 2018, there is no element to lead the way for the teacher in this respect. Thus, this issue can be emphasized both in pre-service and in-service educations of teachers.

Establishing relationships was evaluated on the basis of simultaneity, in other words, it was necessary to lecture simultaneously the topics in order to establish relationship between two achievements referred to in the curriculum. As the lecturing of courses with an interdisciplinary approach is important to the fulfillment of meaningful learning, it is essential to establish relationships of topics which are not lectured at the same time. In other words, the establishment of relationships not referred to in the curriculum should be undertaken by the teacher in order to make the course more

effective. When topics are addressed, the interdisciplinary approach should be taken into consideration even if it is not required either by the course book or curriculum. Even though there was no part addressing the establishment of relationships between courses in social studies curriculum updated in 2018, the importance of interdisciplinary approach was stressed in the curriculum. It is indispensable that teachers and course book authors continue to establish relationships with other courses and the life itself when they present the topics to students. In this sense, through new studies, it can be revealed to what extent social studies course books prepared on the basis of curriculum of 2018 adopt an interdisciplinary approach. Not only social studies course books, but also science, mathematics and Turkish language course books can be analyzed, and in what sense the relationships between these courses and social studies course are established can be evaluated. In order to observe the practices in social studies course at classrooms, case studies or action researches covering interdisciplinary studies can be performed.

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The Study of the Relationship between Teachers' Perceptions of School Culture, Organizational Commitment and Their Resistance to Change

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Abstract

The aim of the study is to examine the relationship between teachers' perceptions of school culture, their organizational commitment and resistance to change. The data of this study in the correlational survey model were collected from 455 teachers working in the central districts of Mersin. In the study, " Teachers' Organizational Commitment Scale " was used to determine the organizational commitment of teachers, and "Resistance to Change Scale" to determine their resistance to change and "School Culture Scale" to determine their perceptions of school culture. Correlation and multiple regression analysis were employed to analyze the data. According to the results, it was revealed that there was a positive and medium-level significant relationship between teachers' perceptions of school culture and their organizational commitment, and a weak relationship between perceptions of school culture and their resistance to change. Also, it was concluded that school culture significantly predicted organizational commitment, but not resistance to change.

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Introduction

It is known that the precondition for societies to maintain their own existence and to follow the developments is the human resources that they raise in accordance with their own purposes. Schools, which are a sub-system of education systems, fulfil the most important function in the process of raising the required human resources. Unlike other organizations, the educational organizations directly serve people. In order for the school to fulfil these functions, it must both keep up with the functioning of the society in which it lives and also bring together its own unique components (Ada & Ayık, 2013). This structure, which has been built up by the school, creates its own culture. Culture is a complex concept that expresses the life style of a group and separates them from others (Güçlü, Yıldırım, & Daşçı, 2016). While the school ensures the socialization of individuals on the one hand, it should, on the other hand, transfer the existing culture of the society from one generation to the next and have a positive organizational culture in order to create permanent behaviours in the desired direction (Korkut & Hacıhafızoğlu, 2011). It is known that the cultural pattern of schools is largely a function of the interaction between the upper system, school staff and their immediate environment (Güçlü, Yıldırım, & Daşçı, 2016). School culture is a special element of perceptions, beliefs and thoughts that play a determining role in increasing the motivation of employees and in better learning of students (Özdemir, 2012). It is evident that the school culture has a great influence on the students' academic success, socialization, gaining democratic attitudes and behaviours and school efficiency. Today, it is a fact that schools are of great importance in carrying the society to the future, therefore schools should have an effective corporate culture (Korkut & Hacıhafızoğlu, 2011). Organizational culture is defined as a concept showing how to do things in the organization or how to behave within the organization, which has taken many years to develop and also is difficult to change (Tunçer, 2013). A strong culture created within the organization will enable employees to act more enthusiastically and selflessly for the goals of the organization. In addition, organizational culture is expected to closely affect many behaviours of employees. For example, it is expected that, in a positive organizational culture, negative organizational behaviours such as alienation and burnout decrease while job satisfaction, organizational citizenship behaviour and organizational commitment are expected to increase. In addition, in organizations with a positive culture, when there is a need for change, conflicts within the organization that will cause resistance to change are not expected to occur. In organizations with a positive culture, it is expected that the expectations that change will take the organization further increase, which, after all, will support change process in these organizations. As the commitment of the employees in organizations to their work, organization and other employees increases (Sezgin, 2016), it is expected that negative behaviours will diminish and the effectiveness and efficiency will increase. Karakullukçu (2015) states that, in order to achieve their goals, organizations need employees who are firmly committed to the functioning, values and beliefs of the organization, who identify with the organization, who see themselves as a part of the organization and adopt the aims and interests of the organization as their own goals and interests. For this reason, organizations have to satisfy their existing employees and try to increase their organizational commitment. It was emphasized by many researchers that one of the organizational behaviors that will emerge as a result of organizational culture is organizational commitment (Ng, Butts, Vandenberg, Dejoy, & Wilson, 2006; Sezgin, 2010; Tamer, İyigün, & Sağlam, 2014; Yücel & Koçak, 2014). As a concept and a form of understanding, commitment exists wherever there is a sense of society and is an emotional expression of social instinct (Karakullukçu, 2015). When the literature is examined, it is seen that many definitions have been made on organizational commitment. Tamer, İyigün, and Sağlam (2014) describe organizational commitment as determining the values and goals of the organization as a result of employees' identification with their organization, making effort in line with values and goals, and the employee's desire to work in the organization. Organizational commitment shows up as an attitude that reflects the employee's loyalty to the organization, and a process that sustains the interest of organization members to the success and well-being of the organization (Northcraft & Neale, 1996). Organizational commitment is also the way of behaviour that affects employees' continuing to work in their institutions due to their desire, need or moral necessity (Meyer & Allen, 1991). On the other hand, Neves and Caetano (2006) define organizational commitment as the degree to which an individual identifies himself / herself with the organization and participates in the organization. It is apparent that organizational commitment develops positively with the active

participation of the employee in the management processes in the work environment, the sense of trust in the organization, and the support and appreciation of the work of the employees. Commitment to the organization means that the employee sees himself/herself as a part of the organization. Yenigürbüz (2017) explains that employees with high organizational commitment will be affected more quickly by the changes in the organizational process. While the concept of organizational commitment expresses continuity, innovation is at the core of the concept of change. Change is defined as the transition of a system from a certain state to another in a planned or unplanned manner (Ince, 2005; Polat, 2003). Organizational change, on the other hand, refers to all kinds of changes that may occur in the employees, subsystems or in their interrelations and also in the relations between the organization and its environment (Polat, 2003). It is widely accepted that, in the competitive environment that develops rapidly with globalization, it is closely related to the ability of organizations to increase their power and to produce services and products in accordance with the requirements of the age and to manage change processes well. Today, it is seen that organizations encounter some problems while managing the change process. One of these problems faced by organizations is resistance to change. Resistance to change is related to the attitude of employees towards change as well as its scope and content (İnandı, Tunç & Gılıç, 2013). Many employees are initially unwilling and resistant to change. No organization is expected to survive in a constantly changing world. In order to keep the organization alive and achieve its goals successfully in the face of changes in the internal and external environment, it is necessary to closely monitor the change and make necessary arrangements without delay (Gılıç, 2015). An attempt to establish a new order is difficult, dangerous and its success is also doubtful (Can, 2009). Change can create resistance in the employees within the organization. All friction, conflict, grouping and separations in the organization can be gathered around the axis of change (Çalık, 2003). Therefore, the change process must be managed very well in order to achieve a healthy change in order for organizations to survive.

While it is known that the rapid and continuous change in the world affects both the society and the organizations, schools, as a strategic sub-system where educational services are produced and offered, are also affected by social changes and transformations (Şişman and Taşdemir, 2008). In this sense, schools both influence the environment as the pioneers of change and are also affected by the changes in the environment. If educational organizations fail to develop strategies to analyze and manage the new situation brought about by change, and if they do not have the competence to manage change, they are likely to face many problems (İnandı et al., 2015). Therefore, schools are expected to be affected by the changes, and the change is known to be a must within the school.

Relationship between School Culture, Organizational Commitment and Resistance to Change

Culture is of great importance both in changing the social structure and shaping organizations. Demirtaş and Ekmekyapar (2012) state that culture provides people with feelings and intuitions about what they have to do and how they should behave by creating behavioral patterns in society. It is known that culture is basically a set of values and judgments that are accepted by a group of people. This set of values and assumptions determines what is right or wrong, what is good or bad, and affects the attitudes and behaviours of the group (Çakır, 2007). School culture, on the other hand, is described as a combination of the school's unique values, beliefs and norms (Özdemir, 2012). As in every organization, the school has a unique cultural structure. The school's unique value judgments take shape over time, develop and gain a structure specific to that school by creating a culture. If the existing culture in an organization is strong, there is less need for bureaucratic procedures, and planning and decision-making processes become easier (Şimşek & Altınkurt, 2010). According to Sezgin (2010), standardization of the practices and processes within the organization enables an appropriate working environment for the employees of the organization and increases organizational efficiency. Gören and Yengin Sarpkaya (2014) state that organizations can achieve their productivity with the knowledge, skills and efforts of their employees. For this reason, it should be kept in mind that, as in every organization or institution, such concepts as value, belief, culture and commitment are of great importance at schools in terms of achieving the organizational functions and goals (Öztuğ & Baştaş, 2012). Based on this, it is thought that the quality of the product and service is directly related to the commitment level of the employees (Gören & Yengin Sarpkaya, 2014). The concept of

commitment is defined as adopting the goals and values of the organization, making an effort to be a part of the organization, and feeling like a member of a strong family (Özdevecioğlu, 2003). It is known that one of the most important factors for organizations to maintain their existence effectively is the employees who show high level of commitment to their organization. Employees with high organizational commitment adopt the goals and values of the organization they work with, make great efforts for the organization and feel more willing to stay in the organization (Gören & Yengin Sarpkaya, 2014). As the organizational commitment of employees increases, it becomes easier for them to adopt organizational goals and identify themselves with the organization, their sense of sacrifice increases, they continue voluntarily in the organization and they can fulfill their roles effectively (Öztuğ & Baştaş, 2012). Low organizational commitment causes individual and organizational negativities such as being late for work, absenteeism, low performance, quitting job and not accepting change (Gül & İnce, 2005).

Culture, which has an important role in social shaping, seems to be the subject of many scientific fields today and it is thought to be important for change (Gizir, 2008). The organizational culture shaped by the contribution of social culture causes the individual to change behaviorally with the inclusion of a new group. If the organizational culture does not have the necessary flexibility to accept change, then it prevents change. For this reason, culture that should accelerate change can become the source of organizational problems and resistance to change (Tunçer, 2013). At this point, the individual affected by the organizational culture reflects this interaction on the social processes. Emphasizing that organizational culture has a strong effect on behavior and relationships within the organization, Gılıç (2015) states that organizational culture will determine the readiness level of the organization for change. Resistance to change occurs when employees do not believe in the necessity of change, think that change will harm them and the organization, and adopt a negative attitude towards change (Çalık, Koşar, Kılınç, & Er, 2013). For this reason, it is considered that it is vital for the members of the organization to adapt to the organization and to adopt the organizational culture, and it is a common knowledge that the group dynamic within the organization is effective in many practices and decisions. Considering that the organizational culture is the norms, behaviors, beliefs and habits that direct the behavior of individuals and groups within the organization (Polat, 2003; Şişman, 2014), it would not be wrong to say that it is closely related to change.

The fact that perception of a strong school culture to be created in educational institutions will affect teachers' organizational commitment and attitudes towards resistance to change has emerged as an issue that needs to be examined. In studies conducted so far, school culture, organizational commitment and resistance to change have been handled either alone or as binary variables (Sezgin, 2010; Çelik, 2014; Gürbüz, 2017), thus, there is no study in the literature that examines the relationships between teachers' perceptions of school culture, organizational commitment and resistance to change together. This study is important in this aspect as it differs from other studies on the subject. That is because organizations are structures consisting of individuals from different ideas and cultures. In order for this structure to achieve its goals, it is important to reveal how the practices within the organization are perceived by the employees, the degree to which education staff adapt to the school culture, and the extent to which school culture has an impact on teachers' organizational commitment and resistance to change. For this reason, this research is also important in terms of unveiling to what extent the perceptions of teachers on school culture are effective on their organizational commitment and resistance to change. The aim of this study is to examine the relationships between elementary school teachers' perceptions of school culture and their level of organizational commitment and their resistance to change.

Method

Research Model

This study was conducted in the correlational survey model, investigating whether there is a significant relationship between teachers' perceptions of school culture, their organizational commitment and their resistance to change, and whether teachers' perceptions of school culture predict their organizational commitment and resistance to change. Relational research is a non-experimental research study designed to explain whether there is a relationship between two or more variables and

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what kind of relationship it is, as well as to make predictions about variables (Christensen, Johnson & Turner, 2010). Survey models aim to describe the past or present situation in its current form. A cause-effect relationship cannot be established in the relationships found by the survey, but it gives some clues in this direction and gives results that can be useful in predicting the other variable if the situation in one variable is known (Karasar, 2007). Correlational survey model is considered appropriate for studies consisting of comparison and relationship questions (Glinier, Morgan & Leech, 2015).

Population and Sample

The population of the study consists of 3690 teachers working in elementary schools in the central districts of Mersin (Akdeniz, Toroslar, Yenişehir and Mezitli) in the 2018-2019 academic year. The sample of the study is comprised of 455 teachers working in elementary schools in these four central districts of Mersin. The sample of the research has been chosen from the population by disproportionate sampling. According to Saunders, Lewis and Thornhill (2009), the sample of this research is at 95% confidence level and 5% error range in line with the sample calculation for the population whose size is definite. From this point on, it can be said that the sample size is large enough for this research. Detailed information about the number of teachers according to gender, education status, professional seniority variables and their percentage rates in the sample can be seen in Table 1.

Table 1. Distribution of the sample by gender, education status and seniority variables

Demographic Features		*n*	*%*
Gender	Female	263	57.8
	Male	192	42.2
Education Status	Associate Degree	68	14.9
	Undergraduate	357	78,5
	Master's Degree	30	6.6
Seniority	1-5 years	47	10.3
	6-10 years	72	15.8
	11-15 years	81	19.1
	16-20 years	168	36.9
	21 years or over	18	2.7
	Total	455	100

According to Table 1, 263 (57.8%) of the teachers constituting the sample are female and 192 (42.2%) are male. In terms of their education status, 68 (14.9%) of the teachers are associate degree, 357 (78.5%) are undergraduate, and 30 (6.6%) are graduate. Lastly, 47 of the teachers participating in the study (10.3%) are between 1-5 years of seniority, 72 (15.8%) are between 6-10 years, 81 (17.8%) are between 11-15 years, 87 ' (19.1%) 16-20 years, 168 (36.9%) 21 years or more seniority.

Data Collection Tools

School Culture Scale

This scale, which was developed by Terzi (2005) consists of 29 items and four sub-dimensions: support, achievement, bureaucratic and task culture. (Sample item: I feel committed to this school since the work is assigned to the true people.) The scale is a 5-point Likert type, ranked between "never" and "always". The arithmetic mean was used in the analysis of the data, and there is no reverse code item. Factor analysis was done to test construct validity of the scale. Factor loads of 8 items in support culture vary between .501 and .736, and Cronbach alpha coefficient was found .88. Factor loads of 6 items in achievement culture vary between .482 and .719, and Cronbach alpha coefficient was found .82. Factor loads of 9 items in bureaucratic culture vary between .443 and .736, and Cronbach alpha coefficient was found .76. Lastly, factor loads of 6 items in task culture vary between .563 and .672, and Cronbach alpha coefficient was found .74. Cronbach alpha coefficient of the scale itself was found .84. In this study, Cronbach alpha coefficient for School Culture Scale as a whole was found .91.

Organizational Commitment Scale

Teachers' Organizational Commitment Scale, developed by Üstüner (2009), contains 17 items and is of single-dimension. (Sample item: Enough effort is made to achieve the goals of the school.) The scale is intended to determine the level of school commitment of elementary school teachers. The scale is evaluated according to the total score. The lowest score to be obtained from the scale is 17 and the highest score is 85, and it is expected that the score to be obtained from the scale will increase as the teachers' sense of commitment increases. The scale is a 5-point Likert type, ranked between "never" and "always". The arithmetic mean was used in the analysis of the data, and there is no reverse code item. The factor loads of the items in the scale vary between .440 and .860. The Cronbach Alpha coefficient of the scale is .92. In this study, the Cronbach alpha coefficient for the whole scale was found to be .97.

Resistance to Change Scale

The Resistance to Change Scale, developed by Oreg (2003), was adapted into Turkish by Bayazit (2003). The scale consists of 17 items and four dimensions. (Sample item: I generally think the changes are negative.) The scale is a 6-point Likert type, ranked between "strongly agree" and "strongly disagree". The arithmetic mean was used in the analysis of the data, and there are reverse code items. According to international validity analysis of the scale, factor loads for routine seeking vary between .44 and .70; for emotional reaction, between .54 and .7; for short term focus, .49 and .72; and for cognitive rigidity, .48 and .68. The Cronbach Alpha coefficient of the scale is .70. In this study, the Cronbach alpha coefficient for the whole scale was found to be .82.

Analysis of Data

The analysis of the data was carried out in two stages. In the first stage, the data were examined in terms of missing or incorrect values, and outliers. In the second stage, sub-problems of the study were analyzed. In the incorrect value analysis, the values that were thought to be entered incorrectly were corrected. In order to analyze the sub-problems in the study, firstly, the arithmetic mean values of the items in each sub-scale were found and a final score was calculated for that factor. Analyzes were made on these factor scores. Pearson correlation analysis was conducted to determine whether teachers' perceptions of school culture have a significant relationship with their organizational commitment and resistance to change. Regression analysis was conducted to reveal whether school culture predicts organizational commitment and resistance to change. The significance level in the study was taken as 0.05.

Findings

Relationship between School Culture and Organizational Commitment

Table 3. Correlation Analysis Results about the Relationship between School Culture and Organizational Commitment

	1	2	3	4	5	Mean	Sd
Organizational Commitment	1					3,627	1,00
Support Culture	,762**	1				3,783	,802
Success Culture	,590**	,796**	1			3,840	,899
Bureaucratic Culture	,279**	,384**	,380**	1		3,297	,687
Task Culture	,506**	,611**	,557**	,454**	1	4,179	,639

**p = 0,01
*p = 0,5

According to the findings in Table 3, it is seen that there is a positive relationship between the support culture (r=0.762; p<0.01) and organizational commitment. Success culture (r=0.590; p<0.01) and task culture (r=0.506; p<0.01) have a positive and medium-level relationship with organizational commitment. Lastly, there is a weak but positive correlation between the bureaucratic culture (r=0.279; p<0.01) and organizational commitment.

Relationship between School Culture and Resistance to Change

Table 4. Correlation Analysis Results about the Relationship between School Culture and Resistance to Change

	1	2	3	4	5	6	7	8	Mean	Sd
Task Culture	1								4,179	,639
Bureaucratic Culture	,454**	1							3,297	,687
Success Culture	,557**	,380**	1						3,840	,899
Support Culture	,611**	,384**	,796**	1					3,783	,802
Routine Seeking	,083**	,186**	,052	,051	,118*	1			2,651	,885
Emotional Reaction	,127*	,138**	-,045	-,005	,061	,395**	1		3,449	1,067
Short Term Focus	,069	,125**	,015	,044	,080	,453**	,572**	1	2,869	1,143
Cognitive Rigidity	,046	,051	,012	-,027	,022	,359**	,391**	,396**	3,789	,892

**p = 0,01
*p= 0,05

According to the findings in Table 4, task culture was found to have a significant but low-level relationship with emotional response (r=0.127; p<0.01) and routine seeking (r=0.083; p<0.05), which are sub-dimensions of resistance to change. However, task culture has no significant relationship with short term focus (r=0.069; p>0.05) and cognitive rigidity (r=0.046; p>0.05). Bureaucratic culture, which is another sub-dimension of school culture, has a significant but low-level relationship with routine seeking (r=0.186; p<0.01), emotional reaction (r=0.138; p<0.01) and short term focus (r=0.125; p<0,01) while it has no significant relationship with cognitive rigidity (r=0.051, p>0,05). Success culture of the school culture has no significant correlation with routine seeking (r=0.052; p>0.05), emotional reaction (r= -0.045; p>0.05), short term focus (r=0.015; p>0.05) and cognitive rigidity (r=0.012; p>0.05). Similarly, support culture also has no significant correlation with routine seeking (r=0.051; p>0.05), emotional reaction (r=-0.005; p>0.05), short term focus (r=0.044; p>0.05) and cognitive rigidity (r= -0.027; p>0.05).

School Culture's Prediction of Organizational Commitment

Table 5. Regression Analysis Results Related to Prediction of School Culture on Organizational Commitment

Variables	B	SE	B	T	P
Constant	-0,161	0,212	-	-0,757	0,450
Support Culture	0,130	0,064	0,083	2,045	0,041
Success Culture	-0,049	0,051	-0,033	-0,964	0,336
Bureaucratic Culture	-0,061	0,057	-0,054	-1,063	0,288
Task Culture	0,962	0,067	0,767	14,419	0,000
	R= ,765	R^2= ,585	F= 158,879		p< 0,05

The results of multiple regression analysis for the support, bureaucratic, task and success culture, which are considered to be the predictors of teachers' perceptions of organizational commitment, are shown in Table 5. According to the findings, there is a high level and significant relationship between teachers' perceptions of school culture, in all four sub-dimensions, and their organizational commitment levels (R=0.765; R^2=0.585; p< ,05). These four sub-dimensions of school culture together explain 58% of the total variance in organizational commitment. According to the standardized regression coefficient (β), the relative importance order of the predictive variables on organizational commitment was found as "task culture", "support culture", "success culture" and "bureaucratic culture". When the t-test results regarding the significance of the regression coefficients are examined, it is seen that the dimensions of "task culture" and "support culture" are significant

predictors on organizational commitment. However, "success culture" and "bureaucratic culture" do not have a significant prediction on organizational commitment.

School Culture's Prediction of Resistance to Change

Table 6. Regression Analysis Results Related to Prediction of School Culture on Resistance to Change

Variables	B	SE	B	T	P
Constant	2,457	0,232	-	10,608	0,000
Support Culture	0,113	0,069	0,101	1,632	0,103
Success Culture	0,175	0,055	0,167	3,166	0,002
Bureaucratic Culture	-0,059	0,062	-0,073	-0,945	0,345
Task Culture	-0,040	0,073	-0,044	-0,548	0,584
	R= ,193	R^2= ,037	F= 4,340	p<0,05	

The results of multiple regression analysis for the support, bureaucratic, task and success culture, which are considered to be the predictors of teachers' perceptions of resistance to change, are shown in Table 6. According to the findings, there is a low level but significant relationship between teachers' perceptions of school culture, in all four sub-dimensions, and their levels of resistance to change (R=0.193; R^2=0.037; p< ,05). These four sub-dimensions of school culture together explain 3% of the total variance in resistance to change. According to the standardized regression coefficient (β), the relative importance order of the predictive variables on resistance to change was found as "success culture", "support culture", "bureaucratic culture" and "task culture". When the t-test results regarding the significance of the regression coefficients are examined, it is seen that the "success culture" dimension is a significant predictor on resistance to change. However, "task culture", "support culture" and "bureaucratic culture" do not have a significant prediction on resistance to change.

Discussion, Results and Suggestions

The main purpose of educational organizations is to ensure that students are educated as individuals equipped with the requirements of the time in educational, social and cultural terms. Individuals who are educated in every field can look to the future with confidence and see themselves as a valuable part of society. It is known that the growth of generations that will shape the future and the realization of this ideal are closely related to the positive school culture, the existence of employees with high organizational commitment and the attitudes of employees towards change. In addition, it is observed that employees' commitment and attitudes towards change are also closely related to the dominant culture and climate of the organization. The culture within the organization greatly affects the attitudes and behaviours of the employees and contributes significantly to the increase of commitment, motivation and productivity of employees. It is known that another factor that is effective in realizing the goals of educational organizations and increasing productivity is the attitudes of teachers towards change. Particularly, the employees who have a positive attitude towards change are expected to pave the way for change and development by embracing innovations more easily in the information age. If the importance of school culture and organizational commitment is taken into consideration, it is supposed to contribute to the harmony in the change process. In this context, the results obtained from the findings of the study were discussed in the light of the literature and related researches.

When the relationships between teachers 'perceptions of school culture and their organizational commitment were examined, it was found that teachers' perceptions of support, success, bureaucratic and task culture, which are sub-dimensions of school culture, have a positive and significant relationship with their organizational commitment. When the studies on the subject are examined, the results of the studies conducted by Maral and Öztürk (2015), Çakır (2007) and Çoban (2015) show similarities with the results of this study. Gümüşeli (2006) defines school culture as the set of concrete and abstract elements that affect the attitudes and behaviours of school staff that form the identity of the school. On the other hand, organizational commitment is defined as employees' efforts for the goals and objectives of the organization, embracing the organization's values and willingness to make an effort for the organization (Gülova & Demirsoy, 2012). A strong school culture is expected to integrate employees with organizational goals and contribute to the efforts of the

employees for the organization. As a result of current research findings and literature review, it is seen that a positive school culture contributes positively to the organizational commitment of employees. According to Sezgin (2010), relations between employees in organizations dominated by a support culture are based on trust and are maintained in mutual understanding and loyalty. This statement supports the finding of a positive high-level relationship between the support culture and organizational commitment obtained from this study. In the bureaucratic culture, rational and legal structures come to the forefront, which supports the finding of a weak relationship between organizational commitment and bureaucratic culture. It is seen that an established culture is formed in organizations where common beliefs and values are shared, so individual and organizational integration is stronger, organizational commitment is high, and teachers' organizational commitment is shaped in a positive organizational culture (McDonald & Gandz, 1991). Similarly, it is seen as a result of the study that teachers' perceptions of school culture in the dimensions of support, success and task culture are associated with their perceptions of organizational commitment, and they significantly predict the organizational commitment perceptions of teachers. According to this, in a school where there are teachers with high organizational commitment, who strongly believe in the aims and values of the school, and who are willing to make an effort for the school, the teachers' perceptions towards the development of the school culture also build up positively. It is expected that the harmony between the values of school staff and organizational values will increase organizational commitment and performance. It is seen that one of the important actors of this adaptation process is the school culture that holds school employees together (Tamer, İyigün & Sağlam, 2014). Therefore, it is thought that perception towards school culture can predict teachers' organizational commitment. The results of this research as well as of other studies (Çakır, 2007; Sezgin, 2010; Maral, 2015; Çoban, 2015) on the subject also support this idea.

According to the correlation analysis results regarding the relationship between teachers' perceptions of school culture and their resistance to change, it was concluded that there is a weak correlation between school culture and resistance to change, and that school culture is a low-level but significant predictor of resistance to change. Studies on the subject also support these findings. İnandı and Gılıç (2016) found a very weak relationship between school culture and readiness to change. In the study conducted by Inandi et al. (2015), it was found that teachers' self-efficacy has a negative relationship with short-term focus dimension of resistance to change, but no significant relationship with the dimensions of routine seeking, emotional reaction and cognitive rigidity. Unlike the findings of this study, Demir (2019) found that school administrators' ability to manage the change has a positive and high relationship with school culture and its sub-dimensions, except for bureaucratic culture. In addition, Kulu (2007) concluded that there is a significant relationship between teachers' reactions to change and the dimensions of school culture. Ada and Ayık (2013) simply define school culture as a combination of ideals, values, assumptions, beliefs and attitudes that bring the school community together. Karabal (2018) states that resistance to change manifests itself in individual or organizational dimensions. The individual structure of resistance to change, its depiction of itself in the form of covert resistance, and organizational culture, as one of the most fundamental factors of the change process and if not having the necessary flexibility for accepting change, can all create an obstacle to change. This situation can be regarded as one of the reasons why school culture does not significantly predict resistance to change. In addition, the dynamic structure of the schools and the excessive personnel circulation, which prevents the formation of an established culture, may be the reason for the weak relationship between the resistance to change and the school culture.

As a result, it can be said that a positive school culture will improve the organizational commitment of the teachers positively. The reason for the weak relationship between teachers 'perceptions of school culture and their level of resistance to change can be attributed to the teachers' having different feelings and thoughts or the influence of individual factors, which is one of the sources of resistance to change. In addition, it should be kept in mind that organizational commitment is not the only thing that predicts resistance to change, but also the suitability of the work environment, the leadership style of administrators, the perception of trust and justice, or psychological, economic and social factors are closely related to resistance to change.

Based on the findings obtained from the study, emphasis should be given to personnel empowerment activities by strengthening a management approach based on human relations in order to create a positive organizational culture in schools, to increase the organizational commitment of employees and to reduce resistance to change. It should not be forgotten that the employees with high organizational commitment will feel themselves as a part of the organization, which is important for the organization to adapt to the change process. Therefore, in order for organizations to accept the changes that will keep up with the requirements of the time, emphasis should be put on a positive school culture and activities to increase the organizational commitment of the employees.

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Investigation Of Teachers' Emotional Labour And Organizational Alienation Behaviours[1]

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Abstract

The aim of this research was to analyze the relationships between emotional labour behaviours and organizational alienation behaviours of secondary school teachers according to some variables. In the study, Emotional Labour Scale developed by Chu and Murrmann (2006) and adapted into Turkish by Kıral (2016) and Organizational Alienation Scale developed by Eryılmaz (2010) were used to search for the behaviors of secondary school teachers. The study universe consists of secondary school teachers who work in the public secondary schools of İzmir in Karşıyaka, Bornova, Bayraklı and Gaziemir districts in 2018-2019 academic year. The sample consisted of 342 secondary school teachers who were selected by the easily accessible sampling method. According to findings of the research, secondary school teachers emotional labour was highest on surface acting dimension and it was followed by genuine acting and deep acting dimensions. According to the age variable of secondary school teachers, it was found that the dimensions of genuine acting and deep acting differed significantly. According to the professional seniority variable of secondary school teachers, surface acting and deep acting dimensions have been found significantly different. According to the level of organizational alienation of the secondary school teachers, the highest average score is the dimension of powerlessness, normlessness, isolation, self-estrangement and meaninglessness respectively. According to the gender variable of secondary school teachers, the dimensions of powerlessness and isolation differed a significantly. It was found that male participants have higher average scores in both powerlessness and the isolation dimensions of organizational alienation compared to women participants of the study.

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Introduction

With the transition of the globalizing world to, the advancement of technology and science constitutes an important element for the economic and social progress of organizations. Emotions of employees have positive or negative reflections in terms of organizational effectiveness. The efforts of organizations to shape and manage the emotions of the employees made the concept of emotional labour crucial in the field of organizational behaviour. Employees in organizations are expected to reflect their emotions, not only by using their physical but also mental and emotional labour. Recently, the growth and development of the service sector has made emotional labour indispensable for many professions. One of these professions is the teacher profession. The more important the effective use of knowledge and skills in the teaching profession make the management of emotions of teachers as vital. Teachers' emotional labour behaviour can be defined as the degree of mismatch between emotions actually felt and repressed. The reason for this is that teachers perform a profession that requires them to constantly interact and communicate with their stakeholders.

Teaching is a profession where emotional labour is used very intensively (Aydın, 2016). The teaching profession also requires the management of emotions as part of their work. Emotions suppressed in educational organizations affect teachers' self-esteem and social life. Nevertheless, factors such as rapid and intense developments in technology, competition conditions among organizations, performance pressure and the adoption of work-based understanding can cause employees to experience negative feelings such as alienation from their professions (Yüksel, 2014). Alienation, which is expressed as a concept that includes negative feelings and thoughts of individuals against private and social situations, emphasizes the effects of social structure on personality. Alienation in organizations may have negative effects on employees in commitment to their professions. The disagreements between teachers' labour role and values, aims and needs are seen as indicators of alienation. The alienation experienced in educational organizations is not only at the individual level but also has the effect of the organizational structure. It was seen that there is a relationship between teachers' organizational alienation levels and emotional labour, productivity, organizational involvement, professional commitment and performances (Averberk, 2016; Polatkan, 2016).

Emotional Labour

Emotional labour; it is a form of labour in which workers organize their emotions in order to fulfill the emotional needs of the organization (Hochschild, 1983; Ashforth & Humphrey, 1993; Grandey, 2000). The concept of Emotional Labour was first used by the American sociologist Hochschild (1983) in the book: The Managed Heart: Commercialization of Human Feeling, which investigates the behaviour of airline workers. According to Hochschild (1983), emotional labour is defined as mental and physical management of emotions as required by the profession. Morris & Feldman (1996) described emotional labour as effort, planning, and control that employees use to demonstrate the emotions desired by the organization during interpersonal processes. According to Grandey (2000), emotional labour may involve increasing, imitating or suppressing emotions to make emotional changes. According to Hochschild (1983), works involving emotional labour have three common characteristics; the first requires employees to communicate with people face to face, the second with body language and the third with voice communication. Hochschild (1983) in her study, she describes the working environment to scene, employees; actors and service areas. From this point of view, the actors should convey the role required by the play to the audience sincerely and naturally and take on the desired identity (Eroğlu, 2010).

 Hochscild (1983) stated that emotional labour is exhibited in two dimensions; these are defined as surface acting and deep acting. Suface acting refers to the behavior of the employee by "wearing a mask" even though she does not feel it, the behaviors displayed in the image (Çoruk, 2014). The surface acting describes the presentation of imperceptible emotions through gestures, tone of voice, and mimics. Deep acting represents; experiencing or suppressing the emotion as it wants to feel. Thus, surface acting focuses on extraverted behaviour, while deep acting role focuses on internal emotions. The focus is on how the employee should feel at work, rather than focusing on rules that lead to the display of rules, which are a function of social norms, professional norms and

organizational norms (Hochschild, 1983). Ashforth & Humphrey (1993) added the dimension of genuine acting in addition to Hochschild's surface acting and deep acting. It is parallel to the feelings that the organization expects from them without changing the feelings that employees actually feel.

Emotional Labour in Educational Organizations

Today, the interest in the concept of emotional labour in educational organizations has been rising gradually. Besides, emotional labour is seen as one of the essential quality to contribute the effectiveness of service sector (Seçer, 2005). Although the term 'emotional labour' is used more often to describe the feelings of employees in the service sectors, it has been found that teaching is a profession that requires much more intensive emotional labour than the others (Zheng et al., 2018). Teachers are one the influential factors of the social structure in educational organizations. A teacher is a person who not only transfers information to students but also shows positive attitudes and emotions to their students and school community. Thus, a teacher not only uses physical but also emotional and mental labour in performing his / her profession. So, teachers perform a high level of emotional labour in their duties at schools (Ye & Chen, 2015). Teachers are constantly interacting and communicating with school stakeholders through emotional labour (Kıral, 2016). Emotional formations affect the quality of education and training in educational organizations. Although the priority in teaching profession focuses on expertise and teaching knowledge but the recent research has shown that teaching is widely an emotional practice (Hargreaves, 1998; Brown, 2011). In this context, education and training is not only a "technical initiative'' but more than this (Zembylas, 2004).

Teachers perceive surface acting as an obligation and act reluctantly but deep acting role in the dimension of emotional labour is a necessity for teachers to exhibit the emotional behaviours required by the profession (Aydın, 2016). Teachers' ability to correctly manage how they feel and the emotions required by the profession can have a positive impact on their commitment and performance. Therefore, the positive display of teachers' emotions has a priority on the effectiveness and goodness of the school.

Concept of Alienation

When the literature on alienation is examined, it is understood that the concept started with Hegel (Ofluoğlu & Büyükyılmaz, 2008). Following Hegel, philosophers such as Feuerbach, Marx, Marcuse, Mills, Fromm and Seeman, respectively, appear to have alienation theories (Tekin, 2010; Averberk, 2016).

Schacht (1970) stated that, alienation is an individual situation of separation of some other elements in their environment. According to Miller (1975), alienation is the objective state of loneliness made by others. Alienation can be defined as a state of psychological separation from the profession that does not have the potential to meet the prominent needs and expectations of the person (Kanungo, 1979). On the other hand, Horrowitz (1966) defined alienation as a separation from the objects of the world first, second from people and thirdly from other people's thoughts. Alienation can be accepted as a phenomenon where people start living together and need each other and can create a continuous agenda both in past and present-day organizational structures (Şimşek et al., 2006). Alienation means the loss of interest of the individual towards the values and environment of the society and an attitude towards the world. The concept of alienation is generally an action or development that alienates one person or the others from another and makes it alien to another (Aydoğan, 2015).

Seeman's first attempt to clarify the concept of alienation after World War II and made it to measurable dimensions by empirical research (Emir, 2012). Seeman stands out with his research on alienation and especially focuses on the alienation of individuals living in society with their personal aspects. Seeman defined (1959) socio-psychological aspects of alienation and evaluated the social situations that constitute the five types of alienation and their consequences. These are powerlessness, meaninglessness, normlessness, isolation and self-estrangement. *Powerlessness;* is an effort to develop an expectation or probability that an individual's own behavior cannot determine the results as intended. Powerlessness in educational organizations can be defined as the absence of teachers in

decision-making at all levels of the educational process. *Meaninglessness* is defined as the fact that the employee cannot make sense between the actions and the aims, does not know which truths to believe or does not understand what to be connected. *Normlessness* is the person's tendency towards behaviours that are not accepted by the society in achieving the specified goals (Kahveci & Demirtaş, 2014). *Isolation* is the minimization or termination of an individual's relationship with a community. The values, beliefs and behavior norms of the community have been defined as the exclusion or disregard of what is the continuation of an individual's life (Brooks et al., 2008). *Self-estrangement* is the fourth and final form of alienation as "loss of internal meaning and self-decline (Seeman, 1959).

Organizational Alienation in Educational Organizations

Teachers have significant responsibilities to provide students with a qualified education, to guide them to the right goals, and to help them grow as individuals who are beneficial to society and themselves (Averberk, 2016). Teachers have a profound impact on the personality and future of students so the schools and the society. It is problematic for teachers who are alienated from their profession to be helpful to students in critical period in terms of learning and personality development (Yıldız et al., 2013). Largely centralization and bureaucratic structural elements are seen among the causes of alienation, (Nair &Vohra, 2010). In addition, economic problems, teaching in the combined large classrooms, intensive curriculum the continuous change in the educational system can be defined as the causing factors of teachers' alienation (Erjem, 2005). As a result of the researches (Elma, 2003; Averberk, 2016; Brooks et al. 2008), the high level of organizational alienation experienced by teachers can prevent their commitment and loyalty to their profession and negatively affect the organization's productivity, effectiveness and success, and therefore the teachers' performance can be reduced (Eryılmaz, 2010).

In this case, the purpose of this research is to investigate the emotional labour behaviours and organizational alienation behaviours of teachers working in secondary schools. Teachers' emotional labour behaviours and organizational alienation behaviours should be investigated as crucial factors in the capacity, creativity and performance of educational organizations. Organizational alienation in educational organizations is thought to be a negative factor on productivity and performance in the teaching profession. Furthermore, it is aimed to investigate the emotional labour behaviours and organizational alienation behaviours of secondary school teachers according to gender, age, branch, professional seniority and education level. Accordingly, the problem of this research is determined as whether the emotional labour and organizational alienation behaviours of secondary school teachers differ significantly according to gender, age, branch, professional seniority and educational status.

Method

Research Design

In this study, descriptive survey model was used to determine the relationship between emotional labour behaviours and organizational alienation behaviours of secondary school teachers.

Research Group

The study universe consists of 3081 the teachers working in secondary schools of Bornova, Karşıyaka, Bayraklı and Gaziemir districts of İzmir. The sample of the study including 342 secondary school teachers represent the study universe with a level of α = .05. The distribution of secondary school teachers who participated in the study according to gender, age, education level, branch and professional seniority variables were examined in Table 1.

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Table 1. Frequency and Percentages of Secondary School Teachers According to Various Variables

Demographic variables	Factors	n	%
Gender	Female	210	61.4
	Male	132	38.6
	Total	342	100.0
Age	25 and below	16	4.7
	26 -30	29	8.5
	31-35	60	17.5
	36-40	103	30.1
	41 and above	134	39.2
	Total	342	100.0
Educational level	Undergraduate	266	77.8
	Graduate	76	22.2
	Total	342	100.0
Branch	Social Science	189	55.3
	Math and Science	123	36.0
	Skill courses branch	30	8.8
	Total	342	100.0
Professional seniority	1-5	29	8.5
	6-10	37	10.8
	11-15	82	24.0
	16-20	87	25.4
	21 and above	107	31.3
	Total	342	100.0

As shown in Table 1, 210 (61.4%) of the secondary school teachers were female and 132 (38.6%) were male. As the ages of the teachers participating in the study were examined, the number of teachers aged 25 and under was 16 (4.7%); the number of teachers between the ages of 26-30 was 29 (8.5%); the number of teachers in the 31-35 age range was 60 (17.5%) and the number of teachers in the 36-40 age range was 103 (30.1%); the number of teachers aged 41 and over is 134 (39.2%). As the education level of the teachers participating in the study is examined, it is seen that 266 (77.8%) are undergraduate and 76 (22.2%) are graduates. As the branches of the teachers participating in the study were examined, the number of teachers in the social science (Turkish, English, Social Studies) was 189 (55.3%); the number of teachers in the math and science (Mathematics, Science and Technology and Information Technologies) is 123 (36.0%) and the number of teachers in the skill courses branch (Visual Arts, Physical Education and Music) is 30 (8.8%). In terms of professional seniority, the number of teachers who have seniority of 1-5 years is 29 (8.5%); 37 (10.8%) of the teachers have a seniority of 6-10 years; 82 (24.0%) teachers with 11-15 years of seniority; 87 (25.4%) teachers with 16-20 years of seniority and the number of teachers with seniority of 21 years and over is 107 (31.3%).

Instruments

The first part of the instrument personal information consists of gender, age, branch, professional seniority and educational status. In the study, *Emotional Labour Scale* developed by Chu & Murrmann (2006) and adapted into Turkish by Kıral (2016) and *Organizational Alienation Scale* developed by Eryılmaz (2010) were used to search for the behaviors of secondary school teachers. The internal consistency coefficients for the overall and sub-scales of the Emotional Labour Scale ranged from 0.71 to 0.90. and Cronbach alpha coefficient of Organizational Alienation found as 0,94 for the whole scale. It is accepted that reliability co-efficient with 0.70 and over is regarded as reliable.

Data Analysis

In order to measure the emotional labour and organizational alienation behaviors of the secondary school teachers, descriptive analysis; percentage, arithmetic means, frequency, standart deviation, and to find out the differences between the variables, t-test, ANOVA and Kruskal Wallis tests were used (p>0.5 value is statistically significant). In order to determine the differences in organizational alienation and emotional labour scales according to gender variable, t-test was used for independent samples, and Anova test was used to determine differences in organizational alienation

and emotional labour scales according to age, branch, professional seniority variables. Scheffe and Mann Withney tests were performed to determine the differences between the groups.

Findings

Arithmetic means of emotional labour levels of secondary school teachers in surface acting, genuine acting, and deep acting were examined in Table 2.

Tablo 2. Emotional Labour Levels of Secondary School Teachers

Emotional Labour Levels	N	$\bar{x}$	SS
Surface acting	342	5,5463	1,37599
Genuine acting	342	5,4103	1,22038
Deep acting	342	5,1058	1,35626
Valid N (listwise)	342		

As shown in Table 2, the level of emotional labour in which secondary school teachers had the highest average score was surface acting dimension ($\bar{x}$ = 5,5463), while genuine acting ($\bar{x}$ = 5,4103) and deep acting ($\bar{x}$ = 5,1058) respectively.

According to the age variable, the surface acting, genuine acting and deep acting behaviours of secondary school teachers' emotional labour levels were examined in Table 3.

Table 3. Kruskal Wallis Test Results Of Secondary School Teachers' Emotional Labour Levels According to Age Variable

Variables	Age	N	$\bar{x}$	X^2	df	p	
Surface acting	(1)25 and below	16	153,69		4		
	(2)26-30	29	151,83		337	,110	
	(3)31-35	60	164,67	4,838	342		
	(4)36-40	103	166,09				
	(5)41 and above	134	185,10				
Genuine acting	(1)25 and below	16	184,31		4		3-5
	(2)26- 30	29	182,74		337		4-5
	(3)31-35	60	150,05	11,541		,010*	
	(4)36-40	103	154,49				
	(5)41 and above	134	190,22				
Deep acting	(1)25 and below	16	267,94		4		1-2
	(2)26-30	29	190,90		337		1-3
	(3)31-35	60	147,35	20,255	342	,003*	1-4
	(4)36-40	103	170,68				1-5
	(5) 41 and above	134	167,23				2-3

*p<.05   **p<.01   ***p<.001

As shown in Table 3, as Kruskal Wallis test results were examined the surface acting dimension of secondary school teachers did not show significant difference according to age variable (X ^ (2 =) 4,838,897; p> 0.05), whereas genuine acting (X ^ 2 = 11,541; p <0.01) and deep acting (X ^ 2 = 20,255; p <0.01) dimensions were found to be significantly different. Mann Withney was applied in order to determine the source of the difference.

According to Mann Withney test results the genuine acting dimension of secondary school teachers shows a significant difference between 36-40 years and 41 years and older age groups. According to the average scores of secondary school teachers, the highest average of the genuine acting variable was 41 years and over (X ^ 2 = 190,22) and the lowest average in the 31-35 age group (X^ 2 = 150.05).

The deep acting role of secondary school teachers shows a statistically significant difference between the age group 25 and below and the groups 31-35, 36-40 and 41 and over. The highest mean

score in the deep acting variable of secondary school teachers existsin the age group 25 and below ($\bar{x}$ = 6.2625), while the lowest mean score exists in the age group 31-35 (X^2 = 147.35). It can be estimated that secondary school teachers aged 41 and over are more outstanding in the process of showing emotional labour compared to secondary school teachers aged 25 and 31-35.

The emotional labour levels of secondary school teachers in the dimensions of surface acting, genuine acting and deep acting according to professional seniority variable were examined in Table 4.

Table 4. Kruskal Wallis Test Results of Emotional Labour Levels of Secondary School Teachers According to Professional Seniority Variable

Variables	Professional seniority	N	$\bar{x}$	X^2	df	p
Surface acting	(1)1-5	29	189,66		4	
	(2)6-10	37	155,81			,516
	(3)11-15	82	166,99	4,417		
	(4)16-20	87	161,99			
	(5)21 and above	107	183,19			
Genuine acting	(1)1-5	29	190,97		4	
	(2)6-10	37	157,91			,393
	(3)11-15	82	155,75	7,512		
	(4)16-20	87	164,98			
	(5)21 and above	107	188,29			
Deep acting	(1)1-5	29	218,76		4	
	(2)6-10	37	165,95			
	(3)11-15	82	160,41	8,593		,050
	(4)16-20	87	163,36			
	(5) 21 and above	107	175,73			

*p<.05   **p<.01   ***p<.001

As shown in Table 4, Kruskal Wallis test was conducted to determine whether the emotional labour levels of secondary school teachers show the significant difference between surface acting and deep acting according to professional seniority. The genuine acting dimension of secondary school teachers did not show significant difference (X^2 = 7,512; p> 0.05).

However, surface acting (X^2 4,417; p <0.05) and deep acting (X^2 = 8.593; p <0.05) showed significant difference according to professional seniority. In the surface acting of emotional labor behaviours of secondary school teachers, secondary school teachers whose professional seniority is between 1-5 years and 16-20 years, and those whose professional seniority is between 16-20 years and 21 years' teachers showed significant differences (p <.05). Emotional labour behaviors of secondary school teachers were significantly different in terms of deep acting whose occupational seniority was between 1-5 years and 11-15 years and between 1-5 years and 16-20 years (p <.05).

The arithmetic means of organizational alienation levels of secondary school teachers in powerlesness, meaninglessness, normlessness, isolation, self-estrangement were examined in Table 5.

Table 5. Organizational Alienation Levels of Secondary School Teachers

Variables	N	($\bar{x}$)	SS
Powerlesness	342	2,0283	,74646
Meaninglessness	342	1,4538	,61808
Normlessness	342	1,9656	,66469
Isolation	342	1,7885	,74859
Self-estrangement	342	1,5175	,62336
Valid N (listwise)	342		

As shown in Table 5, the level of organizational alienation, where teachers had the highest average score was powerlessness dimension ($\bar{x}$ = 2,0283), normlessness ($\bar{x}$ = 1,9656), isolation ($\bar{x}$ = 1,7885), self-estrangement ($\bar{x}$ = 1.5175) and the lowest average score as meaninglessness ($\bar{x}$ = 1.4538).

Organizational alienation levels of secondary school teachers according to the gender variable were examined in Table 6.

Table 6. t-test Results of Organizational Alienation Levels of Secondary School Teachers According to Gender Variable

Variables	Gender	N	$\bar{x}$	SS	Sd	t	p
Powerlessness	Male	132	2,1586	,83517	340	2,581	,010
	Female	210	1,9463	,67414			
Meaninglessness	Male	132	1,5227	,66420	340	1,639	,102
	Female	210	1,4105	,58472			
Normlessness	Male	132	2,0133	,62572	340	1,050	,294
	Female	210	1,9357	,68784			
Isolation	Male	132	1,8914	,75916	340	2,025	,044
	Female	210	1,7238	,73632			
Self estrangement	Male	132	1,5682	,67267	340	1,192	,234
	Female	210	1,4857	,58970			

*p<.05   **p<.01   ***p<.001

As shown in Table 6, according to the results of independent group t test to determine whether organizational alienation levels of secondary school teachers didn't show a significant difference in gender variable; meaninglessness (t = 1,639; p> 0.05), normlessness (t = 1,050; p> 0.05) and self-estrangement (t = 1,192; p> 0.05). Powerlessness (t = 2,581; p <0.05) and isolation dimensions (t = 2,025; p <0.05) differed significantly between male and female secondary school teachers. It is seen that male secondary school teachers have higher average scores in both powerlessness dimension and isolation dimension than female secondary school teachers.

Organizational alienation levels of secondary school teachers according to the age variable were examined in Table 7.

Table 7. Kruskal Wallis Test Results of Secondary School Teachers' Organizational Alienation Levels According to Age Variable

Variables	Age	N	$\bar{x}$	X^2	df	p	
Powerlessness	(1)25 and below	16	99,13		4		
	(2)26-30	29	193,67			,044*	1-2
	(3)31-35	60	169,69	11,014			
	(4)36-40	103	180,57				
	(5)41 and above	134	169,18				
Meaninglessness	(1)25 and below	16	101,00		4		
	(2)26- 30	29	185,55			,171	1-3
	(3)31-35	60	191,83	11,843			
	(4)36-40	103	170,00				1-4
	(5)41 and above	134	168,93				1-5
Normlessness	25 and below	16	159,88		4		
	26-30	29	208,45				
	31-35	60	168,06	7,687		,121	
	36-40	103	181,31				
	41 and above	134	158,89				

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Table 7. Kruskal Wallis Test Results of Secondary School Teachers' Organizational Alienation Levels According to Age Variable (Devamı)

Variables	Age	N	$\overline{x}$	X^2	df	p
Isolation	25 and below	16	143,56		4	
	26-30	29	186,67			
	31-35	60	159,42	3,867		,276
	36-40	103	180,74			
	41 and above	134	169,86			
Self-estrangement	25 and below	16	121,78		4	
	26-30	29	194,90			
	31-35	60	168,88	6,864		,292
	36-40	103	167,25			
	41 and above	134	176,81			

As shown in Table 7, organizational alienation in the meaninglessness dimension ($X^2 = 11.843$; p> 0.05), normlessness ($X^2 = 7,687$; p> 0.05), and the dimensions of isolation ($X^2 = 3,867$; P> 0.05) and self-estrangement ($X^2 = 6,864$; p> 0.05) did not show significant difference. Powerlessness dimension ($X^2 = 11,014$; p <0.05) showed significant difference according to age variable. There is a significant difference between 25 and below and 26-30 and 36-40 years of secondary school teachers. In the powerlessness dimension is lower in secondary school teachers aged 25 and below, while it is higher in secondary school teachers aged 36-40.

Organizational alienation levels of secondary school teachers according to the branch variable were examined in Table 8.

Table 8. Scheffe Results of Secondary School Teachers' Organizational Alienation Levels According to Branch Variable

Variables	(I) Branch	(J) Branch	$-ij$	$Sh_{\overline{x}}$	p
Meaninglessness	Social science	Math and science	-,02365	,07117	,946
		Skill courses branch	,27984	,12074	,070
	Math and science	Social science	,02365	,07117	,946
		Skill courses branch	,30350	,12509	,054
	Skill courses branch	Social science	-,27984	,12074	,070
		Math and science	-,30350	,12509	,054
Normlessness	Social science	Math and science	-,35163*	,07479	,000
		Skill courses branch	-,06667	,12688	,871
	Math and science	Social science	,35163*	,07479	,000
		Skill courses branch	,28496	,13147	,097
	Skill courses branch	Social science	,06667	,12688	,871
		Math and science	-,28496	,13147	,097

*p<.05   **p<.01   ***p<.001

As shown in Table 8, according to the Scheffe test results, which were used to determine which sub-groups differed according to the branch variable of organizational alienation levels of secondary school teachers. The meaninglessness dimension of secondary school teachers varies significantly different in the math and science and skill courses branches. According to the results of Scheffe test, the meaninglessness dimension is found to be significantly different in skill courses branches. Secondary school teachers differ significantly in the dimension of normlessness according to the social science and math and science. This difference was found to be in favor of secondary school teachers. In terms of meaninglessness, math and science is higher than skill courses branches.

Organizational alienation levels of secondary school teachers according to the professional seniority were examined in Table 9.

Table 9. Kruskal Wallis Test Results of Secondary School Teachers' Organizational Alienation Levels According to Professional Seniority Variable

Variables	Professional Seniority	N	$\overline{\mathrm{x}}$	X^2	df	p	
Powerlessness	(1)1-5	29	116,43		4		1-2
	(2)6-10	37	187,47				1-3
	(3)11-15	82	165,12	12,855		,012*	1-4
	(4)16-20	87	188,34				1-5
	(5)21 and above	107	172,10				
Meaninglessness	(1)1-5	29	143,97		4		
	(2)6-10	37	178,31				
	(3)11-15	82	177,05			,471	
	(4)16-20	87	173,01	2,817			
	(5)21 and above	107	171,13				
Normlessness	(1)1-5	29	183,47		4		
	(2)6-10	37	186,72				
	(3)11-15	82	161,56	3,129		,610	
	(4)16-20	87	178,61				
	(5)21 and above	107	164,83				
Isolation	(1)1-5	29	145,45		4		
	(2)6-10	37	177,04				
	(3)11-15	82	161,56	5,570		,134	
	(4)16-20	87	188,25				
	(5)21 and above	107	170,64				
Self-estrangement	(1)1-5	29	145,97		4		
	(2)6-10	37	178,86				
	(3)11-15	82	185,44	6,195		,481	
	(4)16-20	87	157,86				
	(5)21 and above	107	176,28				

*p<.05   **p<.01   ***p<.001

As shown in Table 9, organizational alienation levels of secondary school teachers according to the seniority variable were meaninglessness ($X \wedge 2 =, 2,817$; $p> 0.05$), normlessness ($X \wedge 2 = 3,129$ $p> 0.05$), isolation ($X \wedge 2 = 5,570$; $p> 0.05$) and self-estrangement ($X \wedge 2 = 6,195$; $p> 0.05$). Organizational alienation of powerlessness ($X \wedge 2 = 12,855$; $p <0.05$) dimension showed significant difference in professional seniority variable. The powerlessness dimension of secondary school teachers was the lowest in secondary school teachers whose professional seniority year was 1-5 years and there was also significant difference in secondary school teachers who are 16-20 years in seniority.

Results, Discussion and Suggestions

As a result of this research, it was seen that the emotional labour levels of secondary school teachers were the highest in the surface acting dimension after the genuine acting and deep acting dimensions respectively. The reason for the higher level of surface acting of secondary school teachers may be due to the fact that they keep their emotions under pressure in the organization and pretend to feel the behaviours that they are expected to show in educational organizations. In the study conducted by Polatkan (2016), it was observed that secondary school teachers were at a higher level with surface acting, genuine acting and deep acting respectively in their research on emotional labour. The emotional labour levels of secondary school teachers show significant differences in genuine acting and deep acting according to age variable. It was concluded that genuine behavior and deep acting dimensions differed significantly in the highest of genuine acting in the 41 year-old group and the lowest in the 36-40 year old group. In the deep acting dimension, the highest mean score belonged to the age group 25 and below while the lowest mean score in the 36-40 age group.

Hochschild (1983) found that the level of emotional labour is significantly higher in individuals who are older in their profession than young people. The reason for the highest dimension in 41 years and older of secondary school teachers may have the knowledge and experience to reflect the emotions they should exhibit in their profession. It was seen that teachers over 41 years of age in educational organizations were more outstanding in exhibiting emotional labour than 25 years and 31-35 years. The emotional labour levels of secondary school teachers in surface acting and deep acting dimensions showed significant differences according to professional seniority variable. The surface acting dimension showed a significant difference between those whose professional seniority years were between 16-20 years and over 21 years. The role of deep acting varied significantly between the years of professional seniority and 1-5 years and 16-20 years. In the surface acting dimension, it was found that the level of professional seniority was lower for the teachers with 16-20 years and higher for the teachers over 21 years seniority. Professional seniority can express more successfully in the representation of emotional labour of teachers.

According to the results of the research, while the highest organizational alienation level of the teachers was in powerlessness dimension, it was followed by normlessness, isolation, self-estrangement and meaninglessness dimensions respectively. Similar to the results of this study, most of the researches related to alienation in educational organizations found the most intense feeling as powerlessness (Çimen, 2018; Averberk, 2016; Eryılmaz, 2010 Elma 2003; Erjem, 2005; Yılmaz & Sarpkaya, 2009). The high level of powerlessness of secondary school teachers can be related to the fact that teachers have lack of control in the management and decision making processes at schools. It was concluded that powerlessness and isolation dimensions differ significantly according to gender and males were higher in both powerlessness and isolation dimensions than women. It can be said that female secondary school teachers in educational organizations have sincerer attitudes and behaviours in their relations with school stakeholders and school administrators.

It was concluded that organizational alienation levels of secondary school teachers showed significant differences in powerlessness dimension according to age variable. The reason for the powerlessness dimension of secondary school teachers was higher in teachers aged 25 and below because the probability of beginning the teaching profession with enthusiasm. It was concluded that organizational alienation levels of secondary school teachers showed significant differences in the meaninglessness and normlessness dimensions according to the branch variable. The results showed

that skill course branch teachers had lower in meaninglessness dimension than math and science branch teachers and social science branch teachers had lower in normlessness dimension than math and science branch teachers. The study revealed that in order to reduce the organizational alienation behaviors of secondary school teachers in educational policy makers should search for the solutions to implement new management strategies at schools.

Suggestions

Suggestions for researchers and practitioners; in order to improve emotion management skills of secondary schools teachers', seminars and activities can be organized by the Ministry of National Education and Universities. In order to minimize the sense of meaninglessness of math and science teachers, approaches that will strengthen the connection between the purpose of the course and real life activities can be added to the curriculum. In order to minimize the surface acting behaviours by suppressing the emotions of secondary school teachers, practical lessons for teacher candidates can be introduced in the teacher training model. According to their professional seniority, secondary school teachers between the ages of 25 and 31-35 trainings should be provided on the content of genuine acting and deep acting behaviors. This research subject can be conducted comparatively to include teachers of private schools and different educational levels and this research can be conducted in qualitative methods.

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Determination of the Attitudes of Postgraduate Students Toward Academic Ethical Values

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Abstract

The aim of this study is to determine the attitudes of postgraduate students toward the academic ethical values. This is a quantitative research that uses the survey model and total of 345 postgraduate students consisting of 272 graduate and 73 PhD students that are studying in the various universities in Turkey in the academic year of 2019/2020 constitute the sampling of this study. To acquire data that is going to be used in the study, "Personal Information Form" which was prepared by the researcher and "Academic Ethical Values Scale" (AEVS) that includes 50 articles in the type of 5 point likert and whose validity and reliability studies have been done were used. As a conclusion of this study, it has been found that the postgraduate students have a mediocre attitude scores toward the academic ethical values. The postgraduate students' attitudes toward the academic ethical values were examined according to the variables of gender, age, mother's educational status, father's educational status, institution and active educational status. In line with the analysis of sub-problems, it has been acquired that the attitudes toward the academic ethical values differs meaningfully according to the gender variable, and does not differ according to the variables of age, mother's educational status, father's educational status, institution and active educational status. As an another conclusion of the study, it has been found that there is a weak relationship between the attitude values of postgraduate students and the variables of gender, age, mother's educational status, father's educational status, institution and active educational status.

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Introduction

Higher education institutions are seen as places that enable individuals to have professions according to their interests with educational services and train scientists who are in charge of producing scientific knowledge. Although these are not the only duties of higher education institutions and the academicians working here, they allow the training of future faculty members with masters and doctoral education. The ability of scientific research methods given to graduate and doctoral students who take the first step towards becoming academicians becomes important at this point (Erdem, 2012). Higher education institutions are seen as places that enable individuals to have professions according to their interests with educational services and train scientists who are in charge of producing scientific knowledge. Although these are not the only duties of higher education institutions and the academicians working here, they allow the training of future faculty members with masters and doctoral education. The ability of scientific research methods given to graduate and doctoral students who take the first step towards becoming academicians becomes important at this point (Erdem, 2012).

Individuals are part of the social environment in which they are located and they have some responsibilities to that environment. Honesty and trust are very important in gaining a place in the society in which individuals are located. Social values are an important place in social life as well as in the academic community where scientific knowledge is produced. Because science also covers the environment and people involved in research not just because of its result benefits society. At this point the scientist's responsibilities to the environment in terms of social values are increasing (TÜBA, 2002). In this context every individual who wants to produce scientific knowledge encounters some rules and ethical principles in research in which living things or living things are involved in the process (Yıldırım and Şimşek, 2016, p.99).

Ethics is a field of philosophy that examines the rules that individuals must follow concerning their behavior in the society in which they are located and the values of the cultural structure in which they are located (Sönmez and Alacapınar, 2011, p.204). According to Kuçuradi (2003) ethics is a logical explanation of how we react to unpredictable events that occur in our daily lives the method that we should follow when conducting research and the posture that we should take in this research by examining with reason. Academic ethics are also involved in the production of scientific knowledge, ensuring the protection of the rights of science, participants, researchers, and society. Neglecting responsibilities related to the professional life of the scientist, their institution, and their work colleagues by not being in harmony with the attitude of disrespect towards the institution to engage in behavior that will erode the credibility of research are observed between the inappropriate use of financial resources in academic unethical behaviors (TÜBA, 2002).

Individuals who produce scientific work have certain responsibilities to the scientific world. These responsibilities are the basic principles that make up the ethics of science and today these principles are used when conducting research in many disciplines. These basic principles;

Honesty: It is the sharing of the results of the study impartially without deflecting the truth and accuracy of the information obtained when the study is started.

Attention: The importance of the work done is to maintain the work in a precise way from beginning to end, showing the necessary sensitivity in this regard without forgetting.

Openness: After impartially sharing the results of the study with the scientific world feedback from readers about the study is thus ensuring the development of scientific knowledge.

Freedom: A scientist is free to observe the rights of other people in doing the work he wants.

Responsibility for Education: It is a situation where you do not only keep information to yourself but also have a say in the education of other people by sharing them.

Social Responsibility: Achieving results that will benefit society.

Legality: At every stage of the research, certain bureaucratic rules must be followed.

Mutual Respect: To take into account the work of colleagues to carry out their communication within the rules of respect.

Efficiency: Information, information sources, most importantly, is the case of efficient use of time.

Respect for Subjects: To prevent harm in studies by not forgetting that subjects participating in the research have a private life (Büyüköztürk, Çakmak, Akgün, Karadeniz and Demirel, 2018, p.29-30).

It is natural that some ethical problems arise in studies in which living beings are involved in the research process but if we conduct the study in accordance with rigor and ethical rules these problems will be minimized. As a matter of fact it seems from time to time that a scientific study in real life does not always progress in this way. In the field this situation is expressed as unethical behavior in science. Types of this behavior;

Undisciplined Research: This is a situation where some problems inadvertently occur in poorly planned and sloppy studies.

Duplication: Sending the work to multiple journals at the same time due to the desire to publish a lot in a short period of time.

Falsification: Defined as the researcher's use of user data to strengthen the results of the study and exclude those that do not work.

Fabrication: This is the conduct of research by changing data by using the desktop method.

Plagiarism: Explained as using ideas that belong to someone else as if they belong to us (Yıldırım and Şimşek, 2016, p.109; Büyüköztürk, et al., 2018, p.31).

In the field of academic ethics national and international studies are conducted for academics, undergraduates, and graduate students. In the study of the relevant field it is seen that undergraduate and graduate students do not have enough knowledge about academic ethical values and hear the concept of plagiarism for the first time. Students agree that copying and passing someone else's work on themselves during a test or exam is an unethical rule. The reasons that push students into unethical situations include ease of research, lack of skills in research methods, anxiety about grades, lack of time, and lack of complete knowledge of what research ethics is, which are the basis of these problems (Köklü, 2000; Thomas, Zly,2012 and Avaroğulları, Ata, 2013). Özden's and Ergin's (2013) study concluded that students behave in accordance with ethical rules. In the study of Yıldırım's and Orhan's (2018) study, it was concluded that students were not fully informed about the issue of academic integrity and felt a lack in this area. A study conducted on students of the Faculty of Education found that 95% of teacher candidates engaged in unethical behavior despite the fact that students were aware that academic irregularities were unethical and thought that this should be prevented (Özden and Özden, 2015).

Research in this area is not only limited to undergraduate and graduate students but also studies have been conducted on academics. Studies have shown that the reasons that drive faculty members to violations of ethical rules are that personal interests due to academic elevation get in the way of science academics consider it unethical to publish an article in multiple journals, to use scales without permission in their studies and not to give citations (Aydın, Şahin and Demirkasımoğlu, 2014; Özder, Işıktaş, and Erdoğan, 2014). In the study of Kırkkılıç, Sevim, and Söylemez (2015), it was found that the scientific research attitudes of academicians were high. In the study of Erdirençelebi's and Filizöz's (2019) they tried to determine whether the perceptions and attitudes of academicians for ethical values differed according to their demographic variables and as a result they found that perceptions and attitudes varied according to demographic variables. It was concluded that plagiarism is the most unethical act in academic studies, and that competition and cooperation between colleagues contrary to research ethics are frequent (Oral, Avcı and Tösten, 2017).

The existence of academic misconduct in universities in America and the UK has been clearly seen in a number of important studies that are even widespread (De Lambert et al.,2006; McCabe,2005; Ashworth et al.,1997). For example, a Web study found significant cases of copying or cheating in written studies in the United States and Canada in surveys with 40,000 undergraduate

students (Ashworth, 1997). A study conducted among graduate students studying medicine found that students argued that it was okay to borrow text from different sources and make it into paragraphs (Ryan et al., 2009). In a study conducted in Turkey, it was determined that there were unfortunately serious ethical problems in the graduate theses written in our country. In the same study, high plagiarism rates of theses and a multi-number of research numbers that often repeat each other also emerged (Toprak,2017).

Today, the number of graduate students in Turkey and their studies are seeing a numerical growth due to the increasing number of universities. When we look at the number of theses entered by the National Thesis Center of the Higher Education Council, it is seen that 21.350 theses were written in 2009, 28.167 in 2014, and 72.846 in 2019 (YÖKTEZ statistics, 2020). This huge increase in numbers begs the question of what the content of theses is like. As a result of Şen's(2012) research on masters and doctoral studies in universities it was seen that theses contained many academic unethical behaviors.

Academic ethical rules are of great importance in ensuring confidence in scientists and scientific knowledge. In the scientific research process, honesty and openness should not be left behind from the beginning to the end of the study, and our thoughts on the studies carried out in the relevant field should be protective of the scientific rights of constructive and other scientists. If an irregularity is detected in the scientific research process, this causes a lack of trust in the researcher who conducted the study and the institution where the study was conducted. Of course, it is natural for such an event to have social consequences. It is inevitable that scientific research will lose its dignity and thus cause science and society to be adverse. The high rates of plagiarism that emerged in the study of Toprak (2017) and Şen(2012) revealing unethical behaviors in theses support this situation. It is thought that determining the attitudes of graduate students who will conduct scientific research in higher education institutions where future academics are trained will benefit the literatüre (TÜBA, 2002).

In this context, the aim of the study is to determine the attitudes of graduate students regarding academic ethical values. Since scientists are part of the social environment in which they live, it is important to investigate the demographic characteristics of graduate students, what education-level family they are raised in and whether they affect the attitudes of the institute in which they study towards academic ethical values. Sub-problems of the study;

•Do attitudes towards academic ethical values differ by gender?
•Do attitudes towards academic ethics differ depend on age?
•Do attitudes towards academic ethical values differ according to maternal education status?
•Do attitudes towards academic ethics differ according to paternal education status?
•Do attitudes towards academic ethics differ according to the institute?
•Do attitudes towards academic ethics differ according to the status of masters or doctorate?
•Is there a meaningful relationship between the attitude values of graduate students?

Methodology

Research Design

This research which aims to determine the attitudes of graduate students regarding academic ethical values is a quantitative study in the survey model. Survey research is a research model in which the status of a group is described as being changed as it is in order to learn the characteristics of a group. The reason why this method is preferred is that it offers the researcher the opportunity to generalization with data obtained from a large number of samples (Büyüköztürk, et al., 2018, p.15)

Study Group

The sample of the study consists of a total of 345 graduate students, including 272 masters and 73 Doctoral students studying at various universities in Turkey in the 2019/2020 academic year. In the research, the convenient sampling method was used as the sampling selection method. The advantage of this method is that it allows the researcher to easily collect data from a sample (Büyüköztürk, et al., 2018, p.95). The data of the research group is presented in Table 1.

Table 1. Information for Graduate Students

		N	Percent %
Gender	Female	221	64.1
	Male	124	35.9
Age	20-25 age	142	41.2
	26-29 age	102	29.6
	30 age and up	101	29.3
Maternal Education Status	Illiterate	29	8.4
	Primary school	147	42.6
	Secondary school	39	11.3
	High school	70	20.3
	University	60	17.4
Paternal Education Status	Illiterate	6	1.7
	Primary school	110	31.9
	Secondary school	45	13.0
	High school	85	24.6
	University	99	28.7
Institute	Educational Sciences	92	26.7
	Science	66	19.1
	Social Sciences	148	42.9
	Health Sciences	39	11.3
Active Learning Status	Master	272	78.8
	Phd	73	21.2

Data Collection Instruments

In the obtaining of the data of this study the "Personal Information Form" prepared by the researcher and the "Academic Ethical Values Scale" which was developed by Sevim (2014) and carried out the validity and trust studies were used. This scale consists of 50 items with a five-way Likert degree type from "Absolutely Disagree" to "Absolutely Agree". The scale has 5 dimensions: Values for scientific research, values for colleagues, values for the institution studied, values for society, and values for the teaching process. In the analysis of scores obtained from graduate students "I Completely Disagree" =1 point for positive substances on the scale. "I disagree"=2 points. "I'm undecided"=3 points. "I agree"=4 points and "Totally Agree"=5 points. For negative substances on the scale reverse scoring was done. Academic ethical values attitude score was obtained by dividing the total score received by graduate students from the scale by the number of items on the scale (50). Sevim (2014) stated that this scale had a Coefficient of Cronbach's Alpha trust of .86. He calculated Spearman-Brown as .84 and Guttman as .81. All internal consistency coefficients were found to be above .80. Cronbach's Alpha trust coefficient of the scale used to obtain the data was found to be .75 in this study. From here it is found that the measuring tool is reliable (Büyüköztürk. et al., 2018. p.115).

The arithmetic means evaluation interval was used to determine the attitudes of graduate students towards academic ethics. The coefficient range .80 points range is calculated as 12.4 (Başçı and Gündoğdu, 2011). The evaluation intervals of the averages for academic ethics are presented in Table 2.

Table 2. Evaluation Intervals of Averages for Academic Ethics

Coefficient Range	Score Range	Rating	Comment
1.00–1.80	106-118.4	I totally don't agree.	Low attitude
1.81–2.60	119-130.8	I don't agree	
2.61–3.40	131-143.4	I'm indecisive	Mediocre attitude
3.41–4.20	144-156.4	I agree	
4.21–5.00	157-168	I totally agree.	High attitude

Analysis

Mode, median, mean, standard deviation, distortion, and coefficient statistics were used to determine whether the data obtained from graduate students showed normal distribution. It was observed that the average score, mode, median values of graduate students from the scale were close to each other and the values of distortion and distortion were between -1 and +1. From this point of view, parametric tests were used in the analysis by concluding that the data was dispersed normally. "T-Test for Independent Groups" was applied to determine whether there is a significant difference between gender and active learning status variables and attitude scores of graduate students towards academic ethics. "One-Factor ANOVA" test was used to determine whether the difference between students' age, maternal education status, paternal education status, and attitude scores for institute variables and academic ethics was significant. In addition, a "Pearson Correlation Coefficient" test was applied to examine the relationship between variables and students with high attitude scores, moderate attitude scores, and low attitude scores. The "Cronbach Alpha Trust Coefficient" is calculated in determining the security of the data collection tool. The findings from the analysis of the data were interpreted at the level of .05 meaningfulness (Büyüköztürk, 2020. p.40).

Findings

The arithmetic means evaluation interval was used to determine the attitudes of graduate students towards academic ethics. The coefficient range .80 points range is calculated as 12.4 (Başçı and Gündoğdu, 2011). The average attitude score of graduate students towards academic ethics was 141.39. Considering Table 2 it is seen that graduate students have attitudes towards mediocre academic ethics.

In the analysis of sub-problems, "t-test for independent groups" was analyzed in gender and active learning status variables, and the results were presented in Table 4 by the results of the "one-factor ANOVA test" for age, maternal education status, paternal education status and institute variables in Table 5.

Table 4. T-Test Results for Independent Groups on Attitude Scores of Graduate Students towards Academic Ethics

		N	$\bar{X}$	S	t	df	P
Gender	Female	221	3.97	.28	3.56	343	.00
	Male	124	3.85	.31			
Active Learning Status	Master	272	3.91	.29	-1.69	343	.09
	Phd	73	3.98	.30			

p< .05

Table 5. One-factor ANOVA Results on Attitude Scores of Graduate Students Towards Academic Ethical Values

		N	$\bar{X}$	S	Source of Variance	KT	df	KO	F	p
Age	20-25 age	142	3.92	.27	Between groups	.04	2	.02	.26	.76
	26-29 age	102	3.91	.28	Within groups	30.99	342	.09		
	30 age and up	101	3.94	.34	Total	31.03	344			
Maternal Education Status	Illiterate	29	3.91	.33	Between groups	.39	4	.09	1.08	.39
	Primary school	147	3.89	.28	Within groups	30.64	340	.09		
	Secondary school	39	3.99	.30	Total	31.03	344			
	High school	70	3.93	.27						
	University	60	3.95	.33						
Paternal Education Status	Illiterate	6	4.11	.31	Between groups	.53	4	.13	1.49	.20
	Primary school	110	3.90	.27	Within groups	30.50	340	.09		
	Secondary school	45	3.90	.26	Total	31.03	344			
	High school	85	3.91	.30						
	University	99	3.97	.33						
Institutes	Educational	92	3.96	.33	Between groups	.24	3	.08	.91	.43
	Science	66	3.90	.25	Within groups	30.79	341	.09		
	Science	148	3.92	.29	Total	31.03	344			
	Social Sciences	39	3.87	.29						
	Health Sciences									

p< .05

Findings on Academic Ethical Values Attitude Scores for Gender Type Variable

T-test findings for independent groups applied to determine whether there is a significant difference between attitude scores for academic ethical values according to the gender variable of graduate students are presented in Table 6.

Table 6. T-Test Results for Independent Groups of Graduate Students' Attitude Scores on Academic Ethics by Gender Variable

Groups	N	X̄	S	t	df	P
Female	221	3.97	.28	3.56	343	.00
Male	124	3.85	.31			

According to Table 6 221 of the graduate students who participated in the study were women and 124 were men. It is seen that the attitude score averages of female graduate students regarding academic ethics (X̄=3.97) are higher than the attitude score averages (X̄=3.85) related to the academic ethics of male graduate students. The p-value was found to be .00 in line with the analysis of the sub-problem "Are the attitudes of graduate students regarding academic ethical values differentiation according to gender?" Since p≤0.05 there is a significant difference between gender variable and academic ethical attitude.

Findings on Academic Ethical Values Attitude Scores for Age Variable

The findings of one-factor ANOVA which is applied to determine whether there is a significant difference between the attitude scores of graduate students towards academic ethical values according to age variable, are presented in Table 7 and Table 8.

Table 7. Measures of Central Tendency and Spread for Academic Ethical Values Attitude Scores for Age Variable

Groups	N	X̄	S
20-25 age	142	3.92	.27
26-29 age	102	3.91	.28
30 age and up	101	3.94	.34
Total	345	3.92	.30

Table 8. One- Factor ANOVA Results of Academic Ethical Values Attitude Scores on Age Variable

Source of variance	Sum of squares	df	Mean of squares	F	P
Between groups	.04	2	.02	.26	.76
Within groups	30.99	342	.09		
Total	31.03	344			

p< .05

According to Table 7 and Table 8, the ages of graduate students participating in the study; It is seen that 142 people are between the ages of 20 and 25, 102 people are between the ages of 26 and 29 and 101 people are 30 years of age or older. In line with the analysis of the sub-problem "Do graduate students' attitudes regarding academic ethical values differ according to age?" the p-value was found to be .76. Since p >0.05 there is no significant difference between the age variable and academic ethical attitude.

Findings on Academic Ethical Values Attitude Scores for Maternal Education Status Variable

The findings of the single-factor ANOVA, which is applied to determine whether there is a significant difference between the attitude scores of graduate students towards academic ethics according to the maternal education status variable, are presented in Table 9 and Table 10.

Table 9. Measures of Central Tendency and Spread for Academic Ethical Values Attitude Scores for Mother Education Status Variable

Group	N	X̄	S
Illiterate	29	3.91	.33
Primary school	147	3.89	.28
Secondary school	39	3.99	.30
High school	70	3.93	.27
University	60	3.95	.33
Total	345	3.92	.30

Table 10. One-Factor ANOVA Results of Academic Ethics Attitude Scores on Med Education Status Variable

Groups	Sum of squares	df	Mean of squares	F	p
Between groups	.39	4	.09	1.08	.36
Within groups	30.64	340	.09		
Total	31.03	344			

p< .05

According to Table 9 and Table 10, it is seen that 29 people are illiterate, 147 people are primary school graduates, 39 people are secondary school graduates, 70 people are high school graduates and 60 people are university graduates. "Do graduate students' attitudes about academic ethical values differ according to their maternal education educational status? "p-value according to the analysis of the sub-problem. It was found to be .36. Because it is p>0.05 there is no significant difference between the maternal educational status variable and academic ethical attitude.

Findings On Academic Ethics Attitude Scores For Paternal Education StatusVariable

The findings of a single-factor Anova, applied to determine whether there is a significant difference between the attitude scores of graduate students towards academic ethical values according to the paternal educational status variable, are presented in Table 11 and Table 12.

Table 11. Measures of Central Tendency and Spread for Academic Ethical Values Attitude Scores for Father Education Status Variable

Group	N	X̄	S
Illiterate	6	4.11	.31
Primary school	110	3.90	.27
Secondary school	45	3.90	.26
High school	85	3.91	.30
University	99	3.97	.33
Total	345	3.92	.30

Table 12. Academic Ethics Related to Paternal Education Status Variable One-Factor ANOVA Results of Attitude Scores

Source of variance	Sum of squares	df	Mean of squares	F	p
Between groups	.53	4	.13	1.49	.20
Within groups	30.50	340	.09		
Total	31.03	344			

p< .05

According to table 11 and table 12 the father's educational status of the graduate students participating in the Study; 6 people are illiterate, 110 people are primary school graduates, 45 people are secondary school graduates, 85 people are high school graduates and 99 people are university graduates. "Do graduate students' attitudes about academic ethical values differ according to their paternal education status? " p-value according to the analysis of the sub-problem. It was found to be

20. Since it is p>0.05, there is no significant difference between the father's educational status variable and academic ethical attitude.

Findings On Academic Ethics Attitude Scores For Institute Variable

The findings of a one-factor Anova, applied to determine whether there is a significant difference between the attitude scores of graduate students towards academic ethical values according to the Institute variable are presented in Table 13 and Table 14.

Table13. Measures of Central Tendency and Spread for Academic Ethical Values Attitude Scores for Institute Variable

Group	N	X̄	S
Institute of Educational Sciences	92	3.96	.33
Institute of Sciences	66	3.90	.25
Institute of Social Sciences	148	3.92	.29
Institute of Health Sciences	39	3.87	.29
Total	345	3.92	.30

Table 14. Academic Ethics Related to Institute Variable One-Factor ANOVA Results of Attitude Scores

Source of variance	Sum of squares	df	Mean of squares	F	p
Between groups	.24	3	.08	.91	.43
Within groups	30.79	341	.09		
Total	31.03	344			

p< .05

According to Table 13 and Table 12, 92 of the graduate students participating in the study at the institute of educational sciences, 66 at the institute of sciences, 148 at the institute of social sciences, and 39 at the institute of health sciences. "Do graduate students' attitudes about academic ethical values differ according to the Institute? "p-value according to the analysis of the sub-problem. It was found to be 43. Since it is p>0.05 there is no significant difference between the Institute variable and academic ethical attitude.

Findings On Academic Ethics Attitude Scores For Active Learning Status Variable

The results of the T-test for independent groups applied to determine whether there is a significant difference between the attitude scores of graduate students towards academic ethical values according to the active learning status variable are presented in Table 15.

Table 15. T-Test Results for Independent Groups of Graduate Students Studying Attitude Scores Related to Academic Ethical Values According to the Active Learning Status Variable

Group	N	X̄	S	T	df	p
Master	272	3.91	.29	-1.69	343	.09
Phd	73	3.98	.30			

p< .05

According to Table 15 272 of the 345 graduate students participating in the study were graduate students and 73 were doctoral students. "Do graduate students' attitudes about academic ethical values differ according to their masters or doctoral status? " p-value according to the analysis of the sub-problem. It was found as 09. Since it is p>0.05 there is no significant difference between masters or doctoral degree status and academic ethical attitude.

Findings On The Relationship Between Attitude Scores Of Graduate Students

The Pearson correlation coefficient findings, applied to determine whether there is a meaningful relationship between the attitude scores of graduate students and the attitude scores for academic ethics are presented in Table 16.

Table 16. Pearson Correlation Coefficient Results Of Examining The Relationship Between Academic Ethical Values And Attitude Scores Of Graduate Students According To Variables

Variables	High Attitude Score	Mediocre Attitude Score	Low Attitude Score
Gender	-.02	-.10	-.01
Age	.18	.00	-.02
Maternal Education Status	.09	.12	.15
Paternal Education Status	.10	.02	-.28
Institutes	-.15	-.07	-.23
Active Learning Status	.03	.00	.18

According to Table 16 graduate students with a high degree of attitude score related to academic ethics have a negative relationship with gender and institute variables (r = -.02; r= -.15), age, maternal educational status, paternal educational status, and active educational status variables are positively associated with a weak (r = .18; r = .09; r = .10; r = .03). Graduate students with mediocre attitude points related to academic ethics have a weak negative relationship with gender and institute variables (r = -.10; r = -.07), in which there is a positively weak relationship with the variables of mother education status, father education status, and active learning status (r = .12; r = .02; r = .00) and the age variable. Graduate students with a low degree of attitude score related to academic ethics have a weak negative relationship with gender, age,father education status and institute variables (r = - .01; r = -.02; r = -.28; r = -.23) in which there is a positively weak relationship between the mother education status and active learning status variables (r = .15; r = .18).

Discussion, Conclusion and Suggestions

As academic research has gained momentum recently it is the basis of scientific research that researchers must adopt some universal ethical values in their work and act according to these principles. A good researcher should not deviate from ethical values in his work but should consider observing the rights of himself, society, colleagues as a way for him to obtain scientific knowledge. As a result of a study that is monitored in this way the development of science can be achieved (Çınar, Özer and Özkan, 2018). In this context the aim of the research is explained as determining the attitudes of graduate students towards academic ethical values. The findings were examined according to gender, age, maternal education status, paternal education status, educational institute, and active education status variables. This study differs from other studies in the field as a survey study using quantitative research methods. In the field of academic ethics, studies based on data obtained using qualitative research methods have usually been found when the literature is examined. According to the research conducted studies that use a quantitative research method are usually aimed at academics.

When the attitudes of graduate students about academic ethical values are investigated the findings obtained in the study are that graduate students have a mediocre attitude. Kırkkılıç's, Sevim's, and Söylemez's (2015) study, which examined the scientific research attitudes of academicians in terms of academic ethical values concluded that academicians' academic ethical attitudes in scientific research are high. In a study by Başaran, Ekinci, and Arıkan (2017) which investigated the level of behavior of teachers by ethical values it was found that teachers have a mediocre level of ethical perception towards other colleagues and towards students.

Research conducted in the world and Turkey found that graduate students generally do not exhibit behavior by ethical rules in their theses and other research (De Lambert et al.,2006; McCabe,2005; Ashworth et al.,1997; Toprak, 2017). The result of the study of Üçüncü, Gökçe, Kıran, Izzetoğlu and Uzilday (2018) which aims to determine the perception of scientific ethics and honesty of graduate students of the department of biology is that graduate students are most aware of scientific unethical movements, forgeries and fabrications, and at least sliced publications. In his study Kurtulmuş and Ardıç(2013) observed unethical behaviors such as playing with data and unfair authorship by desk methods in analyzing the data of graduate students. Şahinoğlu and Bebek (2018) conducted a qualitative study on research assistants and found that research assistants have a basic level of knowledge about scientific ethics.

In a study that investigated the unethical behavior of students it was found that the reason for this situation is that students experience differences between what they learn in ethics courses and the situations they encounter in real life; problems arising from the system (academic promotion criteria, race) may be insufficient to act by ethical principles for many reasons. Another result from the same study is that ethical education is important for students but it will be more effective if a practical and continuous education model is considered than theoretical education (Gül et al., 2016). An experimental study of behavior conducted abroad found that subjects may exhibit unethical negative behavior even if they are individuals with a positive attitude due to compelling external factors (race, political reasons, compelling rules) (Fleischman and Valentine, 2019).

The attitude towards academic ethics graduate students are examined according to the gender variable in the determination of findings and female graduate students' academic ethical values and attitudes points and an average male graduate students' academic ethical values and attitudes it is observed that higher points on average. As a matter of fact, " do graduate students' attitudes about academic ethical values differ by gender?" sub-problems are applied in the analysis of independent sample t-test results according to gender and in favor of female students between the attitude towards academic ethics of graduate students showed a significant difference. Pehlivanlı and Akın(2019) that is the size of the subset of academic ethics in the study of "scientific values" and "values work for the institutions examined, there is a significant difference in favor of female academics that, "the process of teaching the values for" in the lower dimensions they have concluded that gender is not a significant difference according to the variable. In their study of the ethical values of academics Erdirençelebi and Filizöz (2019) found that the gender variable makes a significant difference in the lower dimensions of values for the colleague and values for the teaching process, and other lower dimensions do not make a significant difference. Orhan's and Günay's (2014) study investigated the reasons why students show internet-based academic irregularities and concluded that there was a significant difference in the effect of homework on the gender variable in favor of female students, taking into account the benefit it provides to the student. Üzüm and Sivrikaya(2018), Alkan (2015), Yılmaz and Ünsar (2019) have concluded that the gender variable has a significant impact on ethics. The results support the conclusion that the gender variable in this research has an impact on ethics. Özyer, Azizoğlu (2010) and Gençoğlu(2015) found that the gender variable did not have a significant impact on Ethics in their studies. Aydın, Demirkasımoğlu, and Alkın(2012) investigated academic ethics in Turkish universities and found that there was no significant difference compared to the gender variable.

According to the age variable findings, the average attitude score of graduate students aged 30 years and over is higher than the average attitude score of graduate students aged 20-25 years and the average attitude score of graduate students aged 20-25 years is higher than the average attitude score of graduate students aged 26-29 years. However, " do graduate students ' attitudes about academic ethical values differ by age? "as a result of the one-factor ANOVA test conducted by the analysis of the sub-problem, it seems that this average difference between attitude scores for academic ethical values is not significant. Based on this it is concluded that the results obtained according to the age variable are similar. In their study of Erdirençelebi and Filizöz (2019) it was found that there was no significant difference between the values for scientific research which are the lower dimension of academic ethical values, and the age variable. This result is similar to the result of this study. However, it was determined that there was a significant difference between the age variable and the lower dimensions of the values for the colleague, the values for the institution studied, the values for the society, and the values for the teaching process. Pehlivanlı's and Akın's (2019) study found that academics between the ages of 41-50 had the highest attitude score. As a result of the analysis conducted to determine whether this result was significant, it was found that the lower dimension of the values for the institution studied made a significant difference. Alkan's(2015) ethical perceptions of accounting students s determined in the study, relationships within the institution for ethical perception, ethical perception of professional duties and responsibilities, and job-related individual perception towards ethical behavior in the dimension of the variable age had a significant effect but for the use of professional knowledge had a significant effect in the size of it is concluded that ethical perceptions.

According to the analysis of the data obtained for the maternal education status variable it is seen that the average maternal education status score varies from high to low in secondary school, University, High School, illiterate and primary school. At this point, "do graduate students' attitudes about academic ethical values differ according to their maternal educational status? " to conclude the sub-problem, one-factor ANOVA analysis was performed and as a result it was found that the difference in scores between the educational status groups was not significant. Üzüm and Sivrikaya (2018) concluded that the maternal educational status variable made a significant difference in their study, which was intended to determine the predisposition of students to ethical values. In his study Alkan (2015) concluded that the maternal educational status variable made a significant difference to students' ethical perceptions.

According to the paternal education status variable, the average score of paternal education status varies from high to low, illiterate, but in University, High School, Primary School, and secondary school. "do graduate students' attitudes about academic ethical values differ according to their paternal education status? "by the analysis of the sub-problem, one-factor ANOVA test was applied to the data and it was concluded that this average score difference was not significant. This result can be interpreted as the paternal educational status of graduate students being similar. Üzüm and Sivrikaya (2018) concluded that there is no significant difference between the predisposition of students to ethical values and the father's educational status variable. In his study Alkan(2015) determined that the paternal educational status variable made no significant difference to ethical perception. The results support the sub-hypothesis of this research.

According to the variable of the institute where graduate students study the average attitude to academic ethical values is ranked from high to low as the institute of educational sciences, the institute of social sciences, the ınstitute of sciences, and the institute of health sciences. However, "do graduate students' attitudes about academic ethical values differ according to their paternal education status? " as a result of the one-factor ANOVA test conducted by its analysis it can be interpreted as the variable of the Institute studied does not have a significant effect on attitude scores towards academic ethical values. Based on this it can be said that the attitude scores of graduate students studying in different institutes towards academic ethical values are similar. In their study Erdirençelebi and Filizöz (2019) investigated the significant effect of the branch variable on academic ethics. As a result, it was found that the average score of values for scientific research, values for colleagues, values for the institution studied, and values for the teaching process, which are sub-dimensions of academic ethical values, did not have a significant impact on the branch of academics. But the values for society which are the lower dimension of academic ethical values, are another result that has a significant difference between the average score and the branch. This is similar to the conclusion that there is no significant difference between the Institute variable obtained in this study and the attitude towards academic ethical values.

According to the active learning status variable it is observed that the average score of doctoral students' attitude towards academic ethics is higher than the average score of graduate students' attitude towards academic ethics. " do graduate students' attitudes about academic ethical values differ according to their masters or doctoral status? "according to the analysis of the sub-problem an independent sample t-test was applied to the data and it can be interpreted that the active learning status does not make a significant difference in the attitude towards academic ethical values, and the attitudes of the groups are similar. Alkan(2015) investigated the ethical perceptions of accounting students and concluded that there was no significant difference between the ethical level and the class variable. The data obtained support the conclusion of this study.

Graduate students' attitude scores towards academic ethics are divided into three groups: Students with a high attitude score, students with a mediocre attitude score, and students with a low attitude score. " Is there a meaningful relationship between the attitude values of graduate students? " sub-problems according to the analysis of the findings as a result of a high degree of academic ethics attitude score related to gender and graduate students of the institute that there is a relationship between the variables weak negative directional, age, educational status of the mother, father, and active learning the educational status variable with the condition it was inferred that there is a weak relationship in a positive way.

According to the results obtained from graduate students with mediocre academic ethical values attitude score it was concluded that graduate students have a negative weak relationship with gender and institute variables a positive weak relationship with maternal education status, paternal education status, and active education status variables and that there is no relationship between age variable.

According to the results obtained from graduate students with low attitude scores related to academic ethical values, it was found that graduate students have a negative weak relationship with gender, age, paternal educational status, and institute variables and a positive weak relationship with maternal educational status and active educational status variables.

As a result of the research it was determined that graduate students who are considered future academics have a moderate attitude towards academic ethical values. Both the results of this research and other studies in the field should allow us to recognize our shortcomings in the field of academic ethics allowing us to improve behavior in this direction. In higher education institutions that train scientists students should be introduced early to the academic ethical principles that they will use at every stage of their lives and education should be given by spreading them over longer periods of time in practice. In this way students will have a chance to adopt academic ethical principles more. Higher education institutions should be added to the appointment and upgrade criteria of universities where the quality is more important than the number of publications in graduate education programs and in this way the universal ethical principles that should be used when conducting scientific research should be placed more in real life.

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Discrimination and Exclusion Perceptions of Turkish Students Living in Germany

Asaf Ekin YEŞİL [1]

Summary

The purpose of this research is to determine the discrimination and exclusion perceptions of Turkish students living in Germany. The participants of the study consist of 18 students attending public schools (grundshcule, mittelschule, realschule, and gymnasium) in the Schwaben region of Bayern, Germany in the 2017-2018 academic year. The research was conducted using a semi-structured interview form, one of the qualitative research techniques. The interview form included 18 questions that would enable students to explain their opinions on exclusion and discrimination, and the interviews were conducted in public places by taking notes after obtaining the necessary approvals or by taking a voice recording with the consent of the participants. The data obtained from the interviews were analyzed and interpreted with content analysis. The answers given by the students were coded to reach various themes, then the data were interpreted. As a result of the interviews conducted within the scope of the research, two different themes came to the fore as discrimination based on race and ethnicity, discrimination based on religion and social-cultural exclusion, and "discrimination and exclusion" based on spatial exclusion codes. As a result, Turkish children living in Germany against discrimination based on race-ethnicity and religion; findings that qualify that they have been social-culturally and spatially excluded; Suggestions were made to administrators, teachers, parents, students, and researchers.

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Introduction

Individuals are considered to have equal value with other individuals regardless of their innate characteristics. Discrimination occurs when this equality is broken over the inherent characteristics of the individual, and as a result, the individual who is discriminated against is thought to feel excluded from the community to which he/she is affiliated and marginalized.

Germany has become one of the countries where discrimination and exclusion issues are heavily discussed, especially with the economic problems and unemployment after heavy immigration, the rise of Islamophobia, and the rise of far-right parties. Recently, Mesut Özil, who stated that he left the German National Football team because of the discriminatory behavior he experienced, said "When I win, I become a German but when I lost I am an immigrant.'' (Özil, 2018) also caused the issues of discrimination and exclusion to flare up again.

Although Germany does not consider itself a country of immigration, approximately 7 million foreign nationals living in Germany. When taking German citizenship and their families into account, this number rises to approximately 16 million. In summary, one-fifth of those living in Germany have a foreign origin or a history of immigration with the language of politicians (Dahmann & Akpınar, 2012). Despite hosting so many immigrants, Germany's refusal to accept itself as a country of immigration has contributed to its creation of institutional discriminatory and exclusionary policies in education, labor market, and citizenship issues (Güllüpınar, 2014, p.5). The first striking of these is gradual discrimination. Gradual discrimination means that immigrants are included in the labor force of the society, and their access to political and social areas is prevented. As a result of gradual discrimination practices, immigrants in Germany are deprived of many rights and turn into ethnic minorities, and are not seen as individuals of the country as much as Germans (Castles & Miller, 2008, p.362). For example, Turkey has not been accepted dual citizenship and naturalization applications for the origin of aggravated conditions since 1950 ethnic Germans from Eastern Europe and the Soviet Union have accepted citizenship with all the rights. These special citizenship practices offered to ethnic Germans in Germany are also considered as an indicator of racial discrimination (Güllüpınar, 2014, p.7). Even if a Turk was born and raised in Germany and studied there, even if he speaks German better than an ethnic German, he will continue to be racially discriminated against. Because, according to Castles, the principle of blood ties forms the basis of German nationalism. A person living in Germany is not considered as a German unless he comes from German blood, and this situation is seen as a result of Germany's emergence as a late nation-state (as cited in Güllüpınar, 2014, p.11).

The current discriminatory policies in Germany cause those who do not belong to the German race to feel excluded and citizenship is interpreted vertically in Germany. According to Mueller (2006, p.249), at the bottom of this hierarchy are Turks and immigrants applying for asylum.

The main purpose of this research is to determine the thoughts of Turkish students continuing their education in Germany on discrimination and exclusion. For this purpose, "Are Turkish students living in Germany discriminated against? Do Turkish students living in Germany feel excluded? " It was aimed to determine, interpret, and make suggestions on the discrimination and exclusion perceptions of the students attending public schools in Schwaben Region of Bayern State of Germany.

Method

A qualitative research approach was used in this study, which was conducted to determine the perceptions of discrimination and exclusion of Turkish students studying in state schools (from 3rd to 10th grade) located in the town of Vöhringen in Germany. Qualitative research is a research process in which the facts are tried to be understood in a real-world environment where the researcher does not try to manipulate the subject he is researching (Koca, 2017, p.35)

In the research, the opinions of Turkish children living in Germany on discrimination and exclusion issues were tried to be determined. For this, interviews were made by preparing an "interview form to determine the opinions of Turkish students living in Germany on discrimination and exclusion" (See Annex-1). The data obtained at the end of the interviews were analyzed and described objectively.

In this research process, studies on the method, process, and results of the research are explained in a clear and detailed manner in order to ensure validity and reliability. Participants were also met in non-meeting times, and they were in a long-term interaction environment. In-depth research and investigation understanding (collecting, analyzing, and evaluating data) is adopted. An interrelated and consistent process has been followed from the collection of data to its analysis and reaching the results. A purposeful sampling technique was preferred while determining the study group. Research data and results were shared with the participants for verification, and their opinions were taken by presenting them to other relevant researchers (Durmuş, 2004).

Study Group

A study group was formed using the criterion sampling method, which is one of the purposeful sampling types. As a criterion, among those who were born and continue their education in Germany, their German level is good and whose current grade point average is the lowest 2.00 (2.00 / 4.00) in the system of 4, were preferred. The study group consisted of 18 students from the 3rd grade to the 10th grade, who were attending public schools. As seen in Table 1, 10 of the students participating in the study are girls and 8 of them are boys.

Table 1. Gender and Age Distribution of the Students Participating in the Study

Age	Gender		Frequency (f)	Percentage (%)
	Boy	Girl		
9-10	0	3	3	16.7
11-12	2	2	4	22.2
13-14	3	3	6	33.3
15-16	3	2	5	27.8
Total	8	10	18	100

As seen in Table 2, the students participating in the study consist of Grundschule (primary school), Mittelschule (secondary school), Realschule (higher secondary school than Mittelschule), and Gymnasium (high school) students.

Table 2. School Types of Students Participating in the Study

School Type	Gender		Frequency (f)	Percentage (%)
	Boy	Girl		
Grundschule	0	3	3	16.7
Mittelschule	4	5	9	50.0
Realschule	3	1	4	22.2
Gymnasium	1	1	2	11.1
Total	8	10	18	100

Data Collection Tool

In the study, a semi-structured review form (See Appendix 1) was used as the data collection tool. The questions stated in the interview form were directed to the participants and the answers given by the participants were noted. The semi-structured interview technique is slightly more flexible than the structured interview technique. In this technique, an interview form is created containing the questions we plan to ask beforehand. Depending on the course of the interview, the individual may be asked to open up and elaborate on their answers. This technique is a more suitable technique used in educational science research due to its certain standard and flexibility. The most important convenience provided by the semi-structured interview technique is that it provides more systematic and comparable information since the questions to be asked are prepared in advance and continued depending on this preparation (Türnüklü, 2000, p.547).

In the first part of the interview form, personal information of the participants such as gender, age, current education level/class, current grade point average, German level, place of birth and time lived in Germany are included. In the second part, 18 open-ended questions to measure participants' perceptions of discrimination and exclusion are included (See Appendix 1).

Data Collection Process

The data related to the research are grundschule (Primary School 3rd-4th Grade), Mittelschule (Middle School, 5th-10th Grade), Realschule (Middle School 5th-10th Grade) in Schwaben, Bayern State of Germany, It was collected using a semi-structured interview form prepared by the researcher with Turkish students attending the gymnasium (upper secondary and high school, 5th - 10th grade) schools (see Appendix 1).

Before the interview, the informed consent form was read to the participants, and permission and signature were obtained from the participants and written and signed permissions were obtained from the parents of the participants up to the age of ten (see Appendix 2). The data collection process was applied using the note-taking method. Interviews were held in public places, cafes, and restaurants between March 2018 and May 2018, upon prior agreement with the students to be interviewed. Before starting the interviews, the participants were informed about the subject in general lines and the purpose of the research was mentioned and the interview was started. To prevent data loss, interviews were recorded and notes were recorded in the interviews where the voice of the participant was recorded, within the consent of the participants, and only notes were taken in the interviews where the environment was not suitable for voice recording. The questions in the interview form were asked to the participants one by one and the answers given by the participants were noted on the back of the form. The interviews lasted about 15 minutes.

Data Analysis

Data analysis in phenomenological research is aimed at revealing experiences and meanings. In the content analysis made for this purpose, there is an effort to conceptualize the data and reveal the themes that can define the phenomenon. Results are presented in a descriptive narrative. Besides, findings obtained within the framework of emerging themes and patterns are explained and interpreted (Yıldırım & Şimşek, 2005). Content analysis is to gather similar data within the framework of certain concepts and themes and to interpret them in an understandable order (Yıldırım & Şimşek, 2005).

The data collected within the scope of the research were analyzed by content analysis technique. According to Yıldırım and Şimşek (2013), the data collected in the content analysis are conceptualized first, then organized logically according to the concepts and themes explaining the data are created accordingly. Participants were given a code first in the analysis of the data. Codes such as Ö1 and Ö2 were used for the students interviewed within the scope of the research. The opinions are conceptualized first, then common themes are produced and the opinions are presented and interpreted within the framework of these themes.

The validity of giving direct quotations from the opinions of the participants in the qualitative studies conducted by the interview method and of presenting as many different opinions as possible by increasing the diversity of the participants; It is stated that providing detailed information about the research processes and participant characteristics also strengthens the reliability (Yıldırım & Şimşek, 2013). In this regard, within the scope of validity, while interpreting the research findings, information about the participant characteristics was tried to be given, direct quotations of the participants were included, the participants were encouraged to explain their perceptions and experiences in detail, and were detailed in the study findings.

Results

The comments made based on the codes and themes created from the data obtained in the research are expressed with a descriptive understanding. In this section, the opinions of the participants were coded, themed, analyzed and the findings reported, as in Table 3.

Table 3. The code and themes of the study

Codes	Frequency (f)	Percentage (%)	Themes
Social and cultural exclusion	13	72	Exclusion
Spatial exclusion	7	38	
Discrimination based on race and ethnicity	12	66	Discrimination
Discrimination based on religion	5	27	

A. Views of Turkish Students in Germany on Exclusion

As a result of the interviews conducted within the scope of the research, the themes of social and cultural exclusion, spatial exclusion, discrimination based on race and ethnicity, and discrimination based on religion and exclusion and discrimination were revealed.

A.1. Views of Turkish Students in Germany on Social and Cultural Exclusion

As a result of the interviews, it was revealed that 72% of the participants felt socially and culturally excluded. "How are your classmates treating you? Do they get you into their game? Does he/she have any offensive behaviors for you, for example rude, swearing, or ridiculing you? " When asked the question, the students answered as follows:

"I love my classmates, I have a lot of friends. Some of them don't talk to us. We are not talking to them either. Yes, they make fun of us, for example, when we speak Turkish, they imitate us, make fun of us. They also swear. We don't do anything to them, I don't know why they swear. We don't say anything to them (Ö1). "

"Everyone is playing with their friend group. They have uncomfortable looks, they are rude when they pass me, and say bad things as if they were telling someone else. They call it black or something because the color of my hair is dark (Ö7). "

72% of the students participating in the study stated that they were excluded by their friends in the school environment. While most of these exclusions are due to the students being Turkish, some of the students feel excluded due to their Muslim identity. According to the students interviewed, they stated that although they feel excluded at school, they are rarely exposed to rude behaviors, swearing, and fighting.

Below are some students' views on the question that determines their inclusion in social and cultural activities (tournaments, teams, games, exhibitions, ceremonies, etc.) at schools:

"Yes, but sometimes our teacher makes someone else do what I want to do because you can't do it. For example, once we were going to make music, I wanted to sing the song but he said you cannot sing. He had a German girl sing, but I was telling it better than her (Ö1). "

"For example, we were going to set up a music group at school. I play the guitar well and sing. But the teacher chose a person who did not know and could not play as much as I did, and the group members did not oppose this and immediately approved (Ö8). "

Students, "Do you ever feel excluded in Germany? In which areas and where do you feel left out? " Some of his answers to the question are as follows:

"I don't feel it when shopping. I feel it in government offices. Our job is late, the necessary information is not available. We feel left out in paperwork. This is what they do to non-Germans like us. They behave differently to others other than themselves, they don't like us (Ö3). "

"Of course, I feel like a tourist here sometimes. Like I'm gonna go take a moment to think that Turkey, as though everything as if it were temporary. But it's not like that. I wish we could go but we are here (Ö11). "

Directed to the students regarding the discrimination theme, "Do you feel left out at school? What do you think is the biggest reason for your exclusion? Who do you think is excluding you? " Some of the answers given by the students to the question are as follows:

> *"Yes, I feel like, that, especially in some celebrations and trips. I was born and raised here, but some of its traditions are not for us. At that time, all Germans were united and we stayed outside (Ö18). "*

> *"So I don't know sometimes. For example, I wanted to dance in this musical because they didn't add me because I was Turkish, they would wear a mini skirt, they never asked me not to wear it. Maybe I would wear it but they never even asked, then one of them said and I felt bad, I was sorry (Ö13).*

A.2. Views of Turkish Students in Germany Towards Spatial Exclusion

As a result of the interviews conducted within the scope of the research, a spatial exclusion code was created under the theme of exclusion, and accordingly, it was revealed that 38% of the participants felt themselves spatially excluded. In this context, "What do you think about the area you live in? Why are you sitting there? Are you sitting there voluntarily? Are there Germans in your area of residence? How much? Who else is sitting there? " His views on the question are as follows:

> *"We live in the building. Most of our neighbors are Turkish, some foreigners. Since our neighbors and relatives are here, I do not want to move elsewhere (Ö7). "*

> *"We usually live in a building where Turks live. We have relatives from our neighbors, my father has friends from work. We sit there voluntarily, close to school and my father's business. There are few Germans in our street, none in our building. There is Bulgarian or something (Ö18). "*

It was observed that 38% of the students consulted within the scope of the research live in areas where mostly Turks and foreign nationals live, and the building type and rent are cheap. Most of the students within the scope of the study do not have the idea of moving from the region where they live, since their relatives and Turkish friends are there. One of the main reasons for those who want to move to another house is that the houses they live in are small.

Some of the answers given by the students to the question about the places they usually shop and visit within the scope of the spatial exclusion code under the exclusion theme are as follows:

> *"Most of the time we make it from Turkish markets. We do not buy much food from big markets, we buy other things. We go to each other's house with my friends, sometimes we go out to a cafe, to eat or something, but there is no place we go regularly, we go everywhere (Ö11). "*

> *"We go to all the markets, we buy meat from the Turkish market. Others do not have halal meat. "I do not like to travel, we usually meet my friends at home, we go to the mosque sometimes, if we go out, we go to the field to play football (Ö2)."*

It is seen that students generally prefer Turkish markets due to the convenience of finding halal products for grocery shopping, and they do not prefer a special place to visit.

B. Views of Turkish Students in Germany on Discrimination

To determine the views of Turkish students in Germany on discrimination, various questions were asked, in addition to these questions, questions aimed at revealing whether the students were supported by their teachers and teachers' expectations from them were asked, and the answers given by the students were themed and analyzed. As a result, it was seen that 66% of the students participating in the study stated that they were exposed to discrimination based on race and ethnicity, and 27% of them stated that they were exposed to discrimination based on religion.

B.1. Views of Turkish Students in Germany on Discrimination Based on Race and Ethnicity

Some of the students interviewed within the scope of the research within the scope of the discrimination theme and the code of discrimination based on race and ethnicity, who stated that their rights were violated because they were Turkish, are as follows:

"They had banned me from the exam in which I worked hard and tried to pass. I was overcome there. I didn't say anything because I was a quiet person, but I took the exam again, but this time I got the worst grade again. I think the same things will happen even if I go to a different school (Ö4). "

"There is equality here, the teachers are very good for everyone, but in my previous school, grundschule was not like that. My grades were very good until the fourth grade. I was always the highest in class. But suddenly in the fourth grade, my grades started to decrease. However, I was continuing to work. Then my family came and talked to the teacher and the principal, and so on, while the teacher was going to recommend me to the realschule, my father objected a lot. So in the end my grades improved and I came to my gym, but I wouldn't be able to come if my family didn't care when I could come anyway. According to my father, what we went through in grundcshule is completely related to our being Turkish. My father always says that they do this to many children, but their families are unaware (Ö17). "

Within the scope of the discrimination theme, some of the students interviewed within the scope of the research stated that although their rights were not defeated, some teachers helped German students more, and thus these students got ahead of them. Some of the student views are as follows:

"Of course, the best is for the German ones. Although I was born and raised here, I feel inferior to them. "I have to work harder to get what they have achieved without much effort (T11)."

"We need to work harder." In other words, our slightest mistake does not tolerate us, so we have to do it right in the exams (T3). "

Within the scope of the discrimination theme, the opinions of some of the students participating in the research, teachers, and principals at their schools are as follows:

"I moved to another school this period. I wasn't good with my friends at my previous school. The teacher was giving me different homework, I was doing it, then the teacher always said you did wrong. He was doing it to other students as well. He was doing the same to a Turkish and an Italian like me (Ö5). "

"They don't behave equally." They pretend to be but do not behave equally. They are more tolerant of German students. They officially expect us to make mistakes. They are waiting for our slightest mistake. They exaggerate when we have a mistake. If the Germans did the same thing, the matter would be closed immediately. Teachers are not helping, when I have a

question they ignore it. I raise a finger, for example, they do not look at the class. I want to ask after the lesson, for example, they say I don't have time (Ö8). "

Within the scope of the discrimination theme, 66% of the students who participated in the study said, "If you were German rather than Turkish, would your current success at school be different? Why is that?" "My current success would be higher" answered the question. Some of these answers are as follows:

"I think it probably would be higher. I don't know so there is no difference between us, but why are the German ones having higher grades? It sounds ridiculous to me (Ö8). "

"I do not know. I already had the highest grades, but if I were German, maybe I wouldn't need to study that much, maybe my grades could be higher without working so hard (Ö10). "

The students who participated in the study were asked questions to reveal whether their teachers support them, how they motivate and guide them, and to what extent they give importance to their thoughts, and it has been observed that 66% of the students are not supported by their teachers and not encouraged to great success. Some of the views that reveal this are as follows.

"For example, when I get good grades, the teacher doesn't say anything to me, but when others get it, he says" Well done. He doesn't tell my mom that I'm fine. Our teacher has never talked to us like that. He didn't ask our opinion, I don't know. No, they do not support or help. I think they don't want us to be successful (Ö1). "

"The teacher knows that my father is a worker, and he always tells me that you should be a worker too, and your father will earn well. They are always waiting so that we can be workers, doner kebabs. They don't listen to our thinking that they pretend to listen when something happens and say okay, but then they don't do anything. We cannot say anything again (Ö2). "

On the other hand, a small majority (34%) stated that they are supported and motivated by their teachers and give importance to their own opinions. Some of these expressions are as follows:

"When I get a high grade, my teacher shows me an example to my other friends. He says, if you work as much as he does, you can get good grades. One of my teachers says that I will graduate first, believes that I will be very successful. My teachers care about my thoughts (Ö10). "

"Some of my teachers say my hand is resourceful. They say that I make up well, maybe you can become a hairdresser (Ö13). "

B.2. Views of Turkish Students in Germany on Discrimination Based on Religion

27% of the students interviewed within the scope of the research stated that they were exposed to discrimination based on religion. Some students' views are as follows:

"For example, their celebrations are different and our holidays are different. When we celebrate Ramadan, the school continues (Ö6).

"I've been feeling this (discrimination) more, especially since I closed down. I feel people's uncomfortable looks. They just can't accept it. I am Turkish, Muslim and I can live my

religious belief here as I want but they cannot accept it. I mean, it's okay if I travel openly, but there is because I'm closed (Ö16). "

Under the code of discrimination based on religion, some of the students participating in the study stated that Germans were interested in what they did and did not eat. Some students' views are as follows:

"For example, they say why don't you eat it because I don't eat pork. What difference do you have, why do we eat? (Ö5). "

"Sometimes they look at what we eat while eating outside or at school, and they wonder what we eat (Ö14)."

As a result of the answers given by the students to the questions within the scope of the interview form, most of them thought that they were exposed to discrimination based on race and ethnicity, and some students thought that they were discriminated against because of their Muslim identity; It is observed that the rate of students who are excluded from spatial terms is relatively low compared to the rate of students who are socially and culturally excluded.

Discussion, Conclusion, and Suggestions

In this study, the views of Turkish students studying at public schools in the Schwaben region of Germany on discrimination and exclusion were tried to be determined through semi-structured interviews. The interviews were coded and the themes of discrimination and exclusion were reached. According to the results, most of the Turkish students living in Germany feel excluded socially and culturally, a small majority of them spatially; Approximately two-thirds of them state that they suffer discrimination based on race and ethnicity, and one-fourth state that they suffer discrimination based on religion.

According to the results of the interviews conducted within the scope of the study, some Turkish students think that they are discriminated against by their teachers and principals in their schools. Some of the students interviewed stated that their teachers and principals were more tolerant of German students and their grades would be higher if they were German rather than Turkish. The findings obtained in the examination of the education problems of Turkish youth in the North Rhine-Westphalia region of Germany in 2007 also support this view. According to the study, approximately two-thirds of the students studying at the Fachoberschule and approximately one-third of the students studying at Sonderschule, Realschule, and Berufschule think that teachers and administrators do not treat them equally (Özdemir, Similar and Akbaş, 2007, p.34).

According to the research of Şahan titled "A Qualitative Analysis of the Factors Affecting the Achievement of Turkish Students Attending Primary Schools in Germany", nearly half of the Turkish parents in Germany think that there is discrimination in schools, and the expectation of parents in the first place is about non-discrimination (Şahan, 2012, p.181). The German school system directs students to secondary education categories at different levels, and this decision significantly affects the future of the child, pushing it into a very difficult process to change in his career or adulthood (Bingöl & Özdemir, 2014, p. 141). Moreover, another danger that awaits Turkish children who do not have a good education in the future is economic exclusion. In 2014, in the research named "Discrimination in the Vocational Training Market" conducted by the Bosch Foundation, two resumes with the same qualifications, one with a Turkish name and the other with a German name, were sent to workplaces that provide vocational training. Despite having the same background and qualifications, the applications made under the German name received more positive responses than the applications made with the Turkish name (Bosch-stiftung, 2014).

As stated in the reports prepared by ECRI in 2009 and 2014, which was mentioned earlier in the study, teachers in Germany recommend students who come to good schools with good socioeconomic status three times more than students with the immigrant-origin and the rate of repetition of immigrant students is quite high (ECRI 2009,2014). According to reports, this is a kind of discrimination. During the interviews conducted within the scope of the research, statements were obtained that confirm the ECRI reports. Some students stated that although their grades were good, their teachers guided their parents with the idea that "if they go to the gymnasium, it will have a hard time", and some teachers directed some students to lower-level schools even though their grades were good.

The elimination method, which is the basis of the German education system, aims to create an elite stratum, and as a result of this system, a student is directed to a profession parallel to the social class he/she belongs to (cited in Turan, 1997, p. 200). As a result of these instructions, students generally have to continue their father's profession. During the interviews conducted within the scope of the research, some students were asked to ask them, "What are your teachers supporting you? How does he act in promoting success? How does it help? " They stated that their teachers recommended their father's profession (doner kebab, worker, etc.).

In German society and religious differences have been exposed most to exclude the oriental culture that immigrants have both Turkey. For example, the headscarf has become an object that symbolizes that Germans will not easily wash away their values, even if they wish, even though they pose an obstacle in their own adaptation processes (cited in Arıdıcı, 2015, p. 36). Similarly, according to the interviews made within the scope of the research, some students stated that they were subjected to discrimination based on religion. Some students stated that they were ostracized and sometimes verbally abused by the school administration, teachers, and school friends after they were wearing a hijab.

Within the scope of the study, some students stated that they were discriminated against because they were not Christians, did not drink alcohol, and did not eat pork. Some students also stated that they perceive the school holidays on Christian religious holidays as discrimination based on religion, while the school is attending on their own religious holidays.

According to the findings of the researches, although Turkish children in Germany have the preconditions to participate in social life and to benefit from the institutions and opportunities of the dominant culture, their participants in social life are somewhat restricted and excluded (Gökçe, 2006, p.12). In the interviews held within the scope of the research, most of the Turkish students in Germany stated that they felt excluded. The situation of detachment that begins with the mockery and exclusion of young people at school by their German friends, the conditions in which their families work and growing up in an environment where they are also excluded groups them among themselves, preparing them for a life full of psychological problems (cited in Perşembe, 2009, p.258)

In general, it is observed that one-third of Germans have an exclusionary approach towards foreigners. The xenophobia caused by the increase in the number of foreigners in Germany has developed based on not accepting and not respecting the differences of others. This approach in society in general has also affected the schools (Perşembe, 2006, p.101). In Germany, value judgments of children from foreign cultures are not included in school activities, and a uniform understanding is displayed in social, cultural, and other activities. There is no multicultural or intercultural approach (Genç, 2011, p.43). The findings obtained from the interviews conducted within the scope of the research also support these views. For example, some students think that they are not wanted in celebrations of German culture and they stated that they feel excluded in such events (celebrations, excursions, holidays, etc.) and set an example for children from foreign cultures to feel excluded in school activities.

It is obvious that the new places in Germany, where almost all the features of Turkish culture are experienced, taught, and represented, have symbolic value for diasporic subjects. These places allow to be protected against all kinds of structural and cultural exclusion and to maintain their own cultural belonging and identity characteristics in a certain interaction environment (cited in Çelik, 2008, p. 114). According to the findings obtained as a result of the research, it was seen that the region

where some students lived was generally preferred by the Turks. Some of the students interviewed stated that there were mostly Turks in the building they were in, a similar situation was valid on the streets and that the Germans were extremely rare in that area.

While concerns about the preservation and existence of cultural identity bring exclusionary attitudes displayed in various social environments, Turks' introverted, creating spaces where they can coexist, this situation also abstracts them from the multi-faceted relationships in daily life (cited in Perşembe, 2009, p. 257). On the other hand, some students stated that there were mostly Germans in the region they were in, and that people from other nationalities were almost nonexistent. It has been observed that these students belong to families with higher income and the regions they live in are regions with higher rents and more elite.

As a result, as a result of the interviews made with Turkish students studying at public schools in the Schwaben region of Bayern, Germany, within the scope of the research, it is seen that the community they live in has discriminatory and exclusionary perceptions against them, which may affect their current education life, their future jobs and therefore their whole lives. Most of the students stated that they were discriminated against in terms of ethnicity, some of them religiously, in social life and in schools; Some of these students stated that they were excluded in terms of spatial, most of them socially and culturally.

Suggestions

As a result of this research, the following suggestions can be made for school administrations, teachers, parents, students and future researches and practitioners:

Suggestions for school administrators:

- In German schools, information meetings should be organized for parents about the education system, guidance, rules, and educational environment, and parents should be contacted, if necessary, with the help of other parents who have good German or with publications prepared in different languages, with the participation of parents whose German is insufficient.

- Frequent meetings and conversation meetings should be held between the teacher, parents and the school administration.

- Teachers should follow the student directions closely and ensure parent-teacher coordination when necessary.

- Teachers and administrators should know students more closely (culture, religion, language, etc.) and be more understanding towards them and treat them equally with other students.

Suggestions for teachers:

- Especially classroom teachers should show due care about discrimination and exclusion, and if necessary, they should be trained on these issues.

- In student guidance, the load on the teacher and the rate of opinion given to the teacher should be reduced.

- Teachers should be more fair in guiding students.

- Teachers should consider students' special requests, complaints and suggestions.

Suggestions for parents and students:

- Students should especially improve their German level and take care to do their homework on time and completely. Parents should support and follow up their children in this process.

• Students should pay the utmost attention to obeying school rules, report any problems they encounter, and avoid disciplinary action. Parents should definitely go to interviews about their students who have disciplinary problems and take preventive and preventive measures.

• Students should be open to contact with other students and teachers and be willing to participate in social activities. Parents should encourage their children in this regard as much as possible, and if possible, they should participate in the activities themselves.

Recommendations for research and practitioners:

• A similar research can be done in a way that is more comprehensive and reaches more students or parents.
• Studies can be conducted in which the reasons for exclusion and discrimination are examined in detail.
• Discrimination and exclusion levels can be determined by quantitative research.
• Similar studies can be conducted in other countries where Turkish children live and receive education.
• A similar research can be done for university students.

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Appendix

Appendix - 1: Interview Form

Interview Date: **Interview Hour:**

Participant Information

Gender	:	☐ Male	☐ Female
Age	:		
Current education level / class	:		
Current GPA	:		
German Level	:		
Place of Birth	:		
Time lived in Germany	:		

1. Are you treated differently because you are Turkish? How ?
2. In what matters do you think you are treated differently? How ?
3. Are you treated differently because you are Turkish at school, government offices, markets or cafes?   *How are they treated differently, what are they doing?*   *Why do you think you are being treated differently?*
4. Do your teachers and school principal treat everyone equally at school? How do they treat you and other friends? Would you like to go to a different school?   *Are you having problems, what kind of problems are you having?*
5. Are there any situations where you think your rights are defeated because you are Turkish? How? Can you give an example?
6. How are your classmates treating you? Do they get you into their game?   *Does he/she have any offensive behaviors for you, for example rude, swearing or mocking?*
7. How do your teachers and principal help you when you encounter a problem at school?
8. When you encounter a problem at school, do you feel lonely and left out? Why is that?   *When did you feel like this? When did you feel like this?*
9. Do you think you are included in school activities? (Tournaments, teams, games, exhibitions, ceremonies, etc.)
10. Do you think your current success at school would be different if you were German rather than Turkish? Why is that?
11. In what subjects do your teachers support you?   *How does he act in promoting success? How does it help?*
12. Do your teachers believe that you can do good work, what do they expect from you?   *Does he care about your opinion? How much does he care?*
13. Do you think your friends or teachers have negative thoughts towards you at school? Can you give an example?
14. Do you ever feel left out in Germany? In which areas and where do you feel left out?
15. Do you feel left out at school?   *What do you think is the biggest reason for your exclusion? Who do you think is excluding you?*   *What if the groups or people you were excluded from would take you among them?*
16. What do you think about your area of residence? Why are you sitting there? Are you sitting there voluntarily? Are there Germans in your area of residence? How much? Who else is sitting there?
17. Would you like to move to a different area? Do you think you will be allowed to live in another area?
18. Where do you usually shop from? Where do you like to travel? (Turkish street, garden, park, etc.)

Appendix - 2: Informed Volunteer Consent Form

INFORMED VOLUNTEER CONSENT FORM

We invite you to the research titled "*Discrimination and Exclusion Perceptions of Turkish Students Living in Germany*" conducted by Asaf Ekin Yeşil. The purpose of this research is to reveal the thoughts of Turkish students studying in Germany on discrimination and exclusion issues. In the research, you are asked to spare an estimated 25 minutes. An estimated 15 other people will participate in the study. Participation in this study is entirely voluntary. To achieve the purpose of the study, you are expected to answer all questions completely, without any pressure or suggestion, and sincerely giving you the most appropriate answers. Reading and approving this form will mean that you agree to participate in the research. However, you also have the right not to participate in the study or to stop working at any time after participation. The information obtained from this study will be used solely for research purposes and your personal information will be kept confidential; however, your data can be used for publication purposes. If you need more information about the purpose of the research now or later, you can ask the researcher now or reach ekinyesil@hotmail.com the e-mail address. When the research is completed, please forward it to the researcher if you want general/specific results to be shared with you.

I read the above information that should be given to the participant before the research and I understood the scope and purpose of the study I was asked to participate in and my voluntary responsibilities. Written and verbal explanation about the study was made by the researcher/researchers named below. Adequate confidence has been given that my personal information will be protected with care. Under these circumstances, I agree to participate in the research in the question of my own free will, without any pressure or suggestion.

Participant:

Name-Surname:

Signature:

Researcher:

Name-Surname:

Signature:

The Effect of Different Variables on Pre-service Science Teachers' Level of Digital Literacy[1]

Şendil CAN[2], Büşra ÇELİK[3], Cüneyd ÇELİK[4]

Abstract

Technology has been developing since the early days of humanity. The process starting with the invention of the wheel, for example, has proceeded with the development of two-wheeled carts and then with today's four-wheeled cars equipped with technology. As technology advances, digital transformation steps are taken in the education and training process. Digital transformation has many contributions both for learning and teaching purposes. For this reason, policies are developed to make more use of technology in education. In this respect, digital literacy levels of pre-service teachers which is one of the most important elements of the teaching-learning process are quietly important. The purpose of the current study is to determine the effects of the variables of grade level, gender, the state of having a social media account and the time spent on various technological tools on pre-service science teachers' level of digital literacy. The study was conducted on 110 first and fourth-year students attending the department of science teaching. As the data collection tool, the 10-item Digital Literacy Scale was used. The cronbach-alpha reliability coefficient was calculated 0.86 for the original of the scale, the cronbach alpha reliability coefficient was calculated was found 0.88 on the research data. As the data showed a normal distribution, it was decided to use parametric statistical methods. The findings have revealed that the arithmetic mean score of the pre-service teachers' digital literacy was found to be 3.82 out of 5. This value shows that the pre-service teachers' level of digital literacy is good. Moreover, the pre-service teachers' level of digital literacy was found to be varying significantly depending on grade level in favour of the fourth-year students while it was found to be not varying significantly depending on gender, the state of having a social media account and the time spent on various technological tools. It is suggested which students starting their undergraduate education should be provided with activities and applications that will enhance their level of digital literacy

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Introduction

Technology has been developing since the early days of humanity. The process starting with the invention of the wheel, for example, has proceeded with the development of two-wheeled carts and then with today's four-wheeled cars equipped with technology. While the development of many technological products continues, the importance of technology in many fields such as education, communication and social and cultural areas is increasing. The reason why technology has become an indispensable or integral part of human life is the fact that it facilitates human life. According to the Turkish Language Association [Türk Dil Kurumu, TDK] (2019), technology is all the tools and equipments developed by humans to control and change the material environment and all the related knowledge produced. Another definition of the concept of technology is that it is learning how anything is produced (AAAS, 1993). On the basis of the existing definitions of technology, it can be said that technology is continuously developing in order to make our lives easier and to increase our living standards.

Those who can transfer technology to their lives are one step ahead of other communities (Gündüz and Odabaşı, 2004). It is an undeniable fact that as long as technology is in our life, it will affect education. Many studies reported in the literature have emphasized that one of the objectives of science education is to ensure interaction between technology and science education (AAAS, 1993; Bybee, 1999; Collette & Chiappetta, 1989; Hughes, 1997; Hurd, 1998; Murphy, 2001; NRC, 1996; YÖK, 1997).

In this context, some competencies that students will need in their business and social environments have been added to the 2018 Science Curriculum. One of these is digital competence. Through the inculcation of digital competence in students, it is aimed to make it possible for them to actively use information and communication technologies in their daily lives as well as business, social and cultural lives (MEB, 2018a). In order to use digital technologies as daily life skills, individuals should have sufficient level of digital literacy (Bacanak, Karamustafaoğlu and Köse, 2003) because only with adequate digital literacy, it is possible to know how to use digital technology in the most beneficial way, how to use technological products according to their aims, and to make meaningful and reliable use of digital technologies (Hague and Payton, 2010; Polat and Odabaş, 2008). On the other hand, it is known that great importance is attached to the integration of technology into education within the scope of 2023 Education vision (MEB, 2018b). For this reason, it is believed that inculcation of digital competencies targeted by the 2018 Science Curriculum in students, and the integration of technology into education within the scope of the 2023 education vision depend to some extent on the training of pre-service science teachers as digitally literate individuals because teachers or pre-service teachers are in a very important position in terms of meeting the needs of students in the learning process with the advantages offered by developing technology (Bacanak et al., 2003). It is thought that important roles should be fulfilled by pre-service science teachers as one of the stakeholders for the success of science education in terms of educating individuals as competent in digital technologies (MEB, 2005; MEB 2013). The purpose of the current study is to determine the effect of grade level, gender, the state of having a social media account and the time spent in the internet on the pre-service science teachers' level of digital literacy.

To this end, answers to the following questions were sought.

1. What is the pre-service science teachers' level of digital literacy?

2. Does the pre-service science teachers' level of digital literacy vary significantly depending on grade level, gender, the state of having a social media account and the time spent in the internet?

Method

The current study employed the survey model, one of the quantitative research approaches. The survey model is a research design attempting to quantitatively or numerically define the tendencies, attitudes and opinions of a population by collecting data from a sample selected from the population (Creswell and Clark, 2015).

Sample

The sample of the current study is comprised of 110 (40 first-year; 70 fourth-year) pre-service science teachers enrolled in the Education Faculty of Muğla Sıtkı Koçman University in the spring term of the 2018-2019 academic year. Detailed information about the distribution of the demographic features of the participants is given in Table 1.

Table 1. The distribution of the participants **in terms of** gender and grade levels

Gender	N	%
Female	75	68
Male	35	32
Grade Level	**N**	**%**
1st year	40	36
4th year	70	64

Data Collection Tool

In the current study, the 5-point Likert-Type Digital Literacy Scale developed by Üstündağ, Güneş and Bahçivan (2017) was used as the data collection tool. This is a one dimensional scale consisted of 10 items and its Cronbach alpha reliability coefficient was calculated to be 0.86. The explained variance of the scale is 40%. In the current study, the reliability coefficient was found to be 0.88.

Data Analysis

It was decided whether the data showed a normal distribution by looking at both skewness (-0,124; S:0.230)-Kurtosis (-0.275; S:0.457) coefficients and kolmogorov-smirnov coefficient. As the skewness and Kurtosis coefficients are between +1 and -1 and the kolmogorov smirnov coefficient is higher than 0.05, it was decided that the data showed a normal distribution. Thus, the data were analysed using parametric analysis tests (Çokluk, Şekercioğlu and Büyüköztürk, 2012). In this connection, the pre-service teachers' level of digital literacy was analyzed with descriptive statistics, the effect of gender and grade level was tested with independent samples t-test and the effect of the state of having a digital media account and the time spent in the internet was tested with one-way variance analysis. The pre-service science teachers' level of digital literacy was evaluated on a five-point Likert scale by using descriptive statistics. The evaluation on the five-point scale is given in Table 2.

Table 2. Evaluation of five-point Likert scale

Total Score	Evaluation
1,0-1,7	Very Low
1,8-2,5	Low
2,6-3,3	Medium
3,4-4,1	High
4,2-5,0	Very High

Findings

Pre-service science teachers' level of digital literacy

The results of the analysis are given in Table 3.

Table 3. Results of the descriptive statistics related to the pre-service science teachers' level of digital literacy

	N	$\bar{X}$	S
Digital literacy	110	3,82	0,66

As can be seen in Table 3, the mean score of the pre-service teachers' level of digital literacy was found to be 3.82 out of 5. This value shows that the pre-service science teachers' level of digital literacy is at the good level.

The effect of the grade level variable on the level of digital literacy

Within the context of the second sub-problem of the study, it was investigated whether the pre-service teachers' level of digital literacy varied significantly depending on grade level. For this purpose, independent samples t-test was conducted to determine whether the pre-service science teachers' level of digital literacy varies significantly depending on grade level. The results of the analysis are presented in Table 4.

Table 4. Results of the analysis conducted to determine the effect of grade level on the pre-service science teachers' level of digital literacy

	Grade Level	N	$\bar{x}$	S	df	t	p
Digital literacy	1st year	40	3,60	0,61	108	-2,76	0,00
	4th year	70	3,95	0,65			

As can be seen in Table 4, the pre-service science teachers' level of digital literacy varies significantly depending on grade level [$t_{(108)}$ = -2,76, p<.05]. While the mean digital literacy score of the fourth-year students was found to be 3.95, that of the first-year students was found to be 3.60. In light of these findings, it can be argued that the mean digital literacy score of the fourth-year students is higher than that of the first-year students.

The effect of gender on the level of digital literacy

Within the context of the third sub-problem of the study, it was investigated whether the pre-service teachers' level of digital literacy varied significantly depending on gender. In this connection, the effect of gender on the pre-service science teachers' level of digital literacy was tested with independent samples t-test and the results of the analysis are presented in Table 5.

Table 5. Results of the analysis conducted to determine the effect of gender on the pre-service science teachers' level of digital literacy

	Gender	N	$\bar{x}$	S	sd	t	p
Digital literacy	Female	75	3,84	0,67	108	0,43	0,67
	Male	35	3,78	0,65			

As can be seen in Table 5, the pre-service science teachers' level of digital literacy does not vary significantly depending on gender [$t_{(108)}$ = 0,43, p>.05]. In other words, it can be argued that gender does not have any significant effect on the pre-service teachers' level of digital literacy.

The effect of the state of having a digital media account on the level of digital literacy

Within the context of the fourth sub-problem, it was investigated whether the pre-service science teachers' level of digital literacy varied significantly depending on the state of having a media account by using independent samples t-test and the results of the analysis are presented in Table 6.

Table 6. Results of the analysis conducted to determine the effect of the state of having a media account on the pre-service science teachers' level of digital literacy

	Have a social media account	N	$\bar{x}$	S	sd	t	p
Digital literacy	Yes	105	3,84	0,65	108	1,05	0,29
	No	5	3,52	0,79			

As can be seen in Table 5, the pre-service science teachers' level of digital literacy does not vary significantly depending on the state of having a social media account [$t_{(108)}$=1,051, p>.05]. In other words, the state of having a social media account does not have any significant effect on the pre-service science teachers' level of digital literacy.

The effect of the time spent in the internet on the level of digital literacy

It was tested whether the pre-service science teachers' level of digital literacy varied significantly depending on the time spent in the internet by using one-way variance analysis. The results of the analysis are presented in Table 7.

Table 7. Results of the analysis conducted to determine the effect of the time spent in the internet on the pre-service science teachers' level of digital literacy

Time spent	N	$\bar{\text{x}}$	S
0-1 hour	17	3,79	0,63
1-2 hours	38	3,84	0,69
2-3 hours	45	3,88	0,71
3 hours and more	10	3,77	0,60

As can be seen in Table 7, the digital literacy mean score of the pre-service teachers spending 0-1 hour in the internet is 3,79; that of the pre-service teachers spending 1-2 hours in the internet is 3,84; that of the pre-service teachers spending 2-3 hours in the internet is 3,88 and that of the pre-service teachers spending 3 hours and more is 3,77. One-way variance analysis was used to test whether there is a significant difference between the values.

Table 8. Results of ANOVA conducted to determine the effect of the time spent in the internet on the level of digital literacy

	Source of the variance	Sum of squares	sd	Mean of squares	F	p
Digital literacy	Between-Groups	0,25	2	0,12	0,27	0,76
	Within-Groups	47,14	107	0,44		
	Total	47,39	109	0,56		

As can be seen in Table 8, the pre-service teachers' level of digital literacy does not vary significantly depending on the time spent in the internet [$F_{(2-107)}$ =0,272, p>0.05]. In other words, the time spent in the internet does not have any positive or negative effect on the pre-service science teachers' level of digital literacy.

Discussion, Results and Suggestions

In the current study, the effect of grade level, gender, the state of having a social media account and the time spent in the internet on the pre-service science teachers' level of digital literacy was investigated.

The descriptive results of the study have revealed that the pre-service science teachers' level of literacy is good. In other words, the pre-service teachers are good at adopting newly emerging technologies, using these technologies and bringing these technologies to their future educational-instructional environments and can serve as the leaders of technology for their prospective students. This is believed to enable them to impart some competencies (digital competence, math competence and basic competences in science/technology) stated in the 2018 Science Curriculum to their students in the future. Üstündağ, Güneş and Bahçivan (2017) found that the digital literacy of 979 third-year and fourth-year classroom pre-service teachers is at the good level. Similarly, Dedebali (2019) concluded that pre-service teachers' level of digital literacy is adequate. The findings of these studies conducted to determine whether educational-instructional practitioners are qualified enough to use many technological tools integrated into schools in recent years (Karamustafaoğlu, Köse and Bilen, 2003) concur with the findings of the current study.

The second finding of the current study is that the increasing grade level from first-year towards fourth-year makes positive contributions to their digital literacy. Thus, it can be contended that the four-year undergraduate education of the pre-service science teachers develops them in terms of digital literacy. This is a highly important finding given that the students who will be in their classrooms will be highly interested in technology. In the literature, it is seen that results similar to the ones found in the current study have been reported (Kozan and Bulut Özek, 2019). However, it is possible to see some studies reporting different findings. Özerbaş and Kuralbayeva (2018) found no

significant difference between the digital literacy levels of the third-year and fourth-year pre-service science teachers. This might be because the time gap between these two grade levels is not remarkable.

The third important finding of the current study is that the pre-service science teachers' level of digital literacy does not vary significantly depending on gender. This showed that gender is not a variable influential on the development of digital literacy. Parallel to the findings of the current study, Kozan and Bulut Özek (2019) and Dedebali (2019) concluded that the gender variable does not have any significant effect on the pre-service teachers' level of digital literacy. In the literature, there are some studies reporting results different from the ones found in the current study. In a study conducted by Özerbaş and Kuralbayeva (2018), the digital literacy level of the male pre-service teachers was found to be higher than that of the female pre-service teachers.

Another finding of the current study is that the pre-service teachers' state of having a social media account does not affect their level of digital literacy. In the literature, it was reported that the pre-service teachers' frequency of using the internet in a purposeful manner affects their perception of competence in technology yet that having a social media account does not affect their digital literacy (Menzi, Çalışkan and Çetin, 2012).

The fifth finding of the current study is that the time spent in the internet does not affect the pre-service teachers' digital literacy. Bahar, Uludağ and Kaplan (2009); on the other hand, found that the frequency of using the internet affects digital literacy. This finding does not support the finding of the current study.

In general, in the current study it was concluded that while the pre-service teachers' level of digital literacy increases with increasing grade level, gender, the state of having a social media account and the time spent in the internet do not have any significant effect on their level of digital literacy.

In light of the findings, following suggestions can be made:

➢ Students starting their undergraduate education should be provided with activities and applications that will enhance their level of digital literacy.

➢ The current study is limited to first-year and fourth year students attending Muğla Sıtkı Koçman University. Similar studies may be conducted on larger samples to increase the generalizability of the results

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The Metaphorical Perceptions of Science Teachers Regarding STEM Education

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Abstract

The aim of this research is to specify the metaphorical perceptions of science teachers regarding STEM education. The metaphors created by science teachers are interpreted in the World Economic Forum's Future of Jobs Report (2018) according to the skills that should be the most likely in individuals in the future. In this study, phenomenology pattern which is a method of qualitative research has been used. The study group consists of 84 science teachers with STEM education. The participants did not produce any negative metaphors related to the STEM education. 84 valid metaphors are classified using categories such as "Analytical Thinking and Innovation / Creativity, Originality and Sociability", "Active Learning and Learning Strategies", "Technology Design and Programming", "Critical Thinking and Analysis", "Complex Problem Solving/Reasoning, Problem Solving and Understanding", "Leadership and Social Impact" and "Emotional Intelligence". The most metaphors produced categories are "Leadership and Social Impact", "Complex Problem Solving / Reasoning, Problem Solving and Understanding", "Analytical Thinking and Innovation / Creativity, Originality and Sociability", while the least metaphors produced categories are "Emotional Intelligence", "Technology Design and Programming" and "Critical Thinking and Analysis". In this study, it has been concluded that STEM education develops 21st century skills which parallels with World Economic Forum. In this context, STEM education can be more integrated into the teaching programs. Moreover, science teachers who are practitioners of STEM education may be required to have STEM education with in-service training.

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Introduction

The most distinctive feature of developed and developing societies is that they adapt to the economic, scientific and technological changes experienced on a global scale by updating their education systems. As a matter of fact, the production and human resources required in the 21st century have become more important than the land and raw materials taken into account in the 19th and 20th centuries, and changes in the industry have required rapid changes in education systems (Altunel, 2018). In 21st century, since the concepts of 21st century skills, industry 4.0 and PISA (International Student Assessment Program) the integration of disciplines are related to both education and economy, they have been on the agenda of the world countries (Akgündüz, 2018). The changing agendas of countries make it clear that the consideration of current educational approaches and the fields of science, mathematics and technology independently from each other makes it difficult for individuals to acquire high-level skills such as creativity, critical thinking, and problem solving with classical education understanding (Akgündüz, Aydeniz, Çakmakçı, Çavaş, Çorlu, Öner, & Özdemir, 2015). For this reason, countries that give importance to education have moved away from traditional understanding and started to seek new educational approaches. New approach known as STEM education has emerged with the concept of the integration of disciplines, one of the concepts that are in the focus of countries (Akgündüz, 2018).

STEM education has been interpreted in different ways by different people. According to Sanders (2009), the first mention of STEM education was pioneered in the 1990s when the National Science Foundation in America started using 'SMET' for 'Science, Mathematics and Technology'; SMET has transformed into STEM (Erduran & Kaya, 2018). STEM education is an interdisciplinary education movement that aims to integrate the disciplines of science, technology, engineering and mathematics (Daugherty, 2013; Kuenzi, 2008). The general accepted definition of STEM education is as follows: STEM education is an educational understanding that brings different disciplines together by integrating disciplines, enables individuals to absorb 21st century skills, realizes in-depth learning in individuals and provides an opportunity for individuals to use information in daily life (Akyıldız, 2014; Yıldırım & Altun, 2015). In other words, the STEM approach brings individuals against real world problems instead of preparing them for life, and enables people to produce rational solutions to problems.

The purpose of STEM education is to direct individuals to STEM-related fields by integrating the disciplines of science, technology, engineering and mathematics with official or implicit practices from preschool to university (Gonzales & Kuenzi, 2012). Thanks to STEM education, students' interest in science, mathematics and technology increases and students gain a positive attitude towards these areas. According to Thomas (2014) the aims of STEM education;

- Raising individuals who are integrated with STEM literacy and producing the necessary workforce from these people,
- To carry out current work in the STEM field,
- To create new production opportunities that will achieve economic advantage in competition between states,
- In the future, to make individuals qualified for changing professions.

For the stated purposes, it was emphasized that individuals should adapt to changing economic, scientific and technological conditions in the world and individuals should turn to professions that will be in demand in the future.

Giving the necessary importance to STEM education is possible by reflecting it in education policies. Because changes in science and technology have made it necessary for countries to review their education systems. Turkey's adaptation of constructivist educational approach in 2004 proves this. Constructivism is an understanding that the student should be active contrary to the traditional understanding, constructs the individual after absorbing the information instead of taking it as it is, and emphasizes that the individual's prior knowledge, individual difference and learning conditions are important (Özmen, 2004). Constructivism aims to provide individuals with high-level mental skills such as questioning, decision making, and problem solving, taking into account individual differences, perspectives, and life experiences (Çepni & Ormancı, 2018). Along with the individual centred

constructivist approach and educational philosophy, Turkey has stepped into a new era in the field of education, mathematics, engineering and technology began to be given more attention. Constructivism approach that has affected educational studies in 30 years has formed the basis of STEM education (Karataş, 2018). In order to adapt to the new century, Turkey has taken several steps to adapt STEM approach to education policy. In the action plan for STEM education published by the Ministry of Education in 2016, was emphasized that some steps such as establishing STEM education centers, educating teachers in education centers and updating curricula according to the STEM education approach should be considered (MoE, 2016). In 2017, a program for STEM education was drafted and by adding the unit of the 'Science and Engineering Applications' to the curriculum of 4th, 5th, 6th, 8th grades, STEM education has been integrated into the program of science, mathematics and engineering. The draft program prepared by the Ministry of National Education in 2017 "Science, Engineering and Entrepreneurship Applications" was added to the unit instead of Science and Engineering Applications and it was accepted in 2018 (MoE, 2018). In the published program, the most important thing is to teach science, mathematics and entrepreneurship applications, with the aim of helping individuals acquire high-level skills such as creativity, entrepreneurship, communication, teamwork, decision-making, and analytical thinking (Altunel, 2018).

One of the biggest educational movement STEM which is focus of interest in many countries including Turkey, the reason why it is prefered is to establish a relationship between the economy and schools, industry, vocational training, daily life (Yıldırım, 2020). In other words, STEM education supports global entrepreneurship by enabling it to establish connections between school, society and business (Eroğlu & Bektaş, 2016). Therefore, in the economic competition between countries, it is necessary to give importance to STEM education in order to dominate the changing professions and to take part in the global race. Since, it has been stated that professions in STEM field will be the most popular professions that will enable countries to grow as competitive, innovative and raising their living standards in the global economic race (Langdon, McKittrick, Beede, Khan, & Dom, 2011). Therefore, in order to direct individuals to professions related to STEM education, the education process of the individuals should be planned in line with the 21st century skills that individuals should have published by the World Economic Forum. That's why, the skills that the business world wanted individuals to have a century ago quite different from the current expectations (Yıldırım, 2018).

In order for the 21st century individual to be successful in both education and business life, he can think creatively, critically and reflectively, work collaboratively with others, produce solutions to problems, have high communication skills, know how to access the information he needs, have the ability to benefit from technology while reaching information, must be an open, responsible, self-directed individual with advanced social skills (Uluyol & Eryılmaz, 2015). All of these are aimed at adapting the individual to the 21st century and acquiring high-level features such as critical thinking, creative thinking, communication skills and collaboration (Partnership for 21st Century Learning, 2016). Alongside these skills, the World Economic Forum Future of Jobs Report (WEF, 2018), 21st century skills that will be in the top 10 in 2022, which is in line with the 21st century skills, are shown in Table 1.

Table 1. Jobs and skills rising to 2022

PROFESSIONS	SKILLS
• Data Analyst and Scientist	• Analytical Thinking and Innovation
• Active and Machine Learning Specialist	• Active Learning and Learning Strategies
• General and Operations Manager	• Creativity, Originality and Assertiveness
• Software and Application Developer and Analyst	• Technology Design and Programming
• Sales and Marketing Specialist	• Critical Thinking and Analysis
• Big Data Specialist	• Complex Problem Solving
• Digital Transformation Specialist	• Leadership and Social Impact
• New Technology Specialist	• Emotional intelligence
• Corporate Development Specialist	• Reasoning, Problem Solving and Comprehension
• Information Processing Staff	• System Analysis and Evaluation

Source: World Economic Forum, *the Future of Jobs Report 2018*, (World Economic Forum Report, Geneva.

When Table 1 is examined, according to the World Economic Forum Report, analytical thinking and innovation, active learning and learning strategies, creativity, originality and assertiveness come first among the skills that individuals should have in business life. With this report, the skills and characteristics that individuals should have in order to be active and successful in business life were determined. In this context, individuals with STEM education can be prepared for the future by adapting to both the 21st century skills and the future skills determined by the World Economic Forum. Because the world, whose development is increasing day by day, needs individuals who research, question, produce solutions to problems, use information in daily life, know where and how to learn, and at this point STEM education comes to the fore (Altunel, 2018).

When the literature is reviewed, there can be so many studies that were carried out on STEM in Turkey (Erduran & Kaya, 2018; Çepni & Ormancı, 2018; Yıldırım & Altun, 2015; Eroğlu & Bektaş, 2016), however, there are limited studies that focuses on metaphorical perceptions of teachers and candidate teachers on STEM (Aladak, Zorluoglu & Yapucuoglu, 2019; Bozanoğlu, 2017; Ergün & Kıyıcı, 2019; Aksakal & Yılayız, 2019). In the study conducted by Aladak et al., (2019), 53 teachers from different branches who received STEM education were reached, and the metaphors created by the teachers were evaluated on the basis of product and process. At the same time, the metaphorical perceptions created were evaluated by taking 21st century skills into account. As a result, 60.4% of the teachers who participated in the study stated that STEM is process-oriented and 39.6% stated that STEM is product-oriented. And it has been concluded that STEM is both product and process oriented and individuals gain 21st century skills through STEM education. Another study by Bozanoglu (2017) measured the metaphorical perceptions of 30 teachers from different branches towards STEM education. As a result, the majority of the participants in the study stated that STEM applications were 'mind-enhancing, cooperating, motivating, creative and fun' while some of the participants stated 'unnecessary enthusiasm and waste of time, materials are incomplete and inadequate'. In the study, it was emphasized that teachers should be educated and the lack of materials should be eliminated in order to train people suitable for 21st century skills. Another study in which the metaphorical perceptions of science teacher candidates about STEM education were measured Chopper (2019). Teacher candidates participating in the study produced 50 metaphors. As a result of the study, they perceived the STEM education as an approach that aims to raise individuals who provide learning by living and produce solutions to problems. No negative perceptions about STEM education were encountered in the study. Aksakal and Yılayız (2019), in their metaphorical perception study on STEM education, unlike other researchers, a study was conducted by including the field of art (STEM + A or STEAM) to the STEM education. Based on the responses from 47 pre-service science teachers, 20 different concepts were divided into classes such as 'Art, Science, Environment and Life'.

Although there are many studies on STEM education, no study has been conducted on the metaphorical perceptions of science teachers who are implementers of the "Science, Engineering and Entrepreneurship Practices" unit added to the STEM education curriculum of 5th, 6th, 7th and 8th grades. At the same time, evaluating the responses of teachers according to the skills expected from individuals in 2022 by the World Economic Forum, which emphasizes that the skills and professions of the future, makes this study different from other studies. Since, it is highly important to have the skills of the future in individuals and to gain these skills to individuals through education.

The aim of this study is to determine science teachers' perceptions of STEM education and to evaluate metaphors according to the skills individuals should have in 2022. There are some evidences in literature that teachers' opinions about STEM education have a positive effect on teaching while applying STEM education (Thibaut et al., 2018). In this context, the aim of the study is to determine the metaphorical perceptions of science teachers towards STEM education. For this purpose, answers were sought for the sub-problems presented below.

- What are the metaphorical perceptions of science teachers towards STEM education?
- What skills are associated with the metaphors created by science teachers in the World Economic Forum's Future of Jobs Report (WEF, 2018), which will be in the top 10 for individuals in 2022.

Method

Research Model

While evaluating the metaphors created by science teachers for STEM education, the phenomenology design, one of the qualitative research methods, was taken into consideration. Phenomenology investigates the cases that are known about the facts but haven't been had in-depth and detailed information about the subject (Yıldırım & Şimşek, 2006). For this purpose, the perceptions of the individuals in the sample representing the universe about a subject are tried to be determined.

Study group

Purposeful sampling method was used in the study conducted for science teachers, since the participants involved in the study must have experience against the phenomenon (Merriam, 2015). Therefore, a total of 173 science teachers who received STEM education and did not receive STEM education were reached in the first place. In the study, 98 people out of 173 who received STEM training through in-service training were identified.

During the study, 173 science teachers were reached. 56.1% female and 43.9% male teachers participated in the study. 67.1% of the participants are undergraduate, 34.2% postgraduate and 1.7% doctorate. At the same time, 56.6% of the participants stated that they received STEM education and 43.4% stated that they did not receive STEM education. Content analysis technique was used in the analysis of the data, and the questions answered by 98 people who received STEM training and in-service seminars were analyzed to make the study suitable for purposeful sampling. However, when the data were examined, when the missing or incorrect forms were removed, the metaphorical perceptions created by 84 individuals who had STEM education were taken into consideration and evaluated.

Data Collection Tool and Data Collection

In order to measure the metaphorical perceptions of science teachers regarding the concept of STEM education, a semi-structured interview form was prepared by the researchers and the necessary explanations were given to the participants about metaphor in the explanation section. First of all, science teachers participating in the study, were asked to answer the question "What does STEM mean to you?". It was aimed to make sure that the interview form was filled by the participants in a disciplined manner. At the next stage, Participants' STEM education is like …………………; because …………………………" they were asked to complete the sentence. Thus, it was aimed to reveal the metaphorical perceptions of science teachers about STEM education.

Data Analysis

The data in the study was made according to the stepwise data analysis determined by Saban (2009). These stages are respectively coding and separation, identifying sample metaphors, categorizing, validity and reliability, analysis of data. In the coding and sorting phase, the metaphors developed by 98 Science Teachers were examined one by one and 14 forms that gave incomplete or incorrect answers to the questions were selected among the participants. In the stage of determining sample metaphors, the best example of metaphor representing each metaphor was determined, thus it became easier to list the metaphors. In the categorization stage, in order to prove that STEM education prepares individuals for the future, categories were created according to the skills that the World Economic Forum should have in 2022 and parallel to 21st century skills. Since some categories contain close meanings, they have been combined. As a result, evaluation was made under 7 categories. In the reliability and validity phase, the following path was followed: Creating detailed forms and reports in the study, informing the researchers about the study in detail and accurately, and not changing the answers given to the questions on the form increases the validity of the study (Yıldırım & Şimşek, 2006). Therefore, the studies carried out in the process are stated in the study in detail and comprehensively. Expert opinions were consulted to ensure reliability, and the data were evaluated in detail. The reliability of the study was calculated using the reliability formula suggested by Miles and Huberman (1994). Reliability = Consensus / (Consensus + Disagreement) as a result of

the calculation, the reliability of the study was found to be 90%. A reliability higher than 70% indicates that the study is reliable (Miles & Huberman, 1994). The result obtained here is considered reliable for the research. In the data analysis, which is the last step, the frequency and percentile of the data were determined and transformed into quantitative data.

Results

In this part of the study, after the necessary arrangements were made, the metaphors and explanations created by 84 Science Teachers about the concept of 'STEM education' were categorized. The aim is to reveal the perceptions of Science Teachers about STEM education. The educational status of the participants in the study is shown in Table 2.

Table 2. Educational Level of the Participants

Education Level	Frequency	Percentage
License	53	63.09
Master	30	35.71
Ph.D	1	1.19
Total	**84**	**100.00**

In Table 2, 63.09% of 84 science teachers whose metaphorical perceptions were evaluated were found to have a license degree, 35.71% a master's degree, and 1.19% a doctoral degree. Thus, the evaluation was made with 84 people, clearing the answers of those who gave incomplete or incorrect answers. As some of the skills emerging by the World Economic Forum have close meanings, " Analytical Thinking and Innovation ' and 'Creativity, Originality and Assertiveness' skills and " Reasoning, Problem Solving and Comprehension" and " Complex Problem Solving" categories were created by combining their skills. Categories created as "Analytical Thinking and Innovation / Creativity, Originality and Assertiveness", "Active Learning and Learning Strategies", "Technology Design and Programming", "Critical Thinking and Analysis", "Complex Problem Solving / Reasoning, Problem Solving and Comprehension", "Leadership and Social Impact", "Emotional intelligence" in the form. Of the skills listed ,no metaphor has been identified for the category of " System Analysis and Evaluation".

Categories for Metaphors that The Science Teachers Produced for The Concept of " STEM EDUCATION"

Metaphors are properly categorized. These categories are given in Table 3.

Table 3. Categories Created for the Concept of STEM education

Categories	Frequency	Percentage
Analytical Thinking and Innovation/Creativity, Originality and Assertiveness	13	15.47
Active Learning and Learning Strategies	10	11.90
Technology Design and Programming		8.33
Critical Thinking and Analysis	8	9.52
Complex Problem Solving / Reasoning, Problem Solving and Comprehension	14	16.66
Leadership and Social Impact	28	33.33
Emotional Intelligence	4	4.76
Total	**84**	**100.00**

According to Table 3, the metaphors created by science teachers are grouped under seven categories. 15.47% of the metaphors were in the category of "Analytical Thinking and Innovation / Creativity, Originality and Assertiveness", 11.90% "Active Learning and Learning Strategies"; 8.33% "Technology Design and Programming", 9.52% "Critical Thinking and Analysis", 16.66% "Complex Problem Solving / Reasoning, Problem Solving and Comprehension"; 33.33% "Leadership and Social Impact"; 4.76% "Emotional intelligence".

Metaphoric Findings Regarding the Category of "Analytical Thinking and Innovation / Creativity, Originality and Assertiveness" Produced by Science Teachers on the concept of "STEM EDUCATION"

Considering the WEF Skills of the metaphors developed by Science Teachers for STEM education, the metaphors, the frequencies of the metaphors and the explanations of the metaphors are shown in Table 4.

Table 4. Metaphors related to the category of "Analytical Thinking and Innovation / Creativity, Originality and Assertiveness"

Factory (1)	Key (1)	Seed (1)	Recycling facility (1)
With the harmonious work of different disciplines, brand new and original products can be created.	It enables new doors to be opened in education.	We get the reward of our efforts in line with the attention we show. And we create new products.	We get the reward of our efforts in line with the attention we show. And we create new products.
Master (2)	**Investing in the future (1)**	**Novelty (1)**	**Bring back to life (1)**
It enables us to combine existing resources with experiences and produce new solutions.	It is imperative to move forward.	It allows us to keep up with the developing technology and the digitalizing world.	It is an effective process in producing a useful product in the reuse of waste tools and equipment.
Laboratory (1)	**Rainbow (1)**	**Creativity (1)**	**Knit (1)**
New discoveries can be made at any time.	It creates a whole beauty (work, project, lesson) by bringing together different areas.	It arises from needs.	A whole is formed when loop by loop.

When the Table 4 is examined, it can be seen that science teachers produced 12 metaphors as factory (1), key (1), seed (1), recycling facility (1), master (2), investing in the future (1), novelty (1), bring back to life (1), laboratory (1), rainbow (1), creativity (1) and knit (1) related to the category of 'Analytical Thinking and Innovation / Creativity, Originality and Assertiveness'. It can be interpreted that it improves their skills and contributes to the development of this skill. Some of the sentences that represent the category are 'STEM education is like innovation because it allows us to keep up with the developing technology and the digitalizing world' and 'STEM education is like bringing back to life, because it is an effective process of extracting useful products from the reuse of waste tools and equipment'.

Metaphoric Findings Regarding the Category of "Active Learning and Learning Strategies" Produced by Science Teachers on the concept of "STEM EDUCATION"

The metaphors and their explanations produced by science teachers are shown in Table 5 by taking WEF skills into consideration.

Table 5. Metaphors related to the category of "Active Learning and Learning Strategies"

Active learning (1)	Sunlight (1)	Guide of a machine (1)	Playing (1)	Kibbutz system (1)
At the end of the process, what and how much we have learned is revealed and gives us the opportunity to control ourselves.	It is necessary to what and how to learn	You know what it is, but you need to learn how to use it.	Provides permanent learning.	It supports and includes a desired behavioral change that enables us to work together with the division of labor, but attain basic scientific satisfaction without any interest.
Rope (1)	**Music notes (1)**	**Space (1)**	**The foundation of the building (1)**	**Requirement (1)**
It easily connects everything and makes learning easier.	The subjects taught with STEM education turn into a pleasant-sounding melody in students.	It contains a lot of information; it is fun and intriguing.	The basis of success will come to us according to our capacity to apply the theoretical knowledge we know.	Generation Z does not want to receive information directly anymore. They want to use the information they get.

According to Table 5, science teachers produced 10 metaphors regarding the category of "Active Learning and Learning Strategies". These metaphors are active learning (1), sunlight (1), guide of a machine (1), playing (1), kibbutz system (1), rope (1), musical notes (1), space (1), the foundation of the building (1) and necessity (1). In the explanation section, it can be interpreted that the participants emphasized concepts such as permanent learning and facilitating learning, and that individuals who received STEM education developed the 'Active Learning and Learning Strategies' skill, which is one of the skills that individuals should have in the future. The most representative sentences of this category are "It is like an exam. It gives us the opportunity to evaluate ourselves" and "It is like a life, teaches what why and how we learn".

Metaphoric Findings Regarding the Category of "Technology Design and Programming" Produced by Science Teachers on the concept of "STEM EDUCATION"

The metaphors and their explanations produced by science teachers regarding the category of "technology design and programming' are shown in Table 6 by taking WEF skills into consideration.

Table 6. Metaphors related to the category of "Technology Design and Programming"

Beehive (1)	Production (1)	Machine (1)	Airplane (1)
You design and build.	It requires design and invention.	The parts become machines by coming together with the integration of technology with education and a useful product emerges.	It will get you to your goal in a very short time. It requires technical knowledge and skills.
The link between technology, design and education (1)	**An upgrade of the technology and design course (1)**	**A newborn baby (1)**	
With this training, more contemporary studies can be done. New inventions can be devised.	The student is active.	It takes time and effort to grow and develop.	

Table 6 shows that science teachers produced 7 different metaphors for the concept of 'technology design and programming'. These metaphors are beehive (1), production (1), machine (1), an upper version of the technology design course (1), airplane (1), the link between technology and design (1), a newborn baby (1). When explanations are reviewed, it can be interpreted that the individuals who have received STEM education have emphasized the concepts such as design and

invention. Thus, it can be said that it develops the skill of "Technology Design and Programming", which is one of the desired skills in the business world. The most representative sentences of this category are "It is like the link between technology, design and education. Because with this training, more contemporary studies can be done. New inventions can be devised."

Metaphoric Findings Regarding the Category of "Critical Thinking and Analysis" Produced by Science Teachers on the concept of "STEM EDUCATION"

The metaphors and their explanations produced by science teachers are shown in Table 7 by taking WEF skills into consideration.

Table 7. Metaphors related to the category of "Critical Thinking and Analysis"

Hard disk (2)	Multi-dimensional thinking (1)	Viewing from different windows of a building (1)	Computer (2)
It deals with all aspects, not just one aspect.	In STEM, there is no single and correct answer, everyone can create different puzzles for the same problem.	Events are viewed from different angles from each window.	It includes the ability to approach problems from all aspects.

Figure 3 shows that science teachers produced 5 different metaphors for the concept of "Critical Thinking and Analysis" such as life (2), hard disk (2), multidimensional thinking (1), viewing from different windows of a building (1), computer (2). Being emphasized the concept of 'multidimensional thinking' by the participants is interpreted as STEM education can develop the desired skills in the future business world. The most representative sentences produced by the participants are "STEM education is like looking from different windows of a building. Because every window looks at events from different angles and gives different ideas."

Metaphoric Findings Regarding the Category of "Complex Problem Solving / Reasoning, Problem Solving and Comprehension" Produced by Science Teachers on the concept of "STEM EDUCATION"

The metaphors and their explanations produced by science teachers regarding this category are shown in Table 8 by taking WEF skills into consideration

Table 8. Metaphors related to the category of "Complex Problem Solving / Reasoning, Problem Solving and Comprehension

Mother (1)	The drug in the movie 'Limitless' (1)	Teacher (1)	Pinhole (1)	To respond to the need (1)
Finding solutions to problems.	It allows the brain to become limitless by making new connections.	It produces solutions to problems and solves them.	You can thread by thinking.	With STEM, you can meet your needs.
Technology (1)	**Lighthouse (1)**	**Scientific research process (1)**	**Life (2)**	**Silicone Gun (1)**
It produces the latest solution that makes life easier.	It shows the way.	In STEM education, help is obtained from science about how to solve the problem and scientific process skills are used.	It requires applications in life.	It can be used for problem solving in many disciplines.
Collaboration of different minds (1)	**Puzzle (1)**	**Repairman Apprentice (1)**		
It is the cue of different minds.	It is difficult, but also fun.	It produces a solution to a problem.		

Table 8 shows that science teachers produced 13 different metaphors for the concept of "Complex Problem Solving / Reasoning, Problem Solving and Comprehension" such as "mother (1), the drug in the movie 'Limitless' (1), scientific research process (1), pinhole (1), respond to the need (1), technology (1), lighthouse (1), teacher (1), life (2), silicone gun (1), collaboration of different minds (1), puzzle (1), repairman apprentice". Being underlined the concept of producing solutions to problems by the participants can be interpreted that STEM education provides individuals to gain "Complex Problem Solving / Reasoning, Problem Solving and Comprehension" skill. The most representative sentences regarding this category are "STEM education is like a mother. Because it finds solutions to problems".

Metaphoric Findings Regarding the Category of "Leadership and Social Impact" Produced by Science Teachers on the concept of "STEM EDUCATION"

The metaphors and their explanations produced by science teachers regarding this category are shown in Table 9 by taking WEF skills into consideration.

Table 9. Metaphors related to the category of "Leadership and Social Impact"

Family (1)	Life itself (1)	Combination teaching (1)	Solidarity (1)	Orchestra (2)
Good things happen when they are all together.	Life is interdisciplinary.	Science, math, information technology is required.	People from different fields give ideas for the solution of a problem by inspiring by each other.	Each instrument handles the same melody with different timbre and when the integrity is formed, it forms the background music of life.
Society (1)	**Puzzle (3)**	**Chain (1)**	**Our nerve cells (1)**	**Brain (1)**
It can be done alone, can be done in bulk and is suitable for everyone.	In order for the puzzle to function, all parts must be used correctly in exact place.	The parts that make up it are linked like a chain.	The more connections each synapse has with other synapses, the higher the level of knowledge can be. Because as the branches of education support each other, it can develop faster.	Each lobe has a function, but when combined, it becomes more functional.
Galaxies (2)	**Organism (2)**	**Ant nest (1)**	**An analog clock (2)**	**Bridge (1)**
They are arranged in a certain order in the universe.	It is a structure where many systems come together and form.	Ants produce products by working in colonies, not alone.	The gears will not work without coming together.	Each leg has a specific function.
Our Organs (1)	**Collaborative Working (1)**	**Entrepreneurship (1)**	**Car (1)**	
These disciplines are inseparable.	People's investigative spirit works together to achieve better results.	Being assertive and involved is essential for this education. Designing the product for the needs.	In order to reach a goal, all parts must fulfill their duties.	

Figure 6 shows that science teachers produced 18 different metaphors for the concept of "leadership and social impact". These are family (1), life itself (1), combination teaching (1), solidarity (1), orchestra (2), society (1), puzzle (6), our nerve cells (1), brain (1), galaxies (2), organism (2), ant nest (1), an analog clock (2), bridge (1), organs (1), collaborative working (1), entrepreneurship (1)

and car (1). Being emphasized the concepts of collaboration and solidarity by the participants can be interpreted that STEM education gains the skills of "Leadership and Social Impact". The most representative sentences regarding this category are "STEM education is like a society because it can be done both alone and collective forms and it appeals to everyone", "STEM Education is like solidarity. Because people in different fields give each other ideas for the solution of a problem by inspiring by each other".

Metaphoric Findings Regarding the Category of "Emotional intelligence" Produced by Science Teachers on the concept of "STEM EDUCATION"

The metaphors and their explanations produced by science teachers regarding this category are shown in Table 10 by taking WEF skills into consideration.

Table 10. Metaphors related to the category of "Emotional intelligence"

Butterfly cocoon (1)	Inner world (1)	Kindergarden (1)	Exam (1)
It allows the individual to realize their own abilities.	It takes out the knowledge and engineering inside the child, allowing him to discover himself.	You do an activity, but the child studies and learns versatile. For example, motor development in peer relationships affects their development in the cognitive sensory sphere.	It allows us to evaluate ourselves.

Table 10 shows that science teachers produced 4 different metaphors for the concept of "Emotional intelligence". These metaphors are inner world (1), butterfly cocoon (1), exam (1), and kindergarten (1). Being emphasized the concepts of self-regulation and self-awareness by the participants can be interpreted that STEM education improves one of the desired skills in the business world. The most representative sentences regarding the category are "STEM education is the inner world because it extracts the knowledge and engineering within the children and allows them to discover himself".

Conclusion, Discussion and Suggestion

In this study, in which the metaphorical perceptions of science teachers towards STEM education were determined, 70 valid metaphors were produced by science teachers. The metaphors created are categorized according to the skills expected from individuals in the future business world in the World Economic Forum's Future of Professions Report in 2018, which parallels with 21st century skills. These categories are: "Analytical Thinking and Innovation / Creativity, Originality and Assertiveness", "Active Learning and Learning", "Technology Design and Programming Strategies", "Critical Thinking and Analysis", "Complex Problem Solving / Reasoning, Problem Solving and Comprehension", "Leadership and Social Impact" and "Emotional intelligence" in the form. The reason for choosing these categories is to prove whether the skills of creativity, emotional intelligence, active learning, problem solving, and collaboration, which are the skills that the business world expects from individuals in the future, are reflected in the attitudes and thoughts of teachers who have received STEM education. Because the attitudes and beliefs of the teachers, who are the implementers of the curriculum, affect the methods and techniques they use in the classroom, it is necessary to reveal the teachers' thoughts on STEM education and to determine the difficulties they experience (Eroğlu & Bektaş, 2016).

When the findings section is examined, the categories in which science teachers produce the most metaphors are "Leadership and Social Impact", "Complex Problem Solving / Reasoning, Problem Solving and Comprehension", "Analytical Thinking and Innovation / Creativity, Originality and Assertiveness". The categories for which they produce the least metaphor are "Emotional intelligence", Technology Design and Programming" and "Critical Thinking and Analysis". When the metaphors in the categories were examined, it was concluded that science teachers did not produce any negative metaphors for STEM education and they had a positive approach to STEM education.

In present research, it was concluded that science teachers produced metaphors such as 'key,

foundation of building, innovation' for the category of "Analytical Thinking and Innovation / Creativity, Originality and Assertiveness. It can be understood that STEM education as an approach that allows the individual to discover new products, inventions and inventions. There is a similar study was conducted by Ergün & Kıyıcı (2019), named as "Metaphoric Perceptions of Science Teacher Candidates on STEM Education", the participants produced metaphors such as "scientist, an advanced factory, engineer". As a result, it has been concluded that STEM education enables individuals to create new products and find solutions to problems. Likewise, the TUSIAD STEM report published in 2017 supports individuals' perception of 'innovation' in STEM education. In the report of TUSIAD (2017) 'Towards 2023 STEM requirements in Turkey', under the heading of 'the STEM supports innovation' Sweden is given as an example. In this report, drawing attention to Sweden's inventions such as 'seat belt, pacemaker, Skype communication application', it was stated that STEM fields are very important in Sweden and individuals are encouraged to STEM departments by the state. For all these reasons, STEM education is an effective to gain the one of the skills that individuals should have in 2022 by the World Economic Forum, "Analytical Thinking and Innovation / Creativity, Originality and Assertiveness."

For the category 'Active Learning and Learning Strategies', metaphors such as 'butterfly cocoon, active learning, life' were created by the participants, it was stated that the individual evaluates himself with STEM education and included inquiries at the learning stage. As a matter of fact, in active learning, the individual should make decisions on the subjects such as how much he / she should learn and how the learning event should take place, and have responsibility for the subjects to be learned (Açıkgöz, 2003). For this reason, it was clearly seen that the participants in the study had a perception that STEM education improves active learning skills and prepares the individual for future professions.

It was concluded that for the category of "Technology Design and Programming", individuals stated that STEM education is an approach to using technology and creating designs by producing metaphors such as 'beehive, production, the next version of the technology design course, the link between technology and design'. One of the future skills in the business world is 'Technology Design and Programming.' There is a perception that the "skill" will gain individuals with STEM education. For another category, "Critical Thinking and Analysis', metaphors were produced to emphasize "STEM education provides individuals with multi-directional thinking", and it was commented that STEM education is an education that improves critical thinking. Similar to this study, in the study by Aladak et al. (2018) for critical thinking category based on 21st century skills, metaphors such as day and night, Google, living, fluid pressure were created by the participants. And in the study, it was emphasized that there are perceptions of the science teachers that STEM education provides individuals with critical thinking skills and that the participants have a positive attitude and perception on this issue.

In other categories that constitute the most metaphor in the research are "Reasoning, Problem Solving and Comprehension / Complex Problem Solving", individuals used expressions such as 'STEM education finds solutions to problems and makes life easier.' It was stated that STEM education contributes to solving problems of 21st century, moreover, it is highly important for both this century skills and the WEF skills that the future business world expects from individuals. Indeed, problem solving skill was expressed as taking action to resolve when encountering a problem in 2015 in 'STEM education in Turkey Progress Report', it is defined as the first skill to gain in 21st century (Akgündüz et al, 2015).

Another category with the most metaphors in the research is "Leadership and Social Impact". For this category, such metaphors as family, society, our nerve cells, brain" were created, and in the explanation section, it was emphasized that it provides interpersonal cooperation. For both "learning and innovation skills" of the 21st century skills, as well as the division of labor within the scope of WEF skills, it has become extremely important to organize a business together. As a matter of fact, in the study conducted by Çınar, Pırasa, & Sadoğlu (2016), it was stated that STEM education enables cooperative learning and contributes to the socialization of individuals. As a result, when the data and studies were evaluated, it was clearly said that the science teachers participating in the study had the

perception that individuals would gain social life, collaboration and leadership skills through STEM education.

One of the other skills that the business world expects from individuals 'Emotional intelligence'. For this category, such metaphors as inner world, butterfly cocoon, exam, and kindergarten were produced. STEM education was emphasized as realizing one's own talents and discovering their abilities. In the Future Affairs Report of the World Economic Forum that convenes annually in Davos (2018) emotional intelligence was taken as one of the skills of the future, that's why, it is a very important result for STEM education to improve emotional intelligence.

As a result, it will be needed more researchers, problem solvers, environmentally sensitive, who have self-management and self-awareness, who think analytically and critically, who have advanced decision-making skills, and who understand the importance of collaborative work. Therefore, societies need to prepare individuals for the professions that will be in demand in the future and gain the necessary skills to individuals. The skills that the World Economic Forum wants individuals to have in parallel with 21st century skills, so 21st century skills should be well analyzed and included in education systems. Indeed, Turkey is one of the countries that take this issue into consideration, in recent years has taken several steps to prepare individuals for their future profession. In the report of 'Toward 2023 STEM requirements in Turkey' by TUSIAD (2017), the issues are emphasized that 75% of the profession takes place in the STEM areas and also within 5 years the interest of STEM areas will increased. Therefore, it is necessary to include STEM education in the education system and to train individuals in this direction. Furthermore, for the implementation of STEM education that was added to the curriculum in 2018, STEM education should be given not only to volunteers, but also to all science teachers, who are the practitioners of the unit of 'Science, Engineering and Entrepreneurship Practices'. STEM education should be integrated into the curriculum of universities and the development of prospective teachers towards their profession should be supported.

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Reflection of eTwinning Activity on Teachers' Professional Development in Project-Based Teaching Process

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Öz

Using project-based applications in education and enriching teaching-learning environments with technology, besides supporting 21st century skills of teachers, positively affects their professional development. The integration of technology into education facilitates the implementation of both national and international projects in schools. The purpose of this study is to determine how eTwinning projects reflect on teachers' professional development. about eTwinning projects in Turkey are encountered quite a few studies. The research was conducted with 24 teachers from various branches who took part in eTwininng projects in the 2019-2020 academic year. Participants were determined according to the voluntary principle and appropriate sampling from non-random sampling methods. The data of the study were collected through semi-structured interviews, which took approximately 30 minutes. Five open-ended questions were asked to the participants to find the impact of eTwinning projects on teachers' professional skills. Descriptive and content analysis were used to analyze the data. Expert opinion and researcher triangulation were also included in data analysis. As a result of the research, it is seen that teachers describe their eTwinning projects with words such as cooperation, sharing, technological development and innovation. Participants express that eTwinning projects are embraced by teachers, they are willing to take part in the project process, teachers from all levels and branches should take part in eTwinng projects. In line with the analysis of the data obtained from the participants, it has been concluded that eTwinning projects have a positive effect on the professional development of teachers.

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Introduction

The project is a study that aims to realize change in a planned period, is related, aims and targets are determined, and different outputs are seen when the implementation is realized. In the project that includes scientific studies; It is the situation of obtaining data by observation, processing and organizing the collected data, investigating the cause-effect relationship in the data, and transferring information and results to the next generations (Milli Eğitim Bakanlığı, 2007).

Purpose of the project; It is to obtain in-depth information about the subject rather than finding the right answers to the questions posed by the teacher. Important feature of project work in the education process; It is a research effort where children or teachers focus on finding answers to questions about the chosen topic (Katz, 1994). According to Hamurcu (2000), project working process provides students with vital skills such as planning, budget design, process monitoring; the ability to use technology such as internet, computer, and web 2.0 tools; cognitive skills such as decision making, critical thinking, and problem solving; self-control skills such as decision-making, planning and organizing business and operations, and managing time; They bring interest in learning, curiosity towards education for their future, a sense of achievement and self-efficacy beliefs.

Projects run through the eTwinning Portal are the greatest example of project-based learning. The portal is a multilingual website that provides collaboration tools and services for teachers to create partnerships and joint projects on different topics. It is a free, secure European platform. The portal serves in 31 languages according to May 2020 data. eTwinning; consists of two words: "e" for "electronic" and "twin" for "mutual partnership". The eTwinning European Online Platform was established in 2005 by the European Commission as part of the Lifelong Learning Program to increase cooperation between schools in Europe and support the exchange of good examples. Since 2005, the platform is regarded as a fundamental innovation tool in learning with the integration of teaching strategies, disciplines, and disciplines with many changes in the Erasmus program.

The eTwinning Activity was initiated in 2005 within the scope of the e-learning program affiliated to the European Commission and continues to be carried out within the framework of the Erasmus + program of the Education, Audiovisual and Culture Executive Agency (EACEA) as of 2014. The eTwinning Activity is coordinated by the Central Support Service affiliated with the European School Network established with the Ministry of Education in 34 countries in Europe. eTwinning has been implemented in Turkey since 2009. eTwinning Turkey National Support Service opetares under the General Directorate of Innovation and Educational Technologies of the Ministry of National Education. Since 2005, more than 800,000 teachers have participated in the activity, and approximately 280,000 projects have been carried out in more than 200,000 schools. eTwinning Activity is a community that open to innovation, constantly renews itself and grows every day. eTwinning is Europe's largest e-learning platform where teachers carry out projects with their students, contribute to their personal and professional development, work collaboratively, and share experiences, knowledge, and skills. Thanks to this platform, teachers work in partnership and organize activities for students to do. They conduct research in interaction with participatory roles, respect decisions made, develop 21st century skills and support their students' development. eTwinning projects take place with the contribution of each partner in the team. The main purpose of eTwinning projects is to implement joint projects with educators and schools from different member countries, focusing on effective and efficient cooperation through information and communication technologies. (Carpenter ve Tanner 2013).

At the core of eTwinning are joint projects run by at least two schools. Projects can have any subject but must have a good balance between the use of ICT and classroom activities and must be particularly integrated with the national curricula of the schools participating in the project. During its implementation, it has proven that eTwinning Projects have developed in students the basic competences specified by the European Parliament and the Council (Kearney ve Gras-Valazquez, 2015).

eTwinning is mainly based on the premise that the internet and communication tools provide an ideal environment for a new online collaborative learning and change model. The eTwinning initiative aims to develop new and innovative methods for the use of ICT in European schools,

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through school partnerships, by encouraging online cooperation between teachers and students (Galvin 2006) eTwinning is an institutional collaborative learning environment, but it is an educational social network that collaborates remotely at the same time interval or at different times, using information technology to work on a common project. In this educational social network, students and teachers are given the opportunity to implement effective teaching practices and projects that improve 21st century skills. Manfredini (2007) calls eTwinning an opportunity for students to get to know new cultures, increase teachers' motivation for new approaches in education and continue their professional development. eTwinning is not only a project-driven portal, but an open source that facilitates teachers to continue their professional development. As the number of teachers participating in the portal increased, the online training needs increased at the same rate. At this point, professional development seminars are published and updated in the professional development section of the portal. Massive Online Open Courses (MOOC) prepared by the content development team of Turkey National Support Service is published at http://etwinningonline.eba.gov.tr/. The course is on air for a total of 57 hours, 43 hours in Turkish and 14 hours in English. Courses continue to be published by updating and including new topics (eTwinning Eba, 2020).

In this context, supporting the general competencies of the teacher profession specified and In order to increase the professional development of teachers, in local, national and international platforms eTwinning projects is being implemented in Europe since 2005, in Turkey since 2009. Numerical data of the Central Support Service (2020) are given in Table 1.

Table 1. The Numbers belonging to Turkey and Europe in eTwinning Portal

	Turkey	Europe
Number of Registered Schools	49.241	205.126
Number of Registered Teachers	214.305	800.250
Number of Registered Projects	39.465	332.248

It has been found in the form of studies In the literature research about eTwinning Projects implemented by more than 800 thousand teachers in 44 countries around the world; Reflections and effects of eTwinning and eTwinning (Gülnar & Yatağan, 2014, Gülnar, 2015, Akdemir, 2017) eTwinning and technology integration (Bozdağ, 2017), eTwinning's cultural dimension and disciplinary research (Yılmaz Altun Yılmaz, 2012), Basing eTwinning on educational opportunities for students and teachers (Fat, 2012; Scott, 2009; Gilleran,2007; Gajek ve Poszytek, 2009; Bacescu, 2016, Gajek, 2018), teachers' perceptions of eTwinnng (Prieto & Escobar, 2017; Akdemir, 2017, Crişan, 2013, Holmes & Sime, 2012), key competences in international projects in the eTwinning Program (Gajek, 2009) eTwinning in language learning: perspectives of successful teachers (Akdemir,2017), multidimensional foreign language training: an example of an eTwinning Project (Demir, 2019) , eTwinning proje uygulamalarının öğrencilerin yabancı dil becerileri ile öğretmenlik mesleki gelişimine katkısı (Akıncı, 2018) birincil sınıf ortamında küçük ortak çalışma grupları için bir eTwinning projesine katılmanın avantajlarını keşfetmek (Kane, 2011). It has been found in the studies that the eTwinning Projects are not directly focused on the effects of teachers' professional development.

The main purpose of this research is to answer the question of Does eTwinning project work, implementation in their classrooms by teachers with different working hours at different school levels, in different branches, contribute to the professional development of teachers?

Method

Research Pattern

In this research, qualitative research method, which examines the views of teachers from various branches who took part in eTwinning project activities, was used. Qualitative research is the study of realistically and completely revealing the phenomena and perceptions in which qualitative data collection methods such as interview, observation and document analysis are used (Yıldırım & Şimşek, 2011).

Since in-depth interviews were made with 24 teachers from different branches about eTwinning projects through semi-structured interviews, the design of the research was determined as a

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case study. Case study, which is one of the qualitative research approaches, is a method that makes use of many data collection tools to carry out the study in detail and allows scientific inferences about the data obtained by examining the study in detail and in depth (Cresswell, 2012; Woodside, 2010; Yin, 2003). The situation examined in the research is the examination of the reflection of eTwinning projects on the professional development of teachers.

Study group

The research was carried out with 24 teachers in the branches of English, Primary school, Preschool, Mathematics, Turkish, Physics and Turkish Language and Literature who work in various provinces of Turkey In the 2019-2020 Academic year.

Participants were determined according to the voluntary principle and appropriate sampling from non-random sampling methods. This sampling method gives the researcher practicality and speed. In addition, it has advantages such as providing easy accessibility, determining the participants in the close circle, saving time and being economical (Miles & Huberman, 1994; Yıldırım & Şimşek, 2011).

In the study, the names of the teachers who participated in the study were not used depending on the ethical principle. According to their branches, teachers, English teachers E1, E2… E13, Primary School Teachers PS1, PS2… PS5, Kindergarden Teachers K1, K2, K3, Turkish Language Teachers T1, Turkish Language and Literature teachers TL1 and Physics teachers P 1. The demographic information of the participants is presented in Table 3. The detailed distribution number of the participants according to their branches and the levels they worked is shown in Table 4.

Table 2: Demographic information of the participants

Participant	Gender		Grade	Branch
	Female	**Male**		
E1	+		High School	English
E2	+		High School	English
E3		+	High School	English
E4	+		Secondary School	English
E5	+		Secondary School	English
E6	+		Primary School	English
E7	+		High School	English
E8	+		High School	English
E9	+		High School	English
E10	+		Secondary School	English
E11		+	High School	English
E12	+		Primary School	English
E13	+		Secondary School	English
PS1	+		Primary School	Primary School Teacher
PS2	+		Primary School	Primary School Teacher
PS3		+	Primary School	Primary School Teacher
PS4	+		Primary School	Primary School Teacher
PS5	+		Primary School	Primary School Teacher
K1	+		Kinder garten	Kinder garten Teacher
K2	+		Kinder garten	Kinder garten Teacher
K3	+		Kinder garten	Kinder garten Teacher
T1	+		Secondary School	Turkish Language
TL1	+		High School	Turkish language and Literature
P1	+		High School	Physics

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As Table 2 is examined, it is seen that most of the participants (13 people) are teachers from the English branch. The numbers regarding the branches and school levels of the teachers who participated in the study are summarized in Table 3.

Table 3. School grade of the participants and the total number of branches

Branches of Participants	School Grade			
	Kidergarten	Primary School	Secondary School	High School
English Teacher	-	2	4	7
Primary School Teacher	-	5	-	-
Kindergarten Teacher	3	-	-	-
Turkish Language Teacher	-	-	1	-
Turkish Language and Literature	-	-	-	1
Physics Teacher	-	-	-	1
Total:				24

Data Collection Process

For the implementation of the research, firstly, teachers who took part in eTwinning projects were contacted and an informative study was carried out about the purpose, application and duration of the research. Semi-structured interview technique was used to collect research data. The low number of participants and the sincere ability of the participant to convey their thoughts in the practice were effective in choosing this type of interview. Research data were collected at scheduled times between 01.03.2020 - 10.03.2020. The participants who took part in eTwinning projects were interviewed, which lasted about 30 minutes, by asking research questions prepared previously. Participants were given the opportunity to examine their answers later. The application took place in a single session for each participant.

Data Collection Tool

The data of the study were obtained by applying five open-ended questions in order to find the reflection of teachers' professional skills through eTwinning projects. These questions are ;

• What are the views on the eTwinning project?

• What are the challenges and solution suggestions encountered during the eTwinning project implementation phase?

• What are the skills eTwinning project applications bring to students?

• What professional skills did they gain in the eTwinning project implementation process?

The reflection and working time of eTwinning projects on teachers form the basis of five questions. It was applied by researchers to 24 experienced teachers who worked in eTwinning projects for at least one year, selected from different branches, who took part in eTwinning projects. The data collection tool was created by taking the opinions of the teachers who took part in the literature review and the eTwininng projects that have been working in the field for more than 10 years. This question was asked to three researchers who experts in the field are, and the interview questions to be made necessary arrangements were finalized.

Data analysis

Descriptive and content analysis were used in the analysis of the data obtained. The data collected through the semi-structured interview was translated into text in electronic environment and re-read and the data that did not fall into the research problem was removed and the data was reduced. The raw data obtained were analyzed at different times by the researchers and an independent researcher. Different themes and codes were created in line with this analysis. The researchers, who came together at different times, compared the analysis they had done, and determined the points that were reached and not reached. The researchers used the formula developed by Miles and Huberman (1994) in finalizing their analysis (Reliability = Consensus / Consensus + Disagreement). The

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consistency reliability among researchers was found to be 0.84. This reliability value is considered acceptable for scientific studies. (Miles & Huberman, 1994). While one of the researchers teaches qualitative data analysis in the field of Educational Sciences, the other researchers are graduate students who took qualitative data courses. The independent researcher involved in the analysis of the data has many qualitative studies. It can be said that the fact that the researchers who analyze the data are experienced in qualitative studies directly increases the reliability of this study. The themes and codes obtained from the analysis of the data are tabulated to facilitate the understanding of the readers. The responses given by the participant for each question were made into tables, allowing the reader to see easily.

Validity and Reliability of the Study

Validity and reliability of qualitative research; It is provided with the concepts of being credible, transferable, consistent, and verifiable (Denzin & Lincon, 1994). To make the study believable, expert opinion and researcher triangulation were used in project-based teaching. Researcher triangulation is the involvement of more than one researcher in the collection, analysis, and interpretation of data. (Merriam, 2013; Yıldırım & Şimşek, 2011) Opinions of different researchers were also taken in the evaluation of the study data. In addition, the data were analyzed by researchers who took part in eTwinning projects and had qualitative approach. To increase the reliability of the study, the participants were chosen from volunteer teachers. For the verification of the research, the raw data, findings, comments, and suggestions were recorded and the said documents were re-examined by the participants. To ensure the validity of the research, techniques such as participant confirmation, researcher trilogy, detailed introduction of the participants and avoiding the prejudices of the researcher were used.

Findings

In this section, the answers given by the participants to the questions to determine the effect of eTwinning projects on the professional development of teachers were analyzed. The findings from the semi-structured interview will be given in line with the purpose of the research.

''What does eTwinning mean to you? " The themes created in line with the answers received from the participants to the question are given in Table 4.

Table 4. Teacher's Views on eTwinning Practice

Definition	Frequency
Cooperation	11
Sharing	9
Technological development	8
Innovation	8
Communication	5
Friendship	3
Creativity	3
Productivity	2
Development	2
Sacrifice	1
Money	1
Happiness / Excitement / Motivation	1
Active Participation	1
Success	1
Project	1
Learning by Fun / Learning / Teaching	1
Activity	1

As seen in Table 4, the participants expressed the concepts expressed in themselves by eTwinning projects: "Cooperation, sharing, technological development, innovation, communication,

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friendship, creativity, productivity, development, sacrifice, money, happiness, excitement, motivation, active participation, success, project, learning by fun, learning, teaching, activity".

What do you think of the eTwinning project activity?" with the question, the opinions of the participants about eTwinning projects are given in Table 5.

Table 5. Opinions of Participants on eTwinning activity

Theme	Code	Frequency
Teacher Perspective	Providing Professional development	8
	Professional creativity	3
	Increasing professional sharing	2
	International information sharing	2
	Technology usage improvement	1
	Improved ability to collaborate	1
	Gaining the skill of thinking	1
	Increasing motivation	1
	Providing opportunities	1
	Ensuring success	1
Student Perspective	Provide creativity	2
	Give self confidence	1
	Increasing academic success	1
	Permanent learning	1
	Contribution to sensory intelligence	1
	Ensuring active participation	1
In terms of Process	Sharing	3
	Learning by doing	2
	Providing environments that bring teachers together	1
		1
	Providing rich educational environments	1
	Reinforcing friendship / love concepts	1
	Professional Sharing Globally	

When examined Table 5., it is seen that participants express the eTwinning activities as "Providing professional development, professional creativity, increasing professional sharing, international knowledge sharing, development in technology usage, development in cooperation skills, gaining thinking skills, increasing motivation, providing opportunities, achieving success, providing creativity, giving self-confidence, increasing academic achievement, permanent learning, contribution to sensory intelligence, active participation, sharing, learning by doing, learning by doing, providing environments that bring teachers together, providing rich educational environments, reinforcing the concepts of friendship / love, professionally global sharing ".

Most teachers participating in the research express their views that eTwinning projects provide teachers with professional development and increase professional sharing. In addition, it was stated that eTwinning projects increased the teacher motivation with the knowledge and skills acquired by the teacher during the projects they participated in and made the teaching learning process more efficient with the work they did with students using Web 2.0 tools they learned. Making collaborative work with teachers from different country of Europe and diffrent cities of Turkey on eTwinning Portal is considered beneficial in terms of sharing of information and experience. It was emphasized that eTwinning projects give the student self-confidence by ensuring active participation in the lesson. It can be said that the educational environments are enriched with the applied innovative activities, the rich environments are provided that contribute to the development of the creativity of the students, and thanks to the Web 2.0 tools used, the students' involvement in the process by doing and living provides permanent learning, and thanks to collaborative work with group and team activities, this process reflects positively on their academic success. In terms of the process, eTwinning Projects offer teachers collaborative working environments, with the project partner teachers coming together through webinars and face-to-face interviews. In terms of the process, eTwinning Projects offer teachers collaborative working environments, with the project partner teachers coming together through webinars and face-to-face interviews. The expressions that the sharings and studies in this

process reinforce the feelings of friendship and love were used. It is seen that eTwinning Projects offer opportunities to increase the competence of teachers by sharing their knowledge and experiences and exchanging ideas. "What do you think about the eTwinning activity?" When the answers given by the participants to the question are examined, these are clearly seen.

The quotations regarding the answers given by the participants are as follows.

E1. *"It is a platform that significantly contributes to the professional development of teachers and to students' academic success and emotional intelligence."*

E2. *"It is very beneficial for the professional development of teachers; it is a great blessing for the development of creativity and self-confidence for our students.*"

E3. *"eTwinning activities have a wide range of activities that save schools from monotony, bring color to schools, provide permanent learning by keeping students more active in the educational process, increase cooperation and learning among teachers, and help us gain innovative and technological equipment. I can call it learning by doing, in a way. "*

PS1. *"eTwinning has always made me happy. Friendship, love, sometimes a medicine, sometimes sharing emotions, sometimes crying at the same thing, sometimes being annoyed at the same thing, sometimes entering a friend's webinar using the same link, is to be the same, to be one, to be united. "*

E4. *"It helped me a lot, especially in terms of using technology. It is also great to follow my colleagues about the methods and techniques of similar issues in my country and even in the world. "*

E5. *"I think it is a platform that enables teachers to get out of their cocoons. While there is limited interaction in the local area of study, with etwinning you are communicating with a teacher from another part of the world, only for educational purposes."*

E6. *"eTwinning is a great platform for teachers to improve themselves, to enrich the educational environment, to maximize the activities that students take part in by doing and living, and for the teacher to guide other teachers as the leader teacher."*

PS2. *"You can see the work of many teachers in the virtual environment, and you can share knowledge, experience and experience at zero cost. There is no shortage of time and space. Whenever you want, I can access all the activities from wherever you want. It is an activity that I find very useful."*

TL1. *"The projects that can be applied to all branches and involve students in more projects are among the activities we do not want to end."*

When the answers given by the participants are examined, it can be said that eTwinning projects contribute to the professional development of teachers. eTwinning projects make the learning-teaching processes more active in their educational lives, and the communication between teachers and other teachers working in different countries provides an opportunity to share knowledge and experience. This situation increases the motivation of teachers and provides their professional development. eTwinning Projects include processes that develop teachers' creativity by acquiring different perspectives. The widespread use of information communication technologies has both increased their knowledge and skills in this field and provided rich learning environments. It has laid the groundwork for performing rich activities in the classroom and the application of different methods and techniques. eTwinning projects affect teachers affectively and enable them to exhibit more positive attitudes towards their profession.

"What are the difficulties you faced while implementing the eTwinning project, how do you solve these difficulties?" The difficulties faced by the participants in their eTwinning projects and their solution suggestions are given in Table 6.

Table 6. Difficulties Encountered by Participants in eTwinning Projects and Views on Solution Suggestions

Theme	Code	Frequenc
Difficulties	Inability to get along with partners	6
	Young age insufficient use of technology	2
	Students' environment time constraints	2
	Internet outages	2
	Lack of motivation of the student	1
	Financial project choice of students	1
	Procedure difficulties	1
	Web 2.0 inability to use	1
	No parent involvement	1
Solution proposals	Providing parent support	2
	Being meticulous in choosing a partner	1
	By alerting partners to the problem	1
	By making use of free time	1
	Using personal internet	1
	Students doing activities at home	1
	With help from my colleagues	1
	With help from my coordinator	1
	Improving myself	1

When Table 6. is examined, there are participants' opinions about the difficulties they faced during the eTwinning projects process and how they solved these difficulties.

Participants experienced difficulties during the project process ''*Expressions such as not being able to agree with partners, insufficient use of technology at younger ages, students 'environment time constraints, internet interruptions, student not being motivated, students' financial project preference, procedural difficulties, inadequate use of web 2.0, lack of parent involvement were used. In terms of finding solutions to the difficulties faced, they express "providing parent support, being meticulous in choosing a partner, warning partners about the relevant problem, using free time, using personal internet, students doing activities at home, getting help from my colleagues, getting help from my coordinator, improving myself*". As a result of interviews with teachers, it can be said that some problems are frequently experienced. It follows that the problems experienced in eTwinning projects are not related to the content of the application. It is seen that the most common difficulty experienced by the participants is not getting along with the partners. For the solution of this problem, it was stated that the participants selected the partners because of meticulous studies and warned at the beginning of the project about the problems they may encounter during the process. Insufficient use of technology in younger age groups causes the project process to be tiring and often difficult. Teachers generally stated that they had difficulties in connection to the internet. Inadequate technological infrastructure in some schools may cause disruptions in the implementation of project activities. Teachers try to find a solution to this situation with their own means such as personal use. Lack of parent support for the project process is among the mentioned difficulties. It is also seen among the difficulties that students prefer projects with financial returns. As a solution proposal, the project, which received a certain score because of the evaluation made in the eTwinning Project due to the 30th anniversary of the ErasmusPlus Projects, was provided with grant support to its teachers and students and the chance to visit their partners abroad. It was stated that such grant support and the resulting overseas mobility will motivate students towards eTwinning projects. During the realization of project activities, space and time related problems may occur. In the interviews, some teachers added that the point of view of the school administrators to the project could put pressure on the project implementation process. It is seen that they try to overcome some of the difficulties they encounter with the help of their colleagues and the provincial coordinator.

Researcher: The answers of the participants to the question "What are the difficulties you encountered while implementing the eTwinning project, how do you solve these difficulties?" Are as follows:

E1. *"Sometimes we encounter difficult partners, and when we are patient, we win the person, even at the end of the project."*

E2. *"Actually, I don't have much of a challenge but sometimes I have a hard time when there are European partners who are not working. I try to choose partners very carefully."*

E3. *"Bringing students together, time constraints (8 hours lesson) and providing materials for activities. I take care of my own means (by dividing students into groups and studying at different times; by coming together in my free lessons, at lunch breaks; without burdening anyone as much as I can for the materials we will use for activities). "*

PS1 *"Using technology with younger age group students. I overcame this difficulty with the support of parents. "*

E4 *"My problem is not caused by eTwinning. My school is in a disadvantaged area and almost nobody has the internet. That is why I have a lot of difficulty while doing the activities. I try to find methods and find solutions in my own way. Like having activities done on my phone from my own computer, talking to parents who have a few opportunities and convincing them to provide internet. "*

PS 5 *"It is a bit tiring as I prepare many things because of my age group. It is necessary to spare a lot of time to prepare the activities with their materials at the appropriate time and to upload them to the Twinspace page. What do I do? Sometimes I get support from my parents. "*

E6 *"The technological infrastructure at the school where I work was weak. There was no ICT class. Students with laptops at home were bringing them to school and learning some applications in groups at school. I was unable to attend eTwinning online video conferences. It was not opening all the videos on the internet connection. I was downloading the videos that could not be opened at home and had them watch at school through a projector.*

E2 *"Keeping students motivated. (I give the key rings, notebooks, pens, whatever good works I bought from abroad as a reward to students, sometimes I order chocolate or food as a reward, I do not want to do the work for the grade, I can only do this). 2- Students such as Erasmus, TÜBİTAK, Google ScienceFair They prefer to take part in projects with financial support. 3- I take part in the project school and students come to the school by shuttle service. When there are groups of students from different classes, it is only possible for the students to work during the lunch break. Those who stay in the hostel cannot participate in the studies because they do not want to miss their lunch. 4- My school is behind the construction of the City Hospital, and problems can occur on the internet, so students may have to do most of the activities at home. 5- Partners who do not do their duties (I stay away from those partners in the next project)*

E7. *"Think of a game, each level is difficult, each level gets harder as you go. Sometimes you are on fire. Sometimes you do not have the right to play. But most of the stages are very exciting, very beautiful. You come to play as you play. The best part of the eTwinning project is solving these challenges."*

As can be understood from the answers given by the participants, the problems encountered in eTwinning applications are varying. However, most of the participants did not point to the application as the source of the problems. Difficulties of working with different people may arise. Each participant solves his / her problem within their own means. It can be said that the positive attitudes of the participants towards the practice and the effort they make are in the right proportion.

"What skills do you think the eTwinning Project brings to students?" The question was asked to the participants as the 4th Question and the opinions of the participants are given in Table 7.

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Table 7. Opinions Regarding What eTwinning Brings Students to Gain

Theme	Code	Frequency
	Technology Usage Skill Development	7
	Communication Skill Development	4
	Foreign Language Development	3
	Responsibility Awareness	3
	Creativity	3
	Thinking Skill	3
	Collaborate	3
	Gaining Self-Confidence	2
	Cooperative Learning	2
Öğrenci Gelişimi	Love / Sharing / Solidarity	1
	Problem Solving Skills	1
	21st Century Skills	1
	Being Open to Innovations	1
	Active Curiosity	1
	Presentation Skills	1
	Learning by Doing and Living	1
	ICT Usage	1
	Sense of Belonging	1
	Producing Tangible Products	1

As can be seen in Table 7, the participants will learn about the skills that eTwinning Projects give students: "*Development of technology use skills, development of communication skills, development of foreign language, development of responsibility awareness, creativity, thinking skills, cooperation, gaining self-confidence, cooperative learning, love / sharing / solidarity, problem solving skills, openness to innovations, active curiosity, presentation skills, learning by doing, using ICT, sense of belonging, making tangible products* ".

The researcher said, "What do you think are the skills the eTwinning project brings to the students? asked the question to the participants. It is stated that eTwinning projects provide rich learning environments thanks to the activities and provide students with various skills in the teacher learning process. It was emphasized that due to the activities carried out during the project process, students' technology use skills are developed by being intertwined with information technologies. It is stated that the technology literacy of students has improved thanks to the positive use of technology. It is suggested that providing students with opportunities to work sometimes in groups and sometimes as a team supports their gaining a sense of belonging and the development of affective skills such as love, respect, sharing and solidarity. It has been observed that communication is provided effectively, and students' communication skills are improved in classroom environments where learning is provided through collaborative work.

In addition, it is emphasized that eTwinning projects carried out with partners from Europe change students' foreign language prejudice and contribute to their ability to use foreign language. It is stated that students gain problem solving skills thanks to the activities during the project process, and their self-confidence is supported when they produce concrete products. The project activities are interpreted positively by the teachers as they are found to be functional in terms of preparing students for life, because of which they have gained 21st century skills and thus, the students achieve permanent learning. Below are quotations from the participants that support these inferences.

E1. *"Using technology in a positive way, producing concrete products, working as a team, providing self-expression skills.*

E2. *"It stimulates feelings of Curiosity. It makes it more open to innovations. Their skills in using technology are improving. With the projects, behavioral gain occurs. Creative thinking skills improve. "*

E3. *"Most importantly, they learn to solve problems and thus prepare for life. Apart from that, they develop 21st century skills, become individuals who research, interpret, create products using*

digital and communication skills and share it with their friends, teachers and other people. They use the knowledge and skills they have learned as actively as possible in their future lives. "

PS 1 "*A sense of responsibility for research, collaborative work, completing a job left unfinished, asking questions*"

E4: "*Cooperative learning, sense of sharing, taking responsibility, technological skills, development of self-confidence*"

E5: "*They especially learn to use the foreign language (English) without fear. Computer skills are improving. "*

E6: "*Planning skill is the most important. The focus of today's children is on generating ideas and having fun. ETwinning project that highlights results-oriented thinking skills and planning skills. "*

PS2: "*From my point of view, we prepare our project activities one-on-one with my students, it does not need to be magnificent, the sense of research, cooperation, creativity, listening and comprehension and self-expression skills will improve.*"

E7: "*Since I am a pre-school teacher, it has an indirect effect not directly but, in this branch, where the role of the teacher is very important. The self-improving teacher already paves the way for the development of the student. "*

Ensuring active participation in the educational environment is of course possible with the activation of the student's curiosity. It can be said that eTwinning projects positively affect the student in this respect. As a matter of fact, the opinions received from the participants confirm this. The curiosity of the students and their active participation enabled the development of various skills. The fact that the students were active in the process was effective in transforming the knowledge learned into practice through meaningful learning.

"What professional skills do you think you have acquired or developed during your eTwinning Project implementation?" The last question of the research was asked to the participants. The opinions of the participants on this issue are given in Table 8.

Table 8. Views Regarding What eTwinning Projects Bring Teachers

Theme	Code	Frequency
	Technology Skill	16
	Professional Development	5
	Quality Lesson Process	5
	Using Different Methods and Techniques	4
	Literacy Skills	4
	Effective Use of Educational Technologies	3
	Foreign Language Skill	2
	ICT Skill	2
Öğretmen Mesleki Gelişim	Plan Development	2
	Creativity	2
	Time Management	1
	Crisis Management	1
	Problem Solving Skill	1
	Active Learning	1
	Personal Development	1
	Development of Collaborative Skills	1
	Working with the Team	1

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Participants' views on what eTwinning practice has brought to teachers are given in Table 8. In the answers given, the participants stated that "*technology skills, professional development, quality course process, using method techniques, literacy skills, effective use of educational technologies, foreign language skills, ICT skills, plan development, creativity, time management, crisis management, problem solving skills, active learning, personal development, cooperation, working with a team".*

It is stated that eTwinning projects have a positive effect on teachers' professional skills. Teachers state that they find eTwinning projects useful, especially in terms of using technology and integrating technology into the lesson, as they share activities through the portal. The development of technology skills broadens the teacher's perspective on education and the educational process, thus providing students with an active teaching learning environment. Supporting personal and professional development provides an increase in teacher self-confidence. It is stated that project planning and implementation processes improve teachers' time management and planning competencies. Participants used expressions that eTwinning projects *"saved the lesson from monotony"*. Projects: It was stated that as a result of increasing teacher motivation, quality teaching learning processes are provided and as a result, active participation of students in the lesson is supported and efficient teaching process is supported. It was stated that the projects increase the sharing of knowledge by providing a professional communication environment between teachers, provide professional equipment for teachers, and make it easier to follow professional innovations. Thanks to the communication established with the partners in the project process, it was observed that foreign language skills improved.

Participants' views on the subject are as follows:

E1. *"We can say that technological skills have developed in this process where all fields including education evolve into technological developments and innovations. The eTwinning project creates a desire for the teacher to plan the future. It guides the classroom management and keeps teaching methods and techniques alive. It provides the opportunity to make good use of class time and gain a lot in a short time and at the same time. The anxiety that may occur in the teacher is decreasing. The teacher is not lecturing monotonously and stays alive. With project-based learning, the active participation of students in the classroom, which is 'students are the basis of the implementation of etwinning projects', which provides classroom discipline and creates a vibrant classroom environment. Active classroom environments have a positive effect on teachers' motivation. Professional deformation is decreasing."*

E2. *"I think there is a serious improvement in my ability to integrate technology with my lessons. I can say that I learned a lot about applying different methods and techniques from my colleagues on the eTwinning portal and this reflected positively in my lessons. I can follow the innovations in my field more. I feel better equipped in terms of professional development."*

E3: *"I got closer with technology. It allowed me to see what I was missing and improve them. Seeing different applications broadened my perspective on education. And most importantly, it was instrumental in learning the intricacies of teamwork."*

PS1: *"It has increased professional motivation a lot. His teaching prevented him from being an ordinary and routine profession. Learning new things constantly made me happy. Technologically I found myself very inadequate but with eTwinning I got over it. I have learned to use many applications and web tools. What I learned was sometimes from colleagues, sometimes through research and sometimes trial and error. I was not unhappy in case of a problem. In fact, I would be happy and motivated because every problem taught something new."*

E4: *"I have learned many things online or online for free etwinning and using them while practicing my profession saves me on everything. Especially using technology effectively in lessons makes a difference. My students' interest in the lesson is increasing. I believe I can teach more effectively and efficiently."*

E5: *"I think I have improved myself more in literacy skills, information literacy, media literacy, technology literacy in this process."*

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E6: *"I learned to use web2.0 tools, which I looked at without understanding anything from the outside, astonished the people who did, and made me think whether I am a teacher next to them and put me into depression. Now I can work wonders and make them say no more. "*

PS2: *"I have especially improved in digital competences and language development."*

E7: *"I got to know many of them with eTwinning while I had no idea about web tools."*

As can be seen from the answers given by the participants, eTwinning applications offer professional development opportunities for teachers. The eTwinning project makes great contributions to teachers in terms of integrating technology into education life and developing different method techniques.

Also, in the research, it has been asked that "What are your opinions and suggestions about eTwinning?"

Participants made their views and suggestions about eTwinning projects as "teaching is a journey, indispensable processes are experienced, not a project but a kindness movement, a different perspective on technology, the teacher candidates should increase their readiness by taking part in the project during the internship period, if there will be studies that will support mobility such as Move2Learn Learn2Move. I think students can take part in projects in a more motivated way".

It can be said that the participants have developed different perspectives with their eTwinning projects. Participants' emphasis on the practice that every teacher of all disciplines and levels should participate in is interpreted as functional eTwinning projects. It has been stated that the project's support to the budget and ensuring foreign mobility will be more effective in the applicability of the project. The participants are of the opinion that teachers' meeting during the internship period and taking part in eTwinning projects during the education process will increase their positive readiness. The quotations regarding these views of the participants are given below.

E1: *"Teaching is a journey. Making projects and actively participating in projects are the details that add color to the landscape of this journey. Therefore, our journey passes on patterned roads with lush trees, colorful flowers and butterflies. Because we are the travelers of the colorful world of eTwinning, we are eTwinners.*

E2: *"People who do eTwinning projects are not normal people. Every year is enough now, I am very tired, but the next year they start new projects with sleepless nights, meetings held without lunch at school, gifts bought to motivate students with money spent out of pocket. "*

E3: *"We learned that technology is not just about reading newspapers or watching videos."*

PS1: *"Teachers from all disciplines and at all levels must be active in the eTwinning virtual environment while doing their profession. In the internship training of the teaching departments of universities, every trainee should definitely organize a short eTwinning activity. When starting the profession, the readiness of teaching should be increased. "*

E4: *"I think that if there were activities to support the mobility like Move2Learn Learn2Move, the students could take part in the projects in a more motivated way."*

E5: *"It is very important that the projects are made to cover every branch."*

E6: *"Twirus, the most beautiful virus in the world, I wish everyone would be infected. eTwinning is not just a project portal, it's a kindness movement. It's as if all the good and helpful people are gathered here. May your success always be, Teacher Zehra "*

Based on the information received from the participants, it is concluded that eTwinning projects are adopted by teachers. As positive reflections of the process, it is stated that active participation colors the process and teachers want to take part in new projects even if they are tired. The eTwinning activity can be carried out by teachers from all levels and branches of education. The desire to make eTwinning projects is likened to a contagious virus, and it is stated that it is very important for teachers to be exposed to this situation.

Discussion, Conclusion and Suggestions

eTwinning aims to provide opportunities for collaborative work and communication between schools in European countries using Information and Communication Technologies. Also, eTwinning projects include processes that support schools' cooperation in education by establishing national and international partnerships. In this context, in this study, it has been investigated whether the implementation of eTwinning project studies in their classrooms by teachers at different school levels, in different branches and with different working hours influences teachers' professional development.

It is seen that eTwinning projects provide rich learning environments in educational activities. Teachers see the application as beneficial for their professional development. The research shows that teachers experience affectively positive processes and increase their motivation with eTwinning projects. This situation is very important in terms of the quality of education (Güzel, Özdöl & İmran, 2010). Another issue addressed in the expressions of the teachers is the view that bringing mobility abroad by supporting the project with a budget will provide more motivation for the applicability of the project. As a matter of fact, another finding we obtained is that students prefer financially supported projects supports this view. Teachers' sharing of their experiences with their colleagues in their educational lives contributes to their professional development (Bozak, Yıldırım, & Demirtaş, 2011). Studies show that professional development positively contributes to the student's understanding of information (İlğan, 2013). Effective use of technology in eTwinning projects, teachers' finding an environment to share knowledge and experience on an international platform shows that the application is functional. Teachers who are inexperienced in the use of information and communication technologies with their eTwinning projects emphasized that their technology use skills developed with the project (Bozdağ, 2017). The provision of computer-aided environments has provided the opportunity to exchange information on a global scale. As a matter of fact, eTwinning projects are also considered as a collaboration practice by providing intercultural sharing (Yılmaz, 2012). Collaborating in achieving common goals has increased the efficiency of the participants and improved their collaboration skills. When the literature is examined, it is seen that the projects carried out with school partnerships contribute to a wide range of areas such as communication, language skills, motivation, project cycle management, collaboration, and professional development in the education processes of teachers and students (Kesik & Balcı, 2016). In line with the answers given by the participants, eTwinning projects are seen to add qualifications to teachers in the process of their educational experiences in the fields of "providing professional development, professional creativity, increasing professional sharing, international knowledge sharing, development in technology use, development in cooperation skills, gaining thinking skills, increasing motivation". During the implementation of eTwinning projects, teachers' opinions were taken on the difficulties they faced and the solutions they developed to these difficulties. Teachers do not think that the difficulties experienced are related to the content of eTwinning projects. In line with the answers given, it is seen that there are difficulties because the duties and responsibilities are not fulfilled by the partners during the project process. The participants state that they solved this problem by being meticulous in choosing a partner. This meticulousness is expressed as taking care to work with partners who have project experience during the project partner selection process. It is emphasized that the approaches of the partners involved in the project, having the same level of interest, lead to motivational processes, while otherwise the practice is perceived as fatigue-inducing for teachers (Akıncı 2018). In similar studies, the condition of achieving success is stated as the stakeholders in the project acting in accordance with the objectives determined (Akıncı, Kurtoğlu, & Şerefoğlu, 2012). The difficulties experienced with the use of technology within the scope of the research can be evaluated in three dimensions as the lack of technology use skills of young age group Students, the deficiencies in the use of Web 2.0 tools of the teacher and the lack of technology infrastructure. Developments in technology enable teachers to use technology effectively in educational environments.

In the study, the inadequacy of technology use skills of younger age group students was emphasized. Participants found a solution to this problem by providing parents' support. Studies show that while emphasizing the role of the teacher in the use of technology in school environments, family participation also affects the use of technology by younger age group students. The field emphasizes that young age groups can be supported by cognitive, technical, and affective guidance processes

aimed at supporting technology competence (Işıkoğlu-Erdoğan, 2015). It is seen as a positive approach for teachers to apply for parent support. Teachers note that they receive help from their colleagues at the stage of solving problems caused by their inability to use web 2.0 tools during the project process. Studies show that teachers' help from their colleagues while solving the problems they encounter during the project process contributes to the professional development of both themselves and their colleagues (Akıncı, 2018). Internet use is one of the fundamental building blocks of eTwinning projects. The problems of the teachers in the project in accessing the internet cause problems in the implementation process. In the analyzes made, teachers involved in the eTwinning project indicate that computer-aided education environments contribute to their technology use skills. It is stated in the literature that teachers have an advantage in terms of the development of technology skills when starting eTwinning projects. However, the lack of technological infrastructure of the school he is in can force the process. Eliminating the infrastructure deficiencies of the schools will enable the process to be more efficient (Bozdağ, 2017). The lack of internet infrastructure in schools is among the most common problems. Teachers solve the problems caused by the lack of internet infrastructure by personal internet use, parent support and project activities at home. In some studies, it is emphasized that the schools' internet infrastructure is inadequate and that there are problems in internet connections, causing problems in the project process (Bozdağ, 2017). In literature, In the literature, it was stated that the infrastructure deficiencies of the schools in the integration of technology into the lesson were stated, and it was concluded that efficient processes could be achieved by making the relevant regulations (Şekerci, Bozkurt, & Arslan, 2015). The problems that have occurred also lead to the search for different solutions. eTwinning projects include processes that support students ' educational lives. It is considered as a positive reflection of the project that teachers produce solutions through their own efforts without being intimidated against several difficulties experienced.

When the contribution of eTwinning projects to students is examined, it is seen that the most development is in the use of technology and communication skills. eTwinning projects are supported by research that contributes to the development of students ' language skills. The project supports the student's foreign language development through practical methods (Bozdağ,2017). In addition, research emphasizes that similar projects increase foreign language, digital skills, and professional competencies. It has also been stated that it contributes to the teacher in terms of better understanding of education and training policies (Hatisaru, 2017). According to the findings obtained by Akıncı (2018) in his study on the contribution of eTwinning project applications to the professional development of teaching students with foreign language skills, eTwinning applications can also provide communication to students, despite simple grammatical and vocabulary errors in foreign language development. eTwinning practices reinforced students ' feelings of sharing and made positive contributions to their communication skills. In addition, the increase in students ' curiosity about the course, the ability to solve the problems they face, and the ability to extract concrete products were also emphasized by the participants. Different research on the project also shows that the application has positive effects on the development of students ' problem solving, socialization, active participation in the process and self-confidence (Yılmaz, 2012). eTwinning projects have developed a sense of responsibility in students. Cooperative learning environments increase the desire of the student to obtain information. Cooperative learning is small group work that enables students not only to learn themselves but also to learn from peers. It reinforces students' feelings of leadership, self-confidence and sharing as well as their academic life (Açıkgöz and Güngör 2006). In addition, with similar school partnership projects, it is observed that the creative thinking, communication, problem solving skills of students have improved. In addition, as it provides intercultural communication opportunities, it lays the groundwork for tolerant processes (Aydoğmuş & Sünbül, 2013). In this study, eTwinning projects showed improvements in students ' solidarity and communication skills. Memişoğlu and Broutin (2018)'s study coincides with this finding. active participation of students in the implementation process of eTwinning projects has increased their academic self-sufficiency by supporting their self-confidence. eTwinning projects have given the student the opportunity to experience the processes in which he or she is active and not to be passive. As part of the research, students can communicate, problem solving, flexible thinking, creative thinking, such as 21st century skills also appear to be improving. Changing living conditions as a result of technological

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developments make transformation mandatory in educational environments as well as in social life. Information and Communication Technologies contributes to student success with visual and audio activities in the education process (Şahin, 2019). The goals of education and training to increase the quality are to bring the education system to global standards (National Education Quality Framework, 2017). The fact that eTwinning projects provide students with environments that develop 21st century skills supports the goals of National Education. .As a result, eTwinning projects have provided opportunities for students to develop their skills through more active lives in education. The student's multidimensional acquisition experiences color the educational environments.

In this study, the reflection of eTwinning projects on teacher achievements was discussed. Based on the responses given by the participants, it is seen that the gain achieved in the process is laying the groundwork for a new gain. As a matter of fact, the ability of the teacher to use technology in learning and teaching environments has enriched communication processes. Information and communication in the classroom environment using technology in the learning process makes it easier for the teacher to transfer more information in a short time. It also supports the teacher's use of different methods and techniques (Doğan, 2016). The ability of teachers to integrate Information and Communication Technologies into the lesson process and to use different materials enriches the course (Uğur, 2019). The use of technology in eTwinning projects is about teacher competence. The teacher's approach to integrate technology into the lesson is decisive (Bozdağ, 2017). The development of the teacher's knowledge and transmission technology use skills is the basis for success in the learning teaching process. Computer self-efficacy perception is the perception of evaluating an individual's skills in the use of Information and Communication Technologies. Studies show that the teacher's positive attitude towards the perception of using technology increases success in the learning process (Berkant, 2013). Academic self-efficacy is the ability to regulate the actions necessary for a person to achieve the level of education they are aiming for. Owned recursion is in parallel with the behavior that occurs. The positive development of a person's self-belief reinforces the sense of achievement by increasing their creativity. Self-efficacy perception makes the individual's learning experiences eager and increases professional literacy skills depending on the effort in activities (Tabancalı & Çelik, 2013). In this respect, the project improves the technology use skills of teachers and provides a positive change in their academic self-efficacy. On the other hand, it allows the teacher to develop different methods by exchanging professional information in virtual environments. eTwinning projects cooperate with partner schools in Europe by sharing information through information and communication technologies. While the constantly updated professional knowledge and skills of teachers provide convenience in the implementation process of the project, it also brings the advantage of following the age. Similar projects around the goals of eTwinning projects also show that it supports the professional development of teachers. Teachers and school administrators view the project positively (Yılmaz, 2019). In addition to eTwinning projects, it enables teachers to be aware of different approaches in other projects implemented in the learning-teaching process (Aydoğmuş & Sünbül, 2013). Teachers involved in the eTwinning project get the opportunity to observe the educational environments in different countries. In this respect, eTwinning projects prepare the ground for teachers to observe the cultural diversity in educational environments, to see different teaching practices and to develop innovative ideas at this point. eTwinning practices also improve the skills of teachers to produce alternative solutions to the problems they face. In line with the data obtained from the participants, it is seen that crisis and time management skills have also improved during the project implementation process. Time management is the ability to achieve maximum efficiency in a certain period (Demirtaş & Özer, 2007).

As this research has shown, eTwinning projects have the opportunity to be implemented in educational settings, which has enabled the professional development of the teachers involved in the project. In addition, we can say that it contributes positively to educational environments. The fact that the project supports professional development has made multi-dimensional contributions to educational experiences. Course environments in which both the teacher and the student are active provide a facilitating effect in achieving the purpose of education. eTwinning activities have been providing online support trainings for teachers to use technology correctly since 2015. Thus, it provides convenience to the teacher by integrating technology into education (Döğer, 2015). The active participation in the lesson was ensured by the teachers' benefiting from the opportunities

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provided by the technological developments in the educational environments, by creating a sense of curiosity in the students. Active participation in the lesson develops students' thinking skills and gains different perspectives within the learning activity (Taş, 2005). Integration of Information and Communication Technologies into course environments has improved the technological skills of the teacher. Effective use of technology in eTwinning projects has increased the collaboration and sharing skills of teachers, providing collaboration between schools. In addition, the ability of the teacher to be in contact with his colleagues in different countries has kept the educational information up to date. The teachers taking part in the project have positive education processes with the project, the effective use of Information and Communication Technologies in the implementation phase of the eTwinning project has also highlighted the existing infrastructure deficiencies of the schools. The fact that teachers often mention such failures in practice illustrates the extent of the technological infrastructure shortcomings of schools. If we look at the positive contribution of the project in the educational environment, we can say that the project will be more efficient with the elimination of technological infrastructure deficiencies of schools.

Based on the results obtained, the following suggestions can be made.

- More teachers can be involved in eTwinning projects that have demonstrated beneficial aspects for teachers' professional development.
- Similarly, students can be supported actively to participate in eTwinning projects that are determined to support the development of students in many ways.
- Promotional activities can be organized to ensure the participation of more teachers in the eTwinning project activities.

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Opinions of Social Studies Teachers regarding Teaching History Topics in Social Studies Lessons [1]

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Abstract

One of the most prominent subjects in the social studies course is without a doubt, teaching of history subjects. The teaching of history topics has different features than the teaching of other subjects of the social studies course due to their characteristics. That is why the opinions of teachers regarding teaching of history topics in social studies course and the methods they use in teaching such topics are very significant. That is why the opinions of teachers regarding teaching of history topics in social studies course and the methods they use in teaching such topics are very significant. In the study, it was aimed to determine the opinions of social studies teachers regarding the teaching of history topics in the social studies course, the methods they use while teaching these topics and their opinions on such methods. Qualitative research method was used in the study. Participants were recruited using the criteria sampling method. As a criterion, being a social studies teacher for at least 5 years, being active in social studies and gender were taken into account. Interviews were performed with 10 social studies teachers, 5 of whom were male and 5 were female. The interview form was developed by the researchers through applying to opinions of experts. Descriptive analysis method was used in the analysis of the interviews. In the study, it was determined that opinions of teachers regarding the sufficiency of history topics in social studies courses were different. While some teachers emphasized that history topics were sufficient, some teachers defined them as insufficient. Most of the teachers mentioned problems with the order and sequence of history topics in the social studies curriculum. In the study, while half of the participant teachers found the removal of Atatürk Principles and Revolutions from the fifth grade appropriate, the other half did not. It is concluded that teachers prefer different methods and techniques in teaching history topics. Moreover, it has been determined that most of them prefer direct instruction method and question-answer method. Teachers declared that the methods and techniques which allowed actively participation of students to the lessons were effective in learning the subjects, increasing interest in historical events, and also learning by having fun. As the most basic problem they faced during teaching history topics, teachers defined low level of students, irregularity of the subjects, crowd of classes, abstraction of the subjects, complexity of the topics, prejudices of students towards history subjects, their indifference, insufficient course hours, financial problems and rote learning. Most of the teachers stated that the methods and techniques they use in teaching history topics differ from the methods and techniques they use while teaching other subjects. Teachers indicated that content and characteristics of the subjects, age level of students, their needs, interest, experiences, point of views were effective for determining methods and techniques they applied in the courses. In addition, it was determined in the study that most of the social studies teachers did not take undergraduate or graduate courses on teaching history subjects and did not read the books published in this field.

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Introduction

Social sciences is defined as the process to establish a connection based on proving with the facts in human life and to obtain functional knowledge at the end of such process. Disciplines like history, geography, law, sociology, psychology, anthropology, education, economics, archeology are social sciences. On the other hand, social studies is a field in which these courses are evaluated together (Sönmez, 2010). Although the history of school in the West dates back to Ancient Greece, the lessons that fall within the scope of social studies started to be taught in schools mostly in the 19th century. However, these courses were structured as single disciplined like history and geography until the beginning of the 20th century. In parallel to the developments in the West, social studies courses were added in the education / training curriculum in the Ottoman Empire as well (Öztürk, 2015). The period where handling social studies subjects at elementary level came to the agenda in Ottoman Empire for the first time was Tanzimat Period. In this period, Short Ottoman History, Basic Geography and Knowledge on Public Works were taught regarding social studies. In the period of Abdülhamit II, which is also named as absolutism, there were courses of Ethics, Intensive ottoman History and Brief Ottoman Geography. During the 2nd Constitutional Monarchy period, courses such as Ottoman History, Ottoman Geography, Information on Civilization and Ethics and Economics were taught. In the Republican period, the 1924 program of social studies in elementary schools included Knowledge of Ethics and Information of Homeland courses, these courses were named civics in 1926. Besides, history and geography lessons were given in elementary schools (Akyüz, 2010; Üstel, 2004; Gökdemir and Polat, 2019).

Social studies concept came into use as a lesson in the USA at the beginning of the 20th century. In our country, this concept came into the agenda at the 4th Education Council in 1949 (Aslan, 2016). After this date, in the elementary school curriculum prepared in 1962, instead of History, Geography and Citizenship, "Society and Country Studies" was included. The course has been included in elementary and secondary school programs under the name of social studies since 1968. In the years following the coup of September 12, 1980, the social studies course was given as "National History" and "National Geography", in 1998, this understanding was abandoned and it continued to be taught as a social studies course in grades 4-7 (Öztürk, 2005). Although the name of social studies course was used for the first time since 1968, the content of social studies in previous programs was given together with History, Geography, Country Studies, Citizenship Knowledge, and Turkish Civics (Safran, 2008). With the 1968 program, independent teaching of subjects in the teaching of history topics at elementary education level was abandoned (Sakaoğlu, 1995). Although it was started to be taught independently under the name of "National History" after the 1980 coup, since 1998 it has been handled with an interdisciplinary approach together with other social sciences subjects under the name of "social studies". When the program approaches applied by different countries towards social studies course are evaluated, it is seen that most countries deal with social studies subjects with an interdisciplinary approach. Within this context, while Norway, Sweden apply multi-disciplinary approach, Czech Republic, Ireland and England apply single-disciplinary approach (Öztürk & Deveci, 2011). The definition, objectives, content and teaching methods of social studies course have changed both in the world and in our country since the period when social studies courses emerged and will continue to experience changes in the future (Aslan, 2016).

In addition to the changes and transformations in the teaching of social sciences in the world and in our country, the most prominent discipline in social studies teaching has always been history. At this point, it won't be wrong to say that it is the discipline that gives the basic meaning of social studies teaching (Kabapınar, 2012). The teaching of history subjects, which started to have significant place in social studies curriculum in the 20th century, has preserved its significance in UK, where single-disciplinary approach still continues and also in the USA, where the interdisciplinary social studies has emerged (Öztürk, 2005). In our country, the teaching of history subjects at elementary education level took place in Country and Society Studies in 1968, National History in 1980s, and later in social studies lessons in 1998, mostly with multi-disciplinary basis. This situation caused history subjects to be non-functional at the elementary education level and thus students could not connect with daily life (Şimşek, 2017). Thus, it seems difficult for primary school students to learn social sciences subjects as separate courses (Safran, 2008). Thus, it is obvious that teaching of history subjects, which will be

handled with an interdisciplinary approach, will be more effective, despite difficulties that emerge during history teaching that is without a doubt very important in social sciences (Turan and Ulusoy 2018). In our country, the teaching of history subjects at elementary education level is handled with an interdisciplinary approach within the social studies course at the 4th, 5th, 6th and 7th grades (Keskin 2012).

When the elementary and secondary school social studies curriculum is examined, it is seen that there are history subjects at 4th, 5th, 6th and 7th grade levels. In the 4th grade social studies curriculum, the whole Culture and Heritage learning area consists of history subjects. In this learning area, learning outcomes on family history, national culture elements in and around the family, traditional children games and national struggle are targeted. Furthermore, in the Science, Technology and Society learning area, outcomes on previous state of technology and inventors have taken place as historical topics. In the 5th grade social studies curriculum, the learning area of Culture and Heritage involves history subjects. In this learning area, outcomes relevant to Anatolian and Mesopotamian civilizations, historical assets and cultural characteristics in our country, historical development of cultural elements are included. In the cultural heritage learning area of 6th grade social studies curriculum, outcomes are targeted on first Turkish states established in Central Asia, the emergence of Islam, the acceptance of Islam by the Turks, the Turkification of Anatolia, and trade routes. In social studies curriculum, 7th grade has the most intense history subjects. In the Seventh Grade Social Studies Curriculum, the outcomes relevant to the Ottoman State, developments in Europe, changes in the Ottoman Empire in the culture and heritage area are expected. In the science and technology learning area, there are outcomes related to Turkish-Islamic scientists and inventions in Europe, in the production, distribution and consumption learning area, there are outcomes related to importance of the soil from past to present, and professions in Turks throughout history, in the effective citizenship learning area, the outcomes such as adventure of democracy and Atatürk's contributions to democracy are included (MEB, 2018).

Many studies have been made on teaching history subjects in the context of social studies course at elementary education level. In this context, Topçu (2016) concluded that the history subjects in the social studies course should be studied in depth and thus a separate history course should be included instead of social studies. Both teachers and students defined history subjects as boring. Doğan (2016) determined that the social studies course hour was insufficient in terms of transferring the history contents as a duration, there was a disconnection between the 7th grade history subjects and the content was prepared without considering the chronological order. Kavak (2006), on the other hand, found that there was no integrity between the history subjects in social studies books, and this situation, which made it difficult to cover the subjects, also prevented meaningfully learning for students. These studies point out that the teaching of history subjects in social studies course shall be examined. In addition, in the effective citizenship learning area, the outcomes related to the social status of women are included with examples from Turkish history. Studies have been conducted indicating that the main problem in teaching history subjects in social studies course was about not using active teaching methods. Accordingly, Köstüklü (2004) concludes that active learning techniques used in the history teaching of countries such as England and the USA are not applied in our country, and it is important to organize the teaching of history subjects in such a way that students take an active part. Yeşilbursa (2008) determined that the problems experienced for years regarding the teaching of History subjects in social studies could be solved through expending student-oriented understanding and the introduction of active learning methods. Again, within this context, Canlı (2016) found it was necessary to prepare an environment in which rich teaching methods and techniques suitable for different models were being used rather than using a single method and technique in teaching history subjects. Regarding the effectiveness of active learning methods, Dolmaz (2012) found that students were interested in active learning techniques and were more motivated towards history issues when used.

Similarly, Çiviler (2019) reached the conclusion that the history subjects taught on an activity-based basis made the course more interesting, and improved historical thinking skills of the students. Doğan (2007), on the other hand, found that the level of evidence-based learning was high in the classroom where active learning-based methods were implemented, and that students' historical understanding

skills and historical analysis and interpretation skills improved. On the other hand, it has been determined that the level of gaining historical empathy and questioning perspective is low in classrooms where traditional methods are implemented. These researches revealed that the teaching of history subjects in social studies course should be performed with methods and techniques in which students were active.

Many studies have been conducted on the effectiveness of the lessons taught by using different methods and techniques in teaching history subjects in social studies course. Accordingly, in his study on the use of historical places and museums in the teaching of history subjects in the social studies course, Şentürk (2019) found that social studies teachers found the museum visits for the teaching of historical subjects positive and museum visits increased the awareness of students. Similarly, Bilicioğlu (2017) concluded that students mostly wanted visits to historical sites, historical areas and museums in their social studies course. Regarding the use of historical stories in the teaching of history subjects in the social studies course, Şimşek (2006) found that students' attitudes towards the use of historical stories in teaching history subjects were positive. Similarly, Koçak (2004) pointed out the use of historical stories as a material in the teaching of history subjects in the social studies course enabled children to reach the outcomes more easily. Özkan (2014), on the other hand, found that the story and teaching method used in social studies teaching had a positive effect on students' academic success. It is emphasized that this method improves student perception regarding social studies course. Regarding the use of drama during teaching of history subjects in the social studies course, Kartal (2009) found that teaching history subjects together with the drama method was effective in increasing the success of the students, helped them to involve in the learning environment actively and brought the opportunity to develop their creativity. Similarly, Pektezel (2017) found that social studies performed with the drama technique enabled students to learn more meaningfully and permanently, increased success of students and changed the atmosphere in the classroom in positive manner. Concerning the use of oral history and local history in the teaching of history subjects in the social studies course, Dere and Dinç (2018) found that the oral history study increased students' interest and awareness of history topics and found that students achieved many cognitive and affective outcomes. Similarly, Sarı (2007) determined that the oral history study improved the ability of students to gather information from first-hand sources and developed individual views on historical experiences. Regarding the use of evidence-based teaching methods in the teaching of history subjects in social studies course, Şener (2019) found that the use of evidence in the teaching of history topics triggered cooperative learning, transformed students into active participants and saved time. Similarly, Çıdaçı (2015) found that the subjects studied by implementing evidence-based teaching methods were more effective in achieving cognitive and affective gains through learning the content in more detail. Kıcır (2006), on the other hand, indicated that the students who were implemented traditional teaching methods accepted the contents they read without any questioning filter, and that the students did not have full command of the resource inquiry ability and therefore evidence-based teaching was necessary. Concerning the use of historical empathy in teaching history subjects in social studies course Careless (2019) found that in-class activities aimed at developing historical empathy both made social studies more enjoyable and increased students' interest and curiosity towards the lesson. Again, in this direction, Çorapçı (2019) concluded that activities related to historical empathy, which made historical topics in social studies more understandable and easier, also made the lesson more enjoyable and interesting. Addition to these, Öner (2007) stated that the cooperative learning method was more effective in increasing cognitive success scores in teaching history subjects in social studies course, Korcu (2019) pointed out that teaching with games contributed positively to the academic success of the student and increased the interest in the lesson, Ulusoy and Gülüm (2009) determined that the materials used in the teaching of the course increased interest of students in learning history subjects, Özkan and Gevenç (2017) stated that anecdotes played significant role in achieving the outcomes in the 7th grade social studies unit "Journey in Turkish History", Özel (2013) indicated that use of technological tools was supported by students, Dönmez (2019) determined that the scenario implementations used in the processing of the outcomes of the social studies 6th grade "Culture and Heritage" learning area positively affected the academic success of students. These studies conducted indicate that, more effective teaching is achieved by performing the teaching of history subjects in social studies course through methods and techniques.

During the teaching of history subjects in the social studies course, besides the teaching methods and techniques, different materials and applications in which students are active, also the situation of teachers to perform these methods and techniques, materials and applications is also important. Regarding the methods used by teachers during teaching history subjects in social studies course, Çelikkaya and Kuş (2009) found that teachers did not use student-centered methods in teaching history subjects, social studies teachers did not make much attempt to revive historical characters and mostly benefited from narration and question-answer techniques. Similarly, Ünal (2012) reached the conclusion that social studies teachers used a predominantly teacher-centered method in teaching history subjects at all grade levels. In addition, teachers stated that crowded classes, financial inadequacies, short lecture hours in comparison with the expected outcomes, limit the implementation of student-centered methods and techniques. However, in the studies, it was determined that the in-service and pre-service training was effective in teachers' preference of traditional methods in teaching history subjects in social studies course. In this regard, Er (2015) found that the perceptions of teachers who did not take in-service training relevant to the teaching of history subjects are weak and that these social studies teachers assessed themselves insufficient in teaching history subjects with active methods. Similarly, Tahiroğlu (2006) determined that insufficient training of teachers in methods and techniques in their pre-service education, reflected negatively on their professional practices. Again, in this direction, Er and Bayındır (2015) found that social studies teachers felt insufficient in teaching history subjects and Binder concluded that insufficient pre-service and in-service training as the reason of this situation.

When the social studies curriculum and the studies conducted have been examined, it is seen that the subjects of history have an important place in the social studies course. Studies indicate that teaching of history subjects in the social studies course has different features, teachers encounter various challenges while teaching history subjects, and it is important to use methods and techniques in which students are actively involved in teaching history subjects. This study is important in terms of determining the opinions of social studies teachers regarding the teaching of history subjects in social studies course and to improve their perspectives on teaching history topics. In this direction, the objective of the study is to determine the opinions of social studies teachers regarding the teaching of history subjects in the social studies course, the methods they use in teaching these subjects and their opinions on these methods. The study questions prepared in this direction are as follows;

How do social studies teachers evaluate the history subjects in social studies course?

What are the opinions of social studies teachers regarding teaching history subjects?

Which methods and techniques do social studies teachers prefer in teaching history subjects and why?

What are the challenges faced by social studies teachers while teaching history subjects in social studies course?

Method

Qualitative research method was used in the study. It is defined as "*A study in which data collection methods such as qualitative research, observation, interview and document analysis are used, and a qualitative process is followed to reveal perceptions and events in a realistic and holistic manner in the natural environment*" (Yıldırım and Şimşek, 2013). The study was performed through using the interview method, which is one of the qualitative data collection methods.

Working Group

Social studies teachers constitute the participants of the study. Participants were recruited to study on voluntary basis. Criterion sampling method was used in the selection of the participants. As a criterion, having worked as a social studies teacher for at least 5 years, actively teaching social studies at 5-6-7th grades and gender are taken into account. In this direction, 5 male and 5 females, total of 10 teachers were interviewed, Participants have been given nicknames to cover their identities. Details of the participants are given in table 1.

Table 1. Social Studies Teachers Participating in the Study

Participants	Gender	Professional Seniority	Branch
Participant 1	Male	7	Social studies teacher
Participant 2	Male	20	Social studies teacher
Participant 3	Male	5	Social studies teacher
Participant 4	Male	20	Social studies teacher
Participant 5	Male	8	Social studies teacher
Participant 6	Female	13	Social studies teacher
Participant 7	Female	10	Social studies teacher
Participant 8	Female	14	Social studies teacher
Participant 9	Female	20	Social studies teacher
Participant 10	Female	9	Social studies teacher

Data collection tool

In the study, a data collection tool, semi-structured interview form which was developed by the researchers in consultation with the opinions of the experts was used. A pre-application was made with two teachers through using the developed interview form. Following this pre-application, considering opinions of experts, repeats were detected in some questions and thus such questions were removed from the interview form. The interview form was finalized after the pre-application and taking the opinions of the experts.

Analysis of data

The data collected from the interviews during the research process were analyzed by descriptive analysis method. The records obtained from the interviews were written into the text, and then the texts were read and encoded. The codes were determined according to the concepts and words that best expressed the opinions of the participants. Then, the categories were composed by considering the similarities and differences of the determined codes. The opinions of the participants were described by emphasizing their similarities and differences, and supported by direct quotations.

Findings

General Assessment of Teachers Regarding History Topics in Social Studies Curriculum

The general assessments of the social studies teachers who participated in the study regarding history topics in the social studies curriculum have been different. Among the teachers, Participant 1, Participant 3, Participant 9 stated that they considered history topics in the social studies curriculum as sufficient. Among the teachers, Participant 2 and Participant 5 stated that they considered history topics in the social studies curriculum as insufficient. It is determined some teachers evaluate the situation in the curriculum of history topics differently on the basis of classes. Accordingly, while Participant 6, Participant 4 and Participant 8 emphasized especially the history topics subjects in the seventh grade were insufficient, Participant 7 on the other hand defined sixth grade topics as heavy and detailed. Teachers emphasized the problems and deficiencies regarding the history topics in the social studies curriculum. In this context, Participant 1, Participant 5, Participant 7 defined abstract topics, Participant 2 defined narrow scoped topics, Participant 4 and Participant 5 defined the lack of connection between the topics, Participant 1 defined the intense content of the topics and Participant 3 defined the existence of many topics in single unit as the cause of the problem. The teachers made various suggestions for the regulation of history subjects in the social studies curriculum. In this context, Participant 2 said more content should be given on pre-Islamic Turkish history subjects, Participant 6 emphasized life styles of the first constructions and the management and justice issues of the Ottoman Empire subjects should be given in more detail, while Participant 5, 7 stated that class topics should be given more consistently and regularly. Participant 4 stated that attention should be paid to the chronological and historical integrity of the Ottoman state. Participant 9 and Participant 10 declared that recent historical topics should be included more.

The description of assessment of teachers regarding history subjects in the social studies curriculum was supported by direct quotations. In this context, Participant 1 said, "*Within the scope of the social studies course, in fact history subjects area as they should be on the basis of the subject, but the main problem is in density and abstractness*" and thus he stated that the subjects of history were sufficient and the main problem was that the subjects were intense and abstract. Similarly, Participant 7 used the phrase "*History topics are given in chronological order. I think history lesson subjects are very heavy in 6th grade. We're drowning children in too much detail. It can seem abstract to students. In the 7th grade, it is seen that history subjects are very memorized. Words are being used which students find difficult to perceive*" she emphasized that the subjects were given in chronological order, however, the sixth-grade subjects were heavy and detailed, and the seventh-grade subjects were based on rote learning. Similarly, Participant 6 said "*I find history subjects sufficient for 6th grade. Life styles and economic activities of the first people in 5th grade can be given in more detail. For the 7th grade, more subjects should be given to the management and administration issues in the Ottoman Empire*" she underlined that she considered the subjects of history as sufficient in the sixth grade, however, the lives of the first people in the fifth grade and the management and administration issues of the Ottoman Empire in the seventh grade should be taught with more detail. Participant 8 on the other hand, used the expression," *I think that there is very little history in the 7th grade curriculum. For example, I think the conquest of Istanbul is handled superficial and simple. I think that more in-depth topics related to Ottoman history shall be added*". While saying," *I think it is sufficient. A little more emphasis should be placed on history issues. Ottoman history is also handled boring, but 1950 and later can be added. Because it is necessary to evaluate contemporary world*", Participant 9 stated that recent history topics should be weighted. Similarly, Participant 10 said, "*I think that history subjects give the student the opportunity to predict the future and update his knowledge. The Korean war of recent history, the Adnan Menderes period, the gulf war and the present should be added.*" Unlike these, Participant 2 emphasized that history subjects are not sufficient and should be more comprehensive by saying "*history subjects are not enough. It could be more comprehensive. More general topics should be given without going into detail. Especially, pre-Islamic Turkish history should also be concentrated on.*" Similarly, Participant 5 stated that the subjects are not enough and not dealt with in depth, by saying "*very inadequate. The topics are only named but not discussed in depth. It also remains abstract and detached in students' minds. I think at 7th grade, it is necessary to give the Ottoman history more consistently and regularly. How the Ottoman Empire was founded and how it was destroyed should be given in a holistic manner.*"

Teachers' Opinions on the Order of the History Subjects in the Social Studies Course

The opinions of social studies teachers about the order and sequence of history subjects in the social studies curriculum were detected in the study. In this sense, Participant 1, Participant 2, Participant 3, Participant 4, Participant 5, Participant 7 stated that there were problems in the order and sequence of the subjects. However, one of the teachers stated that the order and sequence of the subjects were suitable. regarding the order and gradation of the subjects, among the teachers, Participant 1 stated that there were problems in accordance with the age level of the student, Participant 3 that subjects were intense, Participant 7 that subjects were intense and detailed, Participant 5 that there were problems in the chronological order, Participant 8 and Participant 9 that the subjects were memorizing. Among the teachers, Participant 1 made suggestions to embody the subjects, Participant 2 to teach a short Turkish history and Atatürk to the fifth graders, Participant 3 to allocate more time to the Ottoman Empire. It is observed that the opinions of teachers about Atatürk's principles and reforms, which were derived from fifth grade subjects in the renewed curriculum, differ. Participant 1, Participant 3, Participant 5, Participant 7, Participant 9 stated that it was appropriate to exclude Atatürk's principles and reforms from the 5th grade subjects. Teachers stated that the reason for this was that these subjects remain abstract and are difficult to learn. Among the teachers, Participant 2, Participant 4, Participant 6, Participant 8, Participant 10 stated that it was not appropriate to remove Atatürk's principles and reforms. Teachers who think that it is not suitable to remove these subjects explained the reason as providing the students' readiness for the 8th grade and the necessity of learning about Atatürk.

The description made by teachers regarding the order and sequence of history subjects in the social studies curriculum was supported by direct quotations. Accordingly, Participant 1 emphasized that there are problems with the order of the subjects, the abstractness of the subjects and the limitations of the methods used by saying "*there are serious problems in the order of history subjects. The inclusion of abstract concepts according to age levels and the necessity of presenting in schools where history teaching is not possible, create difficulties.*" Similarly, Participant 5 stated, "*I think it lacks a chronological order. The content and order of the topics are not suitable at all.*" Again accordingly, Participant 7 stated that there are limitations in the order of the subjects, by saying "*there is a disconnection in the order of the historical subjects in the social studies course. In the 7th grade, Ottoman history became completely complex. 5-6-7 history subjects are given in a holistic spiral. However, it is not enough.*" Unlike these, Participant 8 stated that the order of the topics is appropriate, but it is necessary to handle the topics in a more interpretative manner rather than memorization, by saying "*I think it's fine. The order of the topics is nice. However, a more interpretive structure should be given instead of memorization.*" Similarly, Participant 9 stated, "*I think it is nice but has a rote understanding. The order can be arranged a little more.*" Participant 6 emphasized that the content and order of the topics are appropriate, but there are problems in considering the developmental characteristics of the students, by saying "*the contents and order of the subjects are given properly. I think the developmental characteristics of the students are not taken into account because the subjects remain abstract and are a bit heavy.*" Teachers stated different opinions about the abolition of Atatürk's principles and reforms at the 5th grade with the new curriculum. Accordingly, Participant 2 emphasized that the subjects should not be removed and it is important for students to know Atatürk by saying "*Kemalism subjects should not have been removed from 5. I do not find this right. After all, it passes on to other classes without recognizing Atatürk, who is the core value of the republic.*" Similarly, Participant 8 stated that Kemalism issues should not be removed in order to provide readiness to the 8th grade, by saying "*I think the issue of Kemalism should not have been removed. At least the principles had to be given. The subjects of Kemalism should have been given in a simpler way in order to lay a solid foundation in terms of the lesson of the student who will come to 8th grade.*" Unlike these, Participant 9 stated that it is appropriate to exclude the subjects because it remains abstract for students by saying "*I think the issues should have been removed. Principles and Kemalism remained very abstract. It was good. I had a hard time explaining these topics. I could not grasp the subject to students because it was heavy.*" Similarly, Participant 5 stated; "*it is very correct to remove the Kemalism subjects. Because the children did not understand the subject at all. The subject was progressing entirely through rote learning. It was very suitable to remove Kemalism because it was abstract and remote.*"

Teaching Methods Preferred by Teachers in Teaching History Subjects and Reasons for Preferring

In the study, it was determined that social studies teachers preferred different methods and techniques in teaching history subjects in social studies course. Among the teachers, Participant 2, Participant 4, Participant 5, Participant 7, Participant 8, Participant 9 stated that they used direct instruction method; Participant 4, Participant 5, Participant 7, Participant 9 question-answer method, Participant 1, Participant 3, Participant 5, Participant 6 drama method; Participant 2, Participant 8, Participant 10 discussion methods; Participant 4, Participant 10 brainstorming method; Participant 4, Participant 10 research and analysis methods; Participant 1 educational game method; Participant 10 fishbone and six thinking hats technique. Teachers stated that they preferred these methods and techniques because of concretizing the subjects, activating the student, saving time, being suitable for crowded classes and low student level. Participant 1, Participant 2, Participant 3, Participant 4, Participant 5, Participant 6, Participant 7 stated that the methods and techniques used in teaching history subjects in social studies course differ according to the methods and techniques used in other subjects. However, Participant 8, Participant 9 and Participant 10 stated that the methods and techniques they use did not differ from other subjects.

The description made about the teachers' views on the methods used in teaching history subjects in the social studies curriculum was supported by direct quotations. Majority of the teachers stated that they generally used lecture, question-answer and discussion method. Accordingly,

Participant 7 emphasized that she used the question-answer method and that the crowded classes and low student level were effective in his use of these methods, by saying "*I use the lecture and question-answer technique. Sorry, I can't use other methods. Large classes and low levels of students are also effective in this.*" Similarly, Participant 8 stated that she used the method of lecture, discussion and question-answer, she used visual and audio materials, it was effective to save time in using these methods, and that she used similar methods while teaching other subjects, by saying "*I generally use the method of narration and discussion and question-answer technique. I also transfer videos and images through EBA. I save time. Permanent learning is provided with videos. No. I use the same technique when explaining other subjects.*" Again accordingly, Participant 9 stated that she used the method of question-answer and that this did not differ in other subjects by saying "*I use question and answer. Sometimes I give cardboard and homework. I usually use the same method. My methods do not change much when I move on to other subjects.*" In the teaching of history subjects in the social studies curriculum, it was determined that there are teachers who use different methods and techniques in addition to lecture, question-answer and discussion. Accordingly, Participant 3 stated that he used the drama method alongside various visual and audio materials, because he used the method of concretizing the subjects and used different methods from other subjects, by saying "*I use short videos of historical events visually, short stories, as a drama technique by involving the student in the process while teaching history subjects. Since there are abstract subjects, it is necessary to concretize for the student to understand better. Of course, I explain it differently from other subjects of social studies.*" Similarly, Participant 6 stated that she used the drama method in teaching history subjects, this was effective and she used different methods from other subjects, by saying "*I use the drama method more in my lessons. I make the children do the Who Am activity and the role cards activity. Because I want them to evaluate historical events according to their conditions and times. I think many things are more effective with animation. Yes, it is becoming different.*" Again, in this direction, Participant 10 stated that she used brainstorming, research-analysis methods and benefited from concept maps, by saying "*I focus on mind maps, brain storming, and research-analysis techniques in teaching history subjects in the social studies course. While establishing a cause-effect relationship, I use the fishbone technique and the six thinking hats technique. Thus, I try to raise an individual who thinks, researches and questions.*"

Teachers' Opinions on the Methods that They Think are Effective in Teaching History Subjects and Their Effects on Students

Social studies teachers stated that the methods and techniques they thought were effective in teaching history subjects in the social studies curriculum revealed different results on students in the study. Teachers stated that the methods and techniques that students actively participated in were effective in learning the subjects, increasing interest in historical events, and edutaining. Accordingly, Participant 1, Participant 3, Participant 5, Participant 6, Participant 8 stated that the drama and animation method, Participant 2, Participant 4, Participant 6 the travel-observation method, Participant 6 the use of historical novels, and the participant 10 the question-answer method was effective.

The description made for the effects of the methods used by teachers in teaching history subjects in social studies course on students was supported by direct quotations. Accordingly, Participant 1 stated that activities such as drama enable students to learn by having fun, by saying "*especially activities such as animation and drama affect children's comprehension level very much. It shows very positive results to be involved in understanding. Of course, besides this, transferring it to children with games makes it both fun and understandable.*" Similarly, Participant 5 stated that the students identified themselves with historical people by saying "*when you involve the student, a very impressive learning environment is created. When my students act out and learn the lesson, they identify themselves with historical personalities.*" Again accordingly, Participant 6 stated that the use of drama, travel observation method and historical novels were effective by saying "*the students are incredibly excited about the theatrical activities in drama. They also enjoy the technique of sightseeing observation. I also use historical novels. This also varies in the student's behavior.*" And Participant 4 stated that the trip-observation method was effective by saying "*I took my 7th. grade students to Rumelia Fortress Tour. While talking about the conquest of Istanbul, I observed that the method of learning by visiting the city walls, military architecture and war cannons increased the motivation for*

the students and learning became permanent." Similarly, Participant 2 stated that student-centered activities and museum visits were effective by saying "*I can say that the student-centered activities I use affected the students. I can say that after a student I took to the museum, his interest in the museum increased*." Participant 10 stated that the question-answer method was effective in ensuring students' participation in the lesson by saying "*attendance goes to the top. Students learn the subject faster and more effectively. The trend of active participation is rising. The techniques I follow through question and answer connect the child to the lesson*."

The Difficulties Teachers Encounter in Teaching History Subjects

In the study, he stated that social studies teachers encountered many problems in teaching history subjects. Among the teachers, Participant 1, Participant 3, Participant 4, Participant 5, Participant 7 stated the level of the students, Participant 3, Participant 6 and Participant 8 the irregularity of subjects, Participant 5, Participant 7 and Participant 10 the crowdedness of the classes, Participant 1, Participant 5 and Participant 8 the intensity and complexity of the subjects, Participant 1, Participant 6, Participant 10, Participant 4, Participant 9 the prejudices of students towards history subjects, Participant 9 and Participant 10 the lack of interest of students, Participant 2 and Participant 7 the insufficient course hours, Participant 2 the financial difficulties, Participant 8 the rote learning approach, as the difficulties they encountered in teaching history subjects.

The description of the difficulties teachers encounter in teaching history subjects in the social studies curriculum is supported by direct quotations. Accordingly, Participant 3 emphasized that the student level is not sufficient and the irregularity of the subjects are a problem by saying "*I am facing difficulties due to factors such as individual differences, the level of the student, and irregular presentation of the subjects. The reasons such as the 5 grade students' level not being able to perceive elementary school yet, history subjects being challenging*." And Participant 7 stated that crowded classes, low class hours and low student level were among the difficulties they faced in teaching history subjects by saying "*crowded classes, the subjects not being able to be completed due to the shortage of hours, the students' capacity of understanding and perception being low*." Similarly, Participant 10 stated that the density of the subjects, the crowd of the classes and the students' indifference to the lesson were the difficulties they encountered in teaching history subjects by saying "*I think there is an excessive density on history subjects. This directs the child to rote and keeps them away from questioning. Crowded classroom environment, students' lack of interest to the lesson*." Again, accordingly, Participant 5 stated that the subjects were abstract, the classes were crowded, and the students' developmental characteristics were not taken into account as the difficulties they encountered in teaching history subjects by saying "*not paying attention to the developmental characteristics of students, keeping the subjects abstract, crowded classroom environment*."

The Effective Factors in Teachers' Competencies for Teaching History Subjects and Choosing the Methods They Use

Majority of the social studies teachers stated that they did not take undergraduate or graduate courses related to the teaching of history subjects and they did not read the books published in this field in the study. Accordingly, Participant 1, Participant 2, Participant 3, Participant 5, Participant 7, Participant 8 stated that they did not take a course on the teaching of history subjects at the undergraduate level, Participant 2, Participant 5, Participant 6, Participant 7, Participant 8, Participant 9, Participant 10 stated that they did not read any method and technical book related to the teaching of history subjects. However, Participant 3 stated that he inspected the book "How to Teach History" of Mustafa Safran, Participant 6 stated that she took a drama lesson on teaching history subjects. Teachers stated that different reasons were effective in choosing the methods and techniques they applied in the lesson. Accordingly, Participant 1, Participant 3, Participant 7 stated that the characteristics and age levels of the subjects, Participant 5 that students' needs, Participant 6 that students' interest, Participant 8, Participant 9 that their experiences, Participant 10 that the content of the subjects and the students' perspectives were effective in choosing methods and techniques.

The description of the factors that affect the ability of social studies teachers to teach history subjects and the methods they use was supported by direct quotations. Accordingly, Participant 1 stated that he did not receive any education related to the teaching of history subjects, and that he

determined his methods and techniques according to the characteristics of the subjects and the level of the students by saying "*I did not take any training. For the methods I use, I first compare the subject-age level to be told. I try to explain it by making it more permanent and more concrete.*" Similarly, Participant 5 stated that he did not take any courses on the teaching of history subjects, did not read the method technical book, and determined his methods and techniques according to the needs and grade level of the students by saying, "*No, I did not. I consider myself a little bit sufficient. There is no method technical book that I have reviewed or read. However, I read historical novels and stories. I think these contributed a little more to me. Students' needs are the level of classes. In addition, I use the stories in the books I read.*". Again accordingly, Participant 7 stated that "*I did not. There is no history teaching method book I have studied or read. The content of the subjects and the level of the students are effective in determining the methods I use. It varies from class to class.*" Participant 8 stated that she did not take any courses on teaching history subjects, did not read the method technical book, and chose his methods and techniques based on his experiences be saying "*No, I didn't. I did not read a book about method technique. I think experience is more important. I believe that through experience, the teacher will improve himself more.*" Differently from these, Participant 6 stated that she took a drama lesson on the teaching of history subjects, however, she did not read any method book and that the students' interest in the course was decisive in choosing method techniques by saying "*I took a drama lesson on teaching history subjects in undergraduate program. However, I read novels and stories about history. I haven't read a book that includes methods and techniques. The interest and excitement of the children in the lesson most impressed me when choosing methods and techniques.*"

Conclusion, Discussion and Suggestions

In the study, teachers' opinions differed about the adequacy of history subjects in the social studies curriculum. In this sense, it was concluded that some teachers found the history subjects in the social studies lesson sufficient, and some teachers did not find it sufficient. In the study, it was determined that the history subjects in the social studies curriculum were abstract, narrow and intense, there was no connection between the subjects, and the subjects were squeezed into one unit. In the research, it was extrapolated that it is necessary to give more place to pre-Islamic Turkish history subjects, the life styles of the first constructions, the administration and justice subjects of the Ottoman Empire, to give more consistent and regular subjects of the 7th grade, to pay attention to the chronological and historical integrity of the Ottoman State, to give more place its late history. In the study, most of the teachers stated that there were problems with the order and order of history subjects in the social studies curriculum. However, some teachers stated that the order and gradation of their subjects were appropriate. In the study, it was determined that there are problems in social studies curriculum such as compliance with the student age level, subject density, disconnection between the subjects, the detail of the subjects, the chronological order not being appropriate, and the subjects being rote-oriented. In the research, the teachers suggested that the subjects should be concretized, to teach a short Turkish history and Atatürk to the fifth graders, and more time should be allocated to the Ottoman Empire. These results show that there are problems in the adequacy of history subjects, subject contents, subject order and ordering in the social studies curriculum. Similar to the results obtained in the study, Doğan (2016) determined that the social studies course hour was insufficient in transferring the history contents as duration, there was a disconnection between the 7th grade history subjects and the content was prepared without considering the chronological order. Similarly, Kavak (2006) found that there is no unity between history subjects in social studies books, and this situation, which makes it difficult for the subjects to be covered, makes it difficult for students to learn meaningfully. Topçu (2016) precipitated that history subjects in the social studies course should be studied in depth and a separate history course should be included instead of social studies. When the results obtained in the research and the researches are evaluated together, it is observed that it is necessary to review the history subjects in the social studies curriculum. Herein, history subjects in the social studies curriculum should be addressed at the point of adequacy, density, content, class level, and student level.

In the study, it is observed that the opinions of the teachers about Atatürk's principles and reforms, which were taken from 5th grade subjects in the renewed curriculum, differ. Half of the

teachers stated that it was appropriate to exclude Atatürk's principles and reforms from fifth grade subjects. The teachers stated that the reason for this was that these subjects remained abstract and were difficult to learn. Half of the teachers stated that it was not appropriate to remove Atatürk's principles and reforms. Teachers who think that it is not appropriate to exclude these subjects explained this reason as the readiness of the students for the 8th grade and the necessity of learning Atatürk. Accordingly, Dursun (2019) stated in his study that most of the social studies teachers stated that it was appropriate to shift the subject of History of Revolution and Kemalism to the 8th grade in the new curriculum, and that the History of Revolution and Kemalism subject is heavier than the 5th grade and is not suitable for the student level. Again similarly, Akmeşe (2019) stated in his research that some of the teachers stated that the subjects related to Kemalism, which were not included in the old curriculum but were not included in the new curriculum, were not suitable for the development level of the students and that it was appropriate to exclude these subjects from the 5th grade, while some teachers evaluated the fact that the subject to be removed from the program completely as a wrong step. Accordingly, it can be stated that it is necessary to evaluate whether Atatürk's Principles and Revolutions are included at the 5th grade level. It should not be ignored that the teaching style is also important rather than whether or not these subjects exist at the 5th grade level. Yet, these subjects, which are taught with the logic of memorization, make it difficult for 5th grade students to understand the subject.

It was determined that social studies teachers preferred different methods and techniques in teaching history subjects in social studies course in the study. It was determined that most of the teachers preferred the direct instruction method and the question-answer method. It was determined that half of the teachers used the method of drama and brainstorming, some teachers used the method of research-analysis, educational game, fishbone and the de bono hats system technique. Teachers stated that they preferred the methods and techniques they used in the teaching of the lesson because of concretizing the subjects, activating the student, saving time, being suitable for crowded classes and low student level. Similar to the results obtained in the study, Çelikkaya and Kuş (2009) determined that teachers did not use student-centered methods in teaching history subjects, but rather used narration and question-answer techniques. Again, in this sense, Ünal (2012) found that social studies teachers used a predominantly teacher-centered method in teaching history subjects at all grade levels, crowded classes, financial inadequacies, and shortage of lesson hours based on gains limit the application of student-centered methods and techniques. When the results obtained in the study and the researches are evaluated together, it is seen that teachers mainly use traditional teaching methods and techniques in teaching history subjects in social studies course, especially the crowded classes, low student level and insufficient time limit their use of student-centered methods and techniques. Accordingly, the elements that limit teachers' use of student-centered method techniques should be eliminated. In the researches, there are researches that determine that the main problem in teaching history subjects in social studies course is not to use active teaching methods. Accordingly, Köstüklü (2004) stated that active learning techniques used in the history teaching of countries such as England and the USA were not applied in our country, and it is important to organize the teaching of history subjects in such a way that students take an active part. Yeşilbursa (2008) determined that the problems experienced for years regarding the teaching of history subjects in social studies can be solved by the spread of student-centered understanding and the introduction of active learning methods. Again, in this direction, Canlı (2016) determined that it is necessary to prepare an environment in which rich teaching methods and techniques suitable for different models are used rather than using a single method and technique in teaching history subjects. As a result, it is seen that teachers should prefer student-centered methods and techniques in teaching history subjects.

In the study, social studies teachers stated that the methods and techniques that they thought were effective in teaching history subjects in the social studies curriculum, revealed different results on students. Teachers stated that the methods and techniques that students actively participated in were effective in learning the subjects, in increasing interest in historical events, and in edutain. The conclusion that student-centered methods-techniques are effective in teaching history subjects obtained in the study show similarity with results of Dolmaz (2012)'s finding that students are interested in active learning techniques and that they are more motivated towards history subjects when used, Çiviler's (2019) results that the history subjects taught on the basis of activity made the

course more interesting and that the students' historical thinking skills improved and Doğan's (2007) finding that the level of evidence-based learning is high in the classroom where active learning-based methods are applied, and that students' historical understanding skills and historical analysis and interpretation skills have improved. In the study, teachers emphasized that drama and animation method, travel-observation method, historical novels and question-answer method were effective. The result obtained in the study regarding the effectiveness of the travel-observation method in teaching history subjects, determination of Şentürk (2019) that social studies teachers approve the museum visits for the teaching of historical subjects and that the museum visits increased the awareness of the students, Bilicioğlu's (2017) conclusion that students mostly wanted visits to historical sites, archaeological sites and museums in the information course, show similarities. The conclusion that the drama and animation method was effective in the study, determination of Kartal (2009) that teaching history subjects together with the drama method was effective in increasing the success of the students, including them in the learning environment actively and providing the opportunity to develop their creativity, determination of Pektezel (2017) that social studies, which are studied with the drama technique, enable students to learn more meaningful and permanent history, increase students' success and change the classroom atmosphere positively, show similarities. The conclusion obtained in the study that historical novels are effective, determination of Şimşek (2006) that students' attitudes towards the use of historical stories in teaching history subjects were positive, determination of Koçak (2004) that use of historical stories as a material in teaching history subjects in social studies lesson helps children to reach the achievements more easily, determination of Özkan (2014) that the story used in social studies teaching and the teaching method positively affected the academic achievement of the students, show similarities. Besides all these, Dere and Dinç (2018) and Sarı (2007) determined that verbal history studies, Şener (2019), Çıdaçı (2015) and Kıcır (2006) that different methods and techniques, Kaygısız (2019) and Çorapçı (2019) that historical empathy, Öner (2007) that collaborative learning method, Korcu (2019) that play-based teaching, Ulusoy and Gülüm (2009) that material use, Özkan and Gevenç (2017) that jokes, Özel (2013) that technological tools, Dönmez (2019) that scenario applications are effective in teaching history subjects in social studies course. When the results obtained in the study and the results of the research are evaluated together, it shows that the use of student-centered methods and techniques in teaching history subjects in social studies course will be effective. In this context, it is seen that it is necessary to ensure the use of student-centered methods and techniques in teaching history subjects in social studies course.

In the study, he stated that social studies teachers encountered many problems in teaching history subjects. He stated that the most basic problems faced by teachers in teaching history subjects were the low level of students, the irregularity of the subjects, the crowd of the classes, the incorporeity of the subjects, the complexity of the subjects, the students' prejudices towards the subjects of history, the lack of student relevance, the inadequacy of the course time, the material problems and the rote learning approach. Similar to these results, Ünal (2012) found that teachers mainly used a teacher-centered method in teaching history subjects, crowded classes, financial inadequacies, and shortage of course hours with respect to the acquisitions limited the application of student-centered methods and techniques. The results obtained in the study showed that teachers experienced basic problems such as the inadequacy of the course time, crowded classes, as well as the abstraction and complexity of the subjects specific to the teaching of history subjects, students' prejudices and irrelevance towards history subjects.

In the study, it was determined that the methods and techniques used by majority of the teachers in teaching history subjects in the social studies course differ in accordance with the methods and techniques used in other subjects in the social studies course. This shows that teaching history subjects in social studies course requires different knowledge and skills. In the study, it was determined that the characteristics of the subjects and age level, needs, interests, experiences of the students, content of the subjects and perspectives of the students were effective in choosing the methods and techniques applied in the course. Likewise, it was determined that most of the Social Studies teachers do not take undergraduate or graduate courses related to the teaching of history subjects in the study and that they do not read the books published regarding this field. According to the results obtained in the study, Er (2015) found that the perceptions of teachers who did not receive in-service training related to the teaching of history subjects were weak and that the said social studies

teachers felt themselves incompetent in processing history subjects with active methods, which is similar to the Tahiroğlu's finding (2006) that the lack of sufficient training in methods and techniques reflected negatively on their professional practices in the pre-service training of teachers. Again, accordingly, Er and Bayındır (2015) found that social studies teachers felt incompetent in teaching history subjects, and concluded that pre-service and in-service trainings were effective in this. At this point, it is seen that social studies teachers should take training on the teaching of history subjects from pre-service and in-service training processes.

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Discussions of Memorization in Education

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Öz

The general purpose of education is to raise individuals within advanced language, mental, social and emotional skills. New approaches and models are used to achieve this goal. Ineffective, useless practices, one of which is memorization are avoided in this process. Memorization has been used in the history of education for a long time. In the past, memorization was considered as an important method in schools and information was memorized with constant repetition within this concept. In today's educational approaches, memorization is regarded as useless and argued because it is not learning, yet it is the lowest level of the learning process. Memorization includes repeating information and keeping it in mind for a certain period of time. Later, this information is forgotten and all efforts are wasted in vain. There is no mental change in individuals through memorization. Conversely, it causes students to have mental and physical laziness, whereas learning includes understanding, thinking, integrating with prior knowledge, producing new information and applying it. With learning, the individual constantly improves and renews himself. Therefore, memorization is avoided. Although this issue is constantly debated among educators, it is known that students in the world and in our country still tend to memorize. Educators are expected to focus on qualified education and train individuals who will shape the future of our country.

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Introduction

Education is one of the most important forces shaping the future of any individual and society. The way to reach this power is through qualified education. In this process, language, mental and social skills such as reading, writing, understanding, thinking, questioning, and problem solving are very important. In addition, 21st century skills such as communication, collaboration, critical thinking, applying knowledge and skills, integrating with the world, taking social responsibility, innovation and entrepreneurship are also emphasized. These are determinants of the individual's learning process to learn and maintaining this throughout their lives, forming broad worldview and directing their future. With this attitude, new educational approaches and methods are applied in most countries, and existing practices are systematically evaluated. In this process, effective methods and techniques are determined; measurements are taken; and useless practices, one of which is memorization, are abandoned.

Memorization is one of the most frequently discussed topics among educators. Hence, why does this concept generate so much controversy? Memorization is beyond a simple teaching technique, it is an application that has extended from past to present and has a long history. This practice around for years in the world had a good reputation in the past (Maulini, 2016). However, it has faced harsh reactions in recent years, especially, in the 21st century. Various opinions have been put forward about benefits and deficits of this practice, which still has some supporters today. Different practices are observed in instructional approaches and models and teacher training programs regarding this controversial memorization. The aim of this study is to reveal the difference between memorization and learning, to determine its historical process and theoretical foundations, to deduce the positive and negative discussions in the field and the real reasons for this practice. Therefore, firstly, the concept of memorization is defined, and then several aspects such as fundamental features, historical, cultural, and conceptual developments, memorization in educational approaches, educational value of memorization, and its advantages and disadvantages are evaluated.

1. What is Memorization?

Explanations and applications about memorization date back to very old years. Preliminarily, it was regarded and defended as an important learning method, and then criticized for its deficits. In some periods, it was tried to make it effective by various techniques, in some it was opposed on the grounds that it was meaningless and useless. Thus, a series of positive and negative opinions about memorization emerged in areas such as history, philosophy, and education constitute. Despite all these debates, memorization has been used in schools for years and has been a method used by most students.

Memorization in the updated Turkish dictionary is defined as follows:

"1. Storing any learning item or perceptual tools in memory by repeating so as to be remembered later,

2. Keeping something in mind as it is, and memorizing,"

3. Keeping a text or a word in mind through a full repetition.

4. The ability to memorize and recall,

5. Lessons to be memorized" (TDK Contemporary Turkish Dictionary, 2020).

In foreign language dictionaries, memorization is defined as "the process of repeating or saying a list or a text without forgetting any word. For instance, poems, texts, word lists, multiplication tables, etc. are memorized " (Le Grand Dictionnaire Terminologique, 2020).

Memorization doesn't mean learning by rote. Andrée Letarte, who elucidates this concept as a legend that should be eliminated in educational studies, underlines the following explanations on memorization.

"The process and operation of memorization is based on the logical organization of information in the mind, establishment of relationships between prior knowledge in memory and new information, and frequently reactivation of the memorized contexts. (Thuot, Ghersi & Dion, 1994).

As seen, memorization is considered as "the process of repeating information and placing it in the memory, the ability to keep a text completely in mind, the lesson to be memorized". In other words, the process and method of placing information in memory, the process and ability to keep them in mind, and the information to be memorized are called "memorization". Thus, the concept of memorization includes not only operation and method, but also process and skill. In education, all procedures, methods, processes and skills related to memorization are generally considered "learning by memorization".

1.1. Basic Features of Memorization

Memorization is one of the oldest applications used in education. It is based on two basic features: repetition and imitation. Information is acquired through repetition, and behavior is acquired automatically through imitation. In this process, mental skills such as understanding and thinking remain in the background as underlined below.

Repetition: This practice is generally done by repeating information and events in order, memorizing the listed items, remembering definitions and concepts, and executing operations and processes automatically (Basque, Rocheleau, Winer, 1998, p.5). The information to be memorized is presented orally or written. Since it is easily applied in lessons, there is no problem encountered. It is widely used in the old behavioral approach. However, since processes such as understanding, thinking, questioning, combining with the information in the mind are not performed in this way, it is forgotten in a short time.

Repetition is mandatory and necessary in the memorizing process. It has to be repeated in order to embed, keep in mind, remember information or event as it is. The repetition process should be done regularly and conspiratorially. Techniques such as reading aloud, animation, emphasis and intonation are used for memorizing. This application is also valid for verbal information. In addition, techniques such as highlighting words in the text to be memorized, underlining, circling them by colored lines, visuals, enumerating, and putting stars are also utilized. Thus, information is superficially saved in mind. In order for the student to acquire knowledge or behavior, he is first asked to repeat it with the teacher and gradually repeat it himself alone.

As seen, mental operations such as understanding, examining, relating, thinking, questioning, and integrating information with prior knowledge in the mind during memorization remain in the background. During repetition, only taking information, placing and keeping it in mind come to the fore. The information received is forgotten after a while. Therefore, according to Bateson (1977), memorization is the lowest level of the learning process, that is, zero level. This practice is still included in most courses or classes, but it does not invest contribution to students' development (Bateson, 1977). In case the student starts to understand and thinks some of the information he learnt through memorization, then meaningful learning is activated.

Imitation: When individuals acquire some information, they imitate people around them as a model. They act exactly what they do. Some of knowledge and skills acquired in daily life happen in this way. This practice is observed in both animals and humans. For example, a little girl imitates her mother and dresses her doll and feeds like her. Parrots imitate people's speech and repeat the same words. This is called imitative learning. Some of its features are as follows:

- It is an effective way to replicate a sample or model.
- It is based on repetition.
- Repetition is mandatory until it reaches a sufficient level.
- Low level students have difficulty while imitating (Güneş, 2015).

That an individual imitates people around him, acts like them, increasingly resembles them has caused harsh criticism in education. It is underpined that through this practice, everyone will be alike, and development and progress will remain limited (Bateson, 1977). Based on these criticisms, the contribution of learning by imitation to individual development is examined. Lev Vygotsky explains that there are two types of imitation. The first is "automatic imitation", which every living thing can do. The second is "conscious imitation", which merely humans can do.

• *Automatic imitation* is a purely mechanical process based on repeating or duplicating a behavior. It is enforced through conditioning. Imitation in animals is of this kind. This imitation is done by trial and error, and it is forgotten soon. This imitation makes no contribution to the development of people (Bateson, 1977). In particular, it does not affect the development of students' language, mental, and social skills (Güneş, 2015).

• *Conscious imitation* is a logical and effective imitation, in which learning is realized by discovering. While imitating, student tries to understand, think, question and explore processes. Conscious imitation becomes the motor force of the learner's language, mental, individual and social development. Vygotsky highlights its importance as "Conscious imitation contributes directly to development and learning" (Güneş, 2015).

As seen, automatic imitation is the most primitive way of learning process and has no contribution for students. Conscious imitation is placed in the primary level of learning process. To Vygotsky, conscious imitation is realized through natural interaction between teacher and student. Therefore, conscious imitation is regarded within the concept of modelling and observing.

2. Historical process

The concept of memorization appears in various fields such as literature, education, philosophy, history and religion in the historical process. These are briefly summarized below.

2.1 Cultural Developments

Since the primitive societies in the world, people have felt the need to learn about what is happening around them and to tell others what they have experienced. Thus, first communication was realized with signs, then languages developed and oral culture started to spread. Verbal culture dominated societies. In verbal culture, events, thoughts, and information spread through speech. The placement of knowledge in the mind is done by verbal memorization. Verbal methods were used in education of children, young people, and adults. The information, tales, epics, stories to be learned were repeated frequently and memorized in patterns. Memorization was considered as an important method, and those who memorized information fast and kept information in mind for a long time were called "the ones with strong memorization" (Abernot, Audran, & Penso,2011).

With the invention of writing, these practices started to change. Information was written on papers, tablets, wall newspapers, books, etc., and was reproduced. These were kept and read whenever needed and used as a document. Then, written communication and learning started, it became easier to reach the real source of information. Confidence in written documents, instead of verbal information memorized, has gradually increased. Over time, printed products became the most important resource and systematically took place in libraries. There was no need to memorize some information because of the permanence of information on papers. Thus, keeping the information on papers came to the fore rather than memorizing it in memory.

Today, with the rapidly developing information technologies, information is stored in electronic devices instead of memory or written on papers. Most information is loaded on devices such as mobile phones, computers, tablets, etc. With the audio-visual revolution, access to information is faster and easier in anywhere, anytime, and any situation. In addition, most information can be accessed within a few seconds through the search engines on the computer. Thus, the process of memorizing information such as words, indexes, lists, formulas, telephone numbers, and storing past events in memory is quickly abandoned. Memorizing information is loaded on technological tools.

2.2. Conceptual Developments

The concept and practices of memorization have a deep-rooted history in the world. In the historical process, this concept has been used in various fields such as literature, education, philosophy, religion, history and has undergone significant changes. Thus, various concepts similar and close to the concept of memorization emerged. For example, knowing by heart, learning by heart, breaking the rote, and rote learning. Each of these contains a different aspect of memorization. These concepts are briefly given below regarding the historical process.

Learning by heart: Memorization is used in French as "apprendre par coeur" meaning "learning with heart" (Grand Dictionnaire Terminologique, 2020). This idiom comes from ancient times. The ancient Greeks (700-200 BC) believed that the soul was settled in the heart. Based on the blood pumping function of the heart, Hippocrates and Aristotle thought that the heart was also the center of feelings and thoughts. The heart was seen as a symbol of courage, sensitivity, attention, and reason. The importance of the heart in learning was emphasized and it was stated that heart rhythms increased during an intense mental activity. In the middle ages, the term "superheart" was used for processes such as excitement, emotion and being affected during learning (Abernot, Audran, & Penso, 2011). Therefore, learning by heart was regarded very important.

In the following years, due to scientific advances, the human body was studied better and the functions of the brain were revealed. However, for centuries the heart was the center of emotions and passions. Therefore, expressions such as entering the heart, loving from the heart, heart to heart, heartless are used in many languages. Heart was associated with the concept of courage, and the concepts such as brave, strong-willed, willing, sincere, etc. have come up. During this process, the relationship between heart and memory was not clearly determined. However, based on the difficulty of forgetting a beloved one, it was stated that "memory is at the command of the heart" (Dufresne, 2001). Therefore, the word "heart" is also used to refer to "memory" in languages such as German, Spanish, Italian, French, and Portuguese.

Knowing by heart: In the 17th century, the phrase "to know by heart" or "know from the heart" came to the fore in addition to learning by heart. This phrase was used for the first time in some texts of Rabelais (Ricœur, 2000, p. 69). In this idiom, the word "heart" is again regarded as the center of feelings and thoughts. However, the concept of knowing from the heart or knowing by heart puts emphasis on keeping the memorized information in mind, and the process, rather than the word learning with the heart. This practice was widely adopted in the Middle Age and was extensively utilized by theologists or educators of religion. Bible verses, indexes, lists, etc. were utilizied so as to keep the information in memory and recite it (Ricœur, 2000, p.72). Thus, knowing and telling by heart has been emphasized for many years.

Knowing by heart is different from learning by heart. The former is the process and the latter involves the method. Knowing by heart is keeping the information in the mind, not the process of putting it in the mind. For this reason, it received harsh criticism in the following years. In his letter to Diane de Foix, Montaigne harshly criticized the phrase "to know by heart" or "to learn by heart". According to Montaigne, "To know by heart is not to know, but to keep something that we have given to memory. However, what we really know is what is in us, regardless of the text or the book. These are what we need". Later, memorization was opposed in Descartes' book "Malin Génie" and Rousseau's book "Emile". Rousseau proposes directing students' attention to natural events, curiosity and exploration rather than memorization. Tolstoy in his book entitled "Voyage en France" in 1860 emphasized that students memorize religious texts instead of understanding them (Abernot, Audran & Penso, 2011). Nowadays, the concept of knowing by rote is generally used adversely and is unaccepted.

Learning by memorization: It is a commonly used concept in education. This concept is expressed in various phrases such as rote learning, rote teaching, rote reader, memorizing, knowing by heart, memorization techniques, memorization method, permanent memorization, easy memorization. It has an important place in early learning theories and approaches in education. However, later educational approaches and theories oppose this. There are still some supporters today, and these practices are tried to be effective with various methods and techniques. Some others, however, explain what information should be memorized, and state that not every information should be memorized. (Weisser,2002). Yet, despite all these efforts, there are harsh criticisms on memorization by most educators (Maulini, 2016).

In the 1900s, memorization was included in the education and teacher training programs of most countries. Teachers taught students how to memorize in class for many years. It was introduced as an effective learning method and technique. It was suggested that information should have been repeated at least ten times in order to keep it in mind. These applications continued until the 1970s. In

the 1970s, new learning theories and approaches were emerged. Emphasis was put on meaningful learning, curiosity and exploring for students' learning. Thus, learning by memorization was strongly opposed. Then, in the 1980s, the constructive approach came to the fore. In this approach, the emphasis was on developing language, mental and social skills instead of memorization.

Breaking the mould: This concept is used in daily life. Since memorization is repeating what is already known and performing the same tasks and processes, breaking the mould indicates the opposite. In other words, it implies not doing the known and expected functions, repeating the same information and behaviors, but leading people to think by acting contrary rather than the usual.

Rote learning: The most important feature of learning by memorization is that it is not durable against time. What is memorized is forgotten after a while. It is called rote learning because it is not permanent and robust. According to Bateson (1977), learning by transferring knowledge is regarded as the lowest level or zero level of learning. This level of learning does not contribute any change for the individual. This practice causes various problems, namely achieving educational goals and providing students with the necessary knowledge and skills.

3. Memorization in Educational Approaches

Various educational approaches and theories have been applied since the 1900's in the world. These are grouped under four headings as traditional, behavioral, cognitive, and constructive approach. Upon consideration of memorization, different practices are observed in educational approaches and models, and teacher training programs related to the period. While memorization is valued in traditional and behavioral approaches, it is opposed in cognitive and constructive approaches. These are briefly summarized below.

Traditional Approach: It is the oldest approach used in education. Learning theories in this approach are classical, operant, juxtaposition and bonding theories (Güneş, 2014). Classical conditioning theory emerged with the laboratory studies by Ivan Pavlov. To Pavlov, most of learning takes place in a stimulus-response way. The emphasis is on clearly conveying information to be given to students. The concept of education is addressed in sense of giving lectures and courses. In this approach, importance is given to the form of transfer as much as the quality of the information conveyed to students. In order to facilitate the efforts of students, emphasis is placed on the gradual organization and consolidation of knowledge. In short, the traditional approach focuses on changing students' behaviors through conditioning, reinforcing knowledge with repetitions, and gradually forming habits.

Behavioral Approach: According to this approach, education is the process of causing a deliberate and desired change in an individual's behavior through his own life. Emphasis is placed on the process of creating behavioral changes in the individual, making them intentionally and in the desired direction meaning the aimed direction, and realizing these changes through the individual's own life. For this reason, issues such as behaviors, attitudes, stimuli, reactions, reinforcement, repetition, and habit formation are emphasized in the education process. The researchers of this approach are E.L. Thorndike, John B. Watson, Edward Tolman, and B.F. Skinner. Watson formed the basic principles of behaviorism. The purpose of the behavioral approach is to determine knowledge and behaviors to be taught in advance, and to teach students them through memorization, repetition and conditioning. Therefore, forgetting the information should be prevented by constantly repeating it in the classroom.

Cognitive Approach: According to this approach, education is the process of developing an individual's cognitive schemas through various experiences. Learning is taken as the processing of information in the mind, and student is considered a computer that receives and processes information. The functions of memory and information processing processes are emphasized in the learning process. Information received from the outside is processed in short-term memory, encoded and stored in long-term memory. Mental schemes are used for this. Mental schemas perform operations such as organizing, placing and using information. The fact that the schemas in the student's mind are rich and developed makes it easier to process the information they receive.

Researchers of the cognitive approach are far from the behavioral approach. They try to understand mental operations, thinking, concept formation, and learning processes. Most of their findings can be directly applied in educational settings. Representatives of this approach are Jean Piaget, Robert M. Gagne, Ausubel and Bruner. Jean Piaget and Bruner are also involved in the constructive approach. The harshest criticism of memorization in the history of education came from the cognitive approach accepted as "revolution". The researchers of the cognitive approach have tried to open the "black box", that is, the mind that behaviorists have not opened. For this reason, they examined how memory and information processing, gathering information in the mind, storing, transforming, decoding or encoding are done in the learning process. They focused on fast, slow, visual, auditory and tactile memories in minds. Ausubel, on the other hand, created principles that explain how an individual learns, the characteristics of the teaching activity and how to think about it in the theory of teaching through presentation. Ausubel distinguishes between meaningful learning and memorization. For him, memorization is a mechanical learning. He states that new information will gain meaning if it is associated with other information in the mind of the individual. It emphasizes that educational activities should focus on meaningful learning rather than memorization (Güneş, 2014).

Constructivist Approach: In this approach, education is not to convey the meanings and truths formed in an educator's mind to his students; on the contrary, it is the student himself to create the meaning. In other words, education is a process wherein new information is combined, interpreted and structured in mind. Learning takes place through processing and structuring information in the mind. It is envisaged that students learn to learn by discovering through activities and develop various skills. Therefore, the main purpose of the constructivist approach is "teaching to learn". The practice focuses on letting students examine and observe, ask questions, awaken their curiosity, accompany them while implementing the activities suggested, and guide them etc... The constructivist approach considers learning as an active work, focuses on real learning situations, adopts an entrepreneurial education and project approach, directs it to explain a matter from different aspects and to collaborative learning.

The researchers of this approach are Jean Piaget, Wygotsky and Bruner. According to Bruner, learning occurs when student acquires new information, puts it in his mind and integrates it with other information. This is called learning through exploration or discovery. This learning is deemed necessary so that information is kept in long-term storage. Bruner emphasizes that the student who stores the information will reach new information via comprehending and translating and this facilitates learning. In learning process, the emphasis should be on teaching concepts and principles rather than teaching information. This is how student performs mental activities such as perception, comprehension, translation, transference, analysis, synthesis, and application.

4. Educational Value of Memorization

The general purpose of education is to raise people needed for the country and society. Hence, what is focused on is the knowledge and skills to be acquired by future generations. Particularly, emphasis is put on developing individuals' language, mental and social skills. This situation changes according to instructional approaches, practices and the period in the historical process.

In the world, in the 1990s, old educational approaches, namely the traditional and behavioral approach, were applied. In these approaches, emphasis was put on teaching student's knowledge and behavior. The knowledge and behaviors to be taught were predetermined, divided into various stages and taught through continuous repetitions. These were repeated until they became automatic in the individual. The learning outcome was determined by the individual's observable behaviors, and habits were tried to be formed by reinforcing positive behaviors (Güneş, 2014). In this way of education, students' behaviors were more concerned than their minds. Therefore, memorization and repetition were considered as an important method, and a wide coverage was given to memorization in the lessons.

In the following years, due to the fact that this education approach received various criticisms and educational problems increased rapidly, educators turned to new searches. Thus, cognitive and constructive approach came to the fore. In this process, the purpose of education is listed as follows:

• Developing students' language, mental, social and emotional skills,
• Producing information instead of consuming information,

• Managing your own mind,
• Raising learning individuals, etc.

Along with these approaches, raising individuals, who research information, use it effectively, produce new information and develop themselves continuously, come to the fore. It was envisaged that the mind of the student and the student himself was put at the center, and the student should organize his mental structure by establishing a relationship between prior knowledge and new information. In order to regulate the mental structure, mental processes such as thinking, understanding, relating, sorting, questioning, classification have been emphasized. Otherwise, information that is not integrated with the preliminary information and is not mentally structured becomes memorized information to be forgotten in a short time. Briefly, instead of memorizing what is conveyed to the student, emphasis is put on understanding, thinking, researching, studying, learning by questioning and structuring his mind.

In recent years, together with lifelong education, individual initiative, productivity, active and independent learning, improving capacity of individual to the fullest are emphasized, and memorization and encyclopedic knowledge are opposed. Since the information memorized about various disciplines will age over time, these should be stopped. Indeed, all encyclopedic information hinders the mental development of the individual. However, education should focus on thinking, questioning and developing mental skills (Conseil de l'Europe, 1970.s.29).

As seen, memorization is avoided to achieve the desired goals and improve students' cognitive skills in today's educational attitude. Actually, memorization aims at placing information in the mind and keeping it in memory for a certain period of time. However, in today's educational mindset, it is foreseen that information obtained should be well understood, reflected on, integrated with preliminary information, should produce new information, transfer to daily life and used. It is impossible to do this with the information memorized and kept in memory for a short time. On the other hand, students' memorization of information by repetitions is the lowest level of learning. This learning does not bring mental change in the individual. Information is kept in memory for a while, it is forgotten and then all efforts are wasted. In brief, memorization has no educational value. However, if processes such as understanding, thinking, comparing some information with other information are performed during memorization, then meaningful learning starts.

As a result, memorizing and repeating information constitute the lowest level of learning and do not provide the desired change and development in students. This situation causes important problems of achieving educational goals and providing students with necessary knowledge and skills.

5. The Benefits and Disadvantages of Memorization

Today, some educators who adopt the traditional learning approach still defense learning by memorization, while advancers oppose it. These debates continue in the field. Innumerable studies are also conducted in the literature. Some of the views put forward on the benefits and disadvantages of memorization are briefly summarized below.

Benefits: Some educators state that learning by memorization and by understanding are different from one another, and that they should not be confounded. According to Alain Lieury, the human brain saves some of the important information. It is very hard to make our brain memorize anything. For this reason, memorization should be evaluated well in education, and it should be utilized during learning of names, lists, dates, formulas, tables and classifications. However, in the process of learning other information, emphasis should be placed on understanding and meaningful memory should be addressed. This type of application is the most ideal (Lieury, 2004). Some techniques should be used for the message to be effective in memorization. The primary of them is repetition. Texts should be read aloud and repeated. This situation makes it easier to record information to the mind. However, it is effective for visual learners to use information diagrams. Colors should also be used. Techniques such as drawing lines, marking specific places, etc. make memorization easier.

Disadvantages: Some of the claims regarding the damages of memorization are declared. According to these views, repeatitive reading the texts to memorize and focus all attention on

memorization causes students to diverge from the conteptual meaning of the text. This method gradually becomes a habit, and students start to accept the information in the text without understanding, thinking, questioning, and evaluating. However, the process of placing information in the mind without understanding, thinking or questioning is the lowest level of learning. This information will be inevitably forgotten after a while. In addition, this practice causes mental laziness and keeps students away from preparing and solving problems to encounter in their adulthood. The prediction, future plans and strategies of most students who are accustomed to memorization do not work. Mental and physical laziness adversely affects all aspects such as work, family, and social life. On the other hand, the fact that memorized information is generally verbal and superficial affects student's mind one way and leaves a limited effect (Giolitto, 1970). Thus, there is no mental change and development after memorization. According to some scholars, memorization is a "mental genocide", which hinders the development of future generations.

Situation in Turkey

Remarkable studies are also conducted on memorization in Turkey. As known, the primary education curricula put into practice in 2005 were based on a constructive approach. For example, in Turkish (Grades 1-5) Curriculum, it is said that "Along with the constructive approach, various approaches such as multiple intelligences, cognition-based learning, student-centered education, education sensitive toward individual differences, immersive, thematic and skills approach were used." Various outcomes were listed in the curriculum, activities were designed related to the outcomes, and active learning was envisaged for students. In addition, under the title of Turkish Education Curriculum in 2005;

The following aspect is adopted as follows:

Contemporary education approaches and models based on knowledge production, not on memorizing knowledge, are primarily grounded. These can be listed as constructivist approach, multiple intelligence approach, student-centered learning, education sensitive toward individual differences. (MEB,2005, s.14).

As seen, in the 2005 Turkish Education Curriculum, students' active learning is emphasized and this concept is also reflected in the textbooks. However, there have been changes in the sequential curriculum. For example, 3rd, 4th and 5th Grader' reading outcomes appear in 2015 Turkish Education Curriculum appear as follows:

"Student reads and understands stories, dramas and poems independently. *Provided that it does not force the student; memorization is done for some poems that are appropriate for the level and have literary value*. " statement is suplementarily added. (MEB,2015, s,19,24). Then, in the reading outcomes of the 2017 Turkish Education Curriculum for 2nd, 3rd and 4th Grade, the following explanation is given:

"Student reads poetry. *Provided that it does not force the students, they are given the reading and memorizing the first six continents of the Turkish National Anthem"* explanation is given (MEB, 2017, p.32,36).

The same "Reads poetry" reading outcomes and explanations are included in the 2019 Turkish Education Curriculum for 2nd, 3rd and 4th Graders, (MEB, 2019, p.24,27,31).

As observed, while the emphasis was on active learning in the 2005 Turkish Education Curriculum, the 2015, 2017 and 2019 Turkish Teaching Curricula included memorization. However, memorization and learning are completely different from each other. Memorization is for taking information automatically and keeping it in mind for a certain period of time. Learning, on the other hand, is aimed at understanding information, thinking, integrating prior knowledge with new information, and developing language, mental and social skills. Memorization does not contribute to student development and its use in lessons negatively affects student achievement and the quality of education. It also causes important problems for the future of our country. In short, our educators are expected to move away from memorization and focus on qualified education and raise individuals who will shape the future of our country.

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