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FROM THE EDITOR

Dear Distinguished Researchers and Readers,

JTES-KEG is honoured to publish the first issue of 2020 and the second issue in English. We hope to initiate our applications for prestigious indexes such as ERIC and ESCI with our third issue in English. The change in the medium of publication as English, as we expected, has shortened the review and publication process up to nine months. This nine-month process is even shorter due to our OnlineFirst system in which we publish articles earlier than its normal issue.

Furthermore, we have reinforced and diversified our editorial board with many members from different universities in Turkey and the world, and this editorial change is expected to augment the international visibility of our journal and the spread of our authors' articles. We also like to announce that we will go on these changes until the board takes the last version.

In this issue, we decided to publish 13 research articles. We hope that these articles published in the first issue of 2020 will contribute to the literature. Also, we will continue to show accepted manuscripts in OnlineFirst soon.

Finally, we should also express our sincere thanks to the Editorial Board, reviewers and authors for their invaluable contributions. We also look forward to receiving submissions of sufficient rigor and quality. See you at the 2020 April issue!

Fatih GÜNGÖR, PhD
Afyon Kocatepe University
Faculty of Education

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A Study on the Primary Education Curricula in the Context of Socialization, Multiculturalism and Democratic Values

İlköğretim Programlarının Toplumsallaştırma, Çokkültürlülük ve Demokratik Değerler Kazandırma Bağlamında İncelenmesi

Oktay Cem ADIGÜZEL[*] **İbrahim KARAGÖL**[**]

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ABSTRACT: This study aims to examine the primary education curricula prepared in 2017 in the context of gaining socialization, multiculturalism and democratic values. Analyses are carried out on the basis of social adaptation, social norms, individual responsibility, multicultural education, democracy culture, and rights and freedoms. The study is limited to the curricula of "Life Sciences", "Social Studies" and "Human Rights, Citizenship and Democracy" courses in which these knowledge and skills are predominant and carried out within the scope of the primary education curricula published by the Ministry of National Education in 2017. The study is conducted using document analysis method, one of the qualitative research methods. The data are analyzed using both descriptive and content analysis. The aims and the objectives of "Life Sciences", "Social Studies" and "Human Rights, Citizenship and Democracy" courses curricula are examined under the themes of socialization, democratic values and multiculturalism and categorized in terms of cognitive, affective and psychomotor learning domains. It is concluded that, in total, the number of objectives related to social adaptation, social norms and individual responsibility is qualitatively sufficient; however, the number of objectives related to democratic values and multiculturalism is insufficient in the primary education curricula.

Keywords: socialization, multiculturalism, democratic values, rights and freedom, primary education curricula.

ÖZ: Bu araştırmada 2017 yılında hazırlanan ilköğretim programlarının toplumsallaştırma, çokkültürlülük ve demokratik değerler kazandırma bağlamında incelenmesi amaçlanmıştır. İnceleme kapsamında topluma uyum, toplumsal norm, bireysel sorumluluk, çokkültürlü eğitim, demokrasi kültürü, hak ve özgürlükler konuları temelinde analizler gerçekleştirilmiştir. Araştırma, bu bilgi ve becerilerin daha yoğun olarak yer aldığı "Hayat Bilgisi", "Sosyal Bilgiler", "İnsan Hakları, Yurttaşlık ve Demokrasi" öğretim programları ile sınırlandırılmış ve Milli Eğitim Bakanlığının 2017 yılında yayınladığı ilköğretim programları kapsamında gerçekleştirilmiştir. Araştırma, yazılı ve basılı materyallerin analizini kapsayan nitel araştırma yöntemlerinden doküman inceleme yöntemi kullanılarak gerçekleştirilmiştir. Veriler, betimsel ve içerik analizi kullanılarak çözümlenmiştir. "Hayat Bilgisi", "Sosyal Bilgiler" ve "İnsan Hakları, Yurttaşlık ve Demokrasi" dersi öğretim programlarının genel amaç ve kazanımları toplumsallaştırma, demokratik değerler ve çokkültürlülük teması altında incelenmiş ve bilişsel, duyuşsal ve psikomotor öğrenme alanları yönünden sınıflandırılmıştır. İlköğretim programlarının genel toplamda topluma uyum, toplumsal norm ve bireysel sorumluluk ile ilgili kazanım sayısının niceliksel olarak yeterli olduğu; fakat demokratik değerler ve çokkültürlülükle ilgili kazanım sayısının yetersiz olduğu sonuçlarına ulaşılmıştır.

Anahtar kelimeler: toplumsallaştırma, çokkültürlülük, demokratik değerler, hak ve özgürlükler, ilköğretim programları.

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Introduction

Education is a lifelong process. Schools are one of the most significant dimensions of this process. It is expected from schools and the education system to educate individuals who can think critically, question; respect spiritual, cultural and democratic values; know their responsibilities and use them in their lives. Besides, education has functions such as socializing the individual, developing social skills, transferring social culture, reproducing culture, gaining different cultural capitals, acknowledging the existence of different beliefs, values and norms (Şişman, 2015), transforming and directing society. Education carries out many functions such as transferring social and cultural values through curricula. For this reason, it is important to prepare the curricula in a way that meets the needs and expectations of the society and ensures the social development and adaptation of the individual to the society (Demirel, 2012).

For people to live in harmony with the society they are in, they should behave in accordance with its rules, culture and values. That is why individuals should organize their wishes, opinions and behaviors according to the people who share the same social structure (Deliömeroğlu, 1998). This necessitates the establishment of some criteria that regulate the interpersonal relationships in every society and culture and make it easier for individuals to adapt to the society (Özmen, 2009). These criteria that form moral component of culture are called as norms. Norms refer to the typical and appropriate actions of people in a group (Paluck & Ball, 2010).

There are various norms in all societies that determine how an individual will behave, act, eat, and even dress. These norms provide people living in that society with rules on how to act (Özkalp, 2012). Societies develop norms to maintain behavioral regularities and infuse them to all individuals starting from their childhood (Kağıtçıbaşı, 2008). This shared learning which starts at early ages and continues throughout life causes similar behaviours in different individuals (Kağıtçıbaşı, 2008). However, behaviour influenced by other people emerges as a social interaction process, not on its own (Mackie, Moneti, Shakya, & Denny, 2015). This social interaction helps individuals adapt to the society in which they live. Social adaptation or socialization refers to acquired behaviors that are consistent with the expectations of the society (Sungur, 2010). This process involves the individuals' compliance with the principles and rules of the society they are in, acting in accordance with them (Başaran, 1994) and learning the appropriate examples, values and feelings belonging to the society (Tezcan, 1997). As a result of acquiring the behaviours that are in line with the expectations of society, socialization of individuals is carried out (Sungur, 2010). The successful socialization of people is possible as long as they fulfil their duties and responsibilities as active citizens of the society.

Responsibility has been used in the sense of person taking care of himself and others, fulfilling his obligations, contributing to the society and making the world a better place (Lickona, 1991). Responsibility refers to being accountable to others and is expressed as the process of fulfilling the duties given by others or that a person gives to himself (Schlenker, Britt, Pennington, Murphy, & Doherty, 1994). This term, which holds a significant place in which one can function effectively in a society (İkiz, Totan, & Karaca, 2013) plays an important role in forming a successful sense of self, being accepted by a society and gaining respect (Yurtal & Yontar, 2006). Responsible

individuals perform their duties, respect themselves and others, hold themselves responsible for their thoughts and behaviors (Mowling, Brock, & Hastie, 2011). Adaptation of these people who are at peace with themselves and who have developed a sense of responsibility to the society they are in can occur easier than those who have not achieved these skills.

One of the most important problems in education today is the inequality of opportunity. There are many reasons that lead to this situation, which also negatively affects socioeconomic mobility. These include worsening economic conditions due to globalization, increasing income injustice, gender inequality, language, religion and ethnic discrimination, an increase in the number of disabled individuals with special needs, wars and immigration due to wars (Astin, 1993). On the other hand, globalization has helped gather different diversity and values under a single roof (Reitz, 2009) and helped these differences be perceived as cultural richness. In a global world where different cultures are in constant interaction with each other, it is necessary for people to know their responsibilities so that they can adapt to the cultural differences they interact with and be aware of cultural, social and individual differences. This situation, which aims at the interaction, pluralism and uniqueness of different cultures, has been described as multiculturalism (Çüçen, 2011) and has also been discussed in the field of education.

Multicultural education is an important structure that supports equality and pluralism in schools (Bohn & Sleeter, 2000). In addition to being an innovative approach to transform schools, it holistically tackles the existing deficiencies and discriminatory practices in education by criticizing them (Gorski & Covert, 2000). The main purpose of multicultural education is to equally educate all students regardless of gender, social class, race or cultural characteristics (Banks & McGee Banks, 2010). Such an environment provides equality of opportunity for students from different racial, ethnic, and social backgrounds, and helps them develop their knowledge, skills and attitudes to participate effectively in a democratic society (Halvorsen & Wilson, 2010). This reduces prejudices and discriminatory practices from different ethnic, racial, regional and social classes (Banks, 2008), and contributes to greater adoption of active democratic citizenship in a society where pluralism is recognized (Mwonga, 2005). Multicultural education supports the development of democratic citizenship; in return, democratic citizenship education helps create a diverse society in terms of cultural, racial and political aspects. In other words, pluralism is the building block of democracy (Parker, 2003). In this regard, it is obvious that there is an important link between multicultural education and democracy and both support the development of each other. In order to better understand the relationship between these two concepts, one needs to look at the definition of democracy.

Democracy is a regime that helps individuals live their lives and make sense of their life experiences (Touraine, 1997) determined by basic concepts such as respect for minority rights, majority rule, an opportunity to form an alternative government, and control (Cevizci, 2005) and a system in which people's rights are legally secured (Crick, 2007). The purpose of democracy is not to reach consensus on a single truth but to be able to respect other people's truth and live together in peace (Yeşil, 2002). Democracy is a way of life that enables people to live in tolerance and is based on democratic values such as respect for human rights, tolerance, justice, pluralism, participation,

social state, freedom of expression, freedom of association, right to education, right to communication, equality and social justice (Cılga, 2001; Tezcan, 1997; Topuz, 1989; Uysal, 1984). For the democracy culture to be formed, people need to respect humans and human rights, freedom, justice, equality and internalize democracy and its values (Gövercin, 2013). The internalization of the existing democracy in the society is only possible by making it a lifestyle (Biçer, 2007). It is imperative that students experience as directly as possible different perspectives in different societies and cultures so that they could grow into true world citizens who value democracy and democratic principles (Robinson, 2001).

Democracy was born based on human rights (Tekiroğlu, 2013). Therefore, democracy and human rights are two concepts directly related to each other. While democracy as a political regime represents the order in which human rights are realized, human rights provide an intellectual basis for democracy (Çeçen, 1984). Human rights, one of the basic indicators of democracy, are independent of the social status of people (Palumbo, 1982). People have to know of and use these fundamental rights and freedoms that they have since birth in order to carry on their lives, improve themselves, serve society. And as a result, social structures function properly (Doğan, 2004).

In Turkey, knowledge and skills about socialization, democratic values and multiculturalism are intensively taught through the courses such as “Life Sciences”, “Social Studies” and “Human Rights, Citizenship and Democracy” in primary schools. The literature shows a limited number of studies that examine and question to what extent these skills take place in primary education curricula (Akar & Keyvanoğlu, 2016; Akhan & Yalçın, 2016; Kaşkaya & Turan, 2017; Tunçbilek, 2011). In their study, Akar & Keyvanoğlu (2016) found that multicultural education was not at the desired level in Life Sciences. A study of Social Studies curricula found that the curricula were not sufficient to reflect the differences in local, national and cultural dimensions (Akhan & Yalçın, 2016). In similar studies, it was found that there was not a single objective related to democracy, rights and freedoms in Turkish course curriculum (Tunçbilek, 2011), and democratic values were partly included in Turkish textbooks (Kaşkaya & Turan, 2017). No study has examined the primary education curricula updated in 2017 with the latest changes in the context of gaining socialization, multiculturalism and democratic values so far. On the other hand, socialization, multicultural education and democratic values have been an important part of curricula in today’s world, where ethnic diversity and individual differences are on the rise. Many countries have been concerned with how democracy can be activated in their societies and as a consequence have viewed democratic citizenship education, which focuses on the skills and knowledge that a citizen needs for living in a democratic society (Park, 2001), as an important national task (Roh, 2004). With the increasing diversity of the target population, it has been imperative for these countries to review educational policies and create curricula that reflect the diversity of human experience and perspective (Hurtado, 1996).

There are many factors that increase the target group diversity in educational environments such as inequality of opportunity and the hereditary, physical, social and cultural differences of the individuals. The worsening of economic and political conditions, inequalities in income distribution, gender inequality, problems related to immigration, language, religion and ethnic discrimination, limited educational

opportunities offered to disabled people are the factors that increase this diversity. Among these factors, the flow of immigration that Turkey has received in recent history made a significant impact on the education system. Turkey, due to the wars and conflicts in the Middle East, has repeatedly received large groups of refugees since 2011. Turkey, receiving refugees particularly from Syria, Iraq, Afghanistan, Somalia, Iran and many other countries, has become the country that hosts the most refugees in the world with more than 3.4 million registered refugees (European Civil Protection and Humanitarian Aid Operations, 2017). The number of people from different cultures with the immigration in recent years has been gradually increasing and the target group in primary school level in Turkey has become increasingly heterogeneous as a result. As of the end of 2016, it is known that there are 411.046 Syrian children between the ages of 5-9, 308.862 between the ages of 10-14 and 719.908 in total between the ages of 5-14 (Directorate General of Migration Management, 2017). An important goal that we should achieve is to get these children to internalize the values of the society they live in, to be able to understand and live in harmony with each other. Significant tasks fall to schools and curricula to achieve all these goals.

A diversified curriculum bridges differences and challenges students to think about history, identity, and avoid cultural stereotyping; teaches them how to constructively deal with conflicts between different groups (Humphreys, 1998). Through the contents of diversity and cultural pluralism in curricula, it is possible to present past and current social differences and raise culturally more sensitive individuals by developing democratic values (Estrada, 2012). In order for students to be able to cope with their prejudiced views and assumptions, it is important to include more content in curricula that will provide opportunities to critically examine social and cultural groups that are previously ignored or marginalized (Chang, 2002). Diversity promotes the development of citizens with a sense of social justice and responsibility and such an environment has a positive influence on creating individuals who can negotiate differences, make ethical decisions and act in accordance with this (Hurtado, 2007). This creates fairer opportunities for racially, ethically and culturally different students to work effectively together in order to accomplish success personally, socially and academically (Juelis, 2009). With the help of these values in curricula, improving students' ability to think critically about class differences will also enhance students' ability to analyze inequality that is manifested through gender, racial or sexual orientation differences and appreciate cultural pluralism (Chang, 2002).

That is why curricula need to be prepared in a way that they create individuals who know their rights and responsibilities, respect each other, acquire the social and democratic values and apply them in their lives on the basis of multiculturalism. It is necessary to include not only cognitive but also affective and psychomotor skills in curricula so that they can internalize and use these values and skills effectively in their own lives. This will contribute to students' active use of the skills and values they have acquired in their lives. Therefore, we aim to examine primary education curricula in the context of gaining socialization, multiculturalism and democratic values. Research questions underpinning the study are as follows:

1. To what extent do the aims of "Life Sciences", "Social Studies" and "Human Rights, Citizenship and Democracy" courses curricula include socialization,

multiculturalism and democratic values and which learning domain do these aims fall into?

2. To what extent do the objectives of "Life Sciences", "Social Studies" and "Human Rights, Citizenship and Democracy" courses curricula include socialization, multiculturalism and democratic values and which learning domain do these objectives fall into?

3. How do the aims and the objectives of "Life Sciences", "Social Studies" and "Human Rights, Citizenship and Democracy" courses curricula match within the scope of socialization, multiculturalism and democratic values?

Method

Research Design

The study was conducted using document analysis method, one of the qualitative research methods.

Instruments

To classify the aims and the objectives of "Life Sciences", "Social Studies" and "Human Rights, Citizenship and Democracy" courses according to socialization, multiculturalism, democratic values and learning domains, and to match the objectives with the related aims, a classification form was prepared. This form was presented to two experts who have PhD in the field of curriculum and instruction. In accordance with the feedback received from the experts, several changes were made. Learning domain was written after the themes and a separate column was created in the classification form. The final version of the form is shown in the figure below.

Figure 1. Classification Form

Objectives of Social Studies Course Curriculum	THEMES						Learning Domain			AIM NO
	Socialization			Democratic Values		Multiculturalism				
	Social Adaptation	Social Norm	Individual Responsibility	Democracy Culture	Rights and Freedoms	Multicultural Education	Cognitive	Affective	Psychomotor	
OBJECTIVES										
SS.4.1.5. He/She respects the difference of other individuals.										
SS.4.3.2. He/She draws the sketch of the places that he/she uses in daily life.										
SS.4.7.4. He/She respects the different cultures.										
SS.6.1.1. He/She examines the changes of social roles over time.										

Data Collection and Analysis

After reaching the primary education curricula, published by the Ministry of National Education in 2017, in order to collect research data, both descriptive and content analysis were employed. A total of 14 aims and 143 objectives of "Life Sciences" course curriculum, 18 aims and 134 objectives of "Social Studies" course curriculum, 10 aims and 29 objectives of "Human Rights, Citizenship and Democracy"

course curriculum were examined, the aims and the objectives of the curricula were coded under the related themes using the classification form. To examine the reliability of coding, some of the coded aims and the objectives of each course were chosen using random sampling and reviewed by two experts who hold a PhD in the field of curriculum and instruction. The discrepancies between the codings of the researchers and experts were detected. Afterwards, the reliability formula of Miles & Huberman (1994) was used. The results of the calculations showed that the reliability coefficient for each field was over 80%. Reliability coefficient for the opinions of the researchers and the first expert is shown in Table 1.

Table 1

Reliability Coefficient Between the Researchers and the First Expert

	Opinion Association (OA)	Opinion Separation (OS)	Total Opinion	Reliability formula of Miles and Huberman OA/(OA+OS)
Aims	23	0	23	100%
Objectives	81	1	82	98%
Learning Domain	48	4	52	92%
Matching of Aims and Objectives	47	0	47	100%
Total	199	5	204	97%

As seen in Table 1, the reliability coefficient between the opinions of the researchers and the first expert was calculated as 97% in total. Reliability coefficient for the opinions of the researchers and the second expert is shown in Table 2.

Table 2

Reliability Coefficient Between the Researchers and the Second Expert

	Opinion Association (OA)	Opinion Separation (OS)	Total Opinion	Reliability formula of Miles and Huberman OA/(OA+OS)
Aims	23	0	23	100%
Objectives	80	1	1	98%
Learning Domain	51	4	55	92%
Matching of Aims and Objectives	42	5	47	89%
Total	196	10	206	95%

As seen in Table 2, the reliability coefficient between the opinions of the researchers and the second expert was calculated as 95% in total. Reliability coefficient for the opinions of the first and the second expert is shown in Table 3.

Table 3

Reliability Coefficient Between the First and the Second Expert

	Opinion Association (OA)	Opinion Separation (OS)	Total Opinion	Reliability formula of Miles and Huberman OA/(OA+OS)
Aims	23	0	23	100%
Objectives	80	2	82	97%
Learning Domain	49	5	54	90%
Matching of Aims and Objectives	42	5	47	89%
Total	194	12	206	94%

As seen in Table 3, the reliability coefficient between the opinions of the first and the second expert was calculated as 94% in total. If the reliability coefficient is more than 70%, it is considered as reliable (Miles & Huberman, 1994). Therefore, reliability coefficients for the opinions of the researchers and the experts are an important indicator for the reliability of the research.

Separate tables were formed for each research question within their own scopes, categorized as social adaptation, social norms and individual responsibility under the theme of socialization; democracy culture and rights and freedoms under the theme of democratic values; multicultural education under the theme of multiculturalism. These themes were categorized according to cognitive, affective and psychomotor learning domains and analyzed. The aims and the objectives analyzed in the table can fall into more than one theme and learning domain. For instance, the first aim of "Social Studies" course curriculum which is "It is aimed that students are raised as citizens who love their country and nation, know and use their rights, fulfill their responsibilities, have national consciousness as a citizen of the Republic of Turkey" fall into the themes of social adaptation, social norms, individual responsibility, rights and freedom; and involves both cognitive and affective learning domain. This means that the numbers in the "total" lines on the tables can exceed the total aims and objectives of the curricula.

Within the scope of the third research question, a table matching the aims and objectives was formed in accordance with the first and second research question themes. Then, it was calculated how many objectives were written for the aims in the context of related themes. For instance, the second aim of "Social Studies" course curriculum is about social adaptation, democracy culture and multicultural education. It is seen that there is no objective that is related to social adaptation and falls under the second aim; there are three objectives that are related to democracy culture and fall under the second aim; there is one objective that is related to multicultural education and falls under the second aim, and the number of objective is written opposite the aims.

Limitations of the Study

This study is limited to the curricula of the "Life Sciences", "Social Studies" and "Human Rights, Citizenship and Democracy" courses published by the Ministry of

National Education (MoNE) in 2017 and themes of socialization, multiculturalism and democratic values (MoNE, 2017a; MoNE, 2017b; MoNE, 2017c).

Results

Findings regarding the research question: "To what extent do the aims of "Life Sciences", "Social Studies" and "Human Rights, Citizenship and Democracy" courses curricula include socialization, multiculturalism and democratic values and which learning domain do these aims fall into?"

The distribution of the aims of primary education curricula according to the themes is shown in the table below.

Table 4

Distribution of the Aims of Primary Education Curricula According to the Themes

	Themes																	
	Socialization									Democratic Values						Multiculturalism		
	Social Adaptation			Social Norms			Individual Responsibility			Democracy Culture			Rights and Freedoms			Multicultural Education		
Learning Domain	C	A	P	C	A	P	C	A	P	C	A	P	C	A	P	C	A	P
Life Science	1	6	1	-	-	-	2	3	1	-	-	-	-	-	-	-	1	-
Total		8			-			6			-			-			1	
Social Studies	7	6	-	4	3	-	3	3	-	5	5	-	3	3	-	2	3	-
Total		13			7			6			10			6			5	
Human Rights, Citizenship and Democracy	-	7	-	-	1	-	1	4	-	1	5	-	2	4	-	-	3	-
Total		7			1			5			6			6			3	
Learning Domain in Total	8	19	1	4	4	-	6	10	1	6	10	-	5	7	-	2	7	-
Overall Total		28			8			17			16			12			9	

Learning Domain C: Cognitive, A: Affective, P: Psychomotor

Table 4 shows that the themes of social adaptation and individual responsibility related to socialization stand out and affective skills are highlighted in the aims of "Life Sciences" course curriculum. There are not any aims related to social norms under the theme of socialization; democracy culture, rights and freedoms under the theme of democratic values. There is only one aim related to multicultural education which is

"He/She loves his/her country and is willing to keep historical and cultural values alive". It can be argued that affective skills stand out in the curriculum in which the aims related to social adaptation and individual responsibility are predominant. Values such as social norms, respect for human rights, tolerance, justice and freedoms related to the students' ability to live in a democratic environment are mainly acquired in "Life Sciences" courses in primary education, which is the first step of formal education. Considering that some aims fall under more than one theme in the curriculum, in which there are 14 aims in total, it can be said the fact that there are not any aims related to social norms, democracy culture, rights and freedoms and there is only one aim related to multicultural education is an important deficiency.

The theme of social adaptation related to socialization stands out and cognitive and affective skills are highlighted; the theme of democracy culture related to democratic values stands out and cognitive and affective skills are highlighted; there is a limited number of aims for multicultural education related to multiculturalism in the aims of "Social Studies" course curriculum. It can be argued that cognitive and affective skills stand out in the curriculum in which the aims related to social adaptation and democracy culture are predominant; the number of aims related to multiculturalism is less and less sufficient than the number of aims related to socialization and democratic values. Considering that there are some aims falling under more than one theme in the curriculum in which there are 18 aims in total, it can be said that the number of aims related to multicultural education is low and inadequate.

The themes of social adaptation and individual responsibility related to socialization stand out and affective skills are highlighted; the themes of democracy culture and rights and freedoms related to democratic values stand out and affective skills are highlighted in the aims of "Human Rights, Citizenship and Democracy" course curriculum. There appears to be a limited number of aims for social norms related to socialization and multicultural education, which is related to multiculturalism in return in the curriculum. It can be argued that affective skills stand out in the curriculum in which the aims related to social adaptation, democracy culture, rights and freedoms and individual responsibility are predominant; the number of aims related to multicultural education is less than the number of aims related to socialization and democratic values. There is only one aim related to social norms which is "It is aimed that students support the protection and development of rights and freedoms following the rules" in "Human Rights, Citizenship and Democracy" course curriculum. Considering there are some aims falling under more than one theme in the curriculum in which there are 10 aims in total, it can be said that the number of aims related to social norm and multicultural education is low and inadequate.

It draws attention that the aims of primary education curricula are directed mostly towards socialization and rarely towards multiculturalism. There are only two aims for psychomotor skills in the curricula in which the aims towards improving cognitive and affective skills are predominant within the scope of related themes. This indicates that the aims of the curricula are mostly at the level of knowledge and directed at the attitudes, interests and values of students. It is important that the curricula include aims for psychomotor skills so that students can master the learning outcomes they achieve at the cognitive and affective level and apply them in their lives. The fact that

there is a limited number of psychomotor skills in primary education curricula and that they mostly consist of cognitive and affective skills is an important deficiency.

Findings regarding the research question: "To what extent do the objectives of "Life Sciences", "Social Studies" and "Human Rights, Citizenship and Democracy" courses curricula include socialization, multiculturalism and democratic values and which learning domain do these objectives fall into?"

The distribution of the objectives of primary education curricula according to the themes is shown in the table below.

Table 5

Distribution of the Objectives of Primary Education Curricula According to the Themes

	Themes																	
	Socialization									Democratic Values						Multiculturalism		
	Social Adaptation			Social Norm			Individual Responsibility			Democracy culture			Rights and Freedoms			Multicultural Education		
Learning Domain	C	A	P	C	A	P	C	A	P	C	A	P	C	A	P	C	A	P
Life Science	3	26	7	2	11	3	7	19	8	1	2	-	-	2	-	2	4	-
Total	36			16			34			3			2			6		
Social Studies	4	11	1	-	2	-	1	10	3	8	4	-	8	7	-	18	4	-
Total	16			2			14			12			15			22		
Human Rights, Citizenship and Democracy	5	4	-	3	3	-	4	1	-	10	4	-	11	4	-	3	2	-
Total	9			6			5			14			15			5		
Learning Domain in Total	12	41	8	5	16	3	12	30	11	19	10	-	19	13	-	23	10	-
Overall Total	61			24			53			29			32			33		

Learning Domain C: Cognitive, A: Affective, P: Psychomotor

Table 5 shows that the themes of social adaptation and individual responsibility related to socialization stand out and affective skills are highlighted in the objectives of "Life Sciences" course curriculum. It is noteworthy that the number of objectives for democracy culture and rights and freedoms related to democratic values and multicultural education related to multiculturalism is very small. It is seen that although there are not any aims for social norms, democracy culture and rights and freedoms in "Life Sciences" course curriculum, there are some objectives for these themes, even if they are limited, in the curriculum. This indicates that there is a mismatch between the

aims and objectives. Objectives such as “LS.1.3.6. He/She follows dining etiquette while eating” related to social adaptation and social norm; “LS.2.2.4. He/She realizes his/her duties and responsibilities at home” related to individual responsibility; “LS.3.1.7. He/She expresses demands and needs related to the school in a democratic way in the school environment” related to rights and freedoms; “LS.2.5.7. He/She respects the lifestyles and habits of people from different cultures living in our country” related to multicultural education can be given as an example. It can be argued that affective skills stand out in the curriculum in which the objectives related to social adaptation and individual responsibility are predominant. Considering that some objectives fall under more than one theme in the curriculum in which there are 143 objectives in total, it can be said that the number of aims related to social norm, democracy culture, rights and freedoms and multicultural education is low and inadequate. In the light of findings, it can be concluded that the number of objectives related to social adaptation, social norms and individual responsibility is sufficient in terms of socialization; however, the number of objectives related to democracy culture and rights and freedoms is insufficient in terms of gaining democratic values and the number of objectives related to multicultural education in terms of multiculturalism in “Life Sciences” course curriculum.

The number of objectives for social adaptation, social norms and individual responsibility related to socialization is small and affective skills stand out; the number of objectives for culture of democracy and rights and freedoms related to democratic values is small and cognitive and affective skills stand out; the number of objectives for multicultural education related to multiculturalism is small and cognitive skills stand out in “Social Studies” course curriculum. Objectives such as “SS.4.1.5. He/She respects the different characteristics of other individuals” related to social adaptation, democracy culture and multicultural education; “SS.5.4.5. He/She acts in accordance with scientific ethics in his/her studies” related to social norm and individual responsibility; “SS.6.1.5. He/She argues that solutions to a problem should be based on rights, responsibilities and freedoms” related to individual responsibility, democracy culture and rights and freedoms can be given as examples. It can be argued that cognitive and affective skills stand out in the curriculum and the objectives related to social norms are insignificant. Considering there are some objectives falling under more than one theme in the curriculum in which there are 134 objectives in total, it can be said that the number of objectives related to social adaptation, social norms, individual responsibility, democracy culture, rights and freedoms and multicultural education low and inadequate. In the light of findings, it can be concluded that the number of objectives related to social adaptation, social norms and individual responsibility is insufficient in terms of socialization; the number of objectives related to democracy culture and rights and freedoms in terms of gaining democratic values and the number of objectives related to multicultural education in terms of multiculturalism in “Social Studies” course curriculum. Furthermore, while the number of objectives related to socialization skills decreases, the number of objectives related to democratic values and multiculturalism increases in “Social Studies” course curriculum when compared to "Life Sciences" course curriculum. This indicates that democratic values and multiculturalism are more predominant in “Social Studies” course compared to “Life Sciences” course.

The theme of social adaptation related to socialization stands out and cognitive skills are highlighted; the themes of democracy culture and rights and freedoms related to democratic values stand out and cognitive skills are highlighted in the objectives of "Human Rights, Citizenship and Democracy" course curriculum. It is noteworthy that the number of objectives for social norms and individual responsibility related to socialization, and multicultural education related to multiculturalism is very small. Objectives such as "HR.4.4.3. He/She looks for reconciliation ways to solve disagreement" related to social adaptation; "HR.4.5.2. He/She evaluates the effect of the rule on the relationship between freedom and right" related to social norm, democracy culture and rights and freedoms; "HR.4.6.4. He/She explains the responsibilities of being a citizen" related to individual responsibility; "HR.4.3.3. He/She knows that people are equal in terms of rights and freedoms" related to democracy culture, rights and freedoms and multicultural education can be given as an example. It can be argued that cognitive skills stand out in the curriculum in which the objectives related to social adaptation, culture of democracy and rights and freedoms are predominant. Considering there are some objectives falling under more than one theme in the curriculum in which there are 29 objectives in total, it can be said that the number of objectives related to social norms, individual responsibility and multicultural education is low and inadequate. In the light of findings, it can be concluded that the number of objectives related to social adaptation, social norm and individual responsibility is sufficient in terms of socialization, and the number of objectives related to democracy culture and rights and freedoms in terms of gaining democratic values; however, the number of objectives related to multicultural education is insufficient in terms of multiculturalism in "Human Rights, Citizenship and Democracy" course curriculum. Additionally, it is noteworthy that the number of objectives related to democratic values increases in "Human Rights, Citizenship and Democracy" course curriculum when compared to "Life Sciences" and "Social Studies" course curricula.

It draws attention that the objectives of primary education curricula are directed mostly towards socialization and rarely towards multiculturalism. There is a limited number of objectives for psychomotor skills, as in the aims, in the curricula in which the objectives directed at improving cognitive and affective skills are predominant within the scope of related themes. This indicates that the objectives of the curricula are mostly at the level of knowledge and aimed at the attitudes, interests and values of students. It is important that the curricula include aims for psychomotor skills so that students can master the learning outcomes they achieve at the cognitive and affective level and apply them in their lives. The fact that there is a limited number of psychomotor skills in primary education curricula and that they mostly cover cognitive and affective skills is an important deficiency.

Considering there are some objectives falling under more than one theme in primary education curricula in which there are 306 objectives in total, it can be said that the number of objectives related to social adaptation, social norm, individual responsibility, democracy culture, rights and freedoms and multicultural education low and inadequate. It can be concluded that, in total, the number of objectives related to social adaptation, social norm and individual responsibility is sufficient in terms of socialization; however, the number of objectives related to democracy culture and rights and freedoms is insufficient in terms of gaining democratic values and the number of

objectives related to multicultural education in terms of multiculturalism in primary education curricula.

Findings regarding the research question: "How do the aims and the objectives of "Life Sciences", "Social Studies" and "Human Rights, Citizenship and Democracy" courses curricula match within the scope of socialization, multiculturalism and democratic values?"

The table that matches the aims and the objectives of "Life Sciences" course curriculum according to the themes is shown below.

Table 6

Matching Table of the Aims and the Objectives of "Life Sciences" Course Curriculum According to the Themes

Socialization						Democratic Values				Multiculturalism	
Social Adaptation		Social Norm		Individual Responsibility		Democracy Culture		Rights and Freedoms		Multicultural Education	
A	R	A	R	A	R	A	R	A	R	A	R
2	8	-	4	4	-	-	1	-	2	12	1
3	9			5	2					-	3
7	4			6	21						
9	2			9	3						
12	3			13	3						
13	3			-	2						
14	1										
-	4										

A: Aim No, R: The Number of Related Obj.

Table 6 shows that the number of objectives falling under the sixth aim related to individual responsibility is 21, which is the highest; and the number of objectives falling under the 14th aim related to social adaptation and the 12th aim related to multicultural education is 1, which is the lowest. There are no objectives written for the fourth aim related to individual responsibility within the scope of the related theme. Some objectives do not fall under any aims. For instance, the objective of "LS.3.1.7. He/She expresses demands and needs related to the school in a democratic way in the school environment" does not fall under any aims. In this respect, there is not an equal distribution in the number of objectives for the aims in "Life Sciences" course curriculum within the scope of related themes.

The table that shows the match between the aims and the objectives of "Social Studies" course curriculum according to the themes is below.

Table 7

Matching Table of the Aims and the Objectives of "Social Studies" Course Curriculum According to the Themes

Socialization						Democratic Values				Multiculturalism	
Social Adaptation		Social Norm		Individual Responsibility		Democracy Culture		Rights and Freedoms		Multicultural Education	
A	R	A	R	A	R	A	R	A	R	A	R
1	3	1	-	1	4	2	3	1	8	2	1
2	-	3	1	6	3	3	1	3	1	4	9
6	1	15	-	11	3	9	-	15	7	17	1
11	3	16	1	12	1	14	1	18	-	-	4
13	2			-	1	15	8	-	1		
15	4					16	2				
16	3										
-	1										

A: Aim No, R: The Number of Related Obj.

Table 7 shows that the number of objectives falling under the fourth aim related to multicultural education is 9, which is the highest; the number of objectives falling under the sixth aim related to social adaptation, the third and the 16th aims related to social norm, the 12th aim related to individual responsibility, the third and the 14th aims related to culture of democracy, the third aim related to rights and freedom and the second aim related to multicultural education is 1, which is the lowest. There are no objectives written for the second aim related to social adaptation, the first and the 15th aims related to social norms, the ninth aim related to democracy culture and the 18th aim related to rights and freedoms within the scope of related themes. Some objectives do not fall under any aim. For instance, the objectives of "SS.4.1.4. He/She puts himself/herself into other individuals' shoes with different characteristics", "SS.6.2.6. He/She explains the role of historical trade routes in international political, cultural and economic relations", "SS.7.7.1. He/She gives an example of international organizations which Turkey is a member of" and "SS.7.7.3. He/She questions the stereotypes that he/she has towards other cultures" related to multicultural education do not fall under any aims. In this respect, there is not an equal distribution in the number of objectives for the aims in "Social Sciences" course curriculum within the scope of related themes.

The table showing the match between the aims and the objectives of "Human Rights, Citizenship and Democracy" course curriculum according to the themes is below.

Table 8

Matching Table of the Aims and the Objectives of "Human Rights, Citizenship and Democracy" Course Curriculum According to the Themes

Socialization						Democratic Values				Multiculturalism	
Social Adaptation		Social Norm		Individual Responsibility		Democracy Culture		Rights and Freedoms		Multicultural Education	
A	R	A	R	A	R	A	R	A	R	A	R
1	1	7	4	2	-	4	4	2	2	1	1
4	2			3	1	5	-	3	3	6	-
5	-			4	-	6	-	4	3	9	1
6	1			7	1	8	-	7	2		1
7	2			9	-	9	1	8	-		
8	-				1	10	-	10	-		
9	4						3		4		
	1										

A: Aim No, R: The Number of Related Obj.

Table 8 shows that the number of objectives falling under the ninth aim related to social adaptation, the seventh aim related to social norms and the fourth aim related to democracy culture is 4, which is the highest; the number of objective falling under the first and the sixth aims related to social adaptation, the third and the seventh aims related to individual responsibility, the ninth aim related to democracy culture and the first and the ninth aims related to multicultural education is 1, which is the lowest. There are not any objectives written for the fifth and the eighth aims related to social adaptation; the second, the fourth and the ninth aims related to individual responsibility; the fifth, the sixth, the eighth and the 10th aims related to democracy culture; the sixth aim related to multicultural education within the scope of related themes. Some objectives do not fall under any aims. For instance, the objective of "HR.4.2.1. He/She realizes the relationship between rights, freedom and responsibility" related to both individual responsibility and democracy culture and rights and freedoms does not fall under any aims. In this respect, there is not an equal distribution in the number of objectives for the aims in "Human Rights, Citizenship and Democracy" course curriculum within the scope of related themes

Discussion and Conclusion

In the face of the situations creating inequality of opportunity, socialization, multiculturalism and democratic values have become significant concepts in today's world, where many people from different social and cultural backgrounds live together. These concepts, whose values are increasing day by day in making people from different nations and cultures live in harmony and taking the society forward, are one the most important values that students should acquire. The emphasis on diversity and providing students with the opportunity to confront problems related to multiculturalism have beneficial effects on their cognitive and affective development (Astin, 1993). "Life

Sciences", "Social Studies" and "Human Rights, Citizenship and Democracy" courses constitute the most important courses through which socialization, multiculturalism and democratic values can be acquired. The results of the current study show that the aims and the objectives of primary education curricula are directed mostly towards socialization and rarely towards multiculturalism. The number of objectives related to social adaptation, social norms, individual responsibility, democracy culture, rights and freedoms and multicultural education is limited. It is concluded that, in total, the number of objectives related to socialization is qualitatively sufficient; however, the number of objectives related to democratic values and multiculturalism is insufficient in the curricula. It is seen that there is a limited number of aims and objectives for psychomotor skills and there is not enough emphasis put on multiculturalism and democratic values in the curricula in which aims and objectives for cognitive and affective skills are predominant within the scope of related themes. In addition, aims do not cover all the objectives and some objectives do not fall under any aims in the curricula.

Studies show that multicultural education is not at the desired level in Life Sciences (Akar & Keyvanoğlu, 2016) and Social Studies (Açıkalın, 2010; Akhan & Yalçın, 2016; Keskin & Yaman, 2014); multiculturalism is not sufficiently included in primary education curricula, especially in Life Sciences, Social Studies and Turkish course curricula (Cırık, 2008). Arslan (2009) points out that these results indicate that the Ministry of National Education does not have a multicultural education policy and, therefore, the curricula do not reflect multicultural education sufficiently. Consistent with these studies, our study demonstrates that the number of aims and objectives related to multiculturalism is insufficient and there is not enough emphasis put on multiculturalism in the curricula. However, curricula should make students become aware of their unquestioned cultural assumptions and the existence of other cultures around the world and encourage them to think critically about their own culture and other cultures (Kissen, 1989). Such education, which includes multiculturalism, provides better opportunities for intellectual development and social transformation simultaneously allowing teachers to transform classroom interactions (Juelis, 2009). It is seen that curricula that attach importance to diversity and perceive differences as cultural richness have a positive influence on students and society in general (Astin, 1993; Duster, 1993; Estrada, 2012; Kogler, 1999). For this very reason, curricula should include more multicultural objectives and content.

Studies in literature show that although the value of responsibility is one of the most notable concepts in Life Sciences (Candan & Ergen, 2014) and Turkish textbooks (Belet & Deveci, 2008; Doğan & Gülüşen, 2011), there is not a single objective related to democracy, rights and freedoms in Turkish course curriculum (Tunçbilek, 2011), and democratic values are partly included in Turkish textbooks (Kaşkaya & Turan, 2017). A similar situation is observed in the acquisition of democratic values. It is stated that although democracy is one of the most notable concepts in Social Studies textbooks (Berkant & Atmaca, 2013), Social Studies curriculum is insufficient in terms of content about human rights and democracy education (Aydeniz, 2010). Consistent with these studies, our study demonstrates that the number of aims and objectives related to democratic values is insufficient in the curricula. Given the number of children in need of special education in the educational system in Turkey, curricula need to focus on

providing democratic values in order for them not to be excluded from the society and be marginalized. Linton (1998), disability studies scholar, points out that although people with disabilities have symptoms which are scary, painful, difficult to manage, the real challenge is not the disability itself but to resist the strategies that keep them from their rights and opportunities and the pursuit of pleasure. The best way to preserve and maintain democracy and human rights in a society is to educate people at early ages to be democratic and respect other people's rights (Gündoğdu & Yıldırım, 2010). Therefore, there is a need for the values and skills related to rights and freedoms, democracy culture and multicultural education to be emphasized more in primary education curricula. Values related to rights and freedoms, democracy culture and multicultural education should not only be theoretically taught in the books; they should also be actively applied and put into practice (Dolanbay, 2011). Application-oriented and experience-centered methods should be used in order for students to gain desired behaviors and attitudes. Students should also receive help to learn these values by experiencing them (Yeşil & Aydın, 2007). The fact that "Life Sciences", "Social Studies" and "Human Rights, Citizenship and Democracy" courses are particularly related to real life requires students to put themselves out there in life.

It is important that curricula should offer equal opportunities for everyone and should not include contents that exclude and marginalize students (Grant & Sleeter, 2007). Dilemmas of differences can only be solved if curricula encompass the members of all groups in a society similarly. And the legitimacy of multicultural practices can only be achieved if they are determined in a democratic way and not enforced by the more powerful (Olneck, 2011). However, as our study shows that the number of aims and objectives related to democratic values and multiculturalism is limited in the curricula. These limited number of aims and objectives in the curricula is not enough for students to be able to gain democratic values and gain a broad perspective on multiculturalism. Curricula should offer students the opportunity to learn how to assess and value differences and challenge them to "relate to the world around them and to the global world" (Veugelers, 2007). Learning activities should be organized to help children develop their values related to living in a democratic and multicultural society (Suh & Triager, 1999), and contents for multicultural education and democratic values such as equality before the law, respect for all people, tolerance and pluralism should be added in curricula. Within this context, "Life Sciences", "Social Studies" and "Human Rights, Citizenship and Democracy" courses constitute the most important courses of primary education level, in which the phenomenon of living together is reinforced on the basis of love, respect and tolerance in a rapidly globalizing world. In these courses, emphasis on issues that reflect cultural diversity and include ethical and moral values of the society is very significant in terms of raising generations equipped with democratic values (Akhan & Yalçın, 2016).

As a result, it should be considered to add practical activities related to multiculturalism and democratic values in these courses in which students intensively learn the knowledge and skills about recognizing natural and social environments they live in and adapting to the society. It can be advised that contents are revised reviewing the curricula, contents that are contrary to multiculturalism and democratic values are sorted out and qualitative aims and objectives reflecting the whole cultural diversity are added taking opinions from all parts of society. It should be paid attention that aims

cover objectives and objectives are written for each aim while preparing aims and objectives of curricula. It can be suggested that aims and objectives to be added should be prepared mostly in social-affective and psychomotor learning domain in order for students to internalize these values, use them in their own lives and be example citizens. In this way, it is possible for students to integrate with each other as individuals who know their rights, freedoms and values, and take the society forward by internalizing these values.

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The Implementation of an Intensive English Language Program in the Fifth Grade in Turkey: A Qualitative Evaluation

Türkiye'de Yabancı Dil Ağırlıklı Beşinci Sınıf İngilizce Dersi Öğretim Programının Uygulanması: Nitel Bir Değerlendirme

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ABSTRACT: This qualitative evaluation study aims to investigate the implementation process of a current educational reform on teaching English to young learners in Turkey, the Intensive English Language Program in the Fifth Grade, from English as a foreign language (EFL) teachers' viewpoints. Seven EFL teachers at pilot schools in the city-center of Erzincan were interviewed twice. The results of the first round of interviews indicated that despite the challenges arising from the pilot program, the teachers had positive attitudes regarding the potential advantages of the program. However, the final interview results painted a different picture in that although the main principles of the policy were seen as beneficial for young learners, the teachers faced a variety of challenges, such as a heavy compulsory curriculum in terms of content, lack of professional development support on the new program and scarcity of suitable language teaching materials. Based on both these problems and the benefits of the program, the teachers offered several suggestions for improving the quality of the program; these targeted elements including poor design of the program and unsatisfying professional development support. This study takes a snapshot of the implementation of the current EFL reform and presents suggestions for policymakers and teachers.

Keywords: intensive English language program, young learners, language policy, EFL teachers' viewpoints.

ÖZ: Bu nitel değerlendirme araştırması, Türkiye'de çocuklara İngilizce öğretimi üzerine geliştirilen güncel eğitim reformlarından biri olan Yabancı Dil Ağırlıklı Beşinci Sınıf İngilizce Dersi Öğretim Programı uygulamasını, yabancı dil öğretmenlerinin gözünden değerlendirmeyi amaçlamaktadır. Çalışmada, Erzincan ili şehir merkezindeki pilot okullarda görev yapan yedi farklı İngilizce öğretmeni ile uygulama sürecinde iki kez görüşme gerçekleştirilmiştir. Görüşmelerin ilk turunda elde edilen sonuçlar; pilot uygulama kendi içerisinde bir takım sorunlar doğursa da, İngilizce öğretmenlerinin programın potansiyel avantajlarını göz önünde bulundurarak olumlu tutumlar geliştirdiğini göstermektedir. Bununla beraber, son görüşme bulguları tamamen farklı bir resim ortaya koymaktadır; bu sonuçlara göre, uygulamanın temel prensiplerinin çocuklar açısından faydalı görülmesine rağmen İngilizce öğretmenleri program süresince içerik açısından yoğun müfredatın uygulamasında, mesleki gelişim kapsamında yapılan eğitimlerin eksikliği ve uygun dil öğretim materyallerinin yetersizliği gibi konularda bir takım zorluklarla karşılaşmıştır. Öğretmenler, belirtilen bu problemler ve ayrıca programın faydalı yönlerini dikkate alarak, uygulanan programın kalitesini arttırmak amacıyla bir takım öneriler sunmuştur. Bu önerilerin temelde programın zayıf olan tasarımı ve çocuklara yabancı dil öğretimi konusundaki mesleki gelişim desteği eğitimlerinin yetersizliğini hedef aldığı görülmüştür. Bu çalışma, mevcut yabancı dil eğitimi reformlarının değerlendirilmesi açısından genel bir bakış açısı ortaya koyarken öğretmen ve eğitim program düzenleyicilerine bir takım öneriler sunmaktadır.

Anahtar kelimeler: yoğun İngilizce dersi öğretim programı, erken yaşta öğrenenler, yabancı dil politikaları, İngilizce öğretmenlerinin görüşleri.

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*"Research seeks to prove; evaluation seeks to improve…"*Michael Quinn Patton

Introduction

Within the last two decades, English has become the lingua franca all over the world, which means it is a contact language or tool of communication among people possessing different first language backgrounds and sharing different cultural norms (Seidlhofer, 2001, 2005). Consequently, millions of non-English speakers have been learning English and coming into contact with English in tandem with recent technological developments (Block & Cameron, 2002; Thomason, 2001). Moreover, teaching and practicing English have been taken more seriously due to the pervasiveness of English outside of English-speaking countries, and education policies across the world have gradually earmarked much more effort, time, and money for helping students to become efficient language learners (Kirkpatrick, 2017).

The education policy changes regarding the lowering of the starting age for language learners have been primarily affected by two main assumptions: (1) that children learn languages better and more easily than adults and (2) that a longer period of formal education leads to higher language proficiency (Enever & Moon, 2009). An expanding stream of literature in the field of language teaching supports these assumptions (e.g., Bland, 2015; Gürsoy & Çelik-Korkmaz, 2012; Johnstone, 2002; Larsen-Freeman & Long, 1991; Nikolov, 2002). With the "uncritical acceptance of the view that early is better" (Enever & Moon, 2009, p.6), Turkey, like all countries, has experienced a number of policy changes regarding language teaching in national education in this century, and teaching English to young learners has recently become the focus of the Ministry of National Education (MoNE) in Turkey within this evolutionary process (Altan, 2016; İnal, 2006; Kırkgöz, 2007, 2009a, 2009b; Kırkgöz, Çelik, & Arıkan, 2016; MoNE, 2013, 2017).

As a means to address the policy changes in foreign language education for young learners in Turkey, a reform was introduced in 1997, and English as a foreign language (EFL) is offered as a standard compulsory school subject in the fourth grade at the elementary level (Kırkgöz, 2008). In that reform, fourth- and fifth-grade students were required to attend two 40-minute-lessons per week that were based on mainly English language grammar and communicative skills. Since the students in those grades were defined as young learners, the courses were planned around game-like activities, communicatively supported tasks, and interactive activities. However, the general framework of that curriculum was criticized by the authorities because of not completing all of the tasks effectively by both learners and teachers (Kırkgöz et al., 2016).

As for chronological order of curriculum research in a Turkish EFL context, the primary school curriculum for English language teaching was revised in 2005 following the principles of the Common European Framework of Reference for Languages (CEFR) about how to teach young learners English at different levels (Ersöz et al., 2006). In that curriculum, the main principles were based on the constructivist approach and Communicative Language Teaching criteria. Additionally, multiple intelligences theory was also integrated into new tasks since it was thought that an effective teaching environment could be supported via different activities for young learners. Considering the problems with the implementation of the 2005 curriculum, Kırkgöz (2009b) stated

that "Turkey needs to resolve existing incongruence between the idealized macro policy objectives and their realizations in practice at micro level teaching situations" (p. 681). At the same time, Turkey's English language teaching system needed to be reformed in a more effective way for both English teachers and young learners.

In 2012, representing a new point of view for all educational systems in primary school education in Turkey, a new kind of educational innovation, namely, 4+4+4 education system, was offered by the MoNE (MoNE, 2012). According to that new system, English language teaching for young learners in Turkey was improved. In the new system, the compulsory education requirement increased from 8 years to 12 years, and the starting age both for primary school (5.5 years of age) and language teaching (6.6 years of age, in the second grade) was lowered (Gürsoy, Çelik-Korkmaz, & Damar, 2013). According to the regulation, second and third graders received two hours of English instruction per week, and fourth, fifth, and sixth graders have received three hours of weekly compulsory language teaching (Arslan, 2012). Within that new framework, the main emphasis was on the more communicative listening and speaking skills rather than on reading and writing skills. Accordingly, assessments of young learners in the courses also developed, with elements such as performance-based assessments, productive activities, and portfolio studies introduced.

In addition to that innovation in the Turkish education system, in 2017, the MoNE stated that the current language teaching approach should aim to teach English effectively to young learners. After a pre-pilot study as a part of the current reform, in January 2017, the MoNE announced its new English language curriculum reform would be implemented starting with the 2017-2018 academic year. In this new curriculum, the MoNE (2017) has increased the number of units in English courses for fifth-grade students as part of an effort to turn the grade into a foreign language preparation year. It is believed that since the program is a new approach to improving young learners' language learning proficiency, current issues with the new curriculum, teachers' needs and challenges, and the effectiveness of the new curriculum for young learners must be discussed in an academic way. Accordingly, this article aims to explore the needs and ideas of EFL teachers in the new system and the challenges that they might face a scientific way.

The Intensive English Language Teaching Program for the Fifth Grade

The intensive English language teaching program for the fifth graders was first introduced by MoNE in 2017 and applied in selected pilot public lower elementary schools after then. With this new reform, weekly course hours for fifth graders in the selected pilot schools were increased from three hours to 15 hours in a week. According to the published report of the program (MoNE, 2017), the program has been designed in accordance with the principles of CEFR and focused much on building learner autonomy and problem-solving skills with a communicative approach in English language teaching. It is also in parallel to the national English Language Teaching Programs from the second to eighth graders published by MoNE in 2017. Unlike some previous changes based on the classification of grammatical forms, the new program has less emphasis on grammar and has been organized with an integrated approach to enhance all language skills with various communicative activities. Then, the content of the program has been heavily broadened and included 40 units with various themes related to daily use of English. New

themes and cultural elements have been added to the new curriculum to improve young learners' cultural awareness and intercultural communication skills. As for the new themes, more global and international issues have been incorporated into the units, and idioms and proverbs have been presented in the activities. As for another innovation, the assessment of young learners has been enhanced with the help of productive activities and task-based homework. As Altan (2017, p. 769) said "everything seems alright on the paper." It is also noted that the success of the program "is inevitably dependent upon the analogous approach in teachers' instructional choices, measurement repertoire and in learners' practice." (MoNE, 2017, p. 3).

As for the related literature in this field, since the current reform is a new procedure in Turkey, there is limited research on the needs and implementation of this system (e.g., Aksoy, Bozdoğan, Akbaş, & Seferoğlu, 2018; Dilekli, 2018; Erdem & Yücel-Toy, 2017). According to recent research on the needs associated with the foreign language-oriented fifth-grade English language teaching curriculum, Erdem and Yücel-Toy (2017) have reported problems based on the size of classes, the lack of a prepared curriculum, and the lack of a coursebook. In their study, Erdem and Yücel-Toy also pointed out that according to English language teachers who participated in the pilot project, students' readiness and the CEFR are the most important factors that should be considered while preparing the English curriculum for foreign language-oriented fifth-grade students. In another study, Dilekli (2018) found that EFL teachers complained about the overloaded curriculum and problems with a limited duration because of that heavy curriculum. Similarly, Aksoy and colleagues (2018) have stated that the new program needs to be revised in terms of the quality of materials and technological requirements, they have also clarified that in-service teacher training based on the new program can be designed as for a suggestion to develop language teaching in further academic years.

However, to analyze the new system's advantages and disadvantages, researchers require significantly more studies in this field. Thanks to the following research on this issue, solutions for the problems with the system, the needs of both teachers and students, implementations and future adjustments can be enhanced in related literature. This study aims to identify English teachers' viewpoints regarding the practical aspects of the English curriculum for foreign language-oriented fifth-grade students as reflected in the current system. The main motivations for studying English language teachers in this context are that EFL teachers' experienced difficulties while teaching young learners and that teaching English to young learners requires specific pedagogical skills, knowledge of teaching methods, the effective use of materials, an understanding of individual differences, and collaborative learning (e.g., Aksoy et al.; 2018; Bayyurt, 2012; Haznedar, 2003, 2012; Kırkgöz et al., 2016). Therefore, correctly identifying the ideas and suggestions of participating EFL teachers could allow researchers and the MoNE to easily and effectively overcome the problems regarding this innovation. Accordingly, a new strategy or policy for teaching English effectively could be adapted for Turkish young learners.

Aim of the Study

This study aims to explore EFL teachers' viewpoints regarding the new foreign language teaching system for young learners. It puts language teachers' views, program implementation challenges and possible suggestions for improvement under the microscope from the perspective of EFL teachers. The following research questions in reference to the education policy change (MoNE, 2017) guided the study:

1. What are EFL teachers' viewpoints on the intensive English language program in the fifth grade?
2. What are the challenges with the implementation of the intensive English language program in the fifth grade?
3. What are solutions to the challenges with the implementation of the intensive English language program in the fifth grade?

Methodology

Research Design

This study adopted a qualitative case study design, which is an in-depth investigation of a specific real-life project, policy or a program and enable readers to understand the case in focus by unravels its complexity (Cohen, Manion, & Morrison, 2018; Simons, 2009; Yin, 2009). In line with Merriam's (1998) case study approaches (i.e., descriptive, interpretative and evaluative), evaluation research perspective was accepted in the study. According to Saldana (2011), evaluation research allows researchers to systematically examine the quality, benefits, and effectiveness of a new program or policy to help authorities redesign current and future endeavors by offering constructive recommendations for improvement. Evaluation research questions whether an educational intervention has worked and provides insight into the effectiveness of the intervention by examining the implementation at different stages (Dane, 2011). Within this framework, this qualitative evaluation study examines the new educational policy change regarding teaching English to young learners in Turkey and investigates language teachers' experiences with program implementation overtimes with two waves: at the beginning and end of the program.

Participants

For the pilot application of the program, totally eight EFL teachers in four public schools in the city-center of Erzincan, Turkey were determined as the universe of this study. However, one of the teachers could not participate in the study due to her health problems. Seven teachers were identified via a purposeful sampling strategy. According to Creswell (2004), with this approach, participants are selected because of their distinctive characteristics or experiences with the central phenomenon. The teachers who were officially assigned by the provincial directorate for national education to implement the intensive English language program for fifth graders during the 2017-2018 school year were chosen as the study group, and their demographic characteristics are presented in Table 1.

Table 1

Demographics of Participants

Teacher	Gender	Graduation degree	Age	Years of experience
T1	Female	MA	30	8
T2	Female	BA	34	11
T3	Female	BA	23	1
T4	Female	BA	25	3
T5	Female	BA	29	6
T6	Male	BA	33	10
T7	Male	BA	28	2
			M=28.86 *SD*=3.68	*M*=8.33 *SD*=3.59

Note: T: Teacher, MA: Master's degree, BA: Bachelor's degree.

Table 1 shows that all of the teachers had a BA, but one teacher also had an MA, and they ranged in age from 23 to 34 years. Their language teaching experience was moderate and ranged from two to 11 years.

Instrument

An interview protocol including open-ended questions, was prepared by the researchers to collect data about teachers' views of the program both at the beginning of the implementation stage and at the end of the school year. As for the instrument development process, firstly, the related literature was reviewed, and it was seen that there was not any specific data collection tool was developed for the aim of reflecting EFL teachers' viewpoints on the new English language teaching program for the fifth-grade students. Accordingly, relevant contents and related terms were included in the data collection instrument as an item pool. After getting three experts' opinions who have been studying in this department, interview questions were designed by the researchers. There was no pilot testing for the instrument due to the limited number of participants and the new application on the program.

In this manner, the first interview protocol included 11 questions related to their expectations for the new program, the problems they anticipated and ways to improve the program. Details for each category are as follows: (1) teachers' expectations and attitudes toward the new program (e.g., "What are the expectations and anxieties you have regarding the program?"), (2) teachers' challenges regarding the new program (e.g., "Have any informative meetings or in-service trainings been provided?"), and (3) suggestions for the development of the program (e.g., "What do you think about the applications of the program for the future?").

The second interview protocol included quite similar questions but was designed for the program evaluation at the end of the year. It had 11 questions about to what extent their expectations had been met, what challenges they faced during implementation, and what suggestions for program improvement in the following years they had. Sample questions are as follows: "What kind of experiences did you have during the process?",

"What were the difficulties you faced in the process?", "Can you give some examples of these difficulties?", and "Do you have any advice on how the program could improve?".

Data Collection, Analysis and Presentation

For the data collection process, the researchers first obtained consent from the Provincial Directorate for National Education. Later, they contacted eight teachers from all four public schools determined by the MoNE to participate in the pilot. They were informed about the aim of the study, protecting their anonymity and rights to withdraw anytime during the interviews. Seven teachers agreed to be volunteers to take part in the research. The first interview session was held in November 2017. The second interview session was completed between May and June 2018. The interviews were recorded by the second researcher at the teachers' schools at times determined by the teachers, and the interviews lasted approximately 10 to 40 minutes.

The verbal data were transcribed verbatim, and a qualitative data analysis program (NVivo 12) was used for data elimination and thematic extraction. For the qualitative data analysis, thematic analysis served as a flexible means of identifying, analyzing, and reporting the main patterns within all the data (Braun & Clarke, 2006). According to Braun and Clarke, there are six steps of thematic analysis (i.e., familiarizing oneself with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the report). By following the six-step guide, the first researcher first analyzed the data to identify similarities and differences across the datasets, and later the common threads in the interview data were reviewed by both researchers.

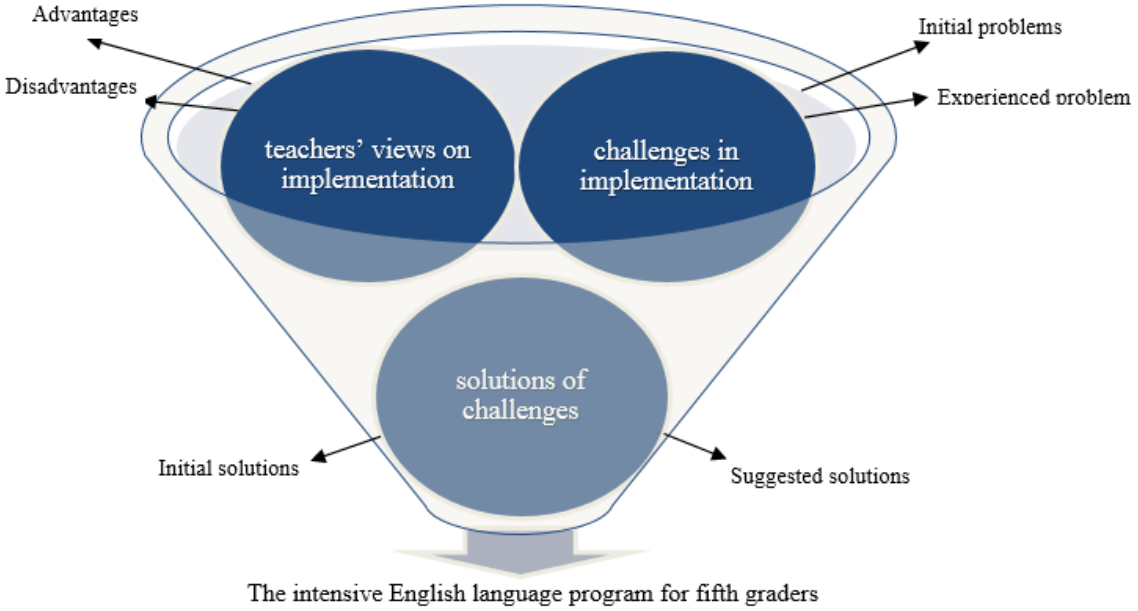
In terms of the presentation of the findings, thematic maps for each question were drawn based on the two interviews. To indicate the data in each, three different writing styles were used. The category names in '*italics'* refer to data from the first interview session, the category names in 'underlined' categories refer to data from the second interview session, and the category names in '**bold**' font refer to data from both interview sessions. Furthermore, sample teacher excerpts related to each category are given after each figure. The letter 'T' indicates the teacher, and the number indicates the number of participants in the demographic details table.

For ensuring the trustworthiness of the study, based on the literature (Lincoln & Guba, 1985; Merriam, 1998; Shenton, 2004) four common criteria (i.e., credibility, transferability, dependability and confirmability) were adopted in qualitative research. For credibility, the researchers for credibility conducted an appropriate method for research, the examination of the previous research, familiarity with the culture of participants, and ensuring honesty in informants. For transferability and dependability, a sufficient explanation of the interview content, process and analysis procedures were presented for future investigators. For confirmability, two researchers joined the data analysis process and also took expert opinion during the analysis. They used a qualitative data analysis program to show the emergent themes in the interviews.

Findings

Based on the research questions, a thematic map was drawn that illustrates the main themes and categories for each one of them shown below.

Figure 1. EFL Teachers' Experiences with the Implementation of the Program

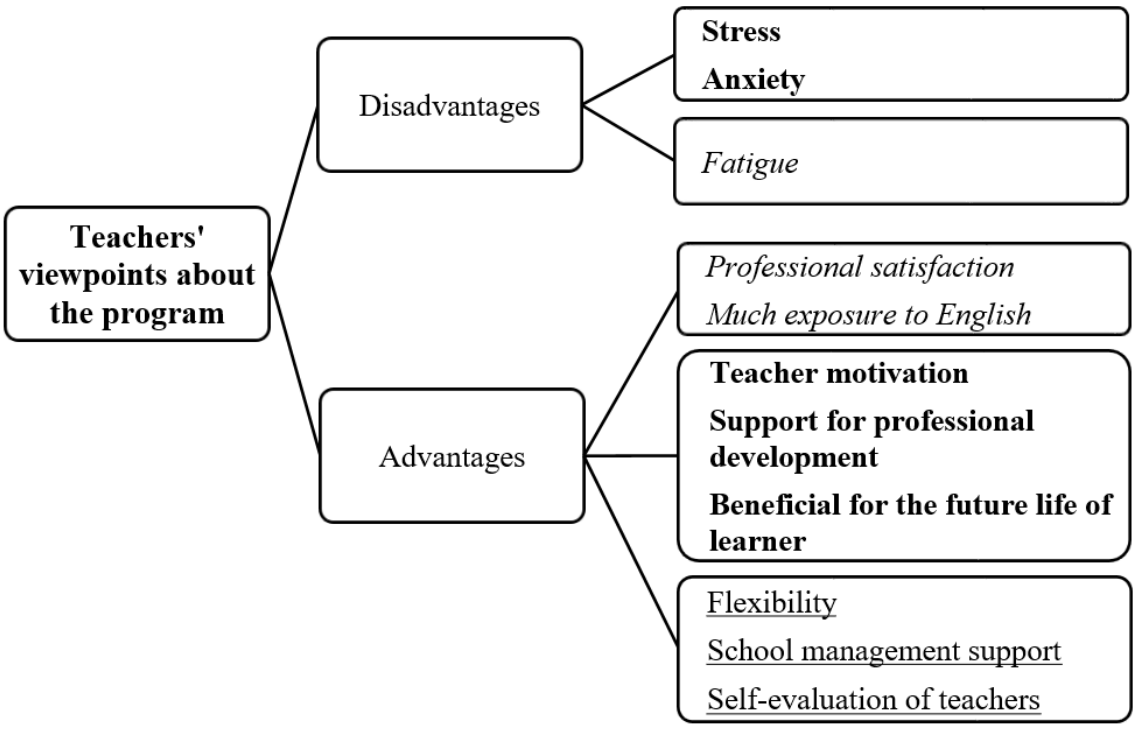


As seen in Figure 1, each theme regarding EFL teachers' experience with program implementation of the new education program for young learners has two main categories.

EFL Teachers' Views Regarding the Intensive English Language Program

Figure 2 presents the findings from both interview sessions for the first research question on EFL teachers' opinions about the program.

Figure 2. EFL Teachers' Viewpoints about the Implementation of the Program



As the figure demonstrates, the main disadvantages of the program were found to be stress and anxiety for teachers. Seven teachers stated at the beginning of the autumn semester that they felt anxious and stressed because of the new themes, curriculum, and the lack of information about the new program. As T4 stated in response to the question about ideas on the program, *"I felt nervous at the beginning of the semester because I didn't know anything about the program, and also there have been lots of new themes and units. So, I think that the curriculum and program are too heavy to apply with young learners, and it made me nervous."* Additionally, all of the teachers indicated that they felt stressed at the beginning of the semester and the current program made them more anxious about the application of the program. As T4 stated, *"There is just one English teacher to teach in one class, and there is no support by policymakers on the program, so it makes me stressed because of the heavy curriculum and confusing elements in the program."* As Figure 2 highlights, teachers expressed similar problems at the end of the year: Teachers, again, stated that they felt anxious and stressed regarding the program. However, apart from the first interview data, the teachers complained about fatigue at the end of the spring semester because the course book for the new program had not been supplied by the MoNE. Instead, the teachers were asked to use the curriculum announced online by the MoNE, and teachers had to design their own materials during the semester. They stated that the lack of course-book had left them very tired; it was coded as a disadvantage of the program according to the teachers. For instance, T2 indicated that *"I am the only English teacher in my school, and since the school is in a small village, I do not have enough sources to design my courses, and I had to create all of the activities by myself. I had to work at least 10 hours for each one of the weeks to design the courses, and after a while, I felt consumed because of it."*

As for the advantages, six participants stated at the beginning of the program that it could be useful for professional satisfaction and significant English exposure for teachers. Additionally, the data from both interview sessions indicated all participants believed that the new program could increase teacher motivation, support professional development, and be beneficial for the future lives of learners. However, for the second interview session, some new perceptions were coded as positive perceptions; these included flexibility, school management support, and the self-evaluation of teachers. In this regard, five teachers stated that the school management was very helpful and an advantage for the new program and that they were supported during the program by the school management. For instance, T3 expressed that *"School management always supports us while designing courses and it also supplies financial support for the materials. Additionally, the management informed parents about the new program, and it makes progress easier for us."* Moreover, all of the teachers stated that they were flexible while designing courses and assessing learners during the program and being flexible increased teacher autonomy in the process.

Challenges with the Implementation of the Program

The findings for the second research question about challenges with implementation are shown below in Figure 3.

Figure 3. EFL Teachers' Challenges Regarding the Implementation of the Program

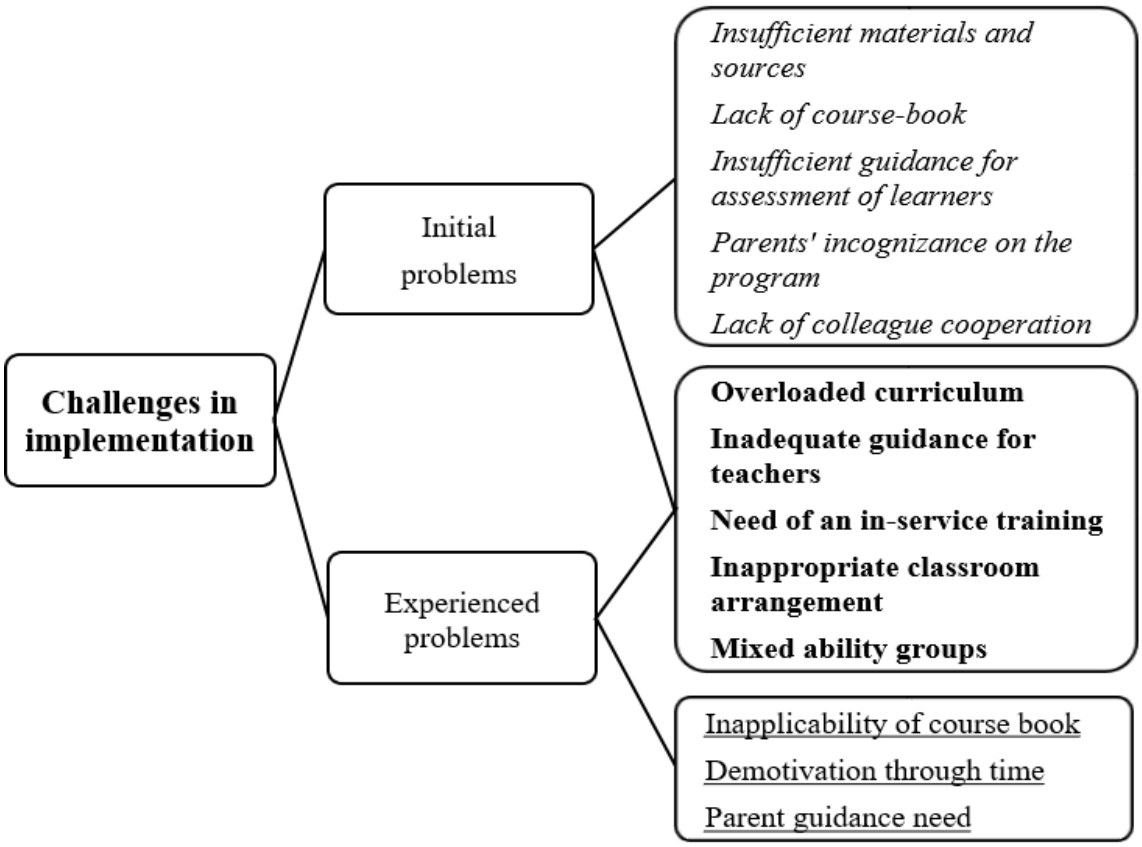


Figure 3 illustrates that the teachers' initial problems were mainly related to the lack of a course book, insufficient materials, and sources, inadequate guidance on the assessment of learners, a lack of colleague cooperation, and parents' unfamiliarity with the program. All of the teachers stated that they did not have a course book or any other supplementary program materials at the outset and they were just informed about the new curriculum; therefore, they had to develop their own materials during the first semester. All of the participants said that this process was very time-consuming and challenging. For instance, T2 who taught in a rural secondary school said, *"I am the only English teacher in this school, and I don't have a chance to design activities with my colleagues, so I have to design all of the courses by myself, and it is very challenging for me. If I get a course book, I can improve the language skills of students more easily."* Additionally, the teachers had problems with the assessment process for students since they were not informed about the evaluation criteria for the new program. As for a sample excerpt from the first interview session, regarding this topic, T1 said, *"We don't know anything about the evaluation process, how can we assess language skills? Do we need to analyze them one by one or in an integrative way? In the grading system developed by the MoNE, there*

will be three exams for each of the semesters, but how can we evaluate students via just written exams? Is it logical for this new program? I have not decided on my own criteria yet, but I want to evaluate all of the skills one by one by preparing different types of exams for language skills. But we need guidance for assessing students effectively." In addition, at the beginning of the autumn semester, six teachers complained about a lack of colleague cooperation and stated that they needed to share their experiences with their colleagues from the other pilot schools since the program was taking place for the first time. According to T4, *"I think we can share our activities and lesson plans with other colleagues from different schools via social media or open-access platforms because we don't have a course book, and we try to design everything individually. If we share our own materials with each other, it gains time for us, and we can see some different ideas on the new program. Therefore, it can be very useful for all of us. But, unfortunately, we can't do it, and now I don't know what other teachers do in their courses or which kinds of materials they are using in their lessons."*

Furthermore, common problems were experienced at both the beginning and end of the academic year. The majority of the teachers stated that one of the largest problems was the overloaded curriculum. As, T4 put it, *"In the new curriculum, there are 40 units, and some of the themes given in these units are too confusing and abstract for young learners. I think it is impossible to complete all of the units in one year, so it should be narrowed in terms of the cognitive abilities and needs of young learners."* As for the other major problem during the academic year, the majority of participants stated that they needed professional development training or a seminar to prepare them for the new program. At the end of the study, T5 pointed out that *"There should be a training program at the beginning of the semester to inform us about the process and new program. Since there was not an informative activity, we had to design our courses in terms of our own knowledge and materials. Also, there wasn't any kind of information about the assessment, and again, we had to prepare our own evaluation exams."* Accordingly, during the year, all of the teachers reported that their initial problems were not solved; they indicated that if the program is used in future academic years, those problems must be solved by the MoNE.

Moreover, at the end of the spring semester, teachers stated that they experienced several problems with the new program such as the inapplicability of the course book, decreasing motivation, and parents' need for guidance. As for course book, it should be indicated here that at the beginning of the spring semester, the course book specifically designed for the current program was delivered by the MoNE and the teachers believed that course book was not suitable for the cognitive level of young learners. Therefore, their problems with the material and course book were not solved during the spring semester, and they again had to design their own activities and materials. Additionally, the teachers specified at the end of the year that the problems with the new program decreased their motivation in terms of the teaching process. Lastly, four teachers stated that parents should be informed about the new program and that parental support was necessary to complete the program successfully; accordingly, T1 stated that *"Parents should know the details of the program, and they should support learners both financially and psychologically because parent guidance is very significant for me. If they support*

the process, getting suitable materials and collecting homework can be easier for me." Hence, parental guidance represented a problem for the teachers in this program.

Suggestions for Program Challenges

The third research question was about the EFL teachers' proposed solutions for the problems with the program. The findings are shown below in Figure 4.

Figure 4. EFL Teachers' Suggestions for the Challenges Regarding Implementation

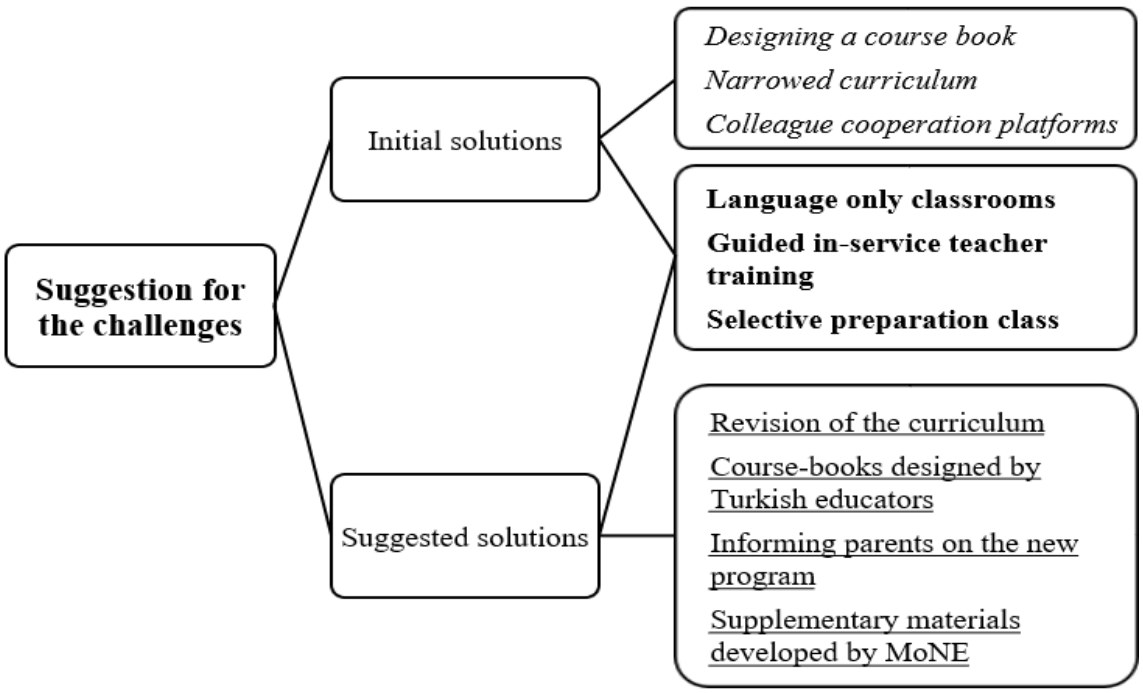


Figure 4 shows that the teachers' initial solutions for problems centered on the course book, the curriculum, and colleague cooperation. Since they had not yet experienced the whole process at the beginning of the program, they could only make suggestions about the course book and curriculum. In that regard, all participants stated at the beginning of the study that the units and themes in the curriculum should be narrowed for future applications. According to T4, *"There are some idioms or proverbs which I don't know the meanings in the units, so it is impossible for me to teach them to learners. Also, there are some chapters that are irrelevant for young learners since they consist of many abstract terms for learners, and those are not suitable for the mental abilities of young learners."* Again, three participants suggested colleague cooperation programs in the form of open-access platforms due to the lack of suitable materials.

On the other hand, both rounds of interviews indicated that the participants believed that there should be an English-language-only classroom for this program to create a more attractive teaching environment for young learners. In addition, all of the teachers thought that there should be guidance for EFL teachers on the new program with respect to units, assessments, homework, and activities via an in-service teacher training program. Lastly, five participants suggested that the new program should be voluntary for both teachers and learners. They indicated that parents or learners should volunteers to

participate in the program and that, only those students should take part; otherwise, learners might face problems and handicaps.

The teachers also provided solutions for the future application of the new program, since teachers completed the academic year. Their final suggestions were seen as more realistic and significant for this study. The teachers stated their ideas for the second time the end of the spring semester, all teachers thought the curriculum should be revised for the needs, cognitive abilities, and level of young learners for future applications. Accordingly, four teachers stated that the course book used for the pilot study was not relevant for their students and a new course book prepared by Turkish educators might be more beneficial for learners. Moreover, they suggested that parents might be informed about the new program at the beginning of the autumn semester and their guidance for the program can be solicited in this way. Last, they demanded significant supplementary support from the MoNE on teaching young learners.

Discussion

This study has explored the viewpoints of EFL teachers on the implementation of an intensive language program for fifth graders in Turkey. Three research questions about EFL teachers' opinions, challenges, solutions for program and implementation were asked, and the findings have been discussed for each research questions.

The first main point concerns the EFL teachers' attitudes and opinions toward the new program. The findings indicate that most teachers had positive perceptions of the program. At first glance, many EFL teachers have positive attitudes and opinions about that current program, in general (Çakır, 2017). Accordingly, they think that the program has many advantages for both language teachers and students; for example, it motivates both learners and teachers, increases self-evaluation and professional development, and is beneficial for the future lives of young learners. Similarly, Aksoy and colleagues (2018) also named the advantages of the program and reported that it is effective for increasing language learning motivation and the academic success of students. This study has highlighted that the program indeed motivated the teachers, as they used the program extensively and improved their teaching skills. In the literature, similar findings on improvements in teachers' self-evaluation and teaching skills in terms of the constructivist approach have been reported by Vural and Şenel (2018), who studied teachers' ideas about the new program. Considering the benefits, the new program for fifth graders represents a new perspective on foreign language teaching in Turkey since it gives young learners an opportunity to effectively acquiring English skills early in their educational life. According to the oft-cited importance of language learning at young ages (e.g., Brewster, Ellis, & Girard, 2002; Brown, 2007; Pinter, 2017), an early language learning experience guarantees later success.

In addition to these positive perspectives, teachers' professional development is another issue that must be emphasized. Young learners are highly dependent on their teachers during the learning process (Bland, 2015), and therefore, teacher training and professional development must be a part of the teaching process in early childhood education. Teachers' continuing professional development plays a significant role in improving the quality of teaching (Daloğlu, 2004). As stated by Fraser, Kennedy, Reid, and Mckinney (2007), professional development is far from just attending courses, it is a

lifelong learning process and a means of personal development for teachers today. Especially for young learners, teachers' professional development and experiences are vital in terms of the creation of a sufficient classroom environment for teaching English (Yazıcı & Genç-İlter, 2018). Moreover, because of the changing and developing needs of modern life, teachers have to improve themselves professionally to ensure a meaningful and modern educational environment for their learners. As the teachers in this study stated, the new program boosts teachers' professional development regarding language teaching and, accordingly, enhances the learning environment for young learners. Hence, the new intensive language program has advantages in terms of effective English language learning and teaching in Turkey.

On the other hand, all of the teachers stated that they felt stressed at the beginning of the program and their anxiety level was higher than normal due to the new application of the program. High anxiety levels in teachers can negatively influence the effectiveness of the teaching process (Aydın, 2016; İpek, 2016; Williams, 1991), and so the teachers' statements regarding their anxiety represented a negative perception since their teaching process might have been negatively affected. The teachers reported problems due to the lack of a course book and guidance on the new program, and those problems made them more anxious as they began the implementation of the program.

The second research question considered challenges with implementation and the weaknesses of the new program. The teachers faced challenges at both the beginning and end of the implementation process. Common programs reported at the end of the study were the lack of materials, the classroom environment, the insufficient curriculum, and the lack of professional guidance for teachers. Consistent with the literature (Aksoy et al., 2018; Erdem & Yücel-Toy, 2017), the teachers experienced issues because of classroom sizes and a lack of suitable materials. Similarly, Aksoy and colleagues (2018) have stated that the lack of adequate program materials was a disadvantage of the process since teachers had to improve their materials during the year, a task that proved highly time-consuming and challenging for them. Another disadvantage of the program was the inadequacy of the current curriculum both Aksoy et al. (2018) and this study have indicated that the curriculum presented problems for teachers. Similar findings might be due to the heavy and confusing program curriculum. Regarding the lack of teacher guidance, the teachers experienced many problems at the beginning of the semester. They struggled to decide how to assess their learners and how to design their courses effectively because of the lack of effective teacher guidance. Additionally, the teachers complained about parental guidance, mixed ability groups of learners, and an inadequate classroom environment for English language teaching. As for classroom environment, the use of various teaching activities, techniques, visual materials, and tasks to teach a foreign language has a substantial influence on young learners (Çakır, 2004). Moreover, teaching a foreign language requires both theoretical and practical knowledge of the teaching process (Widdowson, 2012). Accordingly, mixed activities, literary works, songs, and games can help students to develop their speaking skills; these make their pronunciation better and encourage greater motivation for language learning (Klancar, 2006). Therefore, the classroom environment and materials should be designed with the needs of young learners in mind.

As for the last research question on the EFL teachers' proposed solutions for challenges regarding program implementation, the teachers called for professional development support on program implementation. The teachers in the study had limited support concerning the program and needed professional guidance on curriculum details, assessment, homework, and activities appropriate for the learners' level to use the curriculum in an effective way. Teachers need training to combine theory and practice, not intellectually superficial seminars (Borko, 2004). Professional development training is not a one-time panacea for all deficiencies in education and training; it must be accepted as a long-term strategy, and teachers should regularly participate in continuing education to stay up to date with the latest changes in modern life (Bayrakçı, 2009; Fraser et al., 2007). Additionally, the teachers suggested that the classroom environment and materials, especially the course book, should be revised for their learners and that parents should be informed at the beginning of the autumn semester about the program. Learners are more successful at acquiring English if the classroom features a range of attractive activities (Dörnyei, 2001), and the teachers suggested that the program might be optional for fifth graders.

Conclusion and Suggestions

As a developing country, Turkey has experienced various reforms and innovations in teaching English as a foreign language for a long time. As for the latest reform regarding English teaching policies, an intensive foreign language program for the fifth grade was piloted in public secondary schools across the country in the 2017-2018 academic year. Starting from the 2018-2019 school year, the program has become optional for secondary schools, and if school administrations want to offer a preparation class for fifth graders, they can introduce the program (MoNE, 2017). Since this reform is quite recent, much research is needed to evaluate it to better understand potential goals and expectations. Considering the qualitative nature of the study, it has some limitations regarding the limited number of participants in focus and one type of data collection strategy. Then, taking more teachers' viewpoints in this implementation process and investigating these teachers' experiences with various data collection strategies such as observation, think-aloud or teacher diaries would be helpful for a more thorough understanding of what is lived and experienced in the class for further research. In sum, this small-scale qualitative study offers a snapshot of the implementation of the program in a small city in Turkey. This picture suggests that the new education reform benefits young learners despite problems with its implementation. The intensive English program has increased learners' awareness of English language learning, motivated them to study languages, and improved communicative competence to some degree via the longer course hours and communicative activities. However, to achieve better outcomes, teachers, as the key educational policy implementers, need to be listened carefully, and the policy change process should incorporate them. To improve program implementation, the curriculum should be revised, supportive language teaching materials should be developed, and professional development programs for teaching English to young learners should be jointly developed by language experts and language teachers participating in the program. These changes to the intensive English language education reform would boost, Turkey's ranking in international English proficiency indexes and equip future generations with improved conversational English skills.

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Country-of-origin and International Students' Motivation in Turkey: A Correspondence Analysis

Türkiyedeki Uluslararası Öğrencilerin Memleketleri ve Motivasyonları: Bir Uyum Analizi

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ABSTRACT: The number of international students in Turkish universities was increased in recent years. Despite the increasing number of international students in Turkey, it is still below from the other Organization for Economic Co-operation and Development (OECD) countries. To understand the reasons of this situation, it is crucial to examine the selection criteria of international students. The main objective of this study was to examine the most important factors that affect students' choice to study abroad. The study was designed as quantitative research. A correspondence analysis was conducted to identify the information from international students who chose Turkey for higher education. As a multivariate analysis technique, correspondence analysis graphically portrays the choice criteria of international students and their country of residence in a single joint space. A survey was developed by the researchers and distributed to the international students at two public universities in Turkey and the data were collected from 281 international students. The results revealed that the two-dimensional solution was accepted with a significant chi-square value and variances accounted for 99% of the total variance explained. Specifically, the selection criteria for an institution in Turkey and Eskişehir differ with international students' home country.

Keywords: international students, university selection, correspondence analysis, pull-push factors.

ÖZ: Türkiye'deki üniversitelerinde bulunan uluslararası öğrencilerin sayısı her geçen yıl düzenli olarak artmaktadır. Artan bu talebe rağmen Türkiye'deki uluslararası öğrenci oranı diğer Ekonomik Kalkınma ve İşbilirliği Örgütü'nde (OECD) yer alan ülkelere göre düşüktür. Bu durumun altında yatan sebepleri öğrenmek için uluslararası öğrencilerin Türkiye'yi seçme kriterlerini araştırma hedeflenmiştir. Bu araştırmanın amacı uluslararası öğrencilerin Türkiye'yi yükseköğretim için seçme sebeplerini tespit etmektir. Bu çalışma nicel araştırma modeli olarak tasarlanmıştır. Bu tespit için uyum analizi yöntemi kullanılmıştır. Bir tür çok değişkenli istatistiksel analiz yöntemi olan uyum analizi ile uluslararası öğrencilerin tercih sebepleri ile onların memleketleri arasındaki ilişkiyi grafik biçiminde ifade etmeye fırsat vermektedir. Araştırmacılar tarafından geliştirilen anket Türkiye'deki iki devlet üniversitesindeki uluslararası öğrencilere dağıtılmıştır ve 281 katılımcıya ulaşılmıştır. Uyum analizi sonuçları gösteriyor ki, iki boyutlu çözüm anlamlı ki-kare değerine sahiptir ve toplam varyansın %99'unu açıklamaktadır. Bu bulgular doğrultusunda Türkiye'ye ve Eskişehir'e yükseköğretim için gelen uluslararası öğrencilerin tercih sebeplerinin geldikleri bölgelere göre farklılık gösterdiği tespit edilmiştir.

Anahtar kelimeler: uluslararası öğrenciler, üniversite seçimi, uyum analizi, çekme-itme faktörleri.

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Introduction

In the 21st century, the international education industry has raised the number of international students to more than double (Shanka, Quintal, & Taylor, 2006). Nowadays, the number of students who emigrate to another country for higher education has exceeded 800,000 and most of the developed countries such as United States, United Kingdom, Canada, and Australia. The Organization for Economic Co-operation and Development (OECD) countries share a big portion of the internationalization economy (Australian Education International, 2001, 2004). By 2025, it is believed that the number of international students will reach to 8 billion around the world (Çetinsaya, 2014; International Development Program of Australian Universities and Colleges, 2002).

The application to European Union membership and the participation into OECD push Turkey to consider internationalization in education (Radmard, 2012). While Turkey hosted 16,000 international students in 2006, the number of full-time international students has reached 81,000 in 2016 (Council of Higher Education, 2017; Çetinsaya, 2014). Unfortunately, the final OECD research reported that Turkey now has the lowest proportion of international tertiary students in the OECD countries with 1.0% (OECD, 2016). All these data demonstrate that Turkish universities have not achieved the expected level of internationalization for education. In Turkey, there are two types of universities for students: governmental and private universities. Most of the Turkish universities accept students from different countries. However, Türkiye Scholarship is a major source for international students to enter public universities in Turkey. Over 130,000 students from 172 different countries applied for this scholarship in 2018 (www.turkiyeburslari.gov.tr). Hence, the majority of international students came to Turkey via scholarship programs and diplomatic agreements (Radmard, 2012).

Since there is an increase in the number of international students in university campuses throughout Turkey, Turkish universities need to reform their marketing strategies to attract international students. Similar to other developing countries, Turkey encountered various problems and limitations in terms of internalization of education.

Research about selection factors to study abroad is crucial and those factors demonstrated that students from different countries have different interests for a higher educational destination (Chen, 2008; Mazzarol & Soutar, 2002; Shanka et al., 2006). As a result, it is important to examine the reasons for the host country selection criteria in order to improve international education in Turkey.

Subsequent research over the past few decades was conducted to clarify reasons that influence the decision making of international students to pursue higher education (Maringe & Carter, 2007; Mazzarol & Soutar, 2002). These researches clearly illustrated the multi-dimensional aspects of the process and provided decision-making process models (Maringe & Carter, 2007; Mazzarol & Soutar, 2002).

Literature Review

The Push-pull Model of International Student Motivation

According to Mazzarol and Soutar (2002), the motivational factors for students in studying abroad are divided into two categories: push and pull factors. Push factors are those that originate by the home country and are defined as factors that initiate people's decision to seek higher international education (Mazzarol & Soutar, 2002). The researchers examined the factors influencing the host country selection criteria from several research studies (Chen, 2008; Mazzarol & Soutar, 2002; Radmard, 2012) and concluded that major economic and social problems push students to seek higher education in another country (Mazzarol & Soutar, 2002). Students from developing countries do not have many opportunities in their countries and they have the desire for searching for new destinations. On the other hand, pull factors seen as the factors that make the host country attractive to the students. Quality of education, variety of programs, expertise of educational staff and family recommendations are crucial pull factors that attract students to a new destination. Particularly, the findings also suggested that other influential factors for international students were the reputation of the institution, high-quality staff and the number of students enrolled at the university (MacGregor, 2014; Mazzarol & Soutar, 2002).

There are many critical pull factors for international students' choice of institutions. Academic reputation is one of them. Early research demonstrated that school prestige and quality of department were identified as key factors for international students' university selection (Bowers & Pugh, 1972). Further research has confirmed that academic reputation is still a crucial variable in the international education literature (Abubakar, Shanka, & Muuka, 2010; Mazzarol, Soutar, & Thein, 2001; Padlee, Kamaruddin, & Baharun, 2010; Soutar & Turner, 2002).

In addition to academic reputation, studies illustrated the importance of programs and the variety of subjects for students' decision-making process (Abubakar et al., 2010; Daily, Farewell, & Kumar, 2010; James-MacEachern & Yun, 2017; Joseph & Joseph, 2000; Kondakci, 2011; Maringe & Carter, 2007; Mazzarol, Savery, & Kemp, 1996; Mazzarol & Soutar, 2002; Shanka et al., 2006; Soutar & Turner, 2002; Wilkins & Huisman, 2011). According to Mazzarol and Soutar (2002), host institutions must have a high academic reputation in order to be chosen by international students. Offering extensive course choices attract international students in deciding a specific institution (Özoğlu, Gür, & Coşkun, 2015). The importance of quality of professors at school were supported by various research and thus international students are influenced to choose their host institution and host country (James-MacEachern & Yun, 2017; Mazzarol & Soutar, 2002; Shanka et al., 2006).

According to Gorman (1974), costs and fees are also crucial factors that influence international students' university selection process (as cited in Shanka et al., 2006). Students tend to enroll in universities that they can afford (Abubakar et al., 2010; Chen, 2008; Joseph & Joseph, 2000; Özoğlu et al., 2015). Moreover, students search for scholarship opportunities for their higher education (Joseph & Joseph, 2000). Students from different countries have different cost issues and some students seek part-time job opportunities to gain money in a host country (Maringe & Carter, 2007; Mazzarol & Soutar, 2002). Daily et al. (2010) showed that financial aid is one of the most important

factors that influence the decision of students to pursue higher education. Hence, scholarship opportunity is an important factor (Alfattal, 2017; Kondakci, 2011; Mazzarol & Kemp, 1996; Nkoko, 2016). Jiani (2016) also supported the findings that students from developing countries choose to study abroad for scholarship opportunities. Moreover, the cost of living in the area was also found to be a major factor in their choice of school (Chen, 2008; Daily et al., 2010; Özoğlu, et al., 2015). It can be claimed that to live in Turkey is much cheaper than any other developed countries such as the USA. As a result, it is expected that international students prefer Turkey because of low living costs.

Family and friend recommendations are other key factors that influence international students' decision-making process (Chen, 2008; Daily et al., 2010; Joseph & Joseph, 2000; Özoğlu et al., 2015; Shanka et al., 2006; Soutar & Turner, 2002). Mazzarol and Soutar (2002) claimed that personal recommendations from close relatives affect the decision to study overseas. Moreover, parents and relatives are likely to recommend institutions that they have graduated from or have had experience in (Mazzarol & Soutar, 2002).

Proximity to the home country is considered as another major factor in the literature (Kondakci, 2011; Nachatar-Singh, Schapper, & Jack, 2014; Soutar & Turner, 2002). Historical ties between host and home countries, geographical proximity of Turkey from the country of origin and cultural closeness are major factors.

Beside these major factors, there are various factors that affect the decision making for the host institution. The number of international students, the safety of the country or city, and job opportunity after graduation are factors that are also important for international students (Alfattal, 2017; Daily et al., 2010; Kondakci, 2011; Maringe & Carter, 2007; Mazzarol, Kemp, & Kemp, 1996; Mazzarol & Soutar, 2002; Nachatar-Singh et al., 2014; Özoğlu et al., 2015; Shanka et al., 2006; Soutar & Turner, 2002).

Wilkins and Huisman (2011) investigated international student destination choice and the results revealed that pull factors are more influential than push factors for starting studies overseas. As a result, there are many studies which focus on the pull factors in the literature (e.g. Chen, 2008; James-MacEachern & Yun, 2006).

James-MacEachern and Yun (2006) conducted a study in a small Canadian institution to fill the gap in the literature about international undergraduate students. The aim of the study was to identify the factors that influence international students' choices while selecting a small institution. Particularly, this study used chi-square and t-test statistics to identify if there are differences in the influential factors between Chinese students and other international students. They concluded that there are two main sources of information for choosing a small institution: university-related motivations (e.g. reputation, location etc.) and structural motivations (e.g. financial issues), and reference groups (parents, friends, peers). Furthermore, the results indicated that reputation, academic programs, expenses, and grants are the most important pull factors on students' decision-making process (James-MacEachern & Yun, 2006). In other words, the findings revealed that international students attending a small institution in Canada identified the most crucial influential factors to be environmental cues and educational facilities.

Similar to James-MacEachern and Yun (2006), Chen (2008) investigated the effect of internalization and marketing of higher education on international students' choice of a university in Canada. He collected the data from 235 graduate and undergraduate international students from Hong Kong, China, Japan, Korea, and Taiwan. First of all, he examined the factors that influence the decision to study abroad. The results showed that graduate students in Canada were influenced by student characteristics and encouragement from family and friends as well as factors related to internalization and globalization. The most influential factor for graduate students was personal characteristics. On the other hand, undergraduate students reported that family decision was the most crucial driving force in studying abroad. Besides the factors influencing studying abroad, Chen (2008) also examined the choice of Canada in the study. The questionnaire results revealed that the characteristics of Canada, the characteristics of marketing or information and significant others (family and friends) are the factors that influenced the choice of studying in Canada. The study showed that graduate students prefer a Canadian university in terms of the affordable tuition and ranking of the university (marketing factors). Undergraduate students ranked factors related to institutional characteristics with high importance in choosing a Canadian school (Chen, 2008). Even though this study demonstrated a broad explanation in the difference between the graduate and undergraduate international students driving forces for studying abroad, there was not much information about the comparison of students from different countries.

In 2012, Turkey published a report about global trends and international students in Turkey. The report was prepared by the Foundation for Political, Economic and Social Research (SETA) and they conducted a qualitative study to examine international students' decision-making process. The results revealed that students from other Turkic Republics prefer Turkish universities because of geographical and cultural proximity. Most of these students had prior experiences with Turkey and their families supported them in choosing Turkey for higher education. Moreover, geographical proximity, cultural and historical connections affect students from Balkan states. Similarly, students from Middle East prefer Turkey because it is recommended by acquaintances and there is a growing reputation of Turkey in the Middle East. In general, qualitative interviews demonstrated that international students desire to undertake higher education in Turkey are in terms of 6 categories as follows: quality of education, cost of living and education, financial aid, cultural and religious proximity, family and friend recommendation, and guidance of Turkish schools in their country (Özoğlu, Gür, & Coşkun, 2012).

Turkey was known as a sending country of international students. However, it has rapidly changed during 10 years and now Turkey is ready to be called as a host country. Kondakci (2011) conducted a study on international students and the study revealed that students from Russia, Ukraine, and Baltic countries prefer Turkey in order to find a better job. Also, students from Azerbaijan and Central Asia are more likely to choose Turkey due to proximity to their home country. In addition, the academic quality of Turkish universities is the most influential factor for students from east Europe. Finally, Kondakci (2011) claimed that students from Turkic republics care more about scholarship opportunities for higher education. Similarly, Nkoko (2016) conducted a thesis study and found that African and Balkan students prefer Turkey because of

financial aid (Turkiye scholarship). Beside scholarship opportunity, students from Balkan countries prefer Turkey for its high quality of education (Nkoko, 2016). Finally, Asian students mentioned that both scholarship opportunities and quality of education are the most important factors in choosing Turkey as a study destination.

Purpose of the Study

The aim of this study is to investigate the major reasons why international students prefer Turkey for higher education. In particular, it is important to analyze the positioning of students' choice of study destination on the merits of their home country. In other words, this study aims to compare the difference between international students from different geographical regions in selecting Turkey and Eskişehir (a city in Turkey) for higher education. The vast majority of researches dealing with selection criteria have used developed countries (e.g. US, UK, Australia). However, there are few studies into Turkish universities and international students' choices regarding those universities. Unfortunately, these researches did not provide the information about the relationship between home country and university selection criteria. Because of the increasing number of international students' application into Turkish universities, it is crucial to analyze push and pull factors in terms of internationalization of Turkish Higher education. Soutar and Turner (2002) suggested using correspondence analysis to provide insights on students' decision processes. Because correspondence analysis can bring more detailed findings to show the association with categorical data, this method was preferred in the current study. There is a unique contribution to the literature because there is no research which used correspondence analysis for international students' university selection criteria process in Turkey.

In this section, characteristics of participants, instrument, data collection procedure and data analysis method were described. The study was designed as a quantitative method.

Participants

The population of the study was 4074 international students in Eskişehir (Council of Higher Education, 2017). Because it is hard to reach all students contact information, convenient sampling method was used to collect the data. The sample of the study was 281 international students attending Turkish universities in Eskişehir. All part-time and full-time international students were allowed to participate in the study. Moreover, students enrolled in language preparation programs, undergraduate and graduate programs were included as a sample of this study. These international students represented different countries in Europe, the Arabian Union, Asia, and Africa. International students attending Turkish universities in Eskişehir were chosen as the study sample for two main reasons. Firstly, selecting participants that had certain characteristics in common backgrounds was important (Cohen, Manion, & Morrison, 2011; Krueger & Cassey, 2009). In this research, the common experience of attending an institution was considered an essential characteristic since it was the main data to be analyzed. Secondly, universities in Eskişehir have a large number of international students with various educational backgrounds. These two factors made international students in Eskişehir a suitable sample for this study.

Table 1

Characteristics of Participants

	n	%
Gender		
Female	71	25.26
Male	210	74.74
Marital status		
Single	252	89.68
Married	29	10.32
Education		
TOMER	27	9.61
Undergraduate	154	54.80
Master's degree	73	25.98
Ph.D.	27	9.61
Department		
Health Science	17	6.05
Science	112	39.85
Social Science	134	47.69
Education	13	4.63
No-major	5	1.78
Home country		
Africa	50	17.80
Europe	35	12.45
Asia	96	34.16
Arabian Union	100	35.59

Note. *n* = number of students.

Of the 281 participants, 71 were female students and 210 were male students. The majority of students were single (*n*=259) and only 29 students claimed they were married. Also, 31 students studied the Turkish language preparation level (TOMER). In addition to that, there are 155 undergraduate students, 75 master's degree students and 27 Ph.D. students in the current study (see Table 1). While there were only 17 health science and 13 education department students, there were 112 science and 134 social science students (see Table 1). Also, 50 of the international students were from African countries, 35 students were from European countries, 96 students were from Asian countries and 100 students were from Arabian countries (see Table 1). Students from Iraq, Syria, Lebanon, Jordan, Saudi Arabia, Qatar, Tunisia, Morocco, Mauritania, Sudan, Somalia, Palestine, Republic of Djibouti, Algeria, Comoros, Libya, Egypt, Kuwait, Yemen, Oman, and the United Arab Emirates were considered as the Arab Union category because all those countries joined the Arab Union and all of them have Arabic roots. African countries such as Zambia, Kenya, Niger, Nigeria, Senegal, Ghana,

Ethiopia, Benin, Eritrea, Sierra Leone, Mozambique, Madagascar, Democratic Republic of Congo, Burkina Faso, Chad, Uganda, Liberia, Tanzania, Burundi, Guinea, and Cameron were considered as the Africa category in the current study. Besides that, Philippines, Kyrgyzstan, Afghanistan, Pakistan, Iran, Mongolia, Cambodia, Uzbekistan, Azerbaijan, Tajikistan, Kazakhstan, India, Turkmenistan, Bangladesh, South Korea, Myanmar, Georgia, Indonesia, and Thailand were considered as Asian countries and finally, Russia, Ukraine, Albania, Bosnia, Slovenia, Macedonia, Kosovo, Montenegro, and Greece are considered as European countries in the current research.

Instrumentation

As mentioned previously, the aim of this paper was to examine major reasons why international students choose Turkey. To achieve this aim, an online questionnaire was designed by the researchers.

First of all, researchers reached 11 international students who study in Eskişehir. They were from different countries (e.g. Ethiopia, Sudan, Malaysia, and the Philippines) even from different regions. They were interviewed why they prefer Turkey, especially Eskişehir, to get a higher education. In light of this information, the selection criteria for Turkey and Eskişehir were developed.

The questionnaire was preceded by a cover letter that explained the nature of the research, the estimated time necessary to complete the survey, the voluntary nature of participation, and a statement regarding informed consent. The main part of the questionnaire had two sections. The first section of the survey contained several demographic questions such as gender, marital status, department of study, country of origin and education level. Section 2 included two major statements to measure the most influential factor regarding international students' choice of Turkey and Eskişehir. Students were asked to select only one major factor which they considered as important in deciding Turkey and Eskişehir for study destination, separately. Participants answered the first statement about choosing Turkey and then they moved to the second question about choosing Eskişehir for higher education. All items were written in Turkish and translated into English. The translation of the items was reviewed by two researchers. Students who didn't understand the Turkish part of the survey can fill the English version.

Based on the literature review and personal experiences, the researchers created six categories which are living conditions, quality of education, scholarship, social environment, proximity to home country and others. Each category included several factors that influenced international students' decision to choose Turkey for higher education. For instance, living condition category included the safety of country and living cost in Turkey. Quality of universities in Turkey, job opportunities after graduation and accreditation of diploma factors are in the quality of education category. Family and friend recommendation and having an acquaintance in Turkey factors were grouped in the social environment category. Moreover, the proximity of home country category included selecting Turkey for the proximity and for Muslim country factors. Finally, the other option contained getting to know Turkish culture, getting citizenship in Turkey, a high number of international students and other factors.

For the Eskişehir section, there were four categories: quality of education, living conditions in Eskişehir, social environment and others. Quality of education category

consisted of better university campus life, good reputation of universities in Eskişehir and job opportunities after graduation factors. Living condition category included the low living expenses in Eskişehir, safety in Eskişehir and social life in Eskişehir. Family and friend recommendation and having an acquaintance in Eskişehir factors are grouped in the social environment category. The final category is 'other' category that included other answers not included in other categories.

To ensure face validity, a pilot study was administered. In the pilot study, the survey was sent to three international students whose opinions were asked about the statements and questions. The errors and unclear parts were identified and the questionnaire was revised. The final version of the survey was distributed to the students. Correspondence analysis is a technique that analyzes categorical data and transformed into a contingency table to identify the relationship between selection criteria and home country. Because the structure of data was not suitable for the internal consistency coefficient, only qualitative evaluations were applied for a reliability check.

Data Collection

The survey was administered online and the answers recorded via a professional survey site, Qualtrics. Qualtrics was appropriate for this web-based survey because it was convenient for respondents and included automated management and data compilation.

International students received information about the survey by email or through a social media webpage (Facebook). All participants had to read the informed letter and choose if they wanted to continue with the study or not when they clicked the survey link. The survey took approximately 10 to 15 minutes to complete for each participant.

Data Analysis

After conducting the survey, the data were analyzed via correspondence analysis. The purpose of the data analysis was to identify the factors influencing international student choice in selecting Eskişehir and Turkey. There were several steps employed to analyze the data. Demographic questions were included to obtain comparative results. Statistical Package for Social Science (SPSS) version 21.0 was used in the current study.

Correspondence analysis is a popular multivariate statistical method for using categorical data in a contingency table (Özdamar, 2013). This analysis transforms numerical information into a graphical display (Greenacre, 2000). Moreover, correspondence analysis is easy to apply (Shanka et al., 2006). This method only requires a contingency table of nonnegative data (Yavas, 2001). Hence, cross-tabulation of home country and selection criteria of Turkey and Eskişehir provided frequencies for the study.

The aim of the correspondence analysis is to demonstrate data visually in low-dimensional space (generally in two-dimensional space). Rows and columns in a frequency table are depicted as points and row and column proportions can be compared in a two-way table (Kara, Kaynak, & Kucukemiroglu, 1996).

As a result, correspondence analysis enables advance comparison of relationships between categories of nominal data in a contingency table (Yıldız, 2004).

There are three important features of correspondence analysis: row and column profile, mass values and chi-square distance. Chi-square distance was described as the distance between points in row profiles or column profiles in a p-dimensional space (Greenacre & Blasius, 1994: as cited in Yıldız, 2004). Instead of chi-square distance values, inertia statistics are more popular to demonstrate the variance in correspondence analysis. Mass value is another proportion value that indicates the importance of that dimension (Özdamar, 2013).

Results

In the current study, the main purpose was to investigate how selection criteria of Turkey and Eskişehir vary with respect to international students' home country. A correspondence analysis was conducted to detect relationships between home country and international students' selection criteria.

Influence of Home Country on Decision to Choose Turkey

The question asked to international students was why Turkey was so attractive for a higher education destination. The summary of frequencies with which several pull factors for Turkey was presented in Table 2. Majority of international students preferred scholarship and quality of education options. 38.4 % of the international students were preferred scholarship criteria while 22.8% of students thought that the quality of education was the most important factor. More specifically, international students believed that scholarship opportunities and education quality were two major pull factors for studying in Turkey. Choosing Turkey for proximity to home country is the third reason among six reasons with 15.6%. Only 6.1% of international students indicated that living conditions in Turkey were the strongest rationale behind their choice**.**

Table 2

Frequency of Selection Criteria of Turkey

Frequency	*n*	%
Living condition	17	6.1
Quality of education	64	22.8
Scholarship	108	38.4
Social environment	26	9.3
Proximity to home country	44	15.6
Other	22	7.8
Total	281	100

Fundamental dimension number can be calculated with the formula;

K = min {r-1, c-1}; r = number of rows and c= number of columns

Because there are 6 rows (selection criteria) and 4 columns (home country), the ideal number of dimensions should be 5 in this section. However, SPSS computer program did not calculate the values for 5-dimensional space. It provided only inertia values for 3-dimensional space (see Table 3).

As shown in Table 3, dimension 3 did not have significant contribution to the total inertia value and it only has 0.001 proportion of inertia. First and second dimensions together explained the 99.99% of the inertia; hence, the two-dimensional model is most suitable for this data.

Table 3

Dimensionality for Turkey Selection Criteria

Dimension	Singular Value	Inertia	Proportion of Inertia	
			Accounted for	Cumulative
1	0.148	0.022	0.704	0.704
2	0.096	0.009	0.295	0.999
3	0.005	0.000	0.001	1.000
Total		0.031	1.000	1.000

Table 4 shows the factors influencing international students' decision to choose Turkey as a study destination. According to Table 4, 19 students from African countries prefer Turkey for higher education and 10 African students paid attention to the quality of education in Turkey more than the other criteria. Likewise, 13 European students came to Turkey for higher education because of scholarship opportunities. Moreover, the quality of education in Turkey was another important factor for European students. Only one European student selected living conditions and social environment criteria for their study choice. Most of the Asian students decided to move to Turkey because of the quality of education (n=23), scholarship opportunity (n=37) and proximity to their home country (n=15). Finally, 39 international students from Arabian countries prefer Turkey as a study destination for the scholarship that they have awarded. There are 19 students from Arab countries who chose the quality of education and the other 17 Arab students take proximity as a major factor for selecting Turkey.

Table 4

Criteria for Choosing Turkey and Home Country Contingency Table

Criteria	Home country				Total
	Africa	Europe	Asia	Arabian	
Living Conditions	2	1	6	8	17
Quality of education	10	12	23	19	64
Scholarship	19	13	37	39	108
Social Environment	6	1	8	11	26
Proximity to home country	7	5	15	17	44
Other	6	3	7	6	22
Total	50	35	96	100	281

Table 5 displayed the relative contribution of each dimension as explained variance and cumulative variance. Dimension 1 explained 70.40% of variance and dimension 2 explained 29.50% of the variance. All dimensions together account for 99.99% of the total variance.

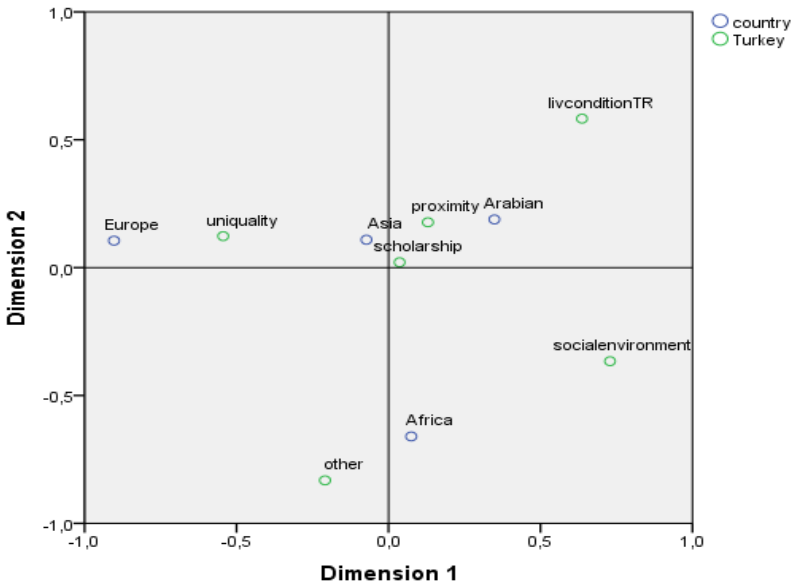
Table 5 also demonstrated the relative contribution of each selection criteria and each region to dimensions 1 and 2. All the contributions of each criterion and each region were acceptable because they were higher than 0.50. Living conditions, quality of education, scholarship opportunity, and social environment contribute to dimension 1 and proximity to home country and other criteria contribute to dimension 2. On the other hand, European and Arabian countries contributed to dimension 1 while African and Asian countries contribute to dimension 2 (see Figure 1).

Table 5

Relative Contribution to Dimensions for Choosing Turkey

	Mass	Dimension 1	Dimension 2	Total
Choice Criteria				
Living conditions	0.06	0.65	0.35	1.00
Quality of education	0.23	0.97	0.03	1.00
Scholarship	0.38	0.81	0.17	0.98
Social environment	0.09	0.86	0.14	1.00
Proximity to home country	0.16	0.44	0.54	0.99
Other	0.08	0.09	0.91	1.00
Region				
Africa	0.18	0.02	0.98	1.00
Europe	0.12	0.99	0.01	1.00
Asia	0.34	0.39	0.58	0.97
Arabian	0.36	0.84	0.16	1.00
Variance %		70.40	29.59	99.99
Cumulative variance %		70.40	99.99	100.00

Figure 1. Positions of Choice Criteria of Turkey and Home Country



Influence of Home Country on Decision to Choose Eskişehir

International students were asked to indicate the major reason for choosing an institution in Eskişehir. Table 6 shows the frequency of choice criteria in the selection of an institution in Eskişehir. The results demonstrated that the most selected options were living condition of Eskişehir and quality of education in Eskişehir with 33.1% and 31.3% respectively. In other words, international students prefer universities in Eskişehir because Eskişehir has good living conditions and the universities have a high quality of education. 18.9% of participants indicated that social-environmental impact is a primary driving force behind choosing Eskişehir. Finally, only 16.7% of international students preferred other option.

Table 6

Frequency of Selection Criteria of Eskişehir

Frequency	*n*	%
Living condition	93	33.1
Quality of education	88	31.3
Social environment	53	18.9
Other	47	16.7
Total	281	100.0

In this section, the results of correspondence analysis between selection criteria for Eskişehir and students' home country is shown. Ideal dimension for this analysis should be min {(4-1), (4-1)} = 3. The output of the correspondence analysis for three-dimension was presented in the Table 7. According to the values in the table, two-dimensional space is acceptable.

Table 7

Dimensionality for Eskişehir Selection Criteria

Dimension	Singular Value	Inertia	Proportion of Inertia	
			Accounted for	Cumulative
1	0.173	0.030	0.825	0.825
2	0.077	0.006	0.164	0.989
3	0.020	0.000	0.011	1.000
Total		0.036	1.000	1.000

Beside selection criteria for Turkey, the reasons that international students prefer Eskişehir are the answer to another research question. While 23 students from the African region chose Eskişehir because of its living conditions, 14 African students claimed the quality of education was a major factor for selecting Eskişehir for higher education. When the European students were considered, 12 of them paid attention to living conditions of Eskişehir when deciding to move there. On the other hand, 9 international students from Europe indicated that the quality of education is the most crucial factor and 8 of them said that they have other reasons. Living conditions of Eskişehir (n= 32) and quality of education in universities (n =33) were two major factors for Asian students' choice in selecting institutions in Eskişehir. For international students from Arab union countries, 32 of them selected quality of education, 26 of them prefer living conditions and 25 of them chose social environment factors as a major impact of their study destination (see Table 8).

Table 8

Criteria for Choosing Eskişehir and Home Country Contingency Table

Criteria	Home country				Total
	Africa	Europe	Asia	Arabian	
Living conditions	23	12	32	26	93
Quality of education	14	9	33	32	88
Social environment	5	6	17	25	53
Other	8	8	14	17	47
Total	50	35	96	100	281

Table 9 showed the relative contribution of each dimension as explained variance and cumulative variance. Dimension 1 accounted for 82.50% while dimension 2 accounted for 16.40% of the variance. Cumulative explained variance of these two dimensions was 98.90%.

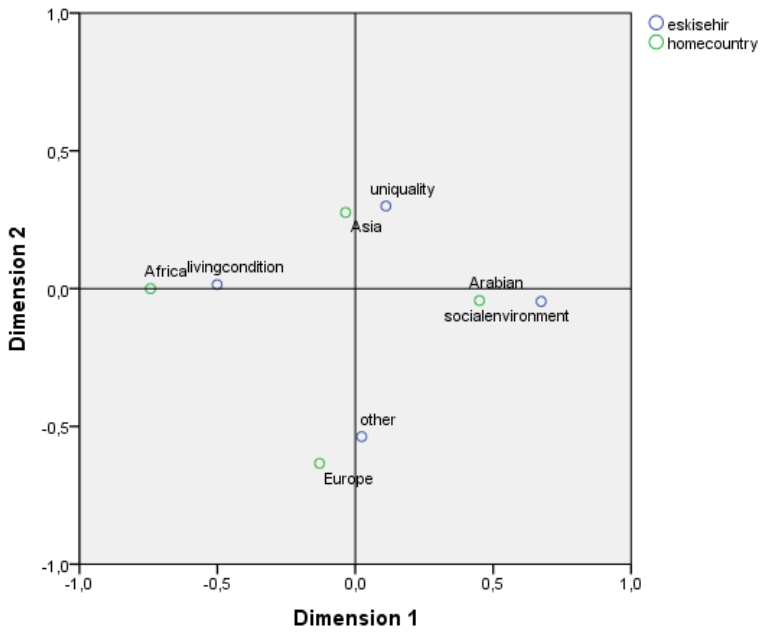
As regard to the choice criteria of Eskişehir, there are two dimensions and the contributions of each region and each choice criterion are higher than 0.50 and this indicated the acceptable results (see Table 9). Specifically, living conditions and social environment criteria contribute to dimension 1 and quality of education and other options contribute to dimension 2. In addition, African countries and Arabian countries contribute to dimension 1 and European and Asian countries contribute to dimension 2 (see Figure 2).

Table 9

Relative Contribution to Dimensions for Choosing Eskişehir

	Mass	Dimension 1	Dimension 2	Total
Choice Criteria				
Living conditions	0.33	0.99	0.00	0.99
Quality of education	0.19	0.23	0.73	0.96
Social environment	0.31	0.99	0.00	0.99
Other	0.17	0.00	0.97	0.97
Region				
Africa	0.18	0.99	0.00	0.99
Europe	0.12	0.08	0.89	0.97
Asia	0.34	0.03	0.91	0.94
Arabian	0.36	0.99	0.00	0.99
Variance %		82.50	16.40	98.90
Cumulative variance %		82.50	98.90	100.00

Figure 2. Positions of Choice Criteria of Eskişehir and Home Country



Discussion and Conclusions

In 2016, the number of the international student population in Turkey has grown by %10. From 2012 to 2018, the Turkish government and Council of Higher Education (YÖK) tried to make developments and provide financial support (e.g. Turkish scholarship) to attract international students in the global market. It is important to make more research on pull and push factors of international students in Turkey, and this may lead to developing suitable policies for them.

The purpose of this study was to investigate the importance of home country in international students' decisions to study in Turkey and specifically in Eskişehir. It revealed several reasons supporting the experiences of international students in Turkey with regard to their selection criteria for studying abroad. The findings from this study suggest that students from Europe prefer Turkey for higher education because of the quality of education. More specifically, international recognition of Turkish university diploma and academic quality of universities are important factors for European students in Turkey. This result was supported by Kondakci (2011) who indicated that academic quality rationale is prominent for students coming from Balkan countries. Because most of the European students in Turkey are coming from Balkan countries, similar conclusions are presented by Kondakci (2011) and the current research.

For African students, social environment is the most influential factor in choosing Turkey for studying abroad. Students from African countries think that family, friend, and acquaintance manipulate their decisions and their recommendations are crucial to select Turkey for a study destination. This conclusion demonstrates partial parallelism with Maringe and Carter (2007) and Padlee et al. (2010). Maringe and Carter (2007) conducted the study on African students in England and they found that those students prefer England for international recognition of British universities, easy application process and high quality of learning environment. In another study with African students in Malaysia, learning environment, customer focus and location of the institute were more important factors (Padlee et al., 2010). As a result, students from African countries indicated social rationales behind their choice of Turkey to study abroad.

On the other hand, the correspondence analysis results showed that Arab students and Asian students behave similarly in terms of deciding Turkey for education. International students from the Arabian union and Asia would more likely choose Turkey over other countries on a combination of factors such as scholarship opportunities, proximity to home country and better living conditions in Turkey. Türkiye Scholarship is the most popular financial aid for international students in Turkey. In addition to scholarship opportunity, cultural and geographical proximity to country of origin are also important for Asian and Arab students. Moreover, these students would prefer Turkey because of the low cost of living and safety. These results indicated that there is no single criterion for all international students; in other words, students from different regions have different opinions for choosing Turkey as a study destination. These findings are consistent with the SETA report for international students in Turkey (Özoğlu et al., 2012). This report demonstrated that students from central Asia indicated that they chose Turkey because it has geographical and cultural proximity to their own countries. In addition to proximity, these students also claimed that recommendation by relatives is another important factor (Özoğlu et al., 2012).

Moreover, SETA's report demonstrated that students from the Middle East would more likely choose Turkey for geographical proximity, a recommendation from acquaintance and the perception of Turkey as a powerful country (Özoğlu et al., 2012). Furthermore, the current research demonstrated consistent results with the study by Kondakci (2011). Kondakci (2011) conducted another research for international students in Turkey and the research revealed that students from Azerbaijan and Central Asia prefer Turkey because of proximity. Finally, students from Turkic republics set the high value of scholarship and academic quality (Kondakci, 2011). Nkoko (2016) wrote a thesis about international students in Turkey and this thesis revealed that Asian students believe scholarship opportunities and quality of education are more important factors for choosing Turkey. Somewhat surprisingly, Padlee et al. (2010) claimed that students from the Middle East would more likely choose Malaysia for quality of education and customer focus, and quality of education and facilities are crucial factors for central Asian students.

For the Eskişehir part of the study, the results revealed that African students care more about the living conditions of a city when preferring a higher education destination. Low cost of living, safety, and social life are important for African students in Eskişehir. Students from Asia have different results for choosing Turkey and Eskişehir. Asian students would more likely choose universities in Eskişehir for a higher quality of education which means these types of students think that quality of courses offered by institutions and quality of universities are the most influential factors for them. Besides, students from Arabian Union are more likely to make their choice based on the social environment. In other words, Arab students are affected by their friends, family, and acquaintances for choosing Eskişehir for education. Finally, the results demonstrated that European students prefer Eskişehir for other reasons such as job opportunities after graduation.

Different results from Turkey and Eskişehir section of the study maybe because of the different dynamics of regions. Eskişehir is a middle-size city and it is close to two metropolitan cities which are Ankara and İstanbul. The city contains a large number of international students and is known as a student-friendly city. The community is also open-minded and welcoming to other nations. Because Eskişehir has different characteristics (e.g. living condition and quality of education) than other Turkish cities, international students' primary drive for choosing Eskişehir may be different than for choosing Turkey in general.

James-MacEacher and Yun (2017) conducted a study to compare Chinese students and other students' pull motivations for selecting a Canadian institution. The results demonstrated that there are differences in sources of information used among Chinese students and students from other countries. Although these studies show attributions can be made using all this information, this highlights how erroneous it is to assume that every country can be analyzed in the same manner. It is possible that developmental level, geographical position, cultural backgrounds of the country may influence the results and may not provide a single pull motivation model for international students around the world. Alternatively, it may be the case that there is something in the position of Turkey in the internalization market and the different factors for choosing a public or private university. In addition to studies about international students in Turkey, there are several types of research that support the

current research results. Nachatar-Singh et al. (2014) demonstrated that students from the Middle East would more likely choose Malaysia because of safety, religion factor and cost of living. Moreover, Asian students preferred Malaysia for proximity to home country and low cost of living and education (Nachatar-Singh et al., 2014). In the Alfattal (2017) thesis, the author found that while students from the Middle East select the USA for peace, Asian students claimed that affordability (low tuition fee, living cost, and financial aid) and accessibility are more important than other pull factors. To conclude, inbounding student mobility in countries is based on different rationales.

Turkey's education sector has not done well in the global market for international students. In Turkey, private universities generally decide to go for an international educational fair (Özoğlu et al., 2012). Public universities and YÖK do not have much policy to improve internationalization in higher education in Turkey. During the 2016-2017 academic years, there were 89,312 international students who enrolled in a public university in Turkey while the total number of international students in private universities was 18,635 (YÖK, 2017). Even though most of the international students in Turkey enrolled in public higher education institutions, there are gaps in research about selection criteria of international students in public and private universities in Turkey. Further work is needed to unravel this multivariate effect and to conduct this type of study; a multiple correspondence analysis is suitable.

Countries and institutions have realized that international students have considerable value for a university and an economy. International student mobility in Turkey is also important for internationalization because these students can bring economic and social benefits to an institution in Turkey. The current study disclosed important implications for private and public universities and Presidency of Turks Abroad and Related Communities (YTB). Private and public universities can use the results to update their English websites. In addition, Turkish universities which have the desire to attend an international fair or EXPO's (e.g. China Education Expo and ECHE Saudi Arabia) prepare different advertisements or brochure for different regions. Likewise, YTB may strategize international scholarship in a complex manner and provide different strategies for different countries.

Overall, this study suggests that international students from different countries have different opinions for choosing Turkey as a study destination. The research also points to the potential value of home country variables to affect pull factors for Eskişehir. It must be borne in mind that this study was only conducted on a small sample of international students in a middle-ranged city. Further research can be conducted with all international students in Turkey. It is also important to interview international students to understand the details of their selection process. Besides, university management should take into consideration internationalization and develop new strategies to attract international students from different regions. Finally, international students who are graduated from a Turkish university can be examined to determine which pull factors should be under consideration.

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The Relationship between 21st Century Learning Skills and Educational Technology Competencies of Secondary School Students*

Ortaokul Öğrencilerinin 21. Yüzyıl Öğrenme Becerileri ile Eğitim Teknolojisi Yeterlikleri Arasındaki İlişki

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ABSTRACT: The purpose of this study is to reveal the relationship between 21st century learning skills and educational technology competencies of secondary school students. The population of this correlational research consists of 37.904 secondary school students in central districts (Ipekyolu, Tuşba, and Edremit) of Van province. This study was carried out with 920 secondary school students determined by stratified sampling method. As data collection tools, "21st Century Learning Skills Scale" and "Educational Technology Standards Scale" were used. Pearson Product Moment Correlation Coefficient and simple linear regression analysis were used in the analysis of research data. As a result of the study, it was concluded that there is a moderate, positive and significant relationship between students' 21st century learning skills and educational technology competencies. In addition, it was determined that students' educational technology competencies are a significant predictor of their 21st century learning skills and can explain approximately one quarter (25.1%) of their 21st century learning skills. In teacher education and in-service training programs, teachers should be well-educated in that they can contribute to the students' development of 21st century and technological skills.

Keywords: secondary school students, 21th century learning skills, educational technology competencies.

ÖZ: Bu araştırmanın amacı, ortaokul öğrencilerinin 21. yüzyıl öğrenme becerileri ile eğitim teknolojisi yeterlikleri arasındaki ilişkiyi incelemektir. İlişkisel araştırma modelinin kullanıldığı bu çalışmanın evrenini, Van ili İpekyolu, Tuşba ve Edremit merkez ilçelerinde öğrenim görmekte olan 37.904 ortaokul öğrencisi oluşturmaktadır. Araştırma, tabakalı örnekleme yöntemi ile belirlenen toplam 920 ortaokul öğrencisi ile yürütülmüştür. Araştırmada, veri toplama araçları olarak "21. Yüzyıl Öğrenme Becerileri Ölçeği" ve "Eğitim Teknolojisi Standartları Ölçeği" kullanılmıştır. Araştırma verilerinin analizinde, Pearson Çarpım Momentler Korelasyon Katsayısı ve basit doğrusal regresyon analizi kullanılmıştır. Araştırmanın sonucunda, öğrencilerin 21. yüzyıl öğrenme becerileri ile eğitim teknolojisi yeterlikleri arasında orta düzeyde, pozitif ve anlamlı bir ilişkinin olduğu belirlenmiştir. Ayrıca, öğrencilerin eğitim teknolojisi yeterliklerinin, 21. yüzyıl öğrenme becerilerinin anlamlı bir yordayıcısı olduğu ve yaklaşık olarak dörtte birini (%25.1) açıklayacak güçte olduğu belirlenmiştir. Öğretmen eğitimi ve hizmet içi eğitim programlarında öğretmenlerin, öğrencilerin 21. yüzyıl ve teknoloji becerilerinin gelişimine katkı sağlayabilecek şekilde yetiştirilmeleri gerekmektedir.

Anahtar kelimeler: ortaokul öğrencileri, 21. yüzyıl öğrenme becerileri, eğitim teknolojisi yeterlikleri.

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Introduction

The 21st century is not just a time expression because of scientific developments, technological innovations, new thinking styles and different perspectives experienced by human beings. Living in the 21st century is considered as taking part in a global change involving terms such as science, development, production, innovation and technology. This global change refers to a situation in which human beings are generating information very rapidly and human life is becoming more complex every day. In today's age, education is not limited to the school. It has become a necessity for the individuals to keep up with the times, modernize and be successful in academic/professional areas. Adaptation of the societies to the developments in science, technology and education is possible with educating the individuals accordingly (Cerit, 2002). 21st century learning skills in the curriculum are not only useful for students, they are also a necessity to prepare students for their future life (Alismail & McGuire, 2015). For this reason, it is very important for individuals to acquire some basic skills such as reading, writing and problem solving so that they can develop themselves and extend their knowledge. In line with these developments, today's education approach aims to equip the individuals with skills such as active learning, learning to learn, problem solving and critical thinking. In this way, it is aimed to educate individuals who can search, question, think, produce, criticize, interpret, develop solutions and specialize in more than one area.

The amazingly complex era in which we live comprises a huge amount of information alternatives and formats. Those who know, compare, analyze, synthesize, evaluate and transfer information to the others effectively are seen in high esteem (Rockman, 2019). The ability of an individual to reach this high esteem means adapting to the changes, choosing the right and useful knowledge among the ones that increase every second, analyzing the developments, using the acquired knowledge in daily life and being productive. Individuals need to develop higher-order thinking skills and competencies in order to transfer of knowledge to everyday practices. These skills and competencies, which are deemed necessary for individuals to have, are named in the literature as "*21st Century Learning Skills*" (Anagün, Atalay, Kılıç, & Yaşar, 2016). 21st century learning skills are not only about individuals having sufficient knowledge or only about the skills they possess. 21st century learning skills include the development of an individual's abilities such as questioning, thinking, understanding, problem solving and the reflection of this development on the performance of the individual in his/her academic and social life. In this case, it can be said that 21st century learning skills, which include individuals' higher order thinking skills, abilities and performances, have an important effect in upbringing of students who can keep up with the age and provide social development.

How to develop 21st century learning skills comes with the question of how to organize learning environments for 21st century individuals (Dağhan, Kibar, Çetin, Telli, & Akkoyunlu, 2017). This situation raises the question concerning the role of school in students' development of these skills. There is too much debate about how to teach these skills (Häkkinen et al., 2017). Technology is accepted as one of the necessary elements to provide a learning environment in accordance with the teaching-learning concept of our age and one of the 21st century learning skills. 21st century learning skills emphasize the importance of information and media literacy as required

in information age (Kurudayıoğlu & Tüzel, 2010). Although 21st century technological skills are considered as crucial in today's age, the digital aspect combined with 21st century skills is not adequately defined yet (Van Laar, Van Deursen, Van Dijk, & De Haan, 2017). It is important to support students to utilize the power of technology for developing 21st century learning skills (Alismail & McGuire, 2015). In this respect, the course of "information technologies and software" is taught in 5th and 6th grades, the course of "technology and design" is taught in 7th and 8th grades in our country. The information technology and software course is of great importance in terms of getting the students familiar with current technology at an early age. Nowadays, most of the discipline areas benefit from technology and it is emphasized that individuals should be exposed to technological facilities at an early age. Furthermore, if the students learn how to benefit from technology, it will contribute both their educational lives and professional experiences. It is stated that Turkey cannot reach a sufficient level in both economic and technological areas without effective use of information technology in education (Barut & Kuzu, 2017). In this respect, some of the basic objectives for the students in information technologies and software course curriculum include knowing how to access and use internet-based systems, knowing technological concepts, systems and operations, acquiring cooperation skills as part of learning process, sharing what they have learned by social environments and gaining awareness about lifelong learning (Ministery of National Education [MONE], 2018a).

In today's educational systems, technological devices are increasingly integrated in learning environments on the assumption that usage of these technologies will support student learning and motivation (Aagaard, 2015). Especially for children and young people, the use of technology not only involves learning, but also entertainment. The use of technology in education enables students to find activities more fun, and therefore they are more willing to be active in these activities (Aktay & Aktay, 2015). The technology and design course, which is the continuation of the above mentioned information technologies and software course, aims to educate individuals as the ones who can adapt to the information society (Becel, 2013). Some of the basic objectives for students in technology and design course curriculum are gaining the basic knowledge and skills concerning the development of technology, taking responsibility for how to solve the problems encountered in daily life by using the technology, being aware of the technology's benefits for the development of society (MONE, 2018b). In this case, it is seen that students are expected to have the competencies to use technology in education and daily life through these courses taught in secondary school.

The use of technology in learning environments will shape the individuals' understanding of knowledge, research and inquiry skills, self-directed learning and capacity to utilize technology from an early age, and also contribute to their vital and professional skills (Boyraz, 2008; Rashid & Asghar, 2016). Therefore, it is considered that there is a relationship between secondary school students' educational technology competencies and 21st century learning skills. In this study, it is aimed to examine the relationship between 21st century learning skills and educational technology competencies of secondary school students. For this purpose, the following questions were addressed in this study:

1. Is there a significant relationship between secondary school students' educational technology competencies and their use of 21st century learning skills?

2. Do secondary school students' educational technology competencies significantly predict their use of 21st century learning skills?

In various studies in the literature (Boyraz, 2008; Bozkurt & Çakır, 2016; Eryılmaz & Uluyol, 2015; Gelen, 2017; Miller, 2009), it is emphasized that the technological elements are very important for individuals to gain 21st century learning skills and at the same time, the competency of technology use is one of the 21st century learning skills. Therefore, it is considered that there is a relationship between secondary school students' educational technology competencies and 21st century learning skills. However, no correlational research has been reached concerning the relationship between educational technology competencies and 21st century learning skills. In a study conducted by Van Laar, Van Deursen, Van Dijk and De Haan (2017), the relationship between 21st century skills and digital skills were analyzed with systematic literature review of 75 articles. They concluded that 21st century skills are broader than digital skills and they are interrelated. In this respect, it is thought that this study will contribute to the related literature in terms of revealing the relationship between the educational technology competencies and 21st century learning skills of secondary school students.

Method

Research Model

In this study, correlational research model was used. In correlational research, existing relationships between two or more variables are analyzed without influencing them (Fraenkel, Wallen, & Hyun, 2012). In this study, it is considered that correlational research is appropriate for the purpose of this study as it is aimed to determine the relationships between 21st century learning skills and educational technology competencies of secondary school students.

Population and Sample

The population of this study consists of the 6th, 7th and 8th grade students of secondary schools affiliated to the Ministry of National Education in İpekyolu, Tuşba and Edremit districts of Van province in 2017-2018 academic years. According to data obtained from Van Provincial Directorate of National Education, a total of 37.904 6th, 7th and 8th grade secondary school students are attending schools affiliated to the Ministry of National Education in the three central districts of Van province, namely 19.284 in İpekyolu, 10.295 in Tuşba and 8.325 students in Edremit.

Stratified sampling method was used in this study. In stratified sampling method, the population is subdivided according to the variables that may be effective in the study and the sample is determined by using simple random sampling method from each subgroup (Büyüköztürk et al., 2016). In this study, the schools were determined according to the socio-economic development level, thus the schools were divided into three subgroups as high, moderate and low socio-economic development level by taking expert opinion. While determining socio-economic development level of the schools; the experts were asked to consider the economic conditions of the school, socio-cultural characteristics and education level. The schools in each ssubgroup were determined by

consensus among experts. Then, a certain number of secondary schools were randomly selected from each subgroup.

While determining the sample size in a study, it is very important to determine a sample that is as large as possible in terms of time and possibilities and to represent the whole population (Fraenkel, Wallen, & Hyun, 2012). While determining the size of the sample, it is accepted that 920 students as sample size are enough at .05 significance level if the number of the population is 30.000 (Çıngı, 1994; Cited in, Büyüköztürk et al., 2016). In this case, it can be said that the sample of this study is large enough to represent the population. A total of 920 students from three districts were reached in this study. Table 1 presents the distribution of the 6th, 7th and 8th grade secondary school students according to the gender, grade level, districts where they study and socio-economic development levels of their schools.

Table 1

The Distribution of Secondary School Students According to the Gender, Grade Level, Districts Where They Study and Socio-Economic Development Levels of Schools

Feature	Category	Number (N)	Percentage (%)
Gender	Female	493	54
	Male	427	46
Grade Level	6th Grade	296	32
	7th Grade	306	33
	8th Grade	318	35
Districts Where They Study	İpekyolu	365	40
	Tuşba	268	29
	Edremit	287	31
Socio-Economic Development Levels Of Schools	High	310	34
	Moderate	343	37
	Low	267	29
	Total	920	100

When Table 1 is examined, it is seen that more than half (493; 54%) of the 6th, 7th and 8th grade students in the sample are female and approximately half (427; 46%) are male. Concerning the grade levels, it is seen that 296 (32%) of the participants are 6th grade, 306 (33%) are 7th grade and 318 (35%) are 8th grade students. 365 (40%) of the students are studying in İpekyolu district, 268 (29%) are in Tuşba and 287 (31%) are in Edremit. In terms of socio-economic development level of the schools, 310 (34%) students are studying at schools with high socio-economic development level, 343 (37%) students are studying at schools with moderate socio-economic development level and 267 (29%) students are studying at schools with low socio-economic development level**.**

Data Collection Tools

In this study, "21st Century Learning Skills Scale" was used to determine the 21st century learning skills of secondary school students and "Educational Technology Standards Scale" was used to determine students' educational technology competencies as data collection tools. Information on data collection tools is presented below.

21st century learning skills scale. The five-point Likert-type scale developed by Gülen (2013) and ranging from "never" to "always" consists of 33 items. Gülen (2013) performed exploratory factor analysis (EFA) and it confirmed four sub-dimensions that are “active learning (8 items)", "learning to learn (13 items)", "problem solving (6 items)", "cooperation and communication (6 items)". Explained variance of sub-dimensions in EFA results confirms the validity of the scale. The Cronbach Alpha internal reliability coefficients of the sub-dimensions of the scale were calculated as .82 for active learning, .87 for learning to learn, .74 for problem solving and .83 for cooperation and communication. The total reliability coefficient of the scale is .87 (Gülen, 2013). In this study, Cronbach Alpha internal reliability coefficients for the sub-dimensions of the scale were calculated as .75, .85, .79 and .77, respectively. Total reliability coefficient of the scale was calculated as .93. These values indicate that the data obtained from this scale is reliable.

Educational technology standards scale. The five-point Likert-type scale developed by Mısırlı (2015) consists of 21 items. Mısırlı (2015) performed exploratory factor analysis (EFA) and it confirmed four sub-dimensions as "technology literacy", "creativity", "digital citizenship and participation" and "innovation". According to EFA results, it was determined that four sub-dimensions can explain %51.18 of the variance in total scale. Then, confirmatory factor analysis (CFA) was performed to test the accuracy of the sub-dimensions resulting from EFA, and the resulting structure was verified. Thus, EFA and CFA results confirm the validity of the scale. The Cronbach Alpha internal reliability coefficient was found to be .87 for technology literacy sub-dimension, .72 for creativity sub-dimension, .57 for digital citizenship and participation sub-dimension, and .62 for innovation sub-dimension. Total internal reliability coefficient of the scale was calculated as .88 (Mısırlı, 2015). In this study, Cronbach Alpha internal reliability coefficients were calculated as .87, .74, .70 and .65, respectively. Total internal reliability coefficient of the scale was calculated as .91. The calculated values indicate that the data obtained from this scale is reliable.

Data Analysis

In this study, Pearson Product Moment Correlation Coefficient (*r*) was used to determine the relationship between the 21st century learning skills and educational technology competencies of secondary school students. These values were interpreted as a high level of relationship between "0.70-1.00", as moderate level of relationship between "0.30-0.69 " and as low level of relationship between 0.00-0.29 (Büyüköztürk, 2017).

In this study, simple linear regression analysis was used to determine the predictive power of students' educational technology competencies of secondary school students on their 21st century learning skills. In simple linear regression analysis, two or more variables that are related to each other are determined as dependent variables and others as independent variables and the relationship between dependent variable and

independent variable (s) is analyzed by regression model (Büyüköztürk, 2017). In this study, dependent (21st century learning skills) and independent variables (educational technology competency) were analyzed according to the assumptions of simple linear regression before the analysis and the variables were found to be at normal distribution.

Results

Pearson Product Moment Correlation Coefficients concerning the relationship between educational technology competencies and 21st century learning skills of the secondary school students are presented in Table 2.

Table 2

Pearson Product Moment Correlation Coefficients Concerning Secondary School Students' Educational Technology Competencies and 21st Century Learning Skills

Scales and sub-dimensions	(1)	(2)	(3)	(4)	(5)	(6)
A. Educational Technology Standards Scale						
1. Educational technology competencies	1.00					
B. 21st Century Learning Skills Scale						
2. 21st century learning skills (total)	0.50**	1.00				
3. Active learning	0.46**	0.64**	1.00			
4. Learning to learn	0.39**	0.63**	0.61**	1.00		
5. Problem solving	0.46**	0.66**	0.64**	0.66**	1.00	
6. Cooperation and communication	0.46**	0.68**	0.55**	0.60**	0.62**	1.00

When Table 2 is examined, it is seen that there is a moderate level, positive and significant relationship between the total score of educational technology competencies of secondary school students and the total score of 21st century learning skills scale (r=0.50; p<.01). Similarly, it is seen that there is a moderate level, positive and significant relationship between the educational technology competencies of the students and sub-dimensions of the 21st century learning skills scale as active learning, learning to learn, problem solving, collaboration and communication.

Furthermore, this study aims to determine whether secondary school students' educational technology competencies significantly predict their use of 21st century learning skills. For this purpose, total score was obtained for each scale of educational technology competencies and 21st century learning skills rather than predicting sub-dimensions separately. The results of the simple linear regression analysis are presented in Table 3.

Table 3

Results of Simple Linear Regression Analysis for the Prediction of 21st Century Learning Skills of Secondary School Students

Predictive Variable	*B*	Prediction Power (*R*)	Explained variance (R^2)
Educational Technology Competencies	.501	.501	.251

According to the data in Table 3, it is seen that educational technology competencies of secondary school students explain 25.1% of the variance in 21st century learning skills. The results of the variance analysis of the simple linear regression analysis in Table 3 are presented in Table 4.

Table 4

The Results of Variance Analysis for the Prediction of 21st Century Learning Skills of Secondary School Students

Source of Variance	Sum of Squares	*sd*	Mean of Squares	*F*	*P*
Regression	108.181	1	108.181	306.592	.000
Residual	323.565	917	.353		

In the simple linear regression analysis in Table 4, the predictive power obtained was found to be significant ($F_{(1,917)} = 306.592$, $p<.05$). The results of the analysis show that students' educational technology competencies are a significant predictor of 21st century learning skills and can explain approximately one quarter of students' 21st century learning skills (25.1%).

Discussion and Conclusion

In this study, it was determined that there is a moderate level, positive and significant relationship between secondary school students' 21st century learning skills (in total scale) and educational technology competencies. Similarly, it was determined that there is a moderate level, positive and significant relationship between students' educational technology competencies and 21st century learning skills' sub-dimensions of active learning, learning to learn, problem solving, cooperation and communication skills. In other words, it was concluded that there is a positive relationship between educational technology competencies and 21st century learning skills of the students, thus it was determined that 21st century learning skills of the students' increased as their educational technology competencies increased. In parallel with the results of this study, Van Laar, Van Deursen, Van Dijk, and De Haan (2017) concluded that digital skills are needed to help the individuals be responsible for their own learning and participate in active learning. Similarly, Rashid and Asghar (2016) concluded that the use of technology has a positive relationship with students' self-directed learning. In the study conducted by Ahonen and Kinnunen (2015), it was concluded that the students mostly believed that they would need technology related technical skills in the year 2020. That

is to say, students are expected to take advantage of technological competences in order to support 21st century skills.

Active learning involves the use of various technological tools such as the internet in order to realize and organize their own learning (Aydede & Kesercioğlu, 2012). Nascimento, Moreira, and Welker (2019) concluded that the use of active learning strategies and technology enhanced students' learning. In this case, it can be said that educational technology competencies are an important variable in the students' ability to gain active learning skills. Similarly, learning to learn is defined as a process in which the learner reviews the necessary resources by identifying his/her own needs and with his/her own efforts (Kemp, Goodman, & Tenenbaum, 2010). An individual who has "learning to learn" ability is aware of the ways of accessing information and constructs the information itself. One of the most widely used ways of reaching information in today's age is undoubtedly technology. As Longworth (2019) emphasized, technology is one of the key competencies for lifelong learning. Therefore, it is possible to say that students with educational technology competencies have more opportunities to organize their own learning and access to information, and as a result, they have higher level of learning to learn skills. Problem solving ability involves achieving a goal and using various methods to overcome the difficulties (Chiang & Lee, 2016; Yalçın, Tetik, & Açıkgöz, 2010). In this case, it is possible to say that problem solving skills of the students, who have educational technology competencies, are more advanced. In their study; Huang, Chiu, and Hong (2016) concluded that students' problem solving attitude is positively interrelated to thinking-skill enhancement as a result of participating in a technology-based contest. It is considered that the students who use technology as a source of research and learning are ahead of the other students in solving the problems they face. In addition, students use technology as a tool to communicate with other people or to provide collaboration. Communication is defined as the transfer of emotions, thoughts or information to others by means of various ways (Turkish Language Association [TLA], 2018). The cooperation that can be made thanks to communication in adapting to the globalization in 21st century is very important. Therefore, it can be said that educational technology competencies are a facilitating factor in the communication and cooperation skills of secondary school students.

Based on the results of this study, it is possible to say that individuals' having educational technology competencies is an important factor for the students to acquire 21st century skills and be able to use these skills effectively. In fact, Boyraz (2008) states that using technology in learning environments will help individuals to formulate their knowledge, develop research and inquiry skills, increase capacity to benefit from technology. Similarly, Alismail and McGuire (2015) suggest students' taking advantage of technology for developing necessary learning skills in 21st century. Therefore, it contributes to their vital and professional skills. Siddiq, Scherer, and Tondeur (2016) emphasized that students should be prepared with technological knowledge and skills due to the rapid developments of knowledge and technology in 21st century. In this respect, FATİH Project (The Act of Increasing Opportunities and Improvement of Technology) was developed in Turkey for the students to meet technology in the classroom and acquire skills that they can adapt to the era of learning in the presence of technology. It aims to contribute to the students' 21st century learning skills by

developing their information, media and technology literacy (MONE, 2018). In this case, as students' educational technology competencies increase, it is expected that their 21st century learning skills will increase. Because, thanks to the educational technology competencies, it is possible to say that students interact more with the learning material, become more active in the process, they can access the information more easily and their problem solving, cooperation and communication skills develop more.

In addition, it was found that secondary school students' educational technology competency is a significant predictor of their 21st century learning skills and can explain approximately one quarter (25.1%) of 21st century learning skills. In other words, it is concluded that students' educational technology competences can explain their 21st century skills significantly. When 21st century learning skills and educational technologies are considered in terms of content, it is understood that these two elements are directly related. Many studies in the literature (Bozkurt & Çakır, 2016; Eryılmaz & Uluyol, 2015; Gelen, 2017; Miller, 2009) emphasized that technological elements are very important for individuals to gain 21st century learning skills and at the same time using technology is one of the 21st century learning skills. It is also a necessity for individuals to utilize technological elements in order to use 21st century learning skills (Eryılmaz & Uluyol, 2015). Effective inclusion of technology in education is seen as fundamental for 21st century learning (Henriksen, Mishra, & Fisser, 2016), because integrating educational technologies into education have basic goals such as developing students who possess basic knowledge and skills to become lifelong learners in 21st century (Natividad, Mayes, Choi, & Spector, 2015). In other words; 21st century learning skills such as research, inquiry, learning to learn require technology to be utilized. Therefore, it is possible to say that individuals need to benefit from educational technology in order to use and develop 21st century learning skills, or that educational technology competencies of individuals make it easier to develop 21st century learning skills.

In this study, it was concluded that there is a positive relationship between 21st century learning skills and educational technology competencies of secondary school students. In this case, it is advisable to ensure that the use of technological elements, which are one of the most necessary elements for achieving 21st century learning skills, is not only limited to schools in the central regions, but also provide necessary opportunities for students in rural areas to benefit from the same technological opportunities. In addition, it is thought that teachers' ability to master 21st century skills and technological elements is very important in guiding students in the teaching-learning environment. Therefore, in pre-service and in-service teacher training programs, teachers should be educated to contribute to the development of students' 21st century skills and use the necessary technological elements effectively in their lessons. Village schools can be examined in terms of technological possibilities, and deficiencies can be reported. Thanks to the studies to be done, it is possible to improve the technological opportunities by drawing attention to the impossibilities in these schools. In future studies, the relationship between students' 21st century learning skills, educational technology competencies and academic achievement can be examined.

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Perceptions of School Administrators on Their Contributions to Teacher Professional Development

Okul Yöneticilerinin Öğretmen Mesleki Gelişimine Katkılarına İlişkin Algıları

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ABSTRACT: The aim of the study is to determine the contribution of school administrators working in Şanlıurfa to the professional development of teachers. The research was conducted according to the survey model. Data from 493 school administrators working in a primary school, secondary school and high schools during the 2017-2018 education period were collected with a form prepared on the internet. Descriptive statistics, t-test and variance analysis were used to analyze data. As a result of the research, it was determined that school administrators frequently contribute to the professional development of teachers. In Şanlıurfa, 63.50% of school administrators support teachers' professional development at frequent and always levels. It was determined that the most frequent activity of the school administrators was to review the relevant sources and to inform the teachers about educational innovations. The least frequent activity was to develop an example course to develop teachers. No difference was determined in perceptions of school administrators according to gender, duty, seniority, type of school, education and branch.

Keywords: school administrator, professional development, in-service training.

ÖZ: Araştırma amacı, Şanlıurfa'da görev yapan okul yöneticilerinin öğretmenlerin mesleki gelişimlerine katkı düzeyini belirlemektir. Araştırma, tarama modeline göre yürütülmüştür. Veriler, ilkokul, ortaokul ve liselerde 2017-2018 eğitim-öğretim döneminde görev yapan 493 okul yöneticisinden internet üzerinde hazırlanan bir form ile toplanmıştır. Verilerin analizinde betimleyici analizler, t-testi ve varyans analizi kullanılmıştır. Araştırmanın sonucunda okul yöneticilerinin, öğretmenlerin mesleki gelişimlerine sık sık katkıda bulundukları belirlenmiştir. Şanlıurfa ilinde okul yöneticilerinin %63.50'si yeterli olabilecek sık sık ve daima düzeylerinde öğretmenlerin mesleki gelişimlerini desteklemektedirler. Okul yöneticilerinin en sık yaptığı etkinliğin, ilgili kaynakları takip ederek öğretmenleri eğitim-öğretimle ilgili yeniliklerden haberdar etmek olduğu belirlenmiştir. En az yapılan etkinlik ise, öğretmenleri geliştirmek için örnek ders işlemektir. Okul yöneticilerinin algılarında cinsiyet, görev, kıdem, okul türü, öğrenim ve branş değişkenlerine göre farklılık bulunmadığı belirlenmiştir.

Anahtar kelimeler: okul müdürü, mesleki gelişim, hizmet içi eğitim.

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Introduction

School administrators are responsible for the continuity of all systems in the school in a smooth and proper manner. School principals have an effective leadership structure, support teachers' professional development and help them create space to apply what they have learned, meaning that students and teachers have the opportunity to experience new experiences with the exchange of information and ideas.

In order to understand how professional development is shaped, it is necessary to examine what lifelong learning is and how it develops. In fact, the understanding of lifelong learning throughout the world is parallel. While the models for professional development activities and the incentives for teachers to promote this issue vary across countries, each system is essentially based on the concept of lifelong learning. At this point, the concept of lifelong learning should be examined. This concept actually means that the individual develops himself/herself in every sense outside the school (Craft, 2000). Individuals who continue their lifelong learning process that is useful only to themselves in their professional life are the individuals who carry out their professional development. But those who naturally make professional development are those who have succeeded in placing lifelong learning in all areas of their lives (Kızılkaya, 2012).

The concept of lifelong learning has gained importance especially in 1970 and beyond. This is due to the increase in the competition between information and technology among countries (Knowles, Holton, & Swanson, 2005). The concept of lifelong learning, which focused on social and cultural elements in Europe, was started to be dealt with in a multifaceted way. Today, although lifelong learning is a personal desire in the past, it is generally maintained with economic concerns. In countries, individuals are in a constant race about what they can learn to be more successful than others. People have realized that the rapid development of industry in 1970 and beyond and the danger of exhaustion of resources become clearer and that the knowledge acquired in schools will not be enough to lead them to success. States have also realized that the intellectual resources of people will create new sciences and have begun to create programs that promote lifelong learning and hence professional development. Moreover, taking part in these programs and keeping the information updated in the professional field has been turned into a legal obligation in many countries (Elçiçek, 2016).

The existence of various features is important for providing professional development in teaching. For example, focusing on how students can learn better and researching teaching models for this will increase the success of both teachers and students. However, among the priorities of the teachers, the content of the courses and the transfer of this content to the students should be the most efficient. Teachers should focus on teaching within the classroom and learning by themselves in the details of the profession. Teachers' and managers' interest in deep, active learning activities and leadership skills are among the factors that influence professional development (İlğan, 2013; Schleicher, 2012).

The focus of all models on the professional development of teachers is to make the education more qualified. Kızılkaya (2012) argues that these models aiming at development in the teaching profession should be focused on exhibiting skills and discovering ideas for success. Through these models, teachers get acquainted with technology, recognize new methods of training, learn about analyzing the psychology of

students, parents and other employees in the school, follow developments in curricula and the world, and get strategic information about how they can benefit from technology in the classroom. It is possible to summarize the approaches regarding the professional development of teachers briefly as follows:

Observation / Assessment Model: Teachers are unable to obtain information on what students think about their performance in the class. If experts visit and monitor teachers in classrooms, it is possible to prepare a report on the state of the interaction between the teacher and the student and to develop the teacher's deficiencies (Sparks & Horsley, 1989).

Open Classroom Model: Plans are organized with the participation of parents, education managers or teachers working in other schools. In this way, it is possible to benefit from the accumulation of knowledge of all parties. In a sense, the classroom becomes an open space for everyone. Teachers can differentiate their teaching methods (Ekinci, 2015).

Course Activity Model: In this model, the main activity is to help teachers cooperate with each other. Teachers who study each other in various fields of education aim at developing ideas and exchanges with criticism (Hooker, 2017).

Study Groups Model: In the study groups model, the teacher community cooperates with a specific problem to solve it or to make a plan for a common goal. In this process, they solve problems with their own experiences (Ekinci, 2015).

Interrogative / Action Research Model: Action research means that a teacher trying to understand or solve a problem. Teachers collect data and review their own attitudes, thus giving a proper explanation to their colleagues (Ekinci, 2015).

Case Study Model: In this model, participants write information about their practices and attitudes and then share them with other participants so that other participants can get an idea of themselves. This model is made with the help of video recording systems and is in harmony with the developing technology (Ekinci, 2015; Kızılkaya, 2012).

In order to be successful, Gürbüz, Erdem, and Yıldırım (2013) argue that every individual who constitutes the institution they are in must be successful. The fact that an education manager is a driving force in developing teachers, teachers taking steps to explore their talents and creating opportunities for using these skills means a more dynamic education and training of students who are more successful in social, psychological and other fields. According to the study the importance given to professional development is included in the basis of other variables.

Özdemir (2016) believes that the real success of a school and its administrators can be provided by keeping the information current. It is among the most important factors that give importance to their professional development and motivate the teachers in the school, create opportunities for them and open to innovations and the systems they establish in schools. The author is of the opinion that a teacher should continue to develop on the field, pedagogy, psychology and social issues that he/she is interested in, even after the profession, before and after the profession, regardless of the level of duty and level.

Korkmaz (2015) interviewed 94 classroom teachers in the study which investigated the effects of school administrators and supervisors on the continuity of

teachers' professional development. Accordingly, it was observed that the teachers who were informed by their managers and auditors about the activities related to professional development were more willing and conscious about professional development than those who were not informed. In addition, there are findings that school administrators have more positive opinions on the issues of job satisfaction and organizational commitment than the others. In the study, it was observed that school administrators generally expect teachers to complete their professional responsibilities. Many managers do not take concrete steps towards the development of the teachers in their professional development. Teachers' activities and activities in their classrooms in the event that they feel negative themselves in the study is also among the information obtained in the study that the effort is not noticed in time will prevent people from making an effort and make it difficult to develop professionally.

Turkey is a country that has been to modernize and wanted to provide modern education system and try to make arrangements for professional development of teachers by law. Especially after the proclamation of the Republic, old and hard learning alphabets were left, modern education methods were adopted, and student-teacher interaction was given importance. The Directorate General for Training and Development of the Ministry of Education as a Center within the Ministry of Education now operates in the aim of keeping the teaching profession up-to-date and involving teachers in an effective professional development process. This institution has the aims of teachers to understand their predispositions in their professional development process and to contribute to their development in accordance with their abilities, to develop teachers' careers and to prepare them for top positions, to prepare publications related to in-service training, to train teachers in national or international programs. By taking advantage of the data provided by this institution, young teacher candidates are educated in the universities. Thus, a standard teacher preparation system is established throughout the country and it is made possible for each teacher to catch up with the chance of development (Elçiçek & Yaşar, 2016).

This study was conducted to determine the contribution of school administrators working in Şanlıurfa to the professional development of teachers. The research asked the following questions:

1. How often do school administrators contribute to the professional development of teachers?
2. What activities do school administrators do to contribute to the professional development of teachers?
3. Is there any difference in the perceptions of school administrators according to gender, duty, seniority, type of school, education and branch?

Methodology

This research employs the survey model. This model is based on collecting data from a large number of participants and generalizing the results achieved. The study population consists of 1763 elementary, middle and high school administrators working in Şanlıurfa at the 2017-2018 academic years. All the administrators in the population have been reached without sampling. The Ministry of National Education sent an official invitation letter to school administrators. Finally, 493 administrators volunteered to participate. Descriptive statistics belonging to the participants are given in Table 1.

Table 1

Descriptive Statistics of the Participants

Variable	Category	Frequency (*f*)	Percentage (%)
Gender	Male	428	86.80
	Female	65	13.20
Duty	Principal	270	54.80
	Assistant principal	223	45.20
Seniority	0-3	83	16.80
	4-6	106	21.50
	7-10	81	16.40
	11 and above	223	45.20
School Type	Primary school	194	39.40
	Middle school	184	37.30
	High school	115	23.30
Education	Bachelor's	428	86.80
	Graduate	65	13.20
Branch	Classroom	158	32.00
	Branch	335	68.00

428 (86.80%) of the school administrators participated in the study were male and 65 (13.20%) were female. Of the managers, 270 are principals and 223 are assistant principals. In terms of seniority, 83 managers are between 0 and 3 years, 106 managers are between 4 and 6 years, 81 managers are between 7 and 10 years and 223 managers have more than 11 years. 194 of the executives are in primary school, 184 are in middle school and 115 are in high school. There are 428 managers who hold a bachelor's degree and 65 managers hold a graduate degree. There are 158 principals who graduated from classroom teachers and 335 managers who are graduates of branch teachers.

Data from participants were collected with a form prepared on the internet. In this form, demographic questions related to gender, duty, seniority, type of school, education, and branch, and teacher professional development scale developed by and with the permission of Bozkuş (2016) were included. On the one-dimensional scale, there are ten items which are rated between 1: never and 5: always in Likert type according to their frequency. As a result of the validity and reliability analysis of the scale, the total explained variance was 67.3% and the Cronbach alpha coefficient was calculated as 0.80 (Bozkuş, 2016). The Cronbach alpha coefficient was calculated again with the data obtained in this study as 0.90. Unidimensionality was confirmed again by confirmatory factor analysis based on maximum likelihood estimation according to values stated by Hu and Bentler (1999) (X^2/df = 5.28, p<0.001 GFI = 0.93, CFI = 0.94 NFI = 0.92, IFI = 0.94 RMSEA = 0.09, SRMR = 0.04). Therefore, no modification was done. Factor loads of items ranged from 0.52 to 0.80.

Results

The averages of school administrators' responses concerning the scale are presented in Table 2.

Table 2

Mean and Standard Deviation Values of Items

Items	$\bar{X}$	*Sd*
I keep track of relevant resources and inform teachers about innovations in education	4.23	0.84
I discuss the strengths and weaknesses of the teachers with each other.	3.95	0.98
I create environments where we can share what we learn.	3.93	0.96
I encourage teachers to participate in events such as congresses, courses, competitions organized nationwide.	3.87	1.11
I organize training activities at the school for the professional development of teachers.	3.41	1.12
I get help from the experts in the area for professional development of teachers.	3.38	1.17
I give teachers individual reading and research tasks.	3.35	1.07
I identify individual and group development programs.	3.33	1.11
I organize a professional development monitoring form for each teacher.	3.05	1.24
I do a sample lesson to develop teachers.	3.05	1.21
General	3.55	0.78

According to the average of all items ($\bar{X}$=3.55, *Sd*=0.78), principals' level of support the professional development of teachers correspond to frequently level at Likert ranges (never: 1.00-1.79, rarely: 1.80-2.59, sometimes: 2.60-3.39, often: 3.40-4.19, always: 4.20-5.00). Therefore, school managers think they often contribute to teachers' professional development. In addition, it was determined that the most frequent activity of the school administrators was to inform the teachers about the innovations in education by following the related sources ($\bar{X}$=4.23, *Sd*=0.84). The least frequent activity was teaching a sample class to develop teachers ($\bar{X}$=3.05, *Sd*=1.21).

The overall averages of responses to the unidimensional scale were ordered according to their frequencies. These frequencies and the corresponding Likert ranges are presented in Table 3.

Table 3

The Frequency of School Administrators' Contribution to the Professional Development of Teachers

The frequency of Contribution to the Professional Development	*f*	%	Cumulative %
Never	7	1.40	1.40
Rarely	44	8.90	10.30
Sometimes	129	26.20	36.50
Often	201	40.80	77.30
Always	112	22.70	100.00
General	493	100.00	

According to findings, 7 (1.40%) of the school administrators gave no support to teachers' professional development, 44 (8.90%) administrators rarely, 129 (26.20%) administrators sometimes, 201 (40.80%) administrators frequently, and 112 (22.70%) administrators always supported the teachers' professional development. Therefore, in the province of Şanlıurfa, 63.50% of the school administrators support the professional development of teachers at frequencies that can be considered sufficient (often and always).

Table 4

Differences according to Demographic Variables

Variable	Category	*n*	$\bar{X}$	*Sd*	*T/F*	*p*
Gender	Male	428	3.57	0.79	0.86	0.39
	Female	65	3.48	0.72		
Duty	Principal	270	3.60	0.73	1.55	0.12
	Assistant principal	223	3.49	0.84		
Seniority	0-3	83	3.53	0.74	1.91	0.13
	4-6	106	3.59	0.66		
	7-10	81	3.72	0.80		
	11 and above	223	3.48	0.83		
School Type	Primary school	194	3.57	0.78	1.00	0.36
	Middle school	184	3.59	0.76		
	High school	115	3.46	0.82		
Education	Bachelor's	428	3.56	0.79	0.50	0.62
	Graduate	65	3.51	0.72		
Branch	Classroom	158	3.61	0.78	1.15	0.25
	Branch	335	3.53	0.78		

It was determined whether school administrators' contribution to teacher professional development differs according to gender, seniority, type of school, and education and branch. Independent-groups *t*-test and one-way analysis of variance (ANOVA) findings are presented in Table 4. According to the findings, perceptions do not differ significantly in terms of gender (T=0.86, $p<0.05$), duty (T=1.55, $p<0.05$), seniority (F=1.91, $p<0.05$), type of school (F=1.00, $p<0.05$), education (T=0.50, $p<0.05$) and branch (T=1.15, $p<0.05$).

Discussion

In order to determine the contribution of the school administrators working in Şanlıurfa to the professional development of teachers, the results obtained in this study are as follows:

1. It has been determined that school administrators frequently contribute to the professional development of teachers. In Şanlıurfa, 63.50% of school administrators support teachers' professional development at often and always levels which may be sufficient.
2. The most frequent activity done by the school administrators is to inform the teachers about the innovations in education by following the related sources.
3. The least activity is to teach a sample class to develop teachers.
4. There is no difference in perceptions of school administrators according to gender, duty, seniority, type of school, education and branch.

The data obtained from the research is based on the perceptions of the school administrators. For this reason, there may be differences between administrators' and teachers' perceptions. In a survey that applied the same measurement instrument to teachers in Şanlıurfa province, 25.5% of school administrators support teachers' professional development at often and always levels which may be sufficient (Bozkuş & Karacabey, 2018). Therefore, it can be thought that school administrators evaluate themselves more positively. Further research should be done to compare perceptions of school administrators and teachers. Researchers should consider that school administrators may judge themselves more positively than teachers. Therefore, future research should control self-rater bias.

Because, in previous studies (Çalık & Şehitoğlu, 2006; Ekinci, 2010), it was determined that school administrators did not contribute enough to teacher professional development. The teachers' participation rate of professional development in Turkey is 24%, so the possibility that the administrators contribute to the teacher professional development at a rate of 63.50% is low (Ministry of National Education, 2016). Therefore, it can be claimed that school administrators do not contribute sufficiently to the professional development of teachers, and it may be advisable to educate and encourage administrators to increase their contribution.

In previous studies (Bozkus 2016; Bozkus & Karacabey, 2018) it is confirmed that the most frequent activity done by the school administrators is to inform the teachers about the innovations in education by following the related sources. Indeed, school administrators should follow the innovations and inform the teachers about them (Gündüz & Balyer, 2013). However, school administrators have limited access to academic databases. Therefore, it can be thought that managers follow general media.

Since teachers have the same opportunities, it is important that the administrators have more academic resources. For this reason, school administrators should be provided access to academic resources and they should be encouraged to use these resources.

The result that the least activity is to teach a sample class to develop teachers has been identified in previous research too (Bozkuş 2016; Bozkuş & Karacabey, 2018). In the success of students, it is seen that the teacher's effective lesson can be considered as a priority (Creemers, Kyriakides, & Antoniou, 2013; Muijs & Reynolds, 2000). But it can be asserted that the teachers in Turkey are not effective in this regard (OECD, 2014; World Bank, 2011). Therefore, it is important that school administrators should improve teacher efficacy. Administrators can provide effective education and training methods for teachers (Payne & Wolfson, 2000). Through sample courses, it is possible to prevent the teachers to be hurt by direct education. In the east part of Turkey, the sample lesson method has been shown to be effective in teacher professional development (Erbilgin & Boz, 2013; Mete, 2013). Administrators should be encouraged to give sample lessons.

The reason why the school administrators' self-perceptions about their contribution to teacher professional development did not differ according to the demographic variables might be a result of similar working conditions in schools.

Conclusion

The teaching profession has a great role in the development of the country. The most important factor in student achievement is the teacher factor (Buchanan, 2012). Support for teachers is important for student learning. Even though teachers have received a very high-quality education prior to service, the teacher needs a support mechanism to master his / her profession and achieve competence. The training that the teacher received prior to service has become insufficient within a few years due to the incredible increase in knowledge in today's world. At this point, professional development is an inevitable necessity for teachers.

Professional development is an educational process that aims to provide the individual with the knowledge, skills, and habits related to a specific profession and to improve his / her abilities in many ways (Smith & Gillespie, 2007). The common point in the professional development process is that the individual knows about himself/herself, knows its strengths and weaknesses, and thus seek proper professional development. The process for the teaching starts with the candidate teacher stepping into the profession. In the first years, the candidate teacher is trying to deal with the problems brought by the profession and on the other hand, he must maintain his professional development in accordance with the requirements and needs of the era.

The professional development phenomenon, which is important for all professions, comes to the agenda when it comes to teaching. Teachers' information is changing day by day. The development of new teaching methods further increases the importance of the professional development of teachers. In order to achieve high success in student outcomes, it is necessary to professionally develop a teacher who provides education and training to the student (Duffield, Wageman, & Hodge, 2013).

Professional development is a dynamic process that takes place throughout the life of teachers. Due to this dynamic feature, professional development is a constantly evolving and changing phenomenon. The change and development of teachers'

professions are experienced at a dizzying pace. With professional development, teachers will constantly seek excellence as they will be aware of their deficiencies and will enable their students to achieve excellence. Therefore, teachers' professional development efforts should be supported by school principals (Leithwood, 1992). Teachers whose professional development is supported by the school principals can participate in activities for their professional development more easily.

The approach of the school administration has an important role in ensuring the participation of teachers in the professional development programs. The school administrator is the person who determines the development goals of the school depending on the vision and mission of the school. School administrators form the culture and team spirit as an orchestra conductor within the school. Accordingly, school administrators are responsible for helping teachers to plan their careers by engaging teachers in various professional development programs for school development. It is possible to determine the professional development needs of teachers and to realize the professional development activities within the school by establishing university-school cooperation towards these needs through the initiative of school administration.

Teachers must constantly renew and develop their professional knowledge. If the school principal wants to increase the success of his / her students, he/she should contribute to the professional development of the teachers (Zepeda, 2013). Successful students are the work of the teachers who make their professional development permanent. While teachers are engaged in professional development activities, they may be supported by school principals inside the classroom or outside the classroom. The contribution of school principals to teachers for their professional development can be very different. When a teacher conducts professional development activities in the classroom, school, and private life, it is possible that he/she may face difficulties in some cases. School principals may need to provide a variety of help for teachers to overcome their difficulties in their professional development activities. Every work done by the school principals for the professional development of teachers is a positive contribution.

Professional development should be appropriate to the needs of institutions and teachers. The person who knows the best needs of the institution is the school principal. The school principal needs to know the needs of the teacher, together with the school needs. The school principal should provide teachers with professional development activities in line with the needs of the teacher and the school. These professional development activities must meet the needs of the school as well as the needs of teachers. These professional development activities to be realized by the teachers can be successful with the direct support of the school principal. The school principal can plan various professional development activities for each teacher. Principals should employ instructional leadership to provide teacher professional leadership (Blase & Blase, 1999). Principals should act as an instructional leader and learner, create a learning environment, involve in the design, delivery and content of professional development, and assess the professional development outcomes (Bredeson & Johansson, 2000). In professional development “principals must be cognizant of shared norms and values among their faculties before initiating new practices in curriculum, instruction, or school organization” (Youngs & King, 2002, p. 643).

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Determination of Middle School Students' Mental Models about Science through Mind Maps

Zihin Haritaları İle Ortaokul Öğrencilerinin Bilime İlişkin Zihinsel Modellerinin Belirlenmesi

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ABSTRACT: Mind maps that contain visual and verbal elements can be thought of as an effective graphical tool that can be used to reveal the existing knowledge, opinions and perceptions of individuals about a concept through mental association. In this study, the aim was to determine the mental models of middle school students related to science by using mind maps in terms of their gender and grade levels. 104 middle school students who were studying at different grade levels participated in the study. The study takes the form of a case study supported by qualitative data. First of all, students were given training on how to make mind maps, and sample implementations were carried out. Later, students were asked to prepare a mind map about the concept of science. Students' mind maps were first scored by experts by taking into consideration the evaluation criteria with regard to mind maps. In the data analysis process, each mind map was examined by using a descriptive analysis technique, while the frequency and percent values of the most common expressions were calculated. The results of the analyses revealed that the students' mind maps scores did not differ significantly in terms of their gender. It was concluded that the fifth grade students' mind map scores were significantly lower than those of other grade students. Thematic analyses showed that students mostly associate science with technology, and offer more examples of natural sciences in mind maps.

Keywords: mind map, mental model, science.

ÖZ: Görsel ve sözel öğeler içeren zihin haritaları, zihinsel çağrışım yoluyla bireylerin bir kavrama ilişkin var olan bilgilerini, görüşlerini ve algılarını ortaya çıkarmada kullanılabilecek etkili bir grafiksel araç olarak tanımlanabilir. Bu çalışmada ortaokul öğrencilerinin bilim kavramına ilişkin zihinsel modellerini zihin haritaları yoluyla belirlemek ve cinsiyetlerine, sınıf düzeylerine göre karşılaştırmak amaçlanmıştır. Araştırmaya farklı sınıf düzeylerinde öğrenim görmekte olan 104 ortaokul öğrencisi katılmıştır. Araştırma nitel veriler ile desteklenmiş bir durum çalışmasıdır. Çalışma verilerinin elde edilmesinde öncelikle, öğrencilere zihin haritalarının nasıl yapılacağına ilişkin eğitim verilmiş ve örnek uygulamalar gerçekleştirilmiştir. Daha sonra ise öğrencilerden bilim kavramının zihinlerinde yapmış olduğu çağrışımlara ilişkin zihin haritası hazırlamaları istenmiştir. Öğrencilerin yapmış oldukları zihin haritaları öncelikle uzmanlar tarafından zihin haritaları değerlendirme kriterleri dikkate alınarak puanlanmıştır. Daha sonra her bir zihin haritası betimsel analiz tekniği kullanılarak incelenmiş, en sık karşılaşılan ifadelerin frekans ve yüzde değerleri hesaplanmıştır. Yapılan analizler sonucunda öğrencilerin zihin haritaları puanlarının cinsiyetlerine göre anlamlı düzeyde farklılaşmadığı belirlenmiş, sınıf düzeyine bağlı olarak yapılan karşılaştırmada ise beşinci sınıf öğrencilerinin zihin haritaları puanlarının anlamlı düzeyde diğer sınıf seviyelerindeki öğrencilerden düşük olduğu sonucuna ulaşılmıştır. Tematik analizler ise öğrencilerin bilim kavramını en fazla teknoloji ile ilişkilendirdiklerini ve zihin haritalarında daha çok fen bilimlerine ilişkin örnekler sunduklarını göstermiştir.

Anahtar kelimeler: zihin haritası, zihinsel model, bilim.

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Introduction

Nowadays, since science and technology play an important role in the development of countries, the determination and development of individuals' awareness, perceptions, attitudes and views about science, technology and scientific developments are frequently subject to research (Ardies, De Maeyer, Gijbels, & van Keulen, 2015; Demir & Akarsu, 2013; Shi & Wang, 2017; Turgut, Öztürk, & Eş, 2017; Ünlü & Dökme, 2018; van Griethuijsen et al., 2015; Yenice, Özden, & Hiğde, 2017). In particular, the importance of ensuring that students learn scientific process skills and are knowledgeable about scientific concepts through the provision of courses in schools, directing them to follow scientific developments, and engendering positive attitude towards science, is highlighted. Yoon, Suh, and Park (2014), with a similar view, stress that perceptions and knowledge gained in courses greatly affect students' attitudes towards science. In this process, teachers are important in that students imitate their behavior, idealize them, and take on board their views and feelings as role models (Alam & Farid, 2011). In addition, students' experiences of science in courses affect their views about the nature of science (Tan, Jocz, & Zhai, 2017). As we know, learning is a complex process and attempts have been made to explain it by different scientists over the centuries, and this has led to discussions about how an individual can best learn (Taber, 2006). Different methods and techniques are used to teach students the nature of science. In some cases, concepts related to science are presented to the students by integrating them into the course content; in some cases, teachers adopt a direct approach to teaching the nature of science. It is very difficult to teach and learn the nature of science, because science is multidimensional and is being constantly renewed, a problem to be faced no matter which approach is used.

Science that is collective and universal can be described as an important way to obtain information in the simplest and most reliable form (Inel-Ekici, 2015). In other words, science is the most effective way to observe what is happening in the world and to obtain information about the world (Altun & Yıldız-Demirtaş, 2013). In general, the nature of science is used by researchers to explain the science epistemology (Abd-El-Khalick, Bell, & Lederman, 1998). Since natural science learning means also the process of learning the language of science (Almendingen & Tveita, 2009), studies on the nature of science concentrate on natural sciences education. However, scientific researchers emphasize that the nature of science should not be explored in only a single area, and that science is for everyone (Altındağ, Tunç-Şahin, & Saka, 2012). It is especially important to create conceptual diagrams about the nature of science in children's minds, especially from an early age, without the need for specific course content, because this helps them to understand the characteristics of science. In interviews with children, researchers have concluded that it is difficult to create changes in the understanding of scientific concepts on the part of young children (Novak & Canas, 2006). However, if an individual's scientific knowledge and the image of a scientist are created in the early years, the researcher spirit will develop, and the belief that knowledge is constantly changing will be strengthened (Kaya, Afacan, Polat, & Urtekin, 2013).

It is thought that it is necessary to determine the knowledge, perceptions and opinions of students about the characteristics of science in order to enrich the conceptual understanding of the nature of science on the part of primary and secondary

school students. As we know, one of the most important factors affecting the learning of the individual is the previous knowledge of that individual. In the learning process, learners are expected to bond new and previous information, and to make sense of what they have learned with the help of these links (Kalaycı, 2001). In this context, in terms of structuring new information on the part of learners, it is necessary to identify any deficiencies and misunderstandings in the student's previous knowledge, and to ensure that the learner is aware of these deficiencies (Balım, Evrekli, & İnel, 2011). Therefore, it is important to determine the opinions and perceptions of students related to the nature of science in early childhood. Various studies about the solving of this problem are included in the literature. Kaya, Afacan, Polat, and Urtekin (2013) investigated the views of primary school students on scientists and scientific knowledge. Camcı-Erdoğan (2013) determined the perceptions of gifted students towards scientists by using a drawing method. Tan, Jocz, and Zhai (2017) investigated how the popular media influenced the young students' perception of scientists and science, and used a 'draw a scientist test' in their study.

In this research, an attempt has been made to determine middle school students' mental models about the nature of science through the use of mind maps. Drawings are often used in research because they give students the opportunity to present their ideas freely. The most important advantage of mind maps, which can be considered as a drawing technique, is that they provide the individual with the opportunity to think freely. When used as a teaching material, mind maps guide students to discuss, generate questions, develop thoughts and make research (Muhlisin, Susilo, Amin, & Rohman, 2016). Mind maps also allow students to express their existing knowledge by providing them to remember it through mental association (Muhlisin, 2019). The main concept is placed in the center of a mind map created on a horizontal plane and ideas related to this concept are spread around the page, with branches in different colors and of different thicknesses (Merchie & Keer, 2016). Apart from words in mind maps, symbols, codes or visuals associated with these words in the individual's mind must also be included (Buzan, 1988). Mind map applications can be made by students individually or in collaborative groups as part of the learning process, with simple materials consisting of colored pencils and paper (Smith, DuBois, & Corwin, 2016). There is no limit to the ideas and connections to be made in the mind map, and there is no need to follow a certain structure or form (Davies, 2011). In their study, Wheeldon & Faubert (2009) stated that visual tools such as concept maps and mind maps offer a good way to gather more unexpected results by forcing participants out of the writing mode.

In this research, middle school students transferred information on the concept of science in their minds to their mind maps without any intervention on the part of the teacher. Therefore, in this research, the mind maps of the students were scored by taking into consideration the evaluation criteria. As a result, the verbal and visual statements they provided determined their perception of science quantitatively. The mind maps were then analyzed in terms of the specified themes, and qualitative data were obtained. With both quantitative and qualitative data obtained, the mental models of middle school students related to science were determined, and were evaluated in terms of their gender and class levels. It is thought that the mental models of secondary school students about nature of science determined by the qualitative and quantitative data obtained from the research will contribute to the discovery of the students' knowledge,

perceptions and views about the nature of science. Thus, research can be carried out to enrich the students' incomplete knowledge and ideas about the nature of science. In addition, teachers can support learning environments by developing activities aimed at eliminating deficiencies and misconceptions in the students' existing knowledge about the nature of science. The research questions determined according to the purpose of the research are listed below.

1. How do middle school students' mind map scores related to science differ in terms of their gender and grade levels?

2. How are middle school students' mental models about science?

3. How do middle school students' mental models differ in terms of their gender?

Method of Research

The research approach used in this study is a case study using descriptive research methods. In descriptive research, the researcher tries to determine the situation without any intervention. In this process, the researcher can benefit from both qualitative and quantitative data. In this study, the aim was to determine middle school students' mental models with regard to science by including their knowledge, opinions, and experiences, and to conclude by analyzing them.

Participants

104 middle school students who were enrolled in a secondary school participated in the study. In deciding on the participants to be involved in the study, convenience sampling and maximum variation sampling that are the purposeful sampling methods were used. The secondary school where the participants were educated was determined by using the convenience sampling method. In the selection of the participants from the school, maximum variation sampling was used to allow the students from each class level to participate in the study. 16.3% (*n*=17) fifth grade, 14.4% (*n*=15) sixth grade, 25% (*n*=26) seventh grade, 44.2% (*n*=46) eighth grade students were included in the sample. 49% (*n*=51) of students were girls and 51% (*n*=53) of the students were boys.

Table 1

Descriptive Statistics of Participant Students

	Girls		Boys		Total	
	n	%	*n*	%	*n*	%
Fifth grade	12	23.5	5	9.4	17	16.3
Sixth grade	6	11.8	9	17.0	15	14.4
Seventh grade	10	19.6	16	30.2	26	25.0
Eighth grade	23	45.1	23	43.4	46	44.2
Total	51	49.0	53	51.0		

Data Collection Tool

The data of the study were obtained with the use of mind maps, highlighted in the literature as a tool for qualitative data collection (Tattersall, Watts, & Vernon,

2007). First of all, students were informed about the implementation of mind mapping technique in the data collection process. Examples of mind maps were given to students about different science topics and then mind maps were made with the students. In this way, students used the information they learned in relation to the rules of mind maps. Then, in accordance with the purpose of the research, students were asked to create mind maps related to science. Students draw their own mind maps incorporating the words, images, shapes, and pictures that the concept of science evoked in their minds during a course. In the scoring of the mind maps, the scoring criteria developed by Evrekli, İnel, and Balim (2010) were used. Each student's mind map was scored by two experts based on the evaluation criteria shown in Table 2.

Table 2

Assessment Criteria for Mind Maps (Evrekli, İnel, & Balım, 2010)

Scoring Criteria	Point
1st level concept links	2 point for each if valid
2nd level concept links	4 point for each if valid
3rd level concept links	6 point for each if valid
4th level concept links	8 point for each if valid
Cross links	10 point for each if valid
Examples	1 point for each if valid
Relationships	3 point if valid
Picture, Image and Figure	3 point if valid
Invalid component	0 point

Data Analysis

In this study, the Kolmogorov-Smirnov normal distribution test was applied to the data to decide the statistical analysis test to be used to analyze the quantitative data obtained from the scoring of the mind maps. Since the significance value of a normal distribution test is less than 0.05, and the number of students in the class is less than 30, it was decided that the data did not show normal distribution, and non-parametric tests were used in the data analysis. In general, parametric tests are used when the data are suitable in terms of normal distribution and the variance of the scores of the groups is homogeneous. For non-parametric testing, there is no need for these assumptions (Greasley, 2008). For this reason, in this study, the Mann-Whitney U test was used to compare mind map scores in terms of the gender of the students, and the Kruskall Wallis test was used to compare them in terms of grade levels.

A content analysis method was used for a detailed evaluation of the expressions in the mind maps. Content analysis is the process of coding content by using a category list prepared by the researchers, or by revealing categories after each data source has been read (Dawson, 2007). In this research, the mind maps that students prepared were examined by two experts, and the categories were formed by taking into consideration the statements of the students in the mind maps. It was determined which sub-themes could be included under each category. The experts individually analyzed the mind

maps based on these categories. Quantitative data were obtained by calculating the frequency of repetition of expressions encountered in the students' mind maps. In the literature, it is seen that there is a similar data analysis process in studies where mind maps are used as a qualitative data collection tool (Beckett, 2010; Inel-Ekici, 2015; Karataş, 2010; Tattersall, Watts, & Vernon, 2007). Then, the percentage of convergence was calculated to ensure reliability among the experts. The percentage of convergence among experts was found to be 73.5%.

Results

To solve the first research question, "How do middle school students' mind map scores related to science differ in terms of their gender and grade levels?", the students' scores from the mind maps were compared by using non-parametric statistical tests in terms of their gender and grade levels. Table 3 shows the statistical data obtained as a result of comparing the mind map scores of middle school students in terms of their gender.

Table 3

Comparison of Mind Map Scores of Middle School Students in terms of Gender (Mann-Whitney U Test Results)

Gender	*N*	Mean Rank	Sum of Ranks	*U*	*p*
Girl	51	57.39	2927.00	1102.000	.103
Boy	53	47.79	2533.00		

*p> .05

As a result of the data analysis, it was observed that the scores obtained from the mind maps prepared by middle school students in relation to science did not significantly differ in terms of their gender. The mean score of the girls was 57.39 while the mean score of the boys was 47.79. This result shows that boys and girls remember a similar number of concepts, expressions, relationships, and visual elements in relation to science through mental association. Table 3 shows the statistical data obtained as a result of comparing the mind map scores of middle school students in terms of their grade level.

Table 4

Comparison of Mind Map Scores of Middle School Students in terms of Grade Level (Kruskall Wallis Test Results)

Grade Level	*n*	Mean Rank	X^2	*df*	*p*	Differences
5	17	27.12	16.544	3	.001	5-6, 5-7, 5-8
6	15	48.10				
7	26	56.85				
8	46	60.86				

*p< .05

In the results arising from the data analysis, it was observed that the scores obtained from the mind maps about science differed significantly in terms of grade level. The results of the Mann Whitney U tests showed that the fifth and sixth grades, the fifth and seventh grades, and the fifth and eighth grades showed a significant difference in terms of mind map scores. The mean score of the fifth grade students was 27.12, the mean score of the sixth grade students was 48.10, the mean score of the seventh grade students was 56.85 and the mean score of the eighth grade students was 60.86. This results show that the students' mind maps scores in the fifth grade were significantly lower than those in the sixth, seventh and eighth grades. In other words, fifth grade students have presented fewer concepts, expressions, relationships, and visual elements in relation to science through mental association than other students.

In this section, to solve the second and third research question, "How are middle school students' mental models about science?", "How do middle school students' mental models differ in terms of their gender?", the themes obtained as a result of an examination of students' mind maps about science, and the frequency and percentage of the expressions encountered in these themes, were included. With regard to classifying similar characteristics with regard to expressions in the students' mind maps, 9 main themes - "Science and Technology", "Descriptive and Theoretical Processes", "Disciplines and Topics", "Scientific Studies", "The Earth and The Universe", "Science and Education", "Science and Communication", "Science, Art and Sport" and "Other Expressions" - were identified. Table 5 shows the frequency of the related themes in the mind maps of the middle school students.

Table 5

Themes Including Students' Visual and Verbal Expressions about the Concept of "Science" in Their Mind Maps

Themes	Boys		Girls		Total	
	f	%	*f*	%	*f*	%
Science and Technology	101	22	104	20	205	21
Descriptive and Theoretical Processes	67	15	104	20	171	18
Science Disciplines and Subjects	60	13	82	17	142	15
Scientific Studies	67	15	50	10	117	12
The Earth and The Universe	46	10	41	9	87	9
Science and Education	33	7	51	10	84	9
Science and Communication	9	2	21	4	30	3
Science, Art and Sport	16	4	11	2	27	3
Other Expressions	58	12	43	8	101	10
Total	457	47	507	53	964	100

As a result of the analysis, it can be said that the students mostly associate science and technology with each other in mind maps, were involved in the descriptive and theoretical processes of science, were devoted to science branches and subjects, and

presented examples and expressions related to scientific studies. It is observed that the frequency of some expressions is different when the mind map content is compared to the gender of the students. While girls emphasized the descriptive and theoretical processes of science at a frequency of 20% (*f*=104), boys emphasized this aspect at a frequency of 15% (*f*=67). Similarly, the frequency of expressions related to science disciplines and topics was 17% (*f*=82) in girls and 13% (*f*=60) in boys. On the other hand, boys presented scientific studies in their mind maps at a frequency of 15% (*f*=67), whereas girls emphasized scientific studies at a frequency of 10% (*f*=50) in their mind maps. These results show that the mind maps of girl students include more expressions about the descriptive and theoretical processes of science, science disciplines and subjects than was the case with boys students' mind maps, whereas boy students presented more examples of scientific studies in their mind maps than did girl students. When other themes are examined, it can be seen that the expression of the students in the mind maps is similar.

Table 6

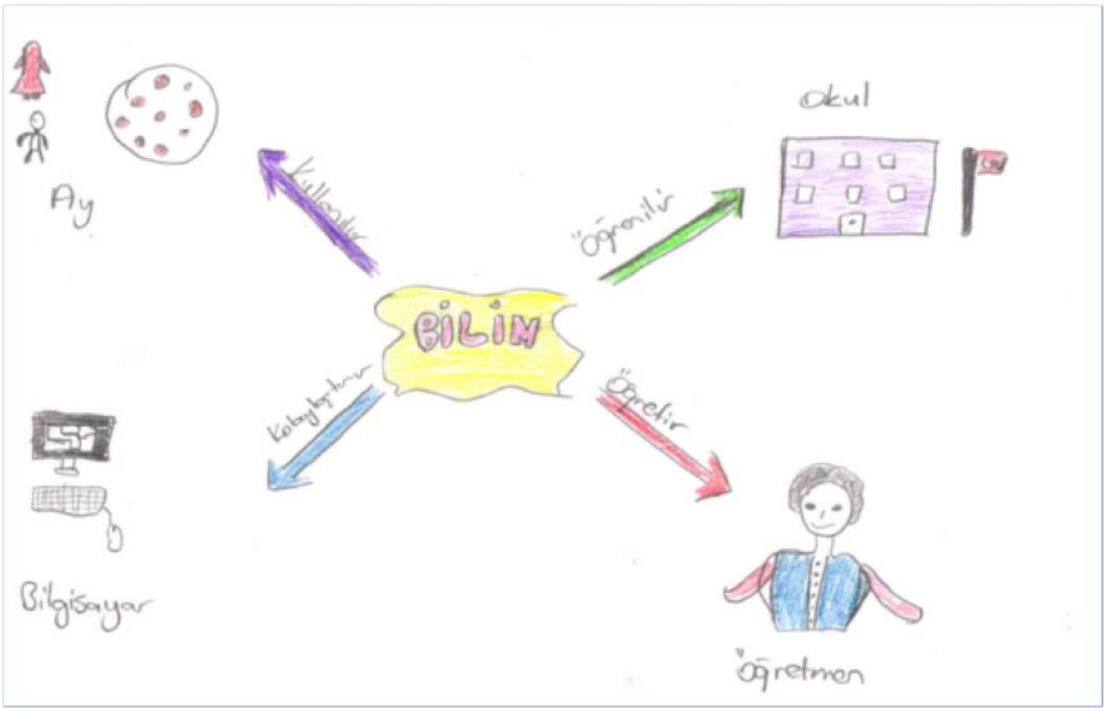
Frequency and Percentage Values of Students' Visual and Verbal Expressions in Mind Maps Related to the "Science and Technology" Theme

Science and Technology	Boys		Girls		Total	
	f	%	*f*	%	*f*	%
Technology	20	20	22	21	42	20
Technological Tools	72	71	74	71	146	71
Tablet/Phone	25	35	20	27	45	31
Computer	14	19	20	27	34	23
White goods (refrigerator, TV, broom etc.)	7	10	16	22	23	16
Transportation vehicles	7	10	3	4	10	7
Software (Windows, Facebook, Internet, Google)	1	1	7	9	8	5
Rocket	5	7	3	4	8	5
Robot	2	3	4	5	6	4
Machinery / Industry	5	7	1	2	6	4
Weapon	4	5	-	-	4	3
Satellite	2	3	-	-	2	2
Convenience / More time	3	3	5	5	8	4
Future Technologies	4	4	2	2	6	3
Time machine	2	50	1	50	3	50
Flying car	2	50	1	50	3	50
Technology and design	2	2	1	1	3	2
Total	101	49	104	51	205	100

With regard to the theme of Science and Technology, mostly students directly associated with science and technology with each other in their mind maps, and gave

examples of technological tools such as computers, white goods, and transportation vehicles. Some students emphasized that technology facilitated human life, and allowed people a lot of time. They gave examples of technological tools that could be produced in the future, and stated that technology was a result of the design process. The content in the mind maps of the students, in terms of their gender, shows that girl and boy students associate with each other science and technology in similar frequencies. Students' opinions differ in terms of some examples they gave with regard to technological tools. Girls showed examples of software technology at a frequency of 9% (*f*=7), whereas boys provided examples at a frequency of 1% (*f*=1). On the other hand, boys showed machines at a frequency of 7% (*f*=5), weapons at 5% (*f*=4), and satellites at a frequency 3% (*f*=2) as examples of technological tools. In contrast, girls did not include the related technological tools in their mind maps. In addition, girl and boy students often presented examples of their own living spaces in terms of technological tools. As a result, boy and girl students can be said to associate science and technology with one another to a large extent and gave examples of technological tools, but their knowledge about the benefits of technology are limited, and they reveal no negative thoughts about science and technology.

Drawing 1. Mind Map about the Concept of Science of a Boy Student in Eighth Grade (Participant 65)



In the mind map presented above, the student tries to explain the concepts they associate with science in his mind. When the relationships in the student's mind maps are examined, it can be seen that he thinks that science is taught through a teacher at school, that the information produced as a result of scientific development is used in explaining the functioning of the universe, and that technological tools such as computers that are produced as a result of scientific developments make our lives easier.

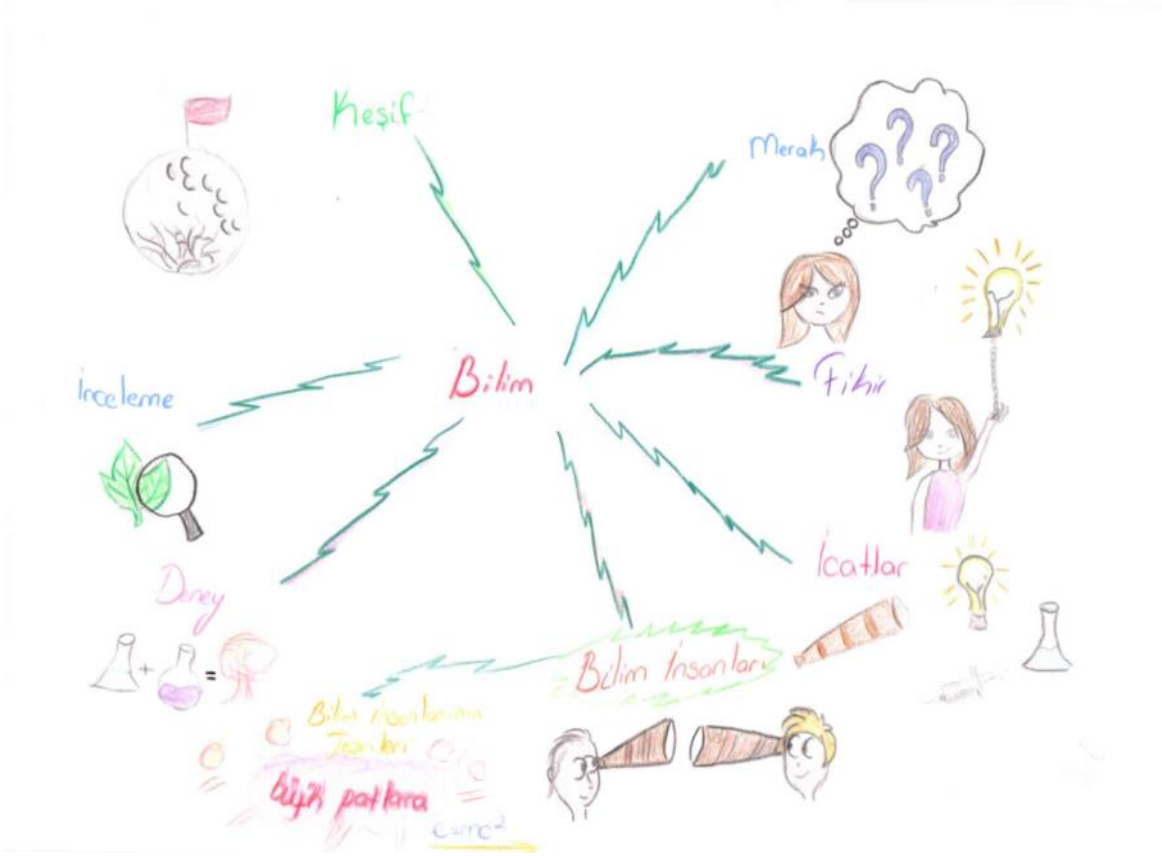
Table 7

Frequency and Percentage Values of Visual and Verbal Expressions in Mind Maps Related to the "Descriptive and Theoretical Processes" Theme of the Students

Descriptive and Theoretical Processes	Boys		Girls		Total	
	f	%	*f*	%	*f*	%
Laboratory / Laboratory equipment	18	27	24	22	42	25
Invention /Discovery/New	17	26	22	21	39	23
Experiment/Project	12	18	21	20	33	18
Research/Study/Learning	6	9	11	11	17	10
The Mind/Brain	4	6	10	10	14	8
Information	5	7	5	5	10	6
Observation	1	1	4	4	5	3
Curiosity/Idea	2	3	3	3	5	3
Dream/Inspiration	1	1	1	1	2	1
Talent/Patience/Love	1	1	2	2	3	2
Theory	0	0	1	1	1	1
Total	67	39	104	61	171	100

Middle school students have also partially emphasized the descriptive and theoretical processes of science in the mind maps they produced. It can be observed that the students indicated the laboratory environment, the tools and materials in the laboratory environment, and concepts such as discovery, invention, observation, experiments and project methods in their mind maps. The results show that students have an idea that scientific knowledge can be produced by experimental methods. In addition, students included mental processes such as mind, curiosity, imagination, talent and ideas in their mind maps. It can be seen that while students include the descriptive processes of science and the features of scientists in their mind maps, they do not make much mention of the theoretical processes of science such as hypothesis formation, theories and laws. In the case of linking the student's mind maps to their gender, it can be said that boy and girl students have similar perceptions about the descriptive and theoretical processes of science. It can be observed that the frequency of girl students' perceptions with regard to this theme was 61% (*f*=104), whereas that of boy students was 39% (*f*=67). This result shows that girls have more information in their minds about the descriptive and theoretical processes of science than boys.

Drawing 2. Mind Map about the Concept of Science of a Girl Student in Seventh Grade (Participant 24)



In the mind map presented above, a girl student includes the descriptive and theoretical processes associated with science. This student emphasizes concepts such as curiosity and ideas by emphasizing the mental processes of science on the mind map, and she states that scientific research start with a research idea. She also notes that scientific knowledge is obtained through experimentation, that investigations are carried out in this process, and that discoveries and inventions are achieved with the results obtained. As a result, this particular student tries to emphasize the process of scientific research with her visual and verbal expressions in the mind map.

Table 8

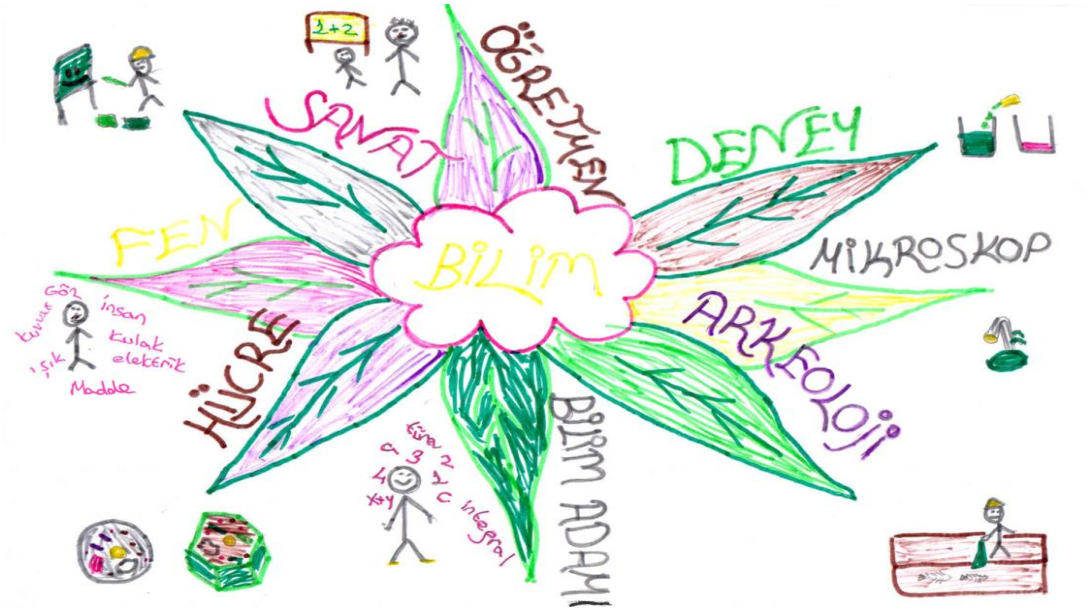
Frequency and Percentage Values of Visual and Verbal Expressions in Mind Maps Related to the "Science Disciplines and Subjects" Theme of the Students

Science Disciplines and Subjects	Boys		Girls		Total	
	f	%	*f*	%	*f*	%
Science Disciplines	29	48	31	38	60	42
Natural Sciences	13	45	14	45	27	45
Medical	6	21	9	29	15	25
Social Sciences (History, Literature, Philosophy)	5	17	5	16	10	17
Math	5	17	3	10	8	13

Science Subjects	31	52	51	62	82	58
Electricity/Energy	10	32	6	12	16	19
Living things	2	6	13	25	15	18
Atom/atomic model/heat	7	24	7	14	14	17
Cloning/DNA/cell/genetic structure	6	19	3	6	9	11
Minerals/Water/Nutrients	-	-	8	16	8	10
Gravity/lifting force/light	2	6	5	10	7	9
Geographical discoveries/Seasons	1	3	4	8	5	6
Formulas	3	10	2	4	5	6
History of creatures/big bang	-	-	3	5	3	4
Total	60	42	82	58	142	100

Table 8 shows that middle school students noted science disciplines at a frequency of 42% (*f*=60) and science subjects at a frequency of 58% (*f*=82) in their mind maps. The students gave more examples of natural sciences in terms of the branches of science than other disciplines. The students noted the existence of social sciences such as history, literature, and philosophy at a frequency of 17% (*f*=10) in their mind maps. This result shows that students consider natural sciences to be the main branches of science. In relation to the subjects of science, the students gave examples of the subjects of natural sciences to include such aspects as electricity, living things, atoms, cloning, nutrients, and gravity. At a frequency of 6% (*f*=5), some students emphasized geographical discoveries and seasons. In addition, it can be said that the students do not associate social science subjects with science in their minds. When the content of the students' mind maps is compared in terms of gender, it can be said that boys and girls have a similar mental model about the branches and subjects of science.

Drawing 3. Mind Map about the Concept of Science of a Girl Student in Seventh grade (Participant 27)



In the mind map presented above, a girl student included the disciplines and subjects of science. When the mind map is examined, it can be seen that the student relates science and natural sciences such as cells, but also as a branch of social science she includes archaeology in her mind map, and also relates science and art to each other. This result shows that this particular student considers science not only as a positivistic subject, but also as a social science and art.

Table 9

Frequency and Percentage Values of Visual and Verbal Expressions in Mind Maps Related to the "Scientific Studies" Theme of the Students

Scientific Studies	Boys		Girls		Total	
	f	%	*f*	%	*f*	%
Scientist (science man)	20	30	14	28	34	29
Scientist (science woman)	3	4	6	12	9	8
Researchers	-	-	2	4	2	2
Examples of Scientists	21	31	11	22	32	27
Einstein	4	19	3	27	7	23
Edison	3	14	2	18	5	16
Atatürk	3	14	3	27	6	19
Graham	2	10	1	10	3	9
Philosophers (Democritus and Socrates)	3	14	-	-	3	9
Cahit Arf/Ali Kuşçu/Farabi	3	14	-	-	3	9
Henry Moseley/Newton	-	-	2	18	2	6
Marie Cruie	2	10	-	-	2	6
Mark Zuckerberg	1	5	-	-	1	3
Important Inventions	23	35	17	34	40	34
Bulb	10	43	14	82	24	60
Car	8	35	1	6	9	22
Wheel	5	22	1	6	6	15
Printing	-	-	1	6	1	3
Total	67	57	50	43	117	100

The students identified people who do scientific research on their mind maps and gave examples to some important scientific discoveries. While the students were identifying people who did scientific research, they used expressions on their mind maps such as science man with a frequency of 29% (*f*=34), science woman with a frequency of 8% (*f*=9) and researchers with a frequency of 2% (*f*=2). When the examples they give of scientists are examined, it can be seen that they included such scientists as Einstein, Graham-Bell, Newton, Edison, who are particularly noted for research in the natural sciences. The students included Mustafa Kemal Atatürk at a frequency of 19% (*f*=6) in their mind maps. As important discoveries affecting the

history of mankind, the students offered examples of the light bulb, the car, the wheel and printing. When the content in the mind maps is compared in terms of gender, it is observed that some boy students mentioned some important philosophers as scientists, whereas girl students did not include philosophers. Some boy students showed Marie Curie as a female scientist. It is observed that the students do not give place in their mind maps to scientists who have done research in recent years. Only one boy student showed Mark Zuckerberg as a scientist. Some of the boy students placed Cahit Arf and Ali Kuşçu as Turkish scientists on their mind maps. As a result, it can be observed that students emphasized science man more than scientists in their mind maps, and give examples of male scientists who had mostly worked in the field of Natural Sciences in the past.

Drawing 4. Mind Map about the Concept of Science of a Boy Student in Seventh Grade (Participant 81)

In the mind map presented above, a boy student associated science with technology and discoveries, but also emphasized the relationship between science and history. On his mind map, this student also showed Ali Kuşçu as a scientist by emphasizing his research with regard to space. In addition, the student gave the Nobel Prize on the mind map, unlike his friends.

Table 10

Frequency and Percentage Values of Visual and Verbal Expressions in Mind Maps Related to the "The Earth and The Universe" Theme of the Students

The Earth and The Universe	Boys		Girls		Total	
	f	%	*f*	%	*f*	%
World	9	20	11	27	20	23
Space	11	23	7	17	18	21
Moon/Star	9	20	5	12	14	16
Sun	5	11	8	20	13	15
Planets	5	11	5	12	10	11
Telescope	4	9	2	5	6	7
Astronaut	3	6	3	7	6	7
Total	46	53	41	47	87	100

It was noted that students relate science and the universe in their mind maps and use various expressions and visuals related to it. Students related the concepts of earth, space, moon, stars, sun, and planets with science on their mind maps. The students exemplified the telescope as an observation tool and exemplified astronauts as the people making research about space. It can be said that the students have a similar mental model about the relationship between science and the universe, when the content in the students' mind maps is compared to their gender.

Table 11

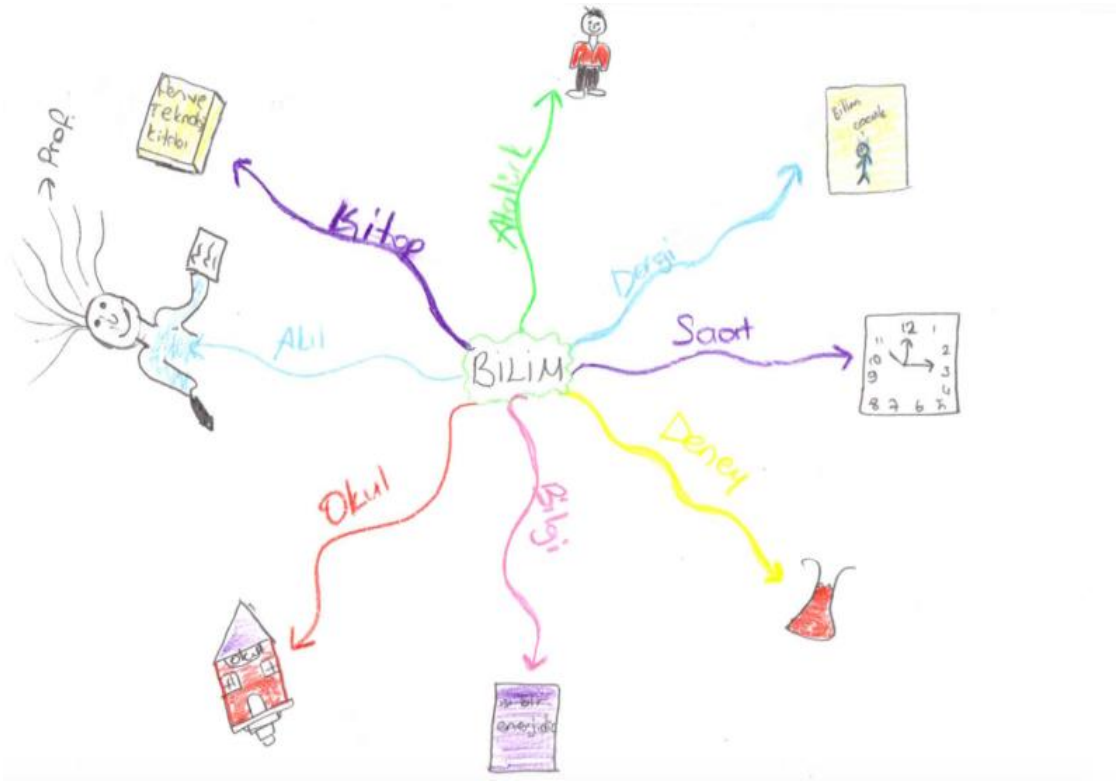
Frequency and Percentage Values of Visual and Verbal Expressions in Mind Maps Related to the "Science and Education" Theme of the Students

Science and Education	Boys		Girls		Total	
	f	%	*f*	%	*f*	%
Book/Encyclopedia	13	39	19	37	32	38
School/Madrasah/Class	4	12	11	22	15	18
Course	3	10	8	16	11	13
Science-Children's magazine	5	15	5	9	10	12
Teacher	5	15	4	8	9	11
Education	2	6	3	6	5	6
Student	1	3	1	2	2	2
Total	33	39	51	61	84	100

As a result of the analyses, it was noted that the students emphasized the concepts of courses, schools, students and teachers in their mind maps when linking education and science. This result shows that students are of the opinion that science can be taught through education. An important point in the research is that students

included the "Science and Children" magazine at a frequency of 12% (*f*=10) in their mind maps. When the mind map content of the students was compared to their gender, it was observed that the girls linked science and education at a frequency of 61% (*f*=51) while boys linked science and education at a frequency of 39% (*f*=33). This result shows that girl students have more awareness of the role of education in scientific development than boy students.

Drawing 5. Mind Map about the Concept of Science of a Girl Student in Eight Grades (Participant 16)



In the mind map presented above, the student relates the concept of science to the concepts of school, information, and books that are related to education. In addition, it is observed that the student includes the magazine "Science and Children" that presents the concepts related to science with visual elements in a fun way. This result shows that this particular student has benefited from school, books and this magazine in learning about the concepts of science.

Table 12

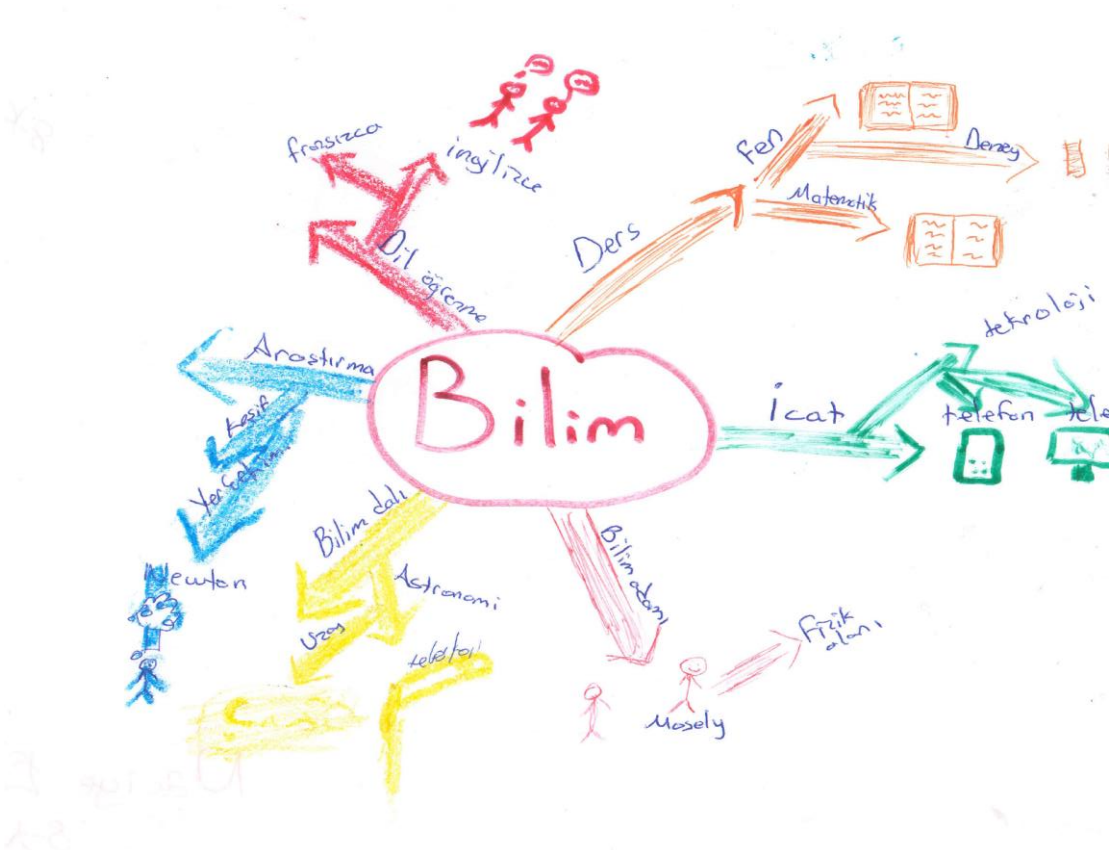
Frequency and Percentage Values of Visual and Verbal Expressions in Mind Maps Related to the "Science and Communication" Theme of the Students

Science and Communication	Boys		Girls		Total	
	f	%	*f*	%	*f*	%
Magazine	6	67	6	29	12	40
News	1	11	3	14	4	13
Foreign Language (English/French)	-	-	3	14	3	10

Dialog	-	-	3	14	3	10
Documentary	-	-	1	5	1	3
Newspaper	-	-	1	5	1	3
Human	2	22	4	19	6	20
Total	9	30	21	70	30	100

It was determined that the students make visual and verbal statements about the importance of communication in the announcement of scientific developments in their mind maps. The students mostly stressed that scientific developments were transferred to society through magazines and news channels. When the content in the students' mind maps were compared in terms of their gender, it is observed that both girl and boy students have established a similar relationship between science and communication; however, the frequency of the expression in the relevant theme on the part of girl students was 70% (*f*=21) while that of boy students was 30% (*f*=9). In addition, only girl students emphasized foreign language knowledge, which is an important element in communication, on their mind maps at a frequency of 14% (*f*=3).

Drawing 6. Mind Map about the Concept of Science of a Girl Student in Eight Grades (Participant 2)



In the mind map presented above, a student associated science and Natural Sciences and mathematics courses, emphasizing that scientific developments led to inventions, and shows technological tools as examples of these inventions. The student emphasized branches of science such as astronomy, and stated that discoveries emerged

as a result of research. The student gave examples of scientists such as Newton and Moseley. In the mind map, the student emphasized the importance of communication in scientific research, and indicated that learning English and French is related to science.

Table 13

Frequency and Percentage Values of Visual and Verbal Expressions in Mind Maps Related to the "Science, Art and Sport" Theme of the Students

Science, Art and Sport	Boys		Girls		Total	
	f	%	*f*	%	*f*	%
Art	5	31	5	46	10	37
Picture	5	31	3	27	8	30
Music	4	25	1	9	5	19
Cartoon /cinema	-	-	2	18	2	7
Sport	2	13	-	-	2	7
Total	16	59	11	41	27	100

It was determined that the students presented visual and verbal expressions related to science, art and sports in their mind maps. The students associated science with art, and gave examples in the fields of painting, music and cinema related to art branches at a frequency of 37% (*f*=10). When the content in the mind maps of the students was compared in terms of gender, it was observed that boys and girls similarly associated science and art, but only some boy students associated science and sport with each other.

Table 14

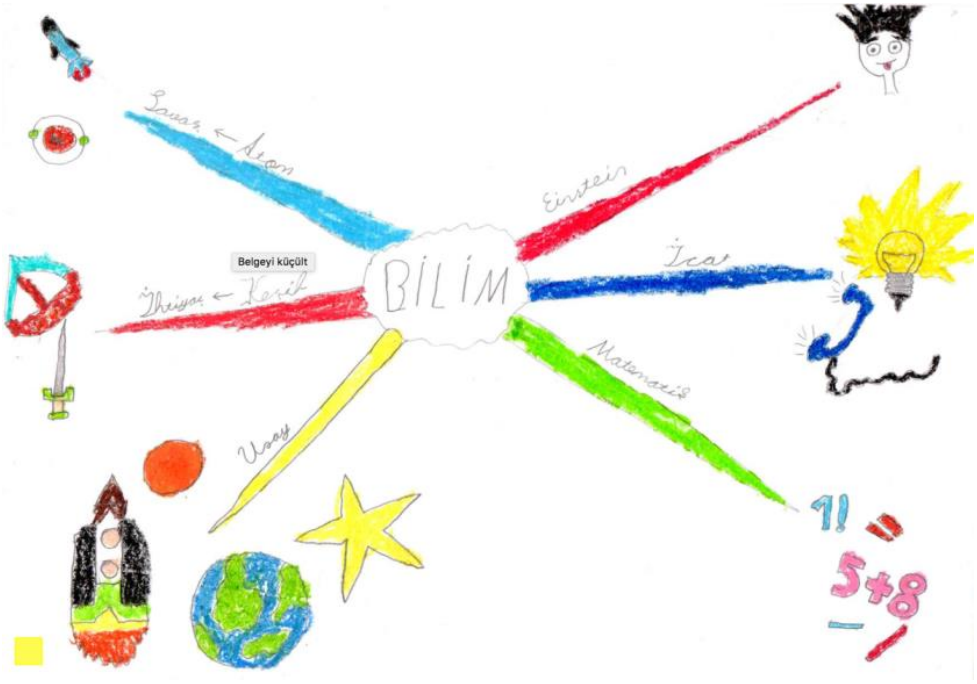
Frequency and Percentage Values of Visual and Verbal Expressions in Mind Maps Related to the "Other Expressions" Theme of the Students

Other Expressions	Boys		Girls		Total	
	f	%	*f*	%	*f*	%
Science and Gender	40	69	41	96	81	80
Male figure / garbage man	36	90	31	76	67	83
Female Figure	4	10	10	24	14	17
War	4	7	-	-	4	4
Modernization And Development	7	12	1	2	8	8
Countries	6	10	-	-	6	6
Supports and rewards (TUBITAK, NOBEL)	1	2	1	2	2	2
Total	58	57	43	43	101	100

As a result of the analysis of students' mind maps, some expressions could not be evaluated under a common theme and "other expressions" are as shown in Table 10.

Students often draw human figures on mind maps. It is observed that 83% (*f*=67) of these drawings were male and 17% (*f*=14) were female. This rate was 76% (*f*=31) in the case of girl students and 90% (*f*=36) in the case of boy students. As a result, students often associate science with males. In the mind maps, boy students, unlike girl students, associated science with war, and evaluated it as an important condition of modernization and development. They gave examples of countries that were influential in scientific development. Only a few students showed examples of the TUBITAK and NOBEL prizes in their mind maps as a reward for scientific progress.

Drawing 7. Mind Map about the Concept of Science of a Boy Student in Seventh Grades (Participant 90)



In the mind map presented above, the student associated science with mathematics and space concepts, presented Einstein as an example of a scientist, stressed that scientific discoveries emerged as a result of needs, and stated that the atomic bomb, one of the scientific discoveries, is used in wars. This result shows that the student has a mental model about the results of scientific development, and that he associates it with science and war.

Discussion and Conclusion

In this study, middle school students' views and perceptions about science were determined by using mind maps in an attempt to describe their mental models about science. As a result of the study, firstly it was observed that the scores obtained from the mind maps prepared by students about science differed significantly according to grade level, and that the related difference was due to the perceptions of fifth grade students. It was concluded that there was no significant difference between the scores of the sixth, seventh and eighth grade students in terms of their mind maps. Demir & Akarsu (2013) also determined that sixth and seventh grade students' views of the nature of science are similar. On the other hand, it was determined that the mind maps scores of fifth grade

students were significantly lower than those of sixth, seventh and eighth grade students. In other words, fifth grade students remembered fewer concepts, expressions, relationships, and visual elements about science through their mental association compared with the other students. This result may be due to the fact that fifth grade students are less likely to encounter science-related concepts and have difficulty structuring their knowledge in their minds. In addition, the fifth grade students may have difficulty understanding the abstract concepts of science because they are still in the process of abstract conceptualization. In the various studies into this topic, it is often emphasized that science should be taught to students at an early age (Kaya, Afacan, Polat, & Urtekin, 2013). For this reason, it is thought that more scientific activities should take place as part of the fifth grade curriculum to provide for students with the opportunity to create and develop mental models related to science.

In this study, the students' mind map scores did not differ significantly in terms of their gender. This result shows that the concepts, expressions, relationships, and visual elements relating to science that boys and girls remember through mental association are at a similar level. In the literature, in some studies on the nature of science there is no difference between boy and girl students. In this study, the content of visual and verbal expressions with regard to the mind maps of boys and girls was also examined, and a comparison made. It can be said that what the students associate most with regard to science and technology in mind maps, includes the descriptive and theoretical processes of science, the separation of science into branches and subjects, and presenting examples and expressions of scientific studies. Girls gave more space on their mind maps to the descriptive and theoretical processes, branches and subjects of science. In contrast, boy students presented more examples of scientific studies in their mind maps than did girl students.

The students in this study identified people who do scientific research on their mind maps and gave examples of some important scientific discoveries. It is observed that the students provided examples of scientists such as Einstein, Graham-Bell, Newton and Edison, who were active in the natural sciences. Only Marie Curie was shown as an example of a female scientist. Some boy students mentioned important philosophers as scientists. On the other hand, in terms of important discoveries affecting the history of mankind, the students showed examples such as the light bulb, the car, the wheel and printing. As a result, it was observed that the students emphasized more male scientists in their mind maps rather than scientists in general, and gave examples of male scientists working in the field of natural sciences in the past. In another study, it was found that the scientists in the minds of pre-service teachers were mostly scientists who undertook research on the natural sciences (Çermik, 2013). In general, the results of the research show that students described men working in a laboratory environment and dealing with natural sciences as being the typical scientist. For example, in another piece of research it was determined that gifted students' images of scientists were that of men who wore glasses, lab coats, worked with test tubes in the laboratory, who used books and technological tools, and were working alone (Camcı-Erdoğan, 2013). Eyceyurt-Türk & Tüzün (2017) also stated that ninth grade students have the perception that science is done in a laboratory. This result can usually be due to the fact that people think that science is directly related to the natural sciences. Esgin & Arslan (2011) emphasized that in their study supporting this view, social sciences are generally seen as

areas that are not taken seriously, and do not produce concrete results, that universities are understood only as places where white-coated scientists do scientific research in laboratories, and that science policies are limited to the natural sciences. In addition, it is observed that the students in our study do not include to scientists who are undertaking recent research in their mind maps. Only one boy student showed Mark Zuckerberg as a scientist. Some of the boy students also emphasized Turkish scientists, Cahit Arf and Ali Kuşçu, on their mind maps. It can be said that students do not have enough knowledge about scientific studies carried out today and about Turkish scientists. This result may stem from the fact that teachers do not provide sufficient examples of scientific developments and do not use historical approach to teach the nature of science. In particular, the belief that science and science features are subjects that should be taught only in science classes may have caused students to encounter only examples in these areas (Altındağ, Tunç-Şahin, & Saka, 2012).

Middle school students also partially emphasized the descriptive and theoretical processes of science in their mind maps. In the study, it was observed that the students stated only the experimental method as a means of data collection. It can be said that boys and girls have similar perceptions about the descriptive and theoretical processes of science. This result shows that students think that scientific knowledge can only be obtained by experimental methods. This may be due to the fact that students think that science should be based on observation and experimentation (Ayvacı & Şenel-Çoruhlu, 2012). Fernandes, Rodrigues, and Ferreria (2018) found that children's conceptualization of the nature of science is based on experimental and technical tools. The results of the studies in the literature show that students usually have this common belief. In research carried out with high school and middle school students, it was determined that the students mostly highlighted experimental–observation–research steps regarding the scientific process, and that they have an understanding of scientific knowledge that is experimental (Eyceyurt-Türk & Tüzün, 2017; Muşlu & Macaroğlu-Akgül, 2006). In another study conducted with pre-service teachers, it was concluded that all the participants emphasized that science is based on experimentation (Abd-El-Khalick, Bell, & Lederman, 1998). Similarly, in our study, students have only included Natural Sciences in relation to the subjects and branches of science. Some students emphasized geographical discoveries and seasons. Apart from these, it can be said that the students do not relate the subjects of social sciences to science. It was observed that boys and girls have a similar mental model regarding the branches and subjects of science. At the same time, Muşlu and Macaroglu-Akgül (2006) determined that secondary school students define science as being natural sciences, and Inel-Ekici (2015) determined that pre-service teachers highlighted natural sciences such as physics and chemistry in their mind maps about science. The results are thought to be derived from the perception of science on the part of society. In order to solve this problem, it is recommended that the subjects related to science, and the characteristics of science should be included not only in the content of natural science lessons but also in social sciences, mathematics, and so on.

As a result of the analysis of the data in this study, it was determined that students frequently emphasize the relationship between science and technology in their mind maps. In addition, girl and boy students presented examples from their own homes. This result shows that students associate science with their daily lives. It can be

said that students' thoughts are product-oriented, and that they emphasize technological tools produced as a result of inventions discovered by scientists through experimental methods in their mind maps. In another piece of research, pre-service teachers similarly associated science and technology in mind maps they drew, and emphasized the scientific process skills such as observation, research and experimentation (Inel-Ekici, 2015). In a study by Fernandes, Rodrigues, and Ferreria (2018), they concluded that the students perceived technology as a part of their lives, and defined it as a tool that involves the application of science. Therefore, it can be said that students consider technology as an integral part of science, and consider it as a tangible application of science in their daily lives. The examples given by the students with regard to technological tools in mind maps are limited. As a result of scientific developments, they stated that technological tools such as the telephone, robots, computers and television have been produced. Aydın (2011) stated that middle school students mostly saw technology as being advanced technologies, and that they always viewed electronic tools in daily life as technology. In addition to the technologies used in daily life such as the telephone, computers and televisions, students gave a limited number of examples of tools that can be produced as a result of recent developments in technology.

One of the remarkable results of this research is the relationship between education and science in the mind maps of a small number of students. Some students particularly emphasized the learning-teaching process while making this association. In the research, some students featured the magazine "Science and Children" in their mind maps. It can be said that boys and girls have a similar mental model about the relationship between education and science. It was determined that the students presented visual and verbal expressions about the importance of communications in the announcement of scientific developments in their mind maps. The students emphasized that society was made aware of scientific developments through magazines and news channels. It was determined that boys and girls have similar views on science and communication, but only girls emphasized foreign language knowledge as an important element in communication in their mind maps. In this study the students who associated science and art gave examples from the fields of painting, music and cinema as related to the branches of art. In addition, in their mind maps, boy students linked science to war, as opposed to girl students, and evaluated science as an important condition of modernization and development. They gave examples of countries that are influential in scientific development. Only a few students presented the TUBITAK and Nobel Prizes in their mind maps as rewards for scientific progress.

As a result, in this study, students' views with regard to science were determined by using free association through a drawing technique in the form of mind maps. Based on the statements of the students, mental models related to science were determined. The most important limitation of the study is that the students do not explain what they want to describe in their drawings. In general, it can be said that the students' mental models of science are based on the natural sciences; they think that scientific knowledge can only be produced through experimental methods, and that there is a strong relationship between science and technology. In the research to be done in the future, it is recommended that the reasons why students offered these views should be examined in detail, and it should be discussed ways in which it is possible to improve and enrich these views.

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Exploring the Gap between Instructors' and Learners' Preferences about Error Correction in ELT

İngilizce Öğretiminde Öğretim Elemanı ve Öğrencilerin Hata Düzeltme Tercihlerindeki Boşluğu Keşfetme*

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ABSTRACT: For successful learning, meeting the expectations of language instructors and learners is indispensable. Taking this into consideration, this study attempts to identify the preferences and expectations of adult EFL learners as to error correction. The research was carried out with 9 English instructors and 150 university students studying English at preparatory classes of Gaziantep University. Data were collected through observation, interviews with the instructors and learners as well as a questionnaire that was conducted to the both parties. The data has been analysed to identify which strategies the students perceived to be the most effective. The findings show that although the instructors and students agree on some strategies such as immediate feedback on recurring oral and written errors, they tend to be incongruous about a more frequent and immediate corrective response from the instructor as well as the learners' role and responsibilities in correcting themselves and their peers. It is concluded that there is clear divergence of attitudes between the instructors and students on how teaching practices should be tailored to meet students' needs and preferences. In this sense, the identification and moderation of different expectations will practically benefit both sides, reinforcing classroom teaching and learning.

Keywords: error correction, mismatches, learner preferences, instructor preferences.

ÖZ: Başarılı bir öğrenme için, dil öğreticilerinin ve öğrenenlerin beklentilerini karşılamak vazgeçilmezdir. Bunu dikkate alarak, bu çalışma yetişkin EFL öğrencilerinin hata düzeltme konusundaki tercihlerini ve beklentilerini belirlemeye çalışmaktadır. Araştırma, Gaziantep Üniversitesi'nde 9 öğretim elemanı ve hazırlık sınıflarında İngilizce okuyan 150 üniversite öğrencisiyle gerçekleştirilmiştir. Veriler gözlem yoluyla toplanmış, öğretim elemanları ve öğrencilerle yapılan görüşmelerin yanı sıra hem öğretim elemanlarına hem de öğrencilere yönelik bir anket yapılmıştır. Veriler, öğrencilerin hangi hata düzeltme stratejilerini en etkili bulduklarını belirlemek için analiz edilmiştir. Bu çalışmayı, katılan öğrenci sayısı nedeniyle daha geniş bir bağlamda uygulamak zor olsa da, bulgular, öğrencilerin hata düzeltme tercihlerinin daha iyi anlaşılması açısından önemli bilgler sağlamaktadır. Bulgular, öğretim elemanı ve öğrencilerin, tekrarlanan sözlü ve yazılı hatalara ilişkin anında geri bildirim gibi bazı stratejiler üzerinde hemfikir olmalarına rağmen, öğretenlerin daha sık ve yanlışları derhal düzeltmelerinin yanı sıra, öğrencilerin kendileri ve akranlarını düzeltmedeki rolleri ve sorumlulukları konusunda uyuşmazlıklar olduğunu göstermektedir. Öğrencilerin ihtiyaçlarını ve tercihlerini karşılamak için uygulamaların öğrencilere nasıl uyarlanması gerektiği konusunda, öğretim elemanları ve öğrenciler arasında belirgin bir farklılığının olduğu sonucuna varılmıştır. Bu bağlamda, sınıftaki öğretme ve öğrenme faaliyetlerini güçlendirerek, farklı beklentilerin tanımlanması ve ölçülmesi pratik olarak her iki tarafa da fayda sağlayacaktır.

Anahtar Sözcükler: hata düzeltme, uyuşmazlık, öğrenci tercihleri, öğretici tercihleri.

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Introduction

There are numerous factors affecting students' success in an EFL (English as a Foreign Language) classroom. One of the most significant factors is the method of error correction employed by language instructors. A learner-centred approach entails that the opinions, preferences and expectations of learners should be sought and taken into consideration in lesson planning. Otherwise, "a mismatch between students' expectations and what they face in the classroom can hinder improvement in their acquisition" (Horwitz, 1988). What instructors perform and students expect should be in harmony. Otherwise, it would be a "block" to learning (Nunan, 1987).

In traditional language classrooms, errors are often approached negatively and the majority of instructors tend to prefer their learners to show error-free performances or they do not hesitate to correct errors immediately after they occur. In contrast, errors are tolerated more in modern and humanistic approaches, but error correction is still a matter of concern among instructors. The language instructors may often put their enthusiasm and energy into correcting learner errors. Students, on the other hand, do not always get the desired benefit and may even consider error correction counter-productive. Getting repeatedly corrected can also make them frustrated or distressed easily.

The effects of instructor feedback have widely been researched, but studies on students' and instructors' preferences are comparatively rare. Therefore, it appears that there is a significant gap between what instructors and learners think about feedback. To offer an insight into this gap, this paper will attempt to research and analyse the preferences of both sides about error correction in a Turkish EFL context. It is intended to provide useful answers to key questions about how to tackle and correct learner errors in the classroom. In the next section, the preferences and expectations of students regarding error correction are checked against those of their instructors so as to see the ways in which errors are corrected and how they are perceived by the learners.

Literature Review

Learners have their own beliefs and preferences about what they should study and learn. Nunan (1995) claims that learners come "into the classroom…with different mind sets…different agendas" (p. 140). The activities that are considered effective by teachers and thus preferred might not be the same with learners. Similarly, teachers "have their own learning agendas" (McDonough, 1995, p. 121). Researchers such as Horwitz (1988) also agree that students' beliefs about language learning are important as they have a strong influence on their success. The problematic issue is that researchers or instructors usually do not ask learners what they like and dislike. They only plan the lesson in view of learners' needs, not the learners themselves (Yorio, 1986, p. 668).

Various researchers have investigated what learners and students think about error correction and how it should be executed for effective learning. Error correction is often regarded as indispensable to teaching and learning a language (Elçin & Öztürk, 2016; Rastegar & Homayoon, 2012) because it plays an important role in the language learning process and indicates to what extent learners have grasped the target language as well as in what ways they could need help (Corder, 1967). Recent research have proved that learners expect to be corrected, but in what way(s) they choose to get

corrected is a matter of discussion (Alamri & Fawzi, 2016; Papangkorn, 2015; Sopin, 2015). It has also been suggested that what learners expect and teachers do in the classroom do not often go hand in hand. In Schulz's (1996, 2001) studies, it was revealed that students expect more error correction when learning grammar. In a study in Japan, Katayama (2007) concluded that students needed their "pragmatic errors" to be corrected.

There are various factors affecting learners' preferences for error correction. Gender has been one of the popular topics studied by researchers (Khorshidi & Rassaei, 2013). As gender has psycholinguistic and sociolinguistic effects on learners, it can also affect how learners prefer being corrected, also how they will accept and respond to error correction. Havnes, Smith, Dysthe and Ludvigsen (2012) claim that not only individual characteristic features but also contextual features have an impact on students' preferences. In a similar line, Sopin (2015) highlights the importance of being aware of learners' emotional state because what they expect and how they expect to receive correction determine their overall attitude towards error correction. The fact that there is a gap between what native language speakers and learners think about correction has been shown in a number of studies such as Chenoweth, Day, Chun, Luppescu (1983) and Cathcart and Olsen (1976). Nonetheless, it is reasonable for learners to expect their perceived needs to be met, otherwise these unfulfilled needs could easily produce negative attitude towards learning.

Error correction has often been one of the issues provoking frequent discussions. Krashen (1982) called error correction "a serious mistake" (p. 74) because "error correction has the immediate effect of putting the student on the defensive" (p. 75). Thus, learners do not take risks to use complex constructions or feel shy about testing the hypothesis they construct in their minds. According to VanPatten (1992), "correcting errors in learner output has a negligible effect on the developing system of most language learners" (p. 24).

Lately, a number of studies have been carried out to focus fully on teachers' error correction preferences in teaching second/foreign languages (Anggraeni, 2012; Behroozi & Karimnia, 2017; Jabu, Noni, Talib & Syam, 2017; Liskinasih, 2016; Motlagh, 2015; Suryoputro & Amaliah, 2016) or only students' error correction preferences (Alamri & Fawzi, 2016; Elçin & Öztürk, 2016; Fitriana, Suhatmady & Setiawan, 2016; Mungungu-Shipale & Kangira, 2017; Papangkorn, 2015; Park, 2010; Yoshida, 2008; Zhao, 2015). When these studies are compared, we see a noteworthy difference between what teachers and students show preference for. Furthermore, there is even a great discrepancy among learners. While some prefer to be corrected explicitly (Alamri & Fawzi, 2016; Fitriana, Suhatmady, & Setiawan, 2016; Papangkorn, 2015; Park, 2010), some others favour receiving implicit feedback (Lyster & Ranta, 1997; Panova & Lyster, 2002; Yoshida, 2008). However, why learners' preferences differ considerably is a topic of another research.

Although error correction has been studied so often, there is not adequate research comparing teachers' and learners' beliefs about it (Kern, 1995). A mismatch between learner and teacher beliefs and preferences can create problems in the classroom because it can lead to "learning problems for the students" (Green, 1993, p. 2). Kumaravadivelu (1995) drew attention to this problem and called it "almost inevitable". He also highlighted that the wider the gap gets, the less learners will have

chances of "achieving desired learning outcomes" (p. 100). In his research, Willing (1988) asked 517 ESL students to rate ten activities according to the degree of usefulness. In the same year, Nunan asked 60 ESL teachers to do the same and compared the answers with Willing's results (1988). Nunan (1988) showed that there is a slight similarity between the viewpoints of teachers and learners.

Table 1

The Results of the Study on the Usefulness of ESL Activities

Activity	Student rating	Instructor rating
1. Pronunciation practice	Very high	Medium
2. Explanations to class	Very high	High
3. Conversation practice	Very high	Very high
4. Error correction	Very high	Low
5. Vocabulary development	Very high	High
6. Listening to /using cassettes	Low	Medium high
7. Student self-discovery of errors	Low	Very high
8. Using pictures/films/video	Low	Low medium
9. Pair work	Low	Very high
10. Language games	Very low	Low

(Nunan, 1988, p. 89)

As shown in Nunan's study (Table 1), there is a significant number of mismatches between the ratings of students and instructors. More notably, students rate the usefulness of error correction much higher than instructors. Students do not also consider that self-discovery of errors is an effective technique, so they rate it "low" while instructors describe it very useful.

Some studies have found low correlation between instructors' and learners' viewpoints even if both put their efforts in for the ultimate goal: effective learning/teaching. In Kern's study (1995), learners rated pronunciation practice, learning grammar rules, translation, and error correction more useful than teachers did (pp. 77-80). Cathcart & Olsen (1976) also conducted a poll for 38 teachers and 188 students to learn students' preferences. They stated that the error correction, mostly of pronunciation and grammar, is more important to them than teachers think. Another important study on error correction was done by McCargar (1993). He compared the opinions of 41 ESL teachers and 161 students on the usefulness of error correction and group work. The data proved that there were noticeable differences between learners' and teachers' opinions (pp. 198-9). While learners rated error correction, teachers rated group work as crucially important (pp. 198-9).

Kaivanpanah, Mohammad Alavi & Sepehrinia (2015) conducted a recent study with 200 EFL learners in Iran. The researchers compared learners' and teachers' views about different types of oral corrective feedback such as peer correction. While teachers approached this type of error correction with caution, learners stated that they would be

happy for receiving correction from a peer who was more proficient in the target language. Teachers claimed that peer correction could possibly destroy the positive atmosphere of the classroom since being corrected by her/his classmate could weaken a learner's self-confidence. However, students could deliver more qualified feedback for their peers (S. Kaivanpanah et al., 2015; Caulk, 1994 as cited in Rollinson, 2005) in that they empathized each other better. All in all, as teachers' (in this case, instructors') and learners' perspectives vary, so do their justifications. Opinions of learners on error correction have comprehensively been studied and these studies carry crucial information about learner's viewpoints.

Errors versus Mistakes

The distinction between mistake and error is to be clarified in order to analyse student errors (Corder, 1967). While "a mistake is a performance error caused by competing plans, memory limitations and syntactic overgeneralizations, an error is a noticeable deviation reflecting the interlanguage competence of the learner" (Brown, 2000). Therefore, it would not be wrong to say that a mistake can be corrected more easily than errors. According to Corder (1967), errors can be a window onto a learner's competence because they work as signals showing that students are learning (Hendrickson, 1978; Ziahosseiny, 2005). In other words, they signal which parts of the lesson have been understood and which parts need more revision (Hedge, 2000), so most of them should be deemed "developmental". By making errors, students test their hypothesis and check what they have understood is right or not (Corder, 1981). That's why, errors should be taken seriously by instructors and the messages it gives to the instructor should not be ignored. According to Corder (1967), errors should get teachers, learners and researchers' attention due to the fact that,

- errors can be good data for teachers to see how far or close they are to their goals;
- errors are used as devices by learners to test their hypothesis about the nature of the language;
- and errors provide solid evidence about how language is learned or acquired.
- Bearing their significance and implications in mind, student errors should be approached and handled with caution and consideration by teachers and researchers.

The Rationale for the Study

Addressing students' needs is vital for lesson planning. Nunan (1995) claims that "at the very least, teachers should find out what their students think and feel about what and how they want to learn" (p.140). It is worth exploring and learning about the "potential sources contributing to the mismatch" (Kumaravadivelu, 1991, p. 98-100). She also stresses that there are not many in-depth studies in this area, so further studies are necessary. If teachers knew what students believe, prefer and expect and also the methods they use in the classroom matched learners' expectations, the effectiveness of programmes could be considerably increased (Ludwig, 1983, p. 217). In this way, any "harmful or erroneous assumptions students make" could be worked on and possibly changed for the better (Kern, 1995, p. 71).

Complementing the previous research in the area of error correction, this paper aims to collect and analyse the views and attitudes of the Turkish EFL learners about errors and error correction at the university level. The results are compared to the instructors' views in order to expose discrepancies and make potential recommendations. The questions determined by Hendrickson on error correction are used in order to put the study into a reliable and well-grounded framework (Hendrickson, 1983, pp. 87–398). These questions also function as the research questions of the study:

- Should learner errors in English be corrected?
- Which learner errors should be corrected?
- When should learner errors be corrected?
- Who should correct which type of errors made by learners?
- How should learner errors be corrected? (Hendrickson, 1983, pp. 87–398)
- The study also features two extra questions to be able to fully understand how learner errors should be treated at different levels.
- Do all learners have a similar attitude toward error correction?
- Are there any attitudinal differences between learners at different level of proficiency?

It is a fact that learners' perceptions of what and how they learn influence their attitudes, which is often neglected but directly affect how well they learn. The extra two questions help us find if there are any differences regarding students' needs for error correction. For example, do learners' preferences differ in their preferences for target language? Would they expect more correction on grammar compared to B1 level students who ask for more correction on pronunciation?

Research Design

The data collected from questionnaires, discussions and video recordings have been examined to address the research questions. The data provides detailed information to explore the attitudes, opinions and expectations of the university students in Turkey about errors and error correction in English. The questionnaires also allow us to make a comparison between the opinions of learners and instructors and among different sets of learners at different level of language learning. In brief, the instruments utilised in the study include:

- an instructor questionnaire on error correction
- a learner questionnaire on error correction
- structured interview sheet for instructors
- video recordings

Therefore, the study combines both quantitative and qualitative research methods for the sake of a more reliable and multidimensional research. The overall analysis is expected to draw a well-defined and representative picture of error analysis and preferences in EFL classrooms.

Data Collection

Both the instructor and student questionnaires were given to the nine instructors. They were informed about the last section of the questionnaire, in which some error correction techniques were exemplified. In case some student could fail to understand, instructors were asked to explain their answers by giving examples.

Participants

The participants are 9 EFL instructors at the School of Foreign Languages at Gaziantep University in Turkey. The majority of instructors are female (8 female, 1 male), aged between 28 and 45. All have taught English more than 10 years. They all accepted to be a part of the study of their own freewill and have their lessons video recorded. Instructors are coded as I (I1, I2, I3, etc.) in this study.

150 university students attending compulsory English classes also take part in this study. Their proficiency levels vary from elementary (A1) to upper intermediate (B1). The total number is divided in three groups of 50 elementary (A1), 50 (pre)intermediate (A2), and 50 (upper) intermediate (B1) level students. They are placed in the classes according to the results of a placement exam at the beginning of the term. There are about 20 students in each class, so 3 samples of the classes (that is, three A1, A2 and B1 classes) feature in the study. All student participants are EFL learners with roughly similar background knowledge and their ages range between 18 and 24.

Data Collection Tools

The instruments of the present research include questionnaires, interviews and video recordings. All these instruments have worked well to cross-check the information obtained from each source. Otherwise, the data obtained from limited sources could be defective, unreliable and, in some cases, misleading. Triangulation is preferred as an effective method for a consistent and justifiable study.

Questionnaire. (See Appendix 2 for a sample of the questionnaire) In the light of previous studies mentioned in the Literature Review section, a questionnaire developed by Katayama (2007) was used in order to collect information on students' and teachers' error correction preferences. The items of the questionnaire were examined with a group of instructors and any items that might cause ambiguity are removed or reworded. Then, it was translated into Turkish, the mother tongue of the participants and checked by the colleagues. The register of the questionnaire was kept casual, not very formal or hard to understand as if it was spoken by a learner in order to get more sincere responses relating to attitudes and beliefs, which is in accordance with Dörnyei's (2003) suggestion that surveys should sound as natural as possible. Another point is that the entries were kept short and clear for students and instructors to understand in order to increase reliability. As to the content validity, the survey was checked by two professors in the field. It was also pretested by three instructors and ten students to make sure that it is clear enough. The students and the instructors in the pre-test helped the researcher about any potential problems such as misleading or confusing questions or expressions. The feedback by the instructors and professors were also sought on the layout of the questionnaire, which was to improve the validity of the

questionnaire before wide-scale application. Table 2 shows the constructs and matching items addressing different issues.

Table 2
Constructs and Item Analysis of the Questionnaire

Constructs	Items addressing the construct
Overall attitude towards EC	1, 2
The timing of correction (delayed, immediate)	3, 4, 5
Importance of errors (major, minor, pronunciation; constantly /selectively)	6, 7, 8, 9, 10
Effectiveness of various correction technique	11, 12, 13, 14, 15, 16, 17, 18
Correction provider (self-peer correction,instructor)	19, 20, 21, 22

The questionnaire had two versions: one for students and another for instructors. The only difference between the two was addressing and reference conventions. The difference between the learner and instructor questionnaires is a single change in the instructions: "learners are asked to assess the usefulness of each activity for learning English; instructors for teaching English". While the instructors used the English version, the students used the Turkish one to keep learner misunderstanding at a minimum level. A group of EFL instructors also double-checked the translated version to eliminate any suspicion. The questionnaire features three sections with 22 items:

The first section contains questions on students' level of competency, sex, and their ages. The second section (items 1-10) asks about students' general opinions about error correction. It addresses the controversial issues mentioned earlier in the literature review such as "whether or not learner errors should be corrected; when learner errors should be corrected and who should correct errors (instructors or peers). The students are asked to indicate their degree of ratings. Response options are coded to the 5-point Likert scale, in which "1" represents always and "5" represents never. Finally, the third section (items 11-22) seeks answers about student's preferences for classroom error correction. It enquires about student's preferences for particular types of error correction techniques. The last question is specifically chosen as open-ended to give opportunity to both instructors and students for brief comments. Errors are exemplified in the questionnaire. The rating for student's opinions about each technique is measured on a 5-point scale as 1 representing very effective and 5 representing very ineffective on the subject of the frequency of correction.

Semi-structured interview schedule. The instructors were interviewed to reveal their opinions about error correction. The interview had 26 questions in line with the research questions such as general attitude towards error correction, timing, activity type, individual differences, proficiency levels and factors affecting its effectiveness, so on (See Appendix 1). It was conducted in a comfortable atmosphere as a casual conversation more than a discussion. Each took about 15-20 minutes. Some questions triggered others and this made the interviews more natural and reliable because the instructors stated that they answered the questions open-heartedly.

During the interviews the instructors were asked questions about their views on language teaching, and more importantly, on their attitudes towards the students' errors, their corresponding approaches with the factors affecting their decisions. These interviews were carried out in Turkish so that the researcher and the instructors could feel more comfortable and express their thoughts naturally and lucidly. As this study was conducted at the end of the semester, it was hard to find student volunteers to have interviews. Due to the time constraints of the break and exam nerves, the researcher asked instructors to video-record their classroom practices, instead. That helped reveal insights of students' and instructors' actual practices and presented the opportunity of comparing the statements they made during the interview to those they did in the questionnaire.

Video recording. Each instructor was asked to video record themselves for a maximum of two hours. They arranged the recording independently. It was important to see the learner errors and the treatment of the instructor on-the-job. These samples provided substantial information for the evaluation of the instructors' and students' attitudes clearly. The researcher did not choose to observe the instructors and students in the classroom as the presence of a stranger could have disturbed the natural flow of classroom teaching. Nonetheless, when a point was unclear, an extra discussion session with the instructor was scheduled to clarify their opinions.

Data Analysis

After taking necessary permissions from the Institute, a brief explanation was made about the aims and the conduct of the research in the classes. The participants were made sure about its confidentiality and anonymity (Cohen, Manion, & Morrison, 2011). The learners were asked to complete the questionnaire individually and anonymously in the class. It was important to ensure that they would not consult with one another or take the questionnaire out of class so as to avoid cross-fertilization of opinions. Later, the data were analysed with the help of the SPSS 22.0 software in detail for final evaluation.

The data collected through interviews was audio recorded, transcribed and then analysed through pattern-coding. The research questions were taken as the base and the constructs in the item analysis (Table 2) for the questionnaire were used as the codes for the interview, too. The data collected via interviews was coded during and after the process and codes were open to change, sticking to the proposition that the "codes should not be defined as rigid regularities with sharp boundaries; they can also cover varying forms" (Hatch, 2002). As an "exploratory problem-solving technique" (Saldana, 2008), coding is not about giving labels to some instances, it should be about linking the data. Richards and Morse (2007) also highlight the cyclical nature of the process by stating that "it leads you from the data to the idea, and from the idea to all the data pertaining to that idea" (p. 137). Since it is a small-scale study, the data was hard copied and then coded by hand. It is easier to see the links on paper when it is coded in pencil and make connections with the other data collection tools (Bazeley, 2007, p. 92). Analysing the data in a traditional way gave the researcher more control and a physical ownership of the study.

During the ongoing data analysis process, the researcher had the opportunity for member-checking and peer debriefing from time to time before coming to a decision (Creswell, 2012; Merriam, 1998). The codes and transcription were checked not only by 3 selected colleagues in the field, but also the participants. Interviewees' transcriptions were emailed to be checked for their statements. All of these techniques that were used for the qualitative data improved the trustworthiness and credibility of this study (Creswell, 2012; Janesick, 2004; Lincoln & Guba 1985; Spall, 1998; Spillett, 2003).

Three external raters volunteered to listen to the interviews. The raters were three PhD holders in the field of English Language Teaching. Each of them listened to the audios and then ranked them depending on the patterns mentioned above. The raters were not given any checklists not to interfere in their assessment. In this way, interrater reliability was ensured by using Cohen Kappa's degree of agreement. When more than half of the raters (2 out of 3 for this case) ranked an instance in the same way (For ex. Rater 1 instructor correction, Rater 2 instructor and peer correction, Rater 3 instructor correction, Final Ranking instructor correction), it was accepted as reliable.

The present research looked into the incongruity between students' and instructors' perceptions and preferences on learner error. The data provided a vital insight into Turkish EFL learners' preferences on error correction. The results obtained show that some preferences of the students match with those of the instructors; nevertheless, the majority do not.

Results

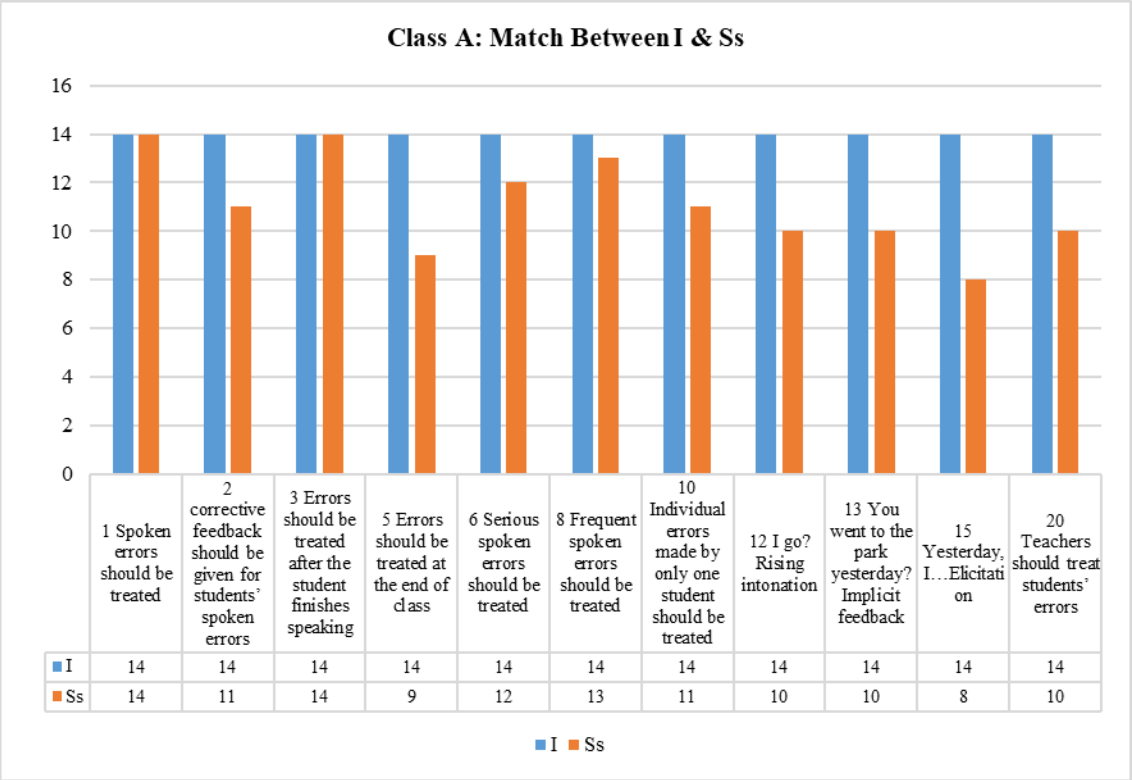
The results show the students' preferences for error correction techniques presented in this study. While some match the instructor's responses, most of them do not. Namely, students in all classes (A, B, and C) agreed with the fact that they found the situations in which they were explicitly corrected "effective". Most think that the instructor should be the one to correct the errors, so they showed signs of hesitancy about peer correction, which is in line with Kaivanpanah et al.'s (2015) study. Considering the instructor as the only source, correction by instructors is regarded superior to the one by the peers. Even the ones who are more positive about peer correction ask the instructor for confirmation whether the feedback they get is relevant enough or not. Another point is that the instructors at time provide explanations that may be challenging even for the most proficient. Furthermore, the majority of the students favour the techniques in which the instructors provide the correct model. They appear to feel more confident when their errors are clarified and they are given the opportunity to be corrected immediately. According to a study conducted by Elçin and Öztürk (2016), students' preferences widely differ in terms of the timing of the feedback. While some do not mind getting interrupted and corrected, the others can favour completing their speech or statements. It is also understandable that the students involved in this study showed favour for the techniques that are clear or offer them clear clues or choices.

Match Between Instructors and Students

Class A (A1 Level). As shown in Figure 1, all the students (11 out of 14 marked "always", 3 of them mark "usually".) agree with the instructor that their speech errors should always be treated (Q1) and many think that they should always be given

corrective feedback (Q2). Students do not want their errors to go unnoticed. They also state that their errors should be treated after finishing off speaking (Q3), not during the speech. The instructor accepts that s/he "rarely" treats spoken errors at the end of class (Q5) as the students expect. The majority of the classroom (85%) expect that if there are parts causing misunderstanding for the listener, error should be treated immediately (Q6). The instructor and her/his students agree on the fact that not only frequent spoken errors (Q8), but also individual errors should be treated (Q10). Most students are accustomed to the instructor's use of stress and intonation in order to draw attention to the problematic part of the sentence and both sides find it "effective" or "very effective" (Q12). Another technique that the instructor and students find effective is implicit feedback, in which the instructor does not directly point to the student's error, but indicates or indirectly amends (Q13). The students also expect the instructor to ask them for self-correction (Q15). However, even if self-correction seemed ideal, at low levels, it might not work well because learners might not notice the problem (Yoshida, 2010). Thus, learners are in need of metalinguistic feedback about why they use a specific language item in that way (Kaivanpanah et al., 2015). As a final point, in line with the previous study (2015), both the instructor and students claim that it is the instructor who should be in charge of error correction (Q20).

Figure 1. Class A-Match between the Instructor and Students

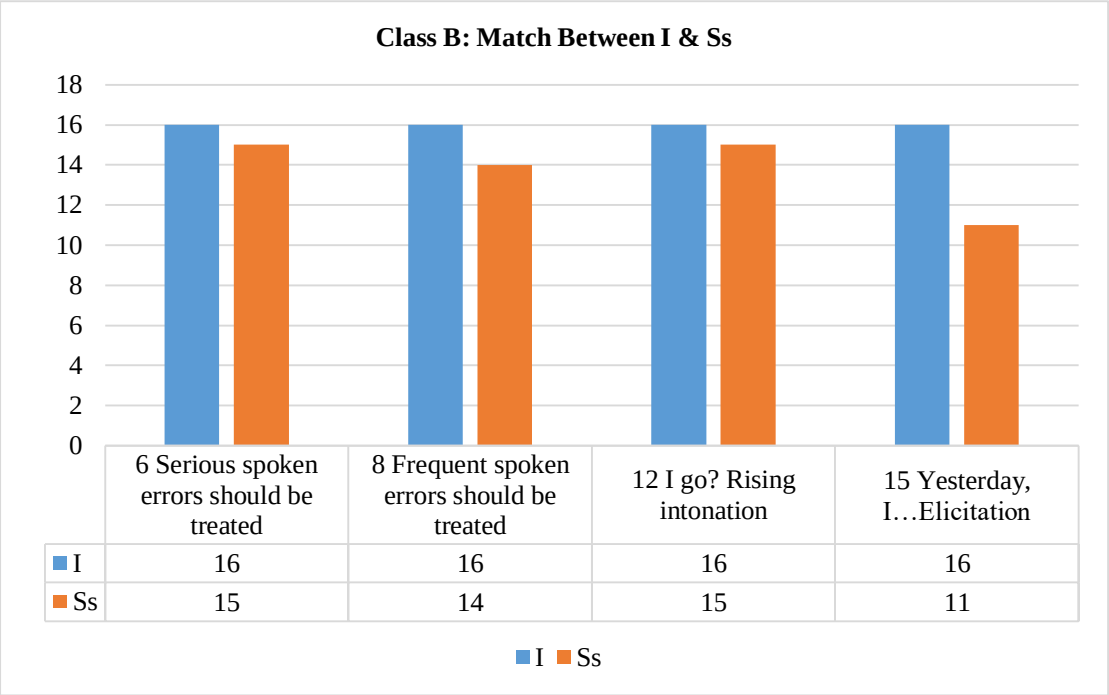


The video that the instructor recorded shows that the instructor offers options or choices to encourage the students to correct themselves. She introduces The Superlative and Comparative adjectives in the video. She uses her voice and facial expressions a lot to attract attention to the incorrect parts. She and her students appear to have built good rapport with each other, so a question can be directed from a student to another easily. The students work as a team to correct problems. In the discussion held with the

instructor about the video, she informed that she spent nearly one semester with the same group, so they knew each other well, which is reflected in the preferences of the instructor. In the interview, she stated that she has a different approach to each student. This becomes evident when she corrects the students, too. She mentioned that there are students who can be very shy or very talkative and overenthusiastic. Kaivanpanah et al., (2015) highlight that instructors should know their learners well and give feedback considering individual differences. Therefore, the way she corrects them depends on these variables. She explained that she approaches the shy students gently and friendly, but the sociable ones in a humorous way or formally if need arises. In this way, she aims to maintain an ideal balance in the classroom.

Class B (A2 Level). Chart 2 clarifies that the instructor and all the students in his classroom think that a spoken error causing any misunderstanding between the speaker and listener should be treated (Q6). Foster and Ohta (2005) states that if the communication between the speakers has broken down, correction can be provided by the instructor or the peers. Thus, 'if meanings are generally clear and communication is supportive and unproblematic…, it is arguable that learners could thus have spare attention to give to form, both of their own and of their partners' language' (p. 426). It should also be treated if this occurs frequently (Q8). Emphasizing the problematic area is considered a useful technique both the instructor and his students favour (Q12). This is how the instructor corrects the students most frequently although he believes that this type of correction does more harm than good. During the interview, he stated that if it is not a common case, he does not prefer to correct oral errors. The video shows that there is almost no example of correction. The instructor states that elicitation is a technique that he finds "effective" and so do the students. In fact, 72% of the students favour elicitation (Q15).

Figure 2. Class B-Match between the Instructor and Students



The data from the video recording and interview show that he refrains from correcting students. He only prefers correcting mistakes in a controlled activity after presenting the targets of the lesson. The video reveals that he has good communication skills with students, but the students' relationship does not seem as close and cordial as it is in Class A. Not surprisingly, the video recordings of Class B do not feature instances of peer correction. The instructor focuses on content while teaching suffixes and prefixes. There is no example of explicit correction in the video, which supports the points the instructor makes in the interview and the questionnaire. This is also an indicator for the reliability of the data.

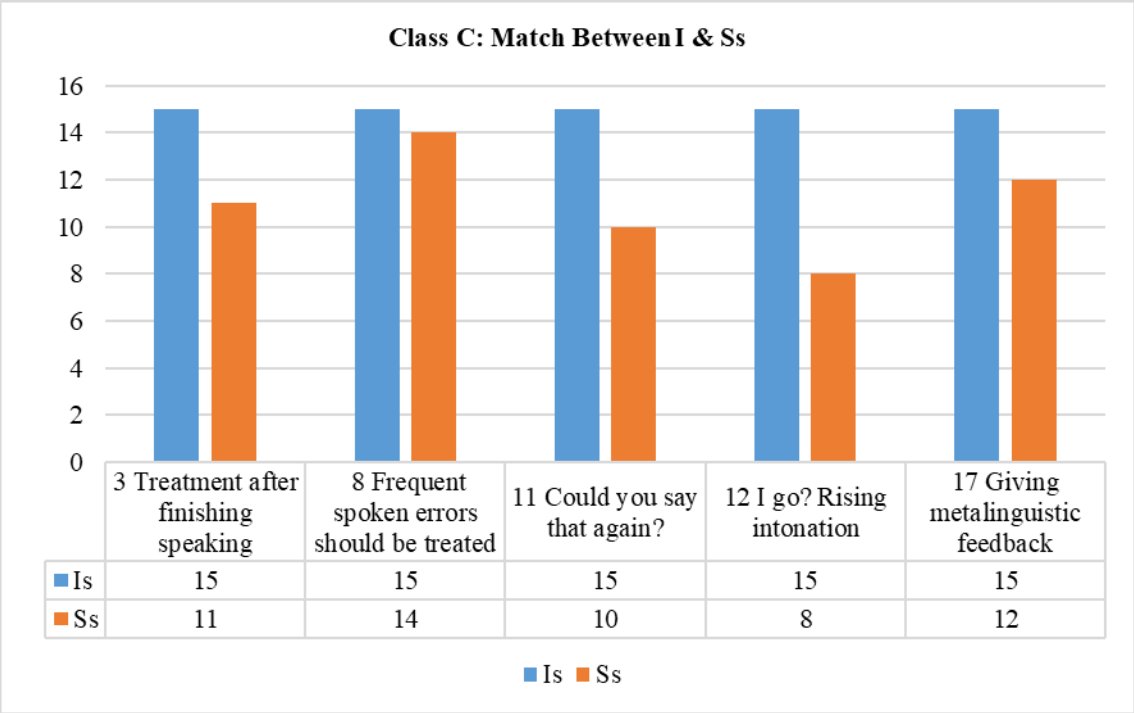
The instructor chooses to correct pronunciation mistakes once or twice only by repeating or presenting the correct form. However, it is not clear if the student is aware of the correction. Liu et al. (2011) claim that pronunciation is vital for an effective communication. Some studies also show that the beginner level learners might find recognizing correction clues harder themselves compared to the intermediate level learners (Lyster & Ranta, 2012; Panova & Lyster, 2002). According to Katayama (2007), it can be because the non-verbal clues such as raising intonation or repetition might not be clear to learners so it does not lead them to self-correct. Another issue is the repetition of the mispronounced item by the teacher as learners do not notice the teacher's strategic move and take it as it is (Gooch, Saito, & Lyster, 2016).

As illustrated in the previous studies, the instructor does not pay enough attention to and there is no sign of the student's awareness of her/his error in this study, too. It is understood from the interview that the instructor chooses to correct the students implicitly in order not to discourage the student from participating in class activities. He also stresses the individual differences and he is conscious of the fact that a particular –working– method may not work for some students, so he enquires about students' preferences in private when he feels a correction method might affect a

student negatively. He seems to adopt a more responsible and student-centred approach to error correction.

Class C (B1 Level). Chart 3 shows that the instructor and the students agree that the students' spoken errors should be treated after they finish speaking (Q3). They might be thinking that interruptions can deter them from speaking confidently. Nearly all students and the instructor think that frequent spoken errors should be treated. In the interview, the instructor clearly stated that if students make the same error repeatedly, she definitely corrects it as she thinks that there might be a problem in conveying information or the way she presents the topic. For that reason, she emphasises that she encourages more practice in the classroom even if she personally does not prefer to correct oral errors. Both the instructor and the students confirm that sentences such as "could you say that again?" are useful (Q11). However, a very recent study by Amalia, Fauziati & Marmanto (2019) claim that this type of correction is highly ambiguous to comprehend, so learners are left with wasting too much time on finding the position of the error and how to correct it. More than half of the students claim that pointing out a problematic area by repetition is an effective technique (Q12). Thus, when the instructor corrects student errors, she makes the most of this technique. Another match is that the students prefer the instructor to give a hint or a clue without directing the attention to the error right away (Q17). This is what the instructor finds "effective", too. At B1 level, what is expected from the students is to "spot their own error and then correct it".

Figure 3. Class C-Match between the Instructor and Students



During the interview, the instructor states:

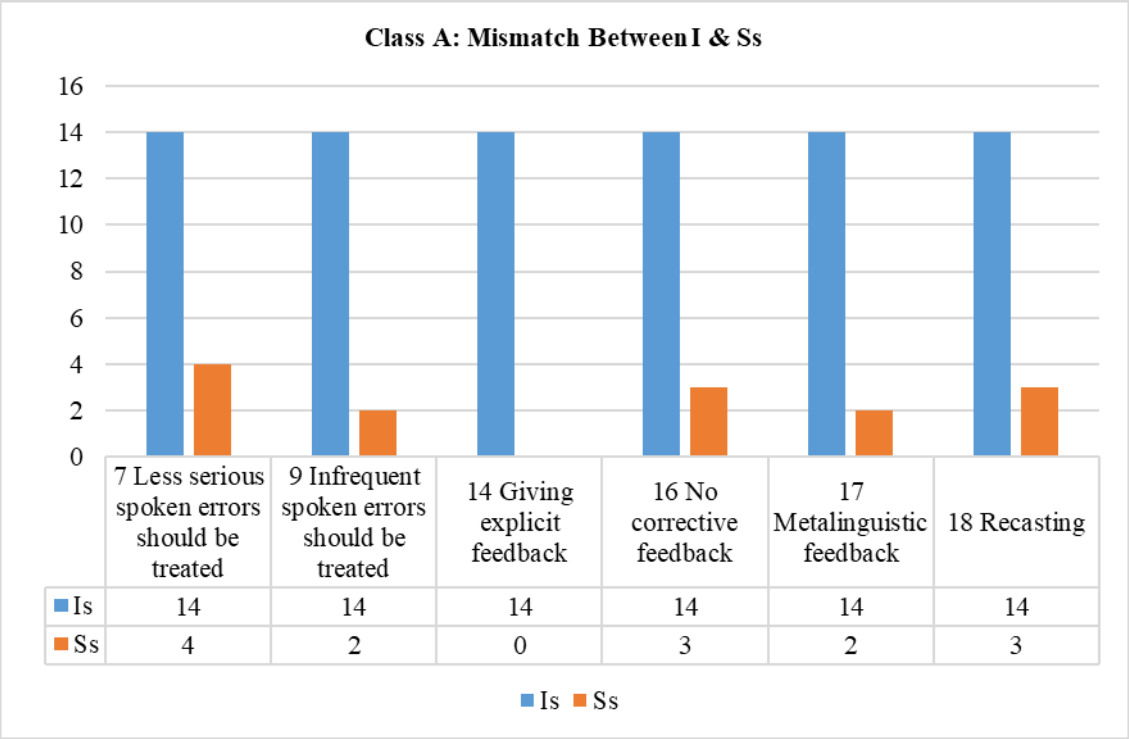
"I personally prefer correcting students' mistakes on paper only, it can be a draft copy of a dialogue or a writing homework but I never correct them in their faces. I don't want to break their eager to speak in the class." (Instructor Z., B1)

She also mentions that she never corrects students' pronunciation mistakes. The students are scared of making mistakes when speaking, so they tend to keep quiet. Breaking that barrier is more important than presenting the correct pronunciation. Hence, her priority is to overcome such a problem at first. She does not correct her students at every opportunity since she believes that the students should be more independent and correct their own mistakes at this level (B1). On the contrary, lower level students would need more correction during the developmental stages of grammar patterns and language skills.

The Items Mismatching Learners' Responses

Class A (A1 Level). Chart 4 demonstrates the difference between the learners' and the instructor's preferences. The instructor thinks that she usually treats the spoken errors after the activities (Q4). However, students have mixed opinions about it (28% always, 21% usually, 21% sometimes, 14% rarely, 14% never). Even if an error does not cause any misunderstanding among the speakers, the students still expect it to be treated (Q7). She believes that infrequent errors should not be treated, but half of the students expect them to be treated no matter how frequent they are (Q9). The data reveals that the instructor does not consider the explicit feedback "effective", so she does not tend to use it as a part of classroom practice. However, nearly all students find this technique "effective" or "very effective" (Q14). She finds not giving corrective feedback "ineffective", but the A1 level students find it "very ineffective" (Q16). This technique is probably used for students to get the clue and correct themselves, but the students are not competent enough to detect the hints and self-correct their mistakes. The majority claim that metalinguistic feedback is very effective because it focuses on the explanation of the language form explicitly and why it should be used in that specific way (Kaivanpanah et al., 2015). However, the instructor is not sure about its usefulness and marked "neutral" for this entry (Q17).

Figure 4. Class A- Mismatch between the Instructor and Students

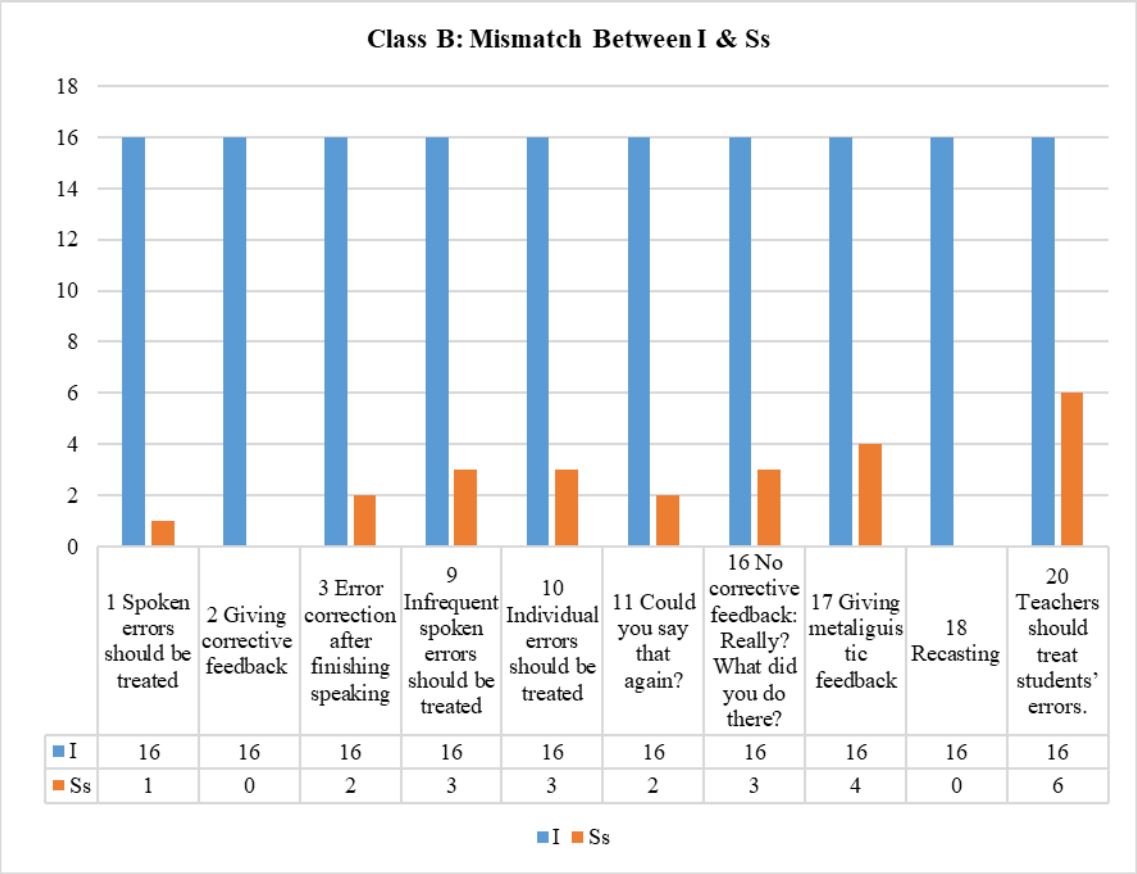


Class B (A2 Level). As seen in Chart 5, almost the entire class think that oral errors should be treated (Q1). However, the instructor is quite decisive about the negative effect of the correction. He justifies himself by saying that:

"I think correction is not an effective tool so I rarely correct my students. I can even say that it is counter-productive because it decreases the student motivation." (Instructor M., A2)

In line with Kaivanpanah et al.'s (2015) study, the majority of the students state that they always or generally want their instructors to correct them, but the instructor claims that he rarely corrects oral mistakes (Q2). The students (A2 level) favour their instructor to treat their mistakes after they finish speaking (Q3). However, the instructor occasionally does that. The instructor never chooses to correct rare spoken errors (Q9). In his interview, he clearly states that he does not deem correction "effective" and he refrains from correcting any student only for the sake of it. As he thinks that many student errors are "developmental" and without causing them to lose their motivation, developmental errors can be corrected as their command of English improves (Q9). The students think that even individual errors should be treated (Q10). However, the instructor marks "sometimes" for this category. In other words, he is not in favour of frequent error corrections.

Figure 5. Class B- Mismatch between the Instructor and Students



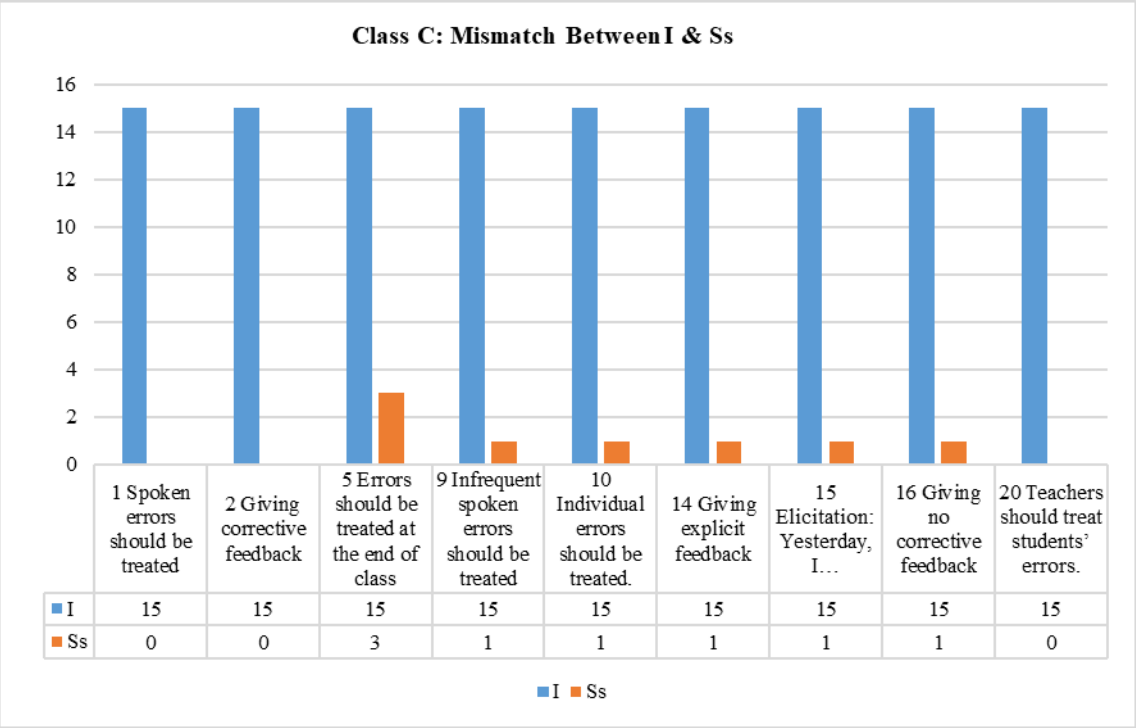
At this level, basic requests such as "Could you say that again?" work well as students still need a great deal of help from the instructor. The students can learn them by memorising, so they do not have to do a lot of mental work to generate or recall the structure. However, the instructor does not favour it and marks it as "neutral", which has no value (Q11). Most students do not prefer the instructor to give any corrective feedback (Q16). They think that it does not work for them, so the majority marked it "ineffective". It is a strategy used in the classrooms, but the students may not understand that the instructor offers them the clue to encourage self-correction. The reason also might be that their English level is so low that they do not have the competence to correct their own mistakes, and so, they are mostly instructor-dependent. For them, the instructor is the only source of new information. In line with Katayama's (2007) and Papangkorn's (2015) studies, most students state that they need metalinguistic feedback such as the clarification of the verb change in the Past Simple Tense. However, the instructor does not meet these needs as he does not consider it "effective" (Q17). Most students also do not want their errors to go unnoticed. It can be understood from the question 18 that the students expect the instructors to attract their attention to the error. They believe that only presenting the correct version would not be "effective" enough (Q18). Only 26% of the classroom agree with the instructor. Many students believe that they do not have the competency of correcting an error, so the majority marked it "ineffective". Instead, they prefer the instructor to treat the errors, so they select "effective" for treating errors (Q20). Nearly all of the students underline the primary role of instructor in correcting oral errors although the instructor chooses "sometimes". He might have highlighted the ineffectiveness of peer or instructor

correction because for both items the instructor marks "sometimes", but he marks "usually" for self-correction. The instructor does not seem to reach a decision on some of questions as he opts for "neutral" six times (Q19).

Class C (B1 Level). As Chart 6 shows, the majority of the Class C students propose that their spoken errors should be treated, but the instructor disagrees and states that she does not tend to correct students or she rarely does it (Q1 & Q2). In the interview, she said to choose not to correct any errors unless she teaches a grammar item. She also highlighted that she only corrects Present Simple Tense when she teaches Present Simple Tense, not Simple Past Tense or any other grammar item such as prepositions. This signifies that she has a focused approach to error correction. Namely, the content is more important than form to her. In this case, the instructor does not prefer correcting all mistakes, which creates a mismatch with the students' preference, but the previous research has shown that some teachers do not want any errors to go unnoticed because they are equally serious (Vann, Meyer & Lorenz, 1984). According to Ellis (2009), "an error is an error" (p. 57), so it needs to be worked on. An alternative approach to error correction is made by Williams (2003), who suggests that teachers and students have a "conference" (p. 2) to talk about personal problematic areas and how to deal with them.

Another point is that the students do not favour "delayed feedback", and they prefer it immediately or after the activity, not at the end of the lesson (Q5). They feel they might fail to remember their error or it can be missed or ignored during the hustle and bustle of classroom activities. They think that if error correction is unaccountably delayed, it unavoidably loses its effect. However, she "usually" prefers to do so. In this sense, Kelly (2006, p. 3) also claims that "there is no simple answer to the question of when to correct. It will depend on many interrelated factors including learner sensitivity, learning situation, learning purpose or task type". Although the instructor does not prefer to correct individual errors, nearly all the students expect the instructor to correct them individually (Q10). This shows that they expect to be recognised and valued personally, not as a member of the classroom. While this result is parallel with Amrhein and Nassaji's (2010) study, it is contrary to Katayama's (2007). In the previous study, high level Canadian ESL learners favoured the teacher correct all of their mistakes. The latter one which was carried out with Japanese ESL learners revealed that the students did not want the teacher to correct all mistakes, but to correct selectively.

Figure 6. Class C- Mismatch between the Instructor and Students



Similar to other students at A1 and A2 levels, the B1 level students also find explicit feedback "very effective" or "effective" (Q14). However, none of the instructors consider it highly useful. They are inclined to think that correcting errors directly without presenting a chance to do the mental work would not offer any benefit to the learners. Being unaware of this, students might prefer this as it appears to be unchallenging and economical. The data shows that these students prefer the instructor to elicit the correct version of the error by starting the sentence like 'yesterday, I…' (Q15). However, the instructor states that she feels "neutral" about elicitation. In other words, either she never uses it or typically considers it to be impractical. In addition, the instructor gives no corrective feedback and shows interest only in the content of a sentence, not the form (Q20). The studies can be group into 3 in term of who should provide the correction. The first group is that nearly all the students expect the teacher to correct the errors in the classroom (Amrhein & Nassaji, 2010, Cestone, Levine, & Lane, 2008; Zacharias, 2007) as it is the case in this study because students consider the instructor as the authority so correction is her/his responsibility. In the second group, students are more flexible and they value peer feedback (Miaoa, Badger, & Zhen, 2006) but they still think that it cannot be as useful as instructor's. For the last group, students prefer their peers to correct them (Chenoweth et al., 1983; Hyland, 2000; Kaivanpanah et al., 2015).

In this study, this finding is fairly understandable at low levels because the instructor is in charge of every activity in the classroom and they rely on her /his knowledge. At these levels, students are largely hesitant at coming forward and have doubts about their peers' knowledge and competency. They also do not want to learn anything grammatically incorrect, yet the instructor seems to be "neutral" or undecided on the necessity of correcting all grammatical errors.

Proficiency Levels and Learner Preferences

The results show that almost all students at three different levels (A1, A2 and B1) express strong preference for error correction. In contrast to Katayama's (2007) study, the students also expect error correction to be continual rather than selective, which is similar to Amrhein and Nassaji's (2010) paper. Here we can take a closer look at the similarities and differences between the results of this study in order to determine whether there is any relationship between learners' level of proficiency and their attitudes towards error correction.

As it is clear in Chart 1, A1 level students are more insistent on error correction. They are more instructor-dependent and expect corrective feedback for their errors. They expect the instructor to correct all errors whether they are frequent, occasional, major or negligible. However, we can see a clear decrease in demand as the level of students rises (Chart 2 and 3). For example, in B1 class, the students desire the instructor to treat errors only after they finish speaking and they favour correction for frequent errors. A1 level learners can be more concerned about grammar, and less about the organization of ideas, which is a problem at higher-level classes. It would not be wrong to say that students gain autonomy as they improve their proficiency and become more independent learners.

Discussion

Reassessing the data, some patterns clearly require attention. Some results display consistency in all selected classrooms while others show variations or contradictions. The data above present us with the preferences that are identical and consented over in all classrooms. It indicates that all the students and instructors support the view that "frequent spoken errors should be treated". Rising intonation to indicate the mistake in a sentence seems to be the most favourable choice among participants. Also, the majority of students disagree with their instructors over the infrequent speech errors because the instructors tend to believe that these errors can deliberately be overlooked unless they cause a communication break-down (Foster & Ohta, 2005) but the students desire to keep their learning under control or they are often cautious about using correct forms. The students are in incongruity with the instructors on the necessity of corrective feedback and they take every chance to state that they need clear explanations about their mistakes, which has received a mention in Kaivanpanah et al.'s (2015) study, too.

The results reveal that responses to the same questions vary from one student to another in relation to their language levels, previous educational experiences, motivation for language learning and etc. It shows that preferences are highly personal and they show inconsistencies and variations among and within different groups. There are instances of a specific preference which is singled out by a student. Alternatively, while students of two different classes match their instructors' preference that errors be treated after a student finishes, another group can claim the opposite (Q3).

Error correction is an intricate and contentious issue. It is surrounded by concerns over the timing, types, techniques and deliverance of correction. However, the findings of this study draw a striking parallel with the previous studies (Cathcart & Olsen 1976; Corder, 1967; Kern, 1995; Nunan, 1988; Mccargar, 1993; Schulz, 1996, 2001; Willing, 1988). It shows that there are differences between instructors' and

students' preferences for error correction. Language teacher and student expectations do not meet in many cases. For example, learners generally disagree with the view that constant error correction could result into frustration (Burt & Kiparsky, 1972). Rather, they favour being corrected more often and more thoroughly than language teachers assume (Cathcart & Olsen, 1972; Vann, Meyer, & Lorenz, 1984).

Educators and researchers do not prescribe or proscribe any systematic strategies to deal with the learner errors because several strategies can prove effective in specific contexts. Ur (1996) suggests that teachers should pose many questions to consider and then try to come up with answers regarding their own practical teaching experiences. This study also proves that a technique favoured in a class and matched with the language teacher can easily be mismatch and disfavoured in another one. There is no one-fits-all method to use in all classrooms. These have many variables, so error correction techniques and practices should alter accordingly. Another point is that meeting students' needs is a cumbersome task. It requires a great deal of effort and time to tailor relevant practices, which is not always the case for instructors as some teach at certain settings only for short periods.

The study shows that there is no consensus between teachers and learners in terms of error types (Amrhein & Nassaji, 2010; Spratt, 1999). The results clearly show that errors leading to misunderstandings are considered significant for both (Foster & Ohta, 2005). However, students prefer instructors not to ignore any types of error – random, systematic, individual or common.

It is widely believed that learners favour peer correction (Chenoweth et al., 1983; Hyland, 2000; Kaivanpanah et al., 2015), but the results indicate that students desire the teacher to comment on their mistakes in line with some previous studies (Amrhein & Nassaji, 2010, Cestone, Levine, & Lane, 2008; Zacharias, 2007). They also state that they favour self-correction when they are capable of carrying out. However, even though they state so in the questionnaire, the video recordings expose some variations among the classrooms. The atmosphere in each class is unique, so teaching practices change accordingly. In class A, there are instances of peer correction and the learners seemed to be used to work as a community. However, in some classrooms, the atmosphere appears formal and detached, not only towards instructors, but among students, too. Thus, peer correction has not been sampled in these classrooms.

Furthermore, the results provide useful insights regarding Turkish EFL learners' preferences for classroom oral error correction by touching on students' proficiency levels and techniques such as peer-correction, instructor-feedback techniques and self-correction. Instructors should be more cautious and selective about when and who to ask for self-correction. Especially at lower levels, student might not be capable of correcting their own mistakes (Yoshida, 2010) (Please see Chart 1). They can still be instructor-dependant, so instructors should be more responsive to feedback needs.

A general conclusion to draw from the findings is that the discrepancy between instructors' opinions and classroom practices on error correction and the perceived needs can lead to the failure of teaching. If instructors adopt a positive approach to learner preferences, their needs can be met more quickly and effectively. That is, a good teacher/instructor should be able to modify to address the learners' expectations and needs if necessary. It is also essential to incorporate classroom discussion on error

correction at the beginning of the course to help learners understand the logic behind how correction is provided and why it is given in a particular way.

Also, error correction should not be approached uncompromisingly. Rather, it is recommended that error correction should be open to discussion or "conferencing" in Williams' (2003) terms. It is shown that the expectations and preferences of learners at different levels of exposure change and this can place demand on the instructor to keep up with these changes. Therefore, flexibility is vital to cope with changing demands. Instructors can get ahead with some theoretical foundations and in-service trainings so that they can become more aware of potential assistance on error correction.

An important point is that some external factors such as cultural and contextual settings can create noticeable differences (Havnes et al., 2012). The context -any particular EFL setting- should be carefully examined before drawing conclusions. The best decisions on how to correct learners' errors effectively can only be made with an in-depth analysis of the needs and expectations of learners. What we need is becoming context-sensitive to the students' attitudes, opinions, expectations, and cultural background as mentioned in the implications section. We have to acknowledge that only cooperation with the learner can lead to long-term success.

Conclusion and Implications

Error correction is a key issue, which gets attention from language instructors and teachers at various levels of teaching. This study has shown that dealing with error correction is not an easy job as having many variables that affect students' preferences (Amalia et al., 2019) as well as teachers' decisions in the classroom. It is confirmed that simple pedagogical rules would not work for every context because they would not reflect the reality of it. For that reason, this study suggests that training programs may provide instructors with a set of guidelines that can assist them in reflection. They also encourage instructors to carry out research in order to reveal the preferences and tendencies of students. Adopting suggestions made for unrelated contexts and implementing them without consideration would be bound to fail due to the differences among student preferences.

Comparable to the previous studies (Amrhein & Nassaji, 2010; Spratt, 1999; Kaivanpanah et al., 2015), the researcher has identified various differences between teachers' and students' views regarding preference for which error correction techniques to use, how much correction to provide, and how to correct errors. These differences are in line with Kern's (1995) and Schulz's (1996, 2001) findings. Addressing students' needs are vital for motivation, but this does not mean that their preferences will ensure the most effective learning. The previous research revealed that the teacher should treat the errors or give corrective feedback (Amrhein & Nassaji, 2010, Cestone, Levine, & Lane, 2008; Zacharias, 2007). This study has shown that the students often favour the teacher's leading role in providing the cues, clues or choices that would help them self-correct. The learners also like to be told their errors and offered correction. However, Truscott (1996) states that this type of correction should be abandoned due to harmful effects. Therefore, teachers should be able to compare and develop their practices with the recent research findings and alter when need arises.

The followings are the recommendations that can be drawn from the current study and they constitute an explicit set of principles that teachers can reflect on during decision making processes on error correction policy:

Language instructors should be context-sensitive. Before planning any error correction practices, instructors should take the context into consideration. Students in the early stages of language acquisition need encouragement more to produce language for meaning so expecting students to self-correct at those levels will not be appropriate.

They should raise self-awareness. Instructors should become aware of their current practices. Asking a colleague to observe you and give feedback on it or audio recording oneself and then reflecting on it can be a good practice to raise awareness and makes you more conscious about what you are doing and why you are doing it.

They should become technique-abundant. It is certain that one technique solely does not fit all. Having knowledge of a few different types of error correction techniques at their service can help instructors in terms of reaching more students.

They should be patient and persistent. Instructors should give the opportunity to their students to self-correct. They should not rush to give the correct answer in a hassle. Instead, they should let them process the information and give them cue to correct their errors. In this way, more students will be able to come through. The least effective technique is to provide them with the answer directly without leaving any space for inference, reasoning, guessing or, in some cases, problem solving skills.

It is essential to know what students prefer for error correction and what type of feedback would be more effective for them. When instructors know these, they can use these strategies more selectively and consciously, so their teaching would be more effective. Thus, students can reformulate their interlanguage, avoid fossilization and thus improve their proficiency of the target language. Certainly, these are not the rules that the instructors must follow without consideration. They are open to reconsideration and modifications. They should serve as a basis for instructors to develop their teaching and contribute to their classroom practices.

Limitations

Concerning the specific context and the limited sample size analysis because of the nature of the study, this study leaves room for improvement. These are:

- The ages of the three instructors ranged from 28 to 32, which affects the generalizability of the results. Instructors whose age is above this range can have different preferences.
- The identification and categorization of errors were largely based on the researcher's own judgment, and such judgment may not be accurate and appropriate in all cases.
- The study cannot fully reveal whether and how error correction helps students develop their second language as this study cannot reveal the long-term effects of error correction.
- More participants from different contexts and levels can extend the study to other settings such as public schools.

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Appendix

Appendix 1

Semi-Structured Interview Questions

Appendix 1:
Semi-Structured Interview Questions

1. What is your attitude toward L2 learners' errors?

2. Does error correction contribute to L2 learning?

3. Should learners' errors be corrected?

4. Do you always correct student errors? If not, how do you select errors to correct?

5. Before the lesson, do you determine which kind of errors or forms you will correct?

6. When should learners' errors be corrected?

7. Does it depend on activity type: free – controlled?

8. Does it depend on focus of the activity: fluency – accuracy?

9. Does it depend on levels of L2 learners: elementary, pre-intermediate, intermediate, upper-intermediate, advanced?

10. Does it depend on age of L2 learners: young learners, adolescence, adults?

11. When do you prefer delayed correction?

12. When do you prefer immediate correction?

13. What kind of errors do your students generally make in speaking activities? (Grammar, vocabulary, pronunciation)

14. Which kind of L2 learners' errors should be corrected? (Grammar, vocabulary, pronunciation)

15. Should L2 learners' errors be followed or written down?

16. How should errors be corrected?

17. Do you use explicit error correction in your teaching? What are some advantages and disadvantages of explicit error correction?

18. Do you use implicit ways of error correction in your teaching? How do you implicitly correct student error? What are some advantages and disadvantages of implicit error correction?

19. Do you think students notice when you implicitly correct their errors?

20. Do you behave in the same way when a group of students or only a student makes an error? If not, how and why does your error correction technique change?

21. Who should do the correction? (Self-correction, peer correction, teacher correction)

22. Which kind of error correction is most effective for L2 learner's learning?)Self-correction, peer correction, teacher correction)

23. Which factors can affect a correction to be effective? (Classroom atmosphere, level of students, type and focus of the activity)

24. Do all your students react to your error correction behaviours in the same way?

25. Do you think that teacher should take individual differences/learners' variables into account?

26. How can you tell whether your error treatment is effective for learners to acquire the correct information? (How to judge the effectiveness of your error correction?)

Appendix 2

A Sample of Instructor Questionnaire

Dear Colleagues,

The purpose of this study is to investigate the perception of instructors and students about error correction preferences in their classes. There are no risks to you from participating in this research.
Please do not put your name on this questionnaire.

Thank you for your contribution to the study.

Part I. Please tick the information that applies to you.
Gender: ( ) Male ( ) Female

What level are you teaching now? A1 A2 B1 B2

How long have you been teaching English?

( ) 1 year ( ) 2-5 years ( ) 6-9 years ( ) more than 10 years

Part II: Please tick the best option that applies to you. Make sure to mark only one.

		Always	Usually	Sometimes	Rarely	Never
1	Students' spoken errors should be treated.					
2	How often do you give corrective feedback on students' spoken errors?					
3	Students' spoken errors should be treated after the student finishes speaking.					
4	Students' spoken errors should be treated after the activities.					
5	Students' spoken errors should be treated at the end of class.					
6	Serious spoken errors that cause a listener to have difficulty understanding the meaning of what is being said should be treated.					
7	Less serious spoken errors that do not cause a listener to have difficulty understanding the meaning of what is being said should be treated.					
8	Frequent spoken errors should be treated.					
9	Infrequent spoken errors should be treated.					
10	Individual errors made by only one student should be treated.					

Part III: How do you rate each type of spoken error correction below?

Teacher : Where did you go yesterday?
Student : I go to the park.

		Very Effective	Effective	Neutral	Ineffective	Very Ineffective
11	Could you say that again?					
12	I go? (Repetition: The instructor emphasizes the student's grammatical error by changing his/her tone of voice.)					
13	You went to the park yesterday? (Implicit feedback: The instructors does not directly point out the student's error but indirectly corrects it.)					
14	"Go" is in the present tense. You need to use the past tense "went" here. (Explicit feedback: The instructor gives the correct form to the student with a grammatical explanation.					
15	Yesterday, I..... (Elicitation: The instructor asks the student to correct and complete the sentence.)					
16	Really? What did you do there? (No corrective feedback: The instructor does not give corrective feedback on the student's errors.)					
17	How does the verb change when we talk about the past? (Metalinguistic feedback: The instructor gives a hint or a clue without specifically pointing out the mistake.)					
18	I went to the park. (Recast: The instructor repeats the student's utterance in the correct form without pointing out the student's error.)					
19	Classmates should treat students' errors.					
20	Instructor should treat students' errors.					
21	Students themselves should treat their errors.					
22	Please indicate any other comments you would like to share related with the study: --- --- ---					

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Material Development in the Context of the Preschool Teaching Profession

Okul Öncesi Öğretmenliği Bağlamında Materyal Geliştirme*

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ABSTRACT: In Turkey, preschool education teachers take courses on material development during their university education, and as such are expected to prepare materials to meet children's interest and needs and enrich their learning environment. This study aims to reveal preschool education teachers' views on material development courses and the effects of these courses on preschool education teachers' professional lives. The participants in this qualitative study were 19 serving preschool teachers, who had taught in an MEB-affiliated kindergarten. In this study, an interview form was created by the researchers as the data-gathering tool. The interviews were conducted with teachers. After data gathering process, the content analysis was applied to the collected data. According to the results of the study, which is aimed to reveal preschool education teachers' views on material development courses and the effects of these courses on their professional lives, the preschool teachers recognized the importance of material development in preschool education and considered material development courses as significant within the teacher education program. In this context, teacher education programs should include material development courses. The study also reveals how material development reflects on the preschool teaching profession.

Keywords: teacher education, material development, preschool teachers.

ÖZ: Türkiye'de okul öncesi öğretmenleri, üniversite eğitimlerinde materyal geliştirme ile ilgili dersler almaktaydılar ve bu öğretmenlerin çocuklarının ilgileri ve ihtiyaçlarına göre materyal hazırlamaları ve öğrenme ortamını zenginleştirmeleri beklenmekteydi. Bu çalışma, okul öncesi öğretmenlerinin materyal geliştirme derslerine ilişkin görüşlerini ve bu derslerin mesleki yaşantıları üzerindeki etkilerini ortaya koymayı amaçlamaktadır. Bu betimsel tarama çalışmasının katılımcıları, bağımsız anaokullarında çalışmakta olan 19 okul öncesi öğretmeninden oluşmaktadır. Bu çalışma kapsamında, veri toplama aracı olarak araştırmacılar tarafından bir görüşme formu hazırlanmıştır. Görüşme formunun hazırlanmasının ardından, öğretmenlerle iletişime geçilerek görüşmeler gerçekleştirilmiştir. Verilerin toplanmasının ardından, araştırmanın analizinde içerik analizi kullanılmıştır. Okul öncesi öğretmenlerinin materyal geliştirme dersine yönelik görüşlerini ve bu derslerin mesleki yaşamlarına etkisini ortaya çıkarmak üzere yürütülmüş olan bu araştırmanın sonuçlarına göre, öğretmenler okul öncesi eğitimde materyal geliştirmenin öneminin farkındadırlar ve materyal geliştirme derslerinin öğretmen eğitim programında önemli bir ders olduğunu düşünmektedirler. Bu bağlamda, öğretmen yetiştirme eğitim programlarında materyal geliştirme derslerine yer verilmelidir. Bu çalışma materyal geliştirmenin okul öncesi öğretmenliği mesleğine yansımalarını ortaya koymaktadır.

Anahtar kelimeler: öğretmen eğitimi, materyal geliştirme, okul öncesi öğretmenleri.

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Introduction

In recent years, significant regulatory changes have been introduced in teacher education in response to criticism about teacher education programs and the training of qualified teachers in Turkey (Yıldırım, 2011). In this way, qualified teachers contribute to increases in the quality of education (Erden, 1998). Society puts forward well-trained teachers to affect its students positively, to present them with essential information, and to contribute positively to the students' personality development. For this reason, well-structured teacher education programs are required so that preservice teachers can improve themselves in ways deemed appropriate to their intended profession (Şahin, Kartal, & İmamoğlu, 2013). In 1981, the provision of higher education in Turkey was reconstructed under the Law for Higher Education (Law Number 2547). After 15 years, the Council of Higher Education (YOK; Yükseköğretim Kurulu in Turkish) comprehensively reorganized teacher education programs. Certain changes and innovations were introduced to the teacher education model, the period of study, as well as the program names and connections, etc. This organization detailed the "teacher education" duties of education faculties and defined the teaching profession as an area of profession with distinctive principles, methods, and applications. In 1997, the Preschool Teacher Education Program was added to the structure of education faculties.

By the 2006-2007 academic year, new arrangements for education faculties had been introduced, along with updates to address problems associated with the teacher education model developed in 1997. The new regulation changed the distribution of courses in the program. Accordingly, courses on the teaching subject field constituted 50-60% of all courses given, with courses on professional teaching knowledge constituting a further 25-30%, and the remaining 15-20% of the courses were for general knowledge (YOK, 2007).

In 2018, the Council of Higher Education updated all teacher education programs (YOK, 2018). In today's current teacher education programs, courses on the teaching subject field constitute 45-50% of the courses given, with courses on professional teaching knowledge constituting a further 30-35%, and the remaining 15-20% is general knowledge courses. While the ratio of professional teaching knowledge courses has increased, the ratio of courses on the teaching subject field has decreased.

In the context of this study, the Preschool Teacher Education Programs of 1998-1999 are compared with those of 2006-2007 and changes made to the courses for material development are revealed. In the 1998-1999 program, there were three courses provided on the subject area of material development. These were Material Production I, Material Production II, and Instructional Technologies and Material Development. Comparatively, in the 2006-2007 version, there were fewer courses on material development with only two courses offered. These were Material Development, and Instructional Technologies and Material Development in the "updated" Preschool Teacher Education Program. This change was one of the starting points for the current study. Significantly, however, in 2018, all material courses were removed from the new Preschool Teacher Education Program (YOK, 2018). It is thought that addressing all these changes is important in terms of revealing how the material development course/s in each of these teacher training programs developed.

Material Development was one of the basic foundation courses in the Turkish Preschool Teacher Education Program as the use of teaching materials is fundamental to the embodiment of the concepts of preschool education. The early years significantly affect children's learning and development; it is when children start to understand and comprehend concrete concepts, and to think differently in comparison with adults. For this reason, to make something "concrete" for children through the use of materials is an important necessity within the preschool education period. In this context, preschool teachers are required to possess knowledge about and be skilled in the use of materials in the preschool education learning environment to properly support student learning and development. It is expected that teacher education programs produce teacher candidates with the requisite knowledge and skills for their future teaching profession. According to the YOK, the content of the Material Development course included designing, developing, and assessing various educational materials for preschool children (puppets, stuffed toys, puzzles, etc.) (YOK, 2007). The description of the YOK's Material Development course for the Preschool Teacher Education Program was considered as a broad framework for universities. Ege University, where this study was conducted, described the content of Material Development course as follows:

In this course, students were expected to learn:

The effects of concept toys and role-play materials, which are used in preschool education, on children's social, emotional, psychomotor, physical, cognitive, language, moral, and gender development;

How to choose supportive and creative toys that meet children's interest;

Types of toys and materials;

The characteristics of playgrounds, toys, and materials;

How to prepare materials for different developmental areas and different age-groups;

How to use materials for supporting education and enriching the educational environment (see Information Package/Course Catalogue, Ege University, n.d.).

When analyzed, it can be stated that the Material Development course represented an extensive scope for preschool teacher candidates. According to the Turkish Ministry of National Education (MEB; Millî Eğitim Bakanlığı in Turkish), teacher candidates are expected to possess certain competencies. The teaching profession demands certain competencies under three main headings encompassing their personal and professional values: recognizing students; teaching and learning process; and, professional knowledge, professional skill, attitude and values (MEB, 2017). Under the teaching and learning process, teachers are expected to develop materials for their students' needs. Furthermore, the MEB described seven headings for special field competencies for preschool teachers as areas of development; communication with family, family involvement, and family education; assessment; communication; creativity and esthetics; cooperation with school and community; and professional development (MEB, 2015). When the "areas of development" competence field is analyzed, it can be stated that preschool teachers should be able to choose, use, and prepare materials. In this context, the Preschool Teacher Education Program should help teacher candidates in gaining these competencies, especially material development, which is the subject of and another reference point for conducting this study.

The Material Development course not only taught the development of materials but also their application within preschool teaching. The Preschool Teacher Education Program offers certain courses with practical amenability for teacher candidates. In courses on school practices, in particular, teacher candidates develop appropriate materials for their daily plan and the children's needs in their practice classes and then develop these materials to increase the effects of their practice. In this way, teacher candidates develop the knowledge, skills, and material transfers between the courses they have to complete in gaining their undergraduate degree. In other words, they should use the knowledge and skills gained in the Material Development course in other courses. This transfer of "knowledge and skills" supports students' learning so that they can internalize what they learn more easily and use their knowledge and skills across different courses, over and over again. Furthermore, this transfer is expected to occur starting in their undergraduate years right through to their professional teaching life.

It is important to convey the knowledge and skills about material development from undergraduate years to the preschool classroom because everything around children should be considered as a learning tool in the early years. Children are curious individuals; they have a natural desire to touch, feel, and play with everything. In this context, preschool teachers are expected to increase the quality of materials around children and also to develop materials for children's learning and development. According to the literature, using materials in the learning environment makes a valuable contribution to children's education. Accordingly, materials facilitate students' learning, increase their interest and desire, and provide real-life experiences (Apperson, Laws, & Scepansky, 2006; Demirel, Seferoğlu, & Yagci, 2001; İşman, 2005; Kablan, Topan, & Erkan, 2013; Koşar et al., 2003). These various research studies all revealed the importance of using materials for a qualified education. Furthermore, the American National Association for the Education of Young Children (NAEYC) (2009) declared that teachers should create an interesting and sensitive environment to promote children's learning and development. To that end, the NAEYC recommended preschool teachers prepare a learning environment in which children can explore materials by choosing appropriate ones in terms of children's needs and interest. Additionally, teachers are expected to prepare learning environments in which materials guide children to specific activities and experiences (Norris, Eckert, & Gardiner, 2004), and provide children different materials and opportunities for learning by doing (Copple & Bredekamp, 2006; Epstein, 2007). Materials are not only important for children but also for their preschool teachers. With the help of materials, teachers make the content of the curriculum appeal pragmatically to their students (Achola, Gudo, & Odongo, 2016). In a learning environment with materials, teachers can provide experience for children through their participation, and this can embody abstract concepts. Adewale (2011) stated that teachers can use materials to attract children's attention to the class. Similarly, Okobia (2011) indicated the significance of using materials for effective curriculum implementation. With the help of materials, teachers can keep the children's interest alive. It is for this reason that teachers should choose and revise materials to keep up with children's changing interest to support the aims of education (Heromen & Copple, 2006). Furthermore, researchers stated the importance of using materials in early childhood education. In the literature, there are many studies, such as using music materials in early childhood education (Rodriguez & Alvarez, 2017), block play and

mathematics learning in preschool (Trawick-Smith et al., 2017), block play on academic learning in preschool (Rasmuson, 2019), the effects of toys on the play quality of preschool children (Trawick-Smith, Wolff, Koschel, & Vallarelli, 2015), and instructional materials on oral skills among early childhood learners (Okune, Gudo, & Odongo, 2016).

The Turkish Preschool Education Program emphasizes the importance of materials and it assigns preschool teachers with the responsibility of providing materials for children (MEB, 2013). In other countries, courses on materials aim to teach how to use suitable materials for providing children with creative learning experiences in various fields (Belmont University, n.d.; Carroll Community College, n.d.; University of Botswana, 2018). In addition to these universities, the University of Washington offers courses called "Engaging Interactions & Environments" and "Focus on Emotional Support & Classroom Organization." In these two courses, students are expected to learn how to identify and describe well-organized and materials-rich environments to support children's growth and development. In addition to this, a course called Multi-Ethnic Studies: Methods, Content, and Materials is offered at the same university with the aim of helping preservice and in-service teachers identify content and materials and devise methods for implementing ethnic studies programs (2019). Northern Illinois University (NIU) offers material-related courses in early childhood education programs by referring to multi-cultural diversity. The courses offered in NIU are Methods and Materials for Teaching English Language Learners in the Content Areas, and Teaching English Language Learners in Bilingual Programs: Methods and Materials. The aims of these courses are instructional approaches and curricular materials for English language learners in bilingual education programs (2019). Unlike in the Turkish educational system, in America, early childhood educators learn how to teach reading and writing in their undergraduate years, since they can teach from kindergarten to 3rd grade. For this reason, some universities offer materials-related courses on teaching reading. One of these universities is Stevenson University. The Materials for Teaching Reading course is offered for teacher candidates with the aim of teaching how to select and evaluate materials for teaching reading and related skills that are consistent with the findings of scientifically based reading research (2016). In some universities, undergraduate programs do not offer courses on the subject of materials, directly, but they do offer courses including material. One of them is Lasell University. Its Interdisciplinary Studies with Early Childhood Education Concentration program offers a course called Early Literacy Teaching & Learning and students are expected to learn instructional strategies and materials to support young learners at the end of this course (n.d.).

The Current Study

In light of this information, using and developing materials for preschool education are significant points and it is expected that preschool teachers transfer their skills in and knowledge of material development to their professional teaching life. In this context, the current study aims to reveal preschool education teachers' views on material development courses and the effects of these courses on their professional teaching lives. To achieve this aim, the researchers attempted to answer these three research questions:

- What do preschool teachers think about the material development courses that they took in their university education?
- How do preschool teachers use materials in their teaching profession?
- What place do material development courses have in preschool teachers' personal lives?

Method

Research Design

This qualitative study is an example of phenomenological research. The aim of phenomenological research is to discover the meaning of the experiences of different individuals (Husserl, 2012). In other words, phenomenological research describes the common meaning of several people's experiences with a phenomenon or concept (Creswell, 2013). In the current study, different teachers' thoughts about material development courses and their related experiences in their subsequent professional life are revealed. The researchers gathered data from teachers with experience in the material development phenomenon and attempted to elicit a holistic description defining the essence of their collective experience.

Participants

To achieve the aim of the study, 19 participants were used. These were six "most experienced" preschool teachers who graduated in 2007, eight "experienced" preschool teachers who graduated in 2010, and five "new" preschool teachers who graduated in 2014 from Ege University's Department of Preschool Teaching in Izmir, Turkey. The reason behind this selection was an attempt to reveal the differences between teachers' views relating to materials depending on the length of their experience. Besides this, the reason why two different groups of "most/experienced" teachers were included in the study is that the YOK regulated the teacher training program in 2006. Subsequent to this regulation, certain changes were applied to the teacher training programs in education faculties; one of which applied to courses on material development. Following this regulation, the Preschool Education Program started to offer a single Material Development course instead of the two former courses, Material Production I and Material Production II. The distribution of participant preschool teachers by graduation year and gender is presented in Table 1.

Table 1

Preschool Teachers' Gender and Graduation Year

	Teaching Experience		
Gender	9 years (2007 graduates)	6 years (2010 graduates)	2 years (2014 graduates)
Female	6	7	5
Male	-	1	-
Total	6	8	5

While forming the working group, several common features of the participants were taken into consideration. These common features are that the participants each graduated from Ege University, had taken the "Material Development" course from the same instructor, had taught in an MEB-affiliated kindergarten, and started work without a break following their graduation. Based on these criteria, the study was announced to the alumni group. Teachers were identified who met the criteria and volunteered to participate in the study. It was ensured that each of the three groups had a similar number of teachers. A total of 19 teachers were selected for inclusion in the study. All the teachers have worked in independent public schools with double-shift schooling. Furthermore, the number of children in all classes ranged from 20 to 25. The children in these schools came from families with a low socio-economic level. Going by all this, it can be stated that all teachers had not the same but similar working conditions. As previously mentioned, all of the participants received the material development course from the same instructor who is an expert in the field of early childhood education and also the first author of this study. This factor facilitated the acquisition of deeper information on the subject during the interviews and in the reporting of the study. On the other hand, there are seven years between the first group's material courses and the last group's material courses. During these seven years, the instructor gave the material courses and gained in-depth experience in material development. This could have caused the teachers in the last group to take the material course in a single period, but with a more intensive content.

Although all of the participants had graduated from Ege University's preschool education undergraduate program and received the material development course from the same instructor, there were certain differences in the undergraduate education process that were deemed beyond their control. First of all, a number of changes were introduced nationally in the teacher training undergraduate programs. Not all of the participants received the same number of material development courses. Those teachers who graduated in 2007 received two courses, while those who graduated in 2010 and 2014 received one course. In 2009, Ege University's Faculty of Education moved to a new building. Therefore, the teachers who graduated in 2007 had taken their material development courses within an inappropriate environment, whilst the other groups took the material development course in a workshop that was specifically designed to cater to such practical lesson types.

Data Collection Tool and Procedure

An interview form was created by the researchers as a data-gathering tool. First, the related literature was examined, then, based on the literature, the interview form was created. After opinion was sought from an expert working within the Department of Preschool Education, the final draft of the interview form was ready to be used in the study. The interview form included questions grouped into three different categories: questions relating to material development courses taken in university education, questions relating to the usage of materials in teaching professions, and questions relating to the place material development courses have in teachers' personal lives. These three different categories were determined based on the research questions of the study and were used for analyzing the data to address the research questions. The preschool teachers were contacted by the researchers and individual interviews

conducted. Each interview was recorded and later transcribed for the purpose of post-interview data analysis. All interview records were written under the related questions. Then, the questions and each of the teachers' answers were grouped according to the three research questions.

The researchers analyzed the teachers' answers according to this final form of the data. The researchers used content analysis for the purpose of data analysis. to this end, the researchers followed these steps during the analysis process: preliminary preparation, qualitative data coding, identifying themes, interpreting the findings, and reporting the findings. The transcripts of the data were read recurrently. The data were coded by the researchers separately. Then, the researchers compared their codes, discussed any differences of opinion until they reached a consensus. Finally, the findings were ready to be interpreted and then reported. A pseudonym coding system was employed for the teachers' direct quotations so as to provide a level of participant confidentiality. Accordingly, NW (new teachers) was used for the 2014 graduates, ET (experienced teachers) was used for the 2010 graduates, and MET (most experienced teachers) was used for the 2007 graduates.

Reliability

In qualitative research studies, it is not expected that the findings show a single, simple truth since the aim is not to produce a generalization based on the results. The measures used in qualitative studies, a type of scientific research, must be valid and reliable. In all processes of the study, the published literature was considered to be the primary source. Expert opinion was sought in planning the study, and in formulating the research questions and interview questions. In addition, the data were grouped under themes to eliminate conflicts. In the reporting of the study's results, the research process is explained in detail and the findings are supported by direct quotations from the participants. In addition, the researchers coded the data independently, and then compared their coding and formed common codes. The interrater reliability between the researchers was calculated as 92%. All data was securely stored to ensure the reliability of the study. For ethical reasons, an informed consent form was prepared for the participants, and their consent was obtained by asking them to participate in the study. All of these measures were taken to ensure that the study was valid and reliable.

Findings

In the study, the researchers aimed to reveal preschool teachers' views about material development courses and the effects of these courses on their professional lives based on the three research questions: preschool teachers' thoughts about the material development courses taken during university education, preschool teachers' usage of materials in their teaching professions, and the place occupied by material development courses in teachers' personal lives. In this section of the study, the results are presented for each research question. Furthermore, categories are sorted in descending order according to their frequency. In other words, the first category is the most frequently seen among the teachers' responses.

Preschool Teachers' Opinions on Material Development Courses

The teachers were asked to define the material development courses they took during their university education – Material Production I and Material Production II (for 2007 graduates), and Material Development (for 2010 and 2014 graduates). The teachers defined these courses with not only common categories but also certain differences. The teachers indicated that material development courses provide resources for preschool teachers working in difficult conditions so as to create an environment in which teacher candidates can prepare materials, develop a process for supporting the preschool education program, and support teachers' creativity. In addition to these common categories, the teachers defined material development courses by referring to preparing developmentally appropriate materials for children and supporting children's creativity. Some of the teachers' answers were grouped into different categories. While the "new" teachers mentioned using waste materials and multidirectional thinking to define material development courses, the "most/experienced" teachers defined them as understanding the importance of using materials in preschool education and exploring their own skills. The "most experienced" teachers also defined these courses as supporting children's development, gaining self-confidence, and making a happy, and a compelling process. In revealing the teachers' perspectives, the following direct quotations are provided:

> I describe this course as a course in which I developed materials aimed at children's development, utilizing waste materials in the materials design and developing process. I believe that this course is useful in providing materials for teachers working in different conditions. (NT1)
>
> I think that this course is one of the most important courses that educators should take. While materials are needed in all aspects of education, materials are essential to the quality of preschool education, in particular. (ET2)
>
> Material development courses supported our creativity and pushed us to our limits, as well as providing an environment in which we presented original materials in addition to existing materials. (MET2)

The preschool teachers used positive and negative expressions to reveal what they thought about material development courses. The preschool teachers defined material development courses within seven positive categories: supporting teachers' creativity; creating materials; utilizing waste materials; providing resources for preschool teachers; developing skills; supporting children's development; and supporting the preschool education program. Furthermore, the "most/experienced" teachers used different positive expressions including knowing oneself, sharing, looking at sample materials, using the skills gained in personal life, and having the chance to choose which materials they developed. Also, the "new" teachers defined the positive aspects of the course as developing different perspectives. It can be stated that the teachers' definitions of material development courses parallel their positive expressions of the courses. Based on this parallelism, it could be inferred that teachers have positive opinions about material development courses. Some sample positive expressions used by the teachers were as follows:

> Most of us were assigned to regions where children did not have economic opportunities and toys. With the help of the skills acquired on this course, we can prepare toys by spending little or no money. (NT5)
>
> On this course, I learned that I could prepare a hand puppet and a shy puppet – even me. (ET7)

> These courses proved that I could achieve certain gains and indicators in my teaching profession. (MET6)

When the teachers' negative expressions were analyzed relating to material development courses, it is seen that the teachers' negative thoughts are grouped under three categories: lack of time; financial difficulties; and, requiring too much effort. Lack of time was particularly expressed by the "new" teachers, who took the material development course as a one-semester course. On the other hand, the "most/experienced" teachers who took the courses over two semesters did not emphasize a lack of time. Furthermore, the "new" teachers mentioned not using materials in practice and requiring handicrafts experience as negative aspects of the course. When the "most/experienced" teachers' negative thoughts are examined in relation to the courses, it can be seen that these teachers lacked an effective learning environment. The "new" teachers and "experienced" teachers had a different learning environment due to the Faculty of Education having moved to a new building in 2009. For this reason, the "most experienced" teachers took their materials courses in a less appropriate learning environment when compared with the "other teachers who took their course in an environment specifically designed for material courses. In addition, the "experienced" teachers expressed that they wanted more information about material development, such as how to prepare technology-based materials, how to develop different kinds of materials for diverse activities, and that they wished for a prepared booklet and materials pool relating to the course. At this juncture, as long as teachers are gaining experience in the teaching profession, they will continually need new information relating to their profession to be able to renew themselves. Some of the negative expressions used by the teachers are as follows:

> The duration of the course was limited. (NT3)

> Each week we would come to the course with lots of bags -- to carry our materials -- which caused issues because the student transportation was always crowded. I wish we could have had lockers at school in which to keep our materials. (ET8)

> Preparing materials cost both time and money. (MET4)

The teachers were asked to describe what they would change about the courses, and also how they would teach these courses. These questions were asked to reveal the teachers' suggestions for material development courses. All of the teachers had five common suggestions for these courses. In addition, the teachers' suggestions differed depending on their working periods. First, the common suggestions were introducing sample materials, developing new materials, conducting a project, supporting the preschool education program, and utilizing waste materials. The "new" and "most experienced" teachers suggested organizing field trips, using materials with children, and providing a richer learning environment. The "new" and "experienced" teachers shared some common suggestions, too. These were students working in groups, and providing guidance for students in material development. While the "new" teachers suggested taking precautions for financial difficulty and not taking attendance, the "most/experienced" teachers gave different and more detailed suggestions such as preparing materials for children with special needs, sharing experiences relating to material development in preschool education, organizing material development contests, supporting student creativity, and providing more time and information for material development. Another suggestion was about the materials that could be prepared during the course. All of the teachers stated that if they taught this lesson, they would make

their students prepare materials for concepts and gains in the preschool education program that were interesting, multi-directional, and utilized different kinds of materials. In particular, the "most/experienced" teachers emphasized the use of different kinds of materials. Apart from these common suggestions, the "new" teachers mentioned creative and durable materials. The "experienced" teachers referred to materials for children's creativity and different versions of existing materials on the market. The "most experienced" teachers stated that they would make students develop value-based materials, technology-based materials, materials for orientation week, wooden materials, and other low-cost materials. Some suggestions the teachers proposed are presented as follows:

> I wish I could develop a project by communicating with other universities, and in this way, I could provide a variety of perspectives. (NT4)
>
> I wish I could provide an environment in which materials were presented in a national preschool education congress and I could exhibit the materials in national and international projects. Furthermore, I could start a project to send the materials that teacher candidates developed on this course to preschool classrooms that do not have the materials and operate in difficult conditions. (ET6)
>
> I could add some details. I could organize a practice in which children use materials developed by teacher candidates. In this way, I could observe children's interest toward the materials and the contribution the materials make to the children's development within the context of the material development course. (MET6)

The teachers indicated that they prepared educational toys based on the concepts and gains of the preschool education program as well as puppets, costumes, and masks in their material development courses. Among all the participant teachers, only two "new" teachers and two "most experienced" teachers indicated that they do not use the materials that they developed on their materials courses. The rest of the teachers stated that they used their own materials from their university days in their professional lives. The reason why these four teachers did not use their own materials were personal reasons, such as having lost the materials, not having taken them from their hometown to their place of work, or they were unwilling to use the same materials for a number of years. All of the teachers who used their own materials in class defined their materials as multi-directional, interesting, and supportive of the preschool education program. In this context, some examples of the teachers' answers are as follows:

> I have been working as a preschool teacher for two years. I have been using my own materials, which I developed on the material development course. The children play with these materials. I was careful to develop them using durable and functional materials, so they have become only a little deformed over all this time. (NT2)
>
> I used all the materials that I developed for the material development course. All of the materials noticeably support the conceptual development of the children and are influential in their permanent learning. (ET3)
>
> I have used my own materials during my nine years of teaching. I have not seen any issues with their malfunction whilst using them. On the contrary, I have been able to adapt my materials according to the characteristics of different age groups. (MET1)

Different to these positive teacher statements, one "experienced" teacher stated:

> I used my materials up until last year, but I have since lost them when moving to another city. (ET5)

Preschool Teachers' Use of Materials in Their Professions

The teachers were asked to describe how they have used materials and the information obtained from their material development courses in their teaching profession. Most of the teachers' answers are grouped under eight common categories, which are: providing resources for teachers, developing materials, supporting children's learning and development, supporting teachers' creativity, being informed of materials, utilizing waste materials, supporting preschool education program, and using materials for concepts and gains within an education program. Among the teachers, the "most/experienced" teachers, in particular, stated that they have used materials for different purposes and so more of their responses were seen in these eight categories. On the other hand, the "most/experienced" teachers specified different usages of materials in their classrooms. The two groups of "most experienced" and "experienced" teachers stated that they used materials for special purposes. The examples they gave of these special purposes included supporting children with special needs, celebrating special occasions, using them within projects, providing children's active learning and taking responsibility, and enhancing family involvement. In addition to these categories, the "most experienced" teachers mentioned that they have used materials to attract children's attention visually and to respond to the needs of the classroom. It can be inferred that teachers referred to the common points of materials' usage in their teaching professions to a large extent. Samples of the teachers' expressions about how they use materials and information about material development in their teaching profession are as follows:

> By means of this course, I can make useless objects valuable for children and I can teach children and they can learn with these materials entertainingly. (NT4)
>
> I could prepare difficult puppets and costumes, and this gave me more self-confidence. I used my materials with the other teachers at my previous school, which was lacking in materials. (ET6)
>
> These courses contributed to my profession. These contributions include learning the importance of using appropriate materials in education, recognizing that I can reach my aims with the materials I developed more qualitatively, and learning how to provide materials for the children's needs. (MET2)

In addition to the teachers' usage of materials and material development information in their teaching profession, the researchers asked the teachers how often they prepared materials for their class. The teachers used different time-period definitions to describe how often they used materials in the classroom. The time periods used by only the "new" teachers were more often at the beginning of the semester and within the school's means. However, teachers from all three groups ("new," "experienced" and "most experienced") pointed out that they prepared and used new materials once a week. Some examples of the teachers' answers about how often they prepared materials are as follows:

> I prepare materials once a week and I develop them for the main concept on which we will focus. (NT5)
>
> I design appropriate characters or materials based on the monthly plan. In this way, my materials archive increases day by day. (ET5)
>
> In contrast to these teacher responses, in developing materials for children, one of the "most experienced" teachers stated:
>
> To tell the truth, I use more ready-made materials instead of developing materials. (MET4)

Another point that deserves highlighting was how teachers obtained materials for their classrooms. A significant majority of teachers from all three groups stated that they prepared materials for their classrooms. Besides this, a few teachers were provided with materials through families, school management, and they also bought ready-made materials. With the exception of the "most experienced" teachers, the other teachers indicated that they utilized waste materials in their classes. In addition, the "experienced" teachers specified different ways of obtaining materials. These ways included using natural materials, obtaining materials from charities, from other schools, from other teachers, and by taking advantage of the available technologies. To clarify the ways in which the teachers obtained materials, the following are examples of the teachers' answers:

> If the materials that we need in the classroom can be easily developed, then I develop these materials. But if they are difficult to prepare, I will buy the materials. (NT3)
>
> If I have enough time, I like to develop permanent materials. I particularly like utilizing waste materials. During material development, I receive support from the children's parents, and from my husband and our friends. (ET3)
>
> When I was working at a village school, I made contact with different schools where my friends worked and they sent many materials to us that we used for quite a while. Besides this, I develop my own materials and use them. (MET6)

Material Development Courses in Preschool Teachers' Personal Lives

In this section, the findings relating to the effects of material development courses on teachers' personal lives are presented. The teachers were asked to define the contributions made by material development courses to their personal lives, and how they evaluate themselves with respect to material development. The teachers stated that they have used the skills acquired on the material development courses to prepare material, to teach material development to others, and to explore their own skills. It can be said that all of the teachers agreed on these three categories. These categories include different codes for describing the places of material development courses in teachers' personal lives. For example, exploring their own skills includes the codes of; thinking sophisticatedly, thinking productively, self-reliance, creativity, and being thrifty. Some of the teachers expressed that they have used materials for home design and repurposed waste materials in their personal lives. Moreover, as to the effects of material development courses in their personal lives, the "new" teachers stated such effects as following material development workshops, creating a materials pool, and turning material development into a lifestyle. Here are some example statements given by the teachers when expressing the effects of material development courses on their personal lives:

> After the course, I started to think that I could generate effective materials by using everything available. (NT5)
>
> With the help of this course, I could see waste materials and anything else from the perspective of an educator. I can help my friends choose appropriate toys for their children. What's more, I can prepare gifts for my friends. (ET3)
>
> These courses support creativity, thinking differently, and saving money since you can develop materials instead of buying expensive new ones. (MET5)

Lastly, the teachers were asked to evaluate themselves with respect to material development. Of all the teachers, only three used negative adjectives: weak in handicraft skills, lazy, and not proficient in terms of material development. While the first

adjective was mentioned by a "new" teacher, the other negative adjectives belonged to two "experienced" teachers. When analyzing the other teachers' self-evaluations, a variety of positive adjectives were seen. Among the "most experienced" teachers' self-evaluations with respect to material development, there were more positive and adequate descriptions, such as skillful, multi-directional, materials developer, and making an effort to develop materials. In revealing the self-evaluation of teachers with respect to material development, the following are presented as direct quotations:

> I am at the beginning of life. There are so many things that I should learn. (NT4)
>
> I think that we are more thrifty and materially aware, and also creative and problem-solving when compared to individuals of the consumer society. (ET5)
>
> These courses and my professional life have taught me many things, but I am not content with just these things, and so I conduct research to see what more I can do. (MET2)

Discussion

The basic elements of a quality education are the usage of resources and materials to support the teaching process and to make learning both more effective and permanent (Demiralp, 2007). A qualified teacher who is able to develop appropriate materials for the class is trained during a period of preservice education on the basis of gaining field information, professional teaching knowledge, and general cultural knowledge (Özkan, Albayrak, & Berber, 2005). Furthermore, by designing a resource center with learning materials such as teacher-made materials, equipment, and guides, preschool children's achievement can be improved as a result (Giordano, 2008). To raise the quality of teachers, the undergraduate training courses provided to teacher candidates are of significant importance. One such course is the Material Development course in Preschool Teacher Education Programs. The aim of the current study was to reveal the views of Turkish preschool education teachers' on the material development courses that they received during their undergraduate education, and the effects of these courses on their professional lives depending on the length of their experience.

It is known that teachers might lack proficiency in the use of materials in the first years of their teaching profession (Anılan & Anagün, 2007; Dursun & Kuzu, 2008). To be able to support teachers using effective materials for their education, teacher education programs should provide this knowledge and these skills to prospective teachers and enable them to put it into practice. With the assistance of taking courses relating to materials, the current study revealed that teachers have positive opinions regarding material development courses, and also that they described these courses with positive statements such as providing resources for preschool teachers, preparing materials, constituting a process for supporting the preschool education program, and supporting teachers' creativity. It can be said that teachers are aware of the importance of material development for preschool education. According to the participant teachers in the current study, introducing sample materials, developing more materials, conducting projects, supporting preschool education programs, and utilizing waste materials could improve material development courses. In addition to these suggestions, the "most/experienced" teachers suggested preparing materials for children with special needs, sharing experiences related to material development in preschool education, organizing contests for material development, supporting students' creativity, and providing more time and information for material development. The teachers

demonstrated that in having experience in teaching, they were able to identify different points on this matter based on their increased level of experience. In a similar finding, Acer (2011) revealed that material development courses support teacher candidates' creativity and skills through developing materials. Furthermore, Ersoy (2006) stated that teacher candidates' creativity is improved by using materials. This parallelism between teachers and teacher candidates can be interpreted as an expected outcome for material development courses in teacher education programs. In addition to these expected outcomes, Karamustafaoglu and Kandaz (2006) revealed that preschool teachers cannot always apply activities due to a lack of materials, and this is something that bears thinking about because preschool teacher candidates have taken courses on materials and material development to address this issue. In brief, material development courses aim to teach preschool teacher candidates how to develop materials by emphasizing their importance.

At Ege University in Turkey, the Faculty of Education moved to a new building in 2009, and as a result, the Material Development course was then given in a well-designed workshop environment. Dikici, Yavuzer, and Gündoğdu (2006) emphasized that the lack of sufficient physical equipment for a materials course in education faculties could lead to the students receiving no benefit from this course. Also, although the "new" teachers took their material development courses in a more appropriate learning environment, they mentioned taking their course within just one semester, which differed from that of the "most/experienced" teachers. The "new" teachers indicated that they had very little time for their material development process in the semester. Furthermore, Morken, Divitini, and Haugalokken (2007) emphasized the dissemination of practice-based education in teacher education by referring to its importance in increasing the quality of teaching. In teacher education, courses on how to design and develop materials, together with all the associated knowledge and skills relating to the subject, should be given to teacher candidates practically (Yanpar Yelken, 2009). In this context, it can be said that the quantity and quality of applied material development courses should be improved in teacher education programs.

The teachers underlined working in groups and providing guidance in material development to teacher candidates. Working in groups provides an environment in which undergraduate students learn from each other; they support, cooperate, and communicate with one another; they develop information and exchange thoughts in the classroom (Yanpar Yelken, 2009). Apart from working in groups, these material development courses were conducted by providing guidance in material development through instructor feedback. In the literature, feedback is specified as an important factor in education (Black & William, 1998; Erişen, 1997; Hattie & Timperley, 2007). Furthermore, if preservice teachers have experience in receiving feedback, they transfer that to their own professional teaching life and the development of quality education (Koray, Kaya, & Pekbay, 2016). In the current study, the teachers' responses regarding feedback revealed its importance in a way that parallels the literature.

Teachers' pedagogical content knowledge and competencies affect the materials that they are able to develop and use in their classrooms. To develop effective material for children's interest and needs, the teacher should know children and know how to plan, develop, and use materials (Bakaç & Özen, 2017). Another important point is that teachers need to know what kind of materials can be used for the proper teaching

objectives (Yanpar & Yıldırım, 1999). In addition to the Material Development course, teachers in the current study indicated how they use information about material development and integrate materials into education. The teachers mentioned several ways of using information about materials and integrating materials into education, namely providing resources for teachers, developing materials, supporting children's learning and development, supporting teachers' creativity, being informed about materials, utilizing waste materials, supporting preschool education programs, and using materials for concepts and gains within education programs. In addition to these categories, the "most experienced" teachers used materials to attract children's attention visually and to respond to the needs of the classroom. Similarly, Yalın (2002) stated that materials have great significance in attracting attention and supporting and strengthening students' learning. In the current study, the "most/experienced" teachers used materials intended for special purposes such as supporting children with special needs, celebrating special occasions, enhancing family involvement, and providing for children's active learning. In early-years education, active learning ensures children learn in their own way. For an active learning approach, materials and learning domains have great significance (Pekdoğan & Kanak, 2016). Furthermore, in active learning, the learning environment is prearranged and materials are offered by teachers (Pekin, 2000), thus the learning environment promotes children to use materials in an active way (Huber, 2000). For all these purposes, a significant majority of the teachers in the current study stated that they prepared materials for their classrooms. In addition, the "most/experienced" teachers specified different ways to prepare such as using natural materials, obtaining materials from charities, from other schools, or from other teachers and taking advantage of the available technologies. Likewise, Kara and Çağıltay (2017) emphasized the importance of technology for teachers using different materials, and in facilitating teachers' jobs.

In a study by Şahin et al. (2013), the Material Development was defined as a course where students learn the information required for their professional teaching life, and where students are active because of its practical structure. In the current study, not only were the professional contributions of material development courses taken into consideration, but also their personal contributions. The teachers stated that they learned how to prepare materials, to show others how to develop materials, and to explore their own skills. Among the "most experienced" teachers' self-evaluations with respect to material development, there were more positive descriptions such as being skillful, multi-directional, material developers and making an effort to develop materials. By contrast, just three teachers evaluated themselves in the material development process negatively as being weak in handicraft skills, lazy, and not proficient in terms of material development. Similarly, the literature indicated that some teachers could be unwilling to use materials in education, and would not make the effort to find out how they can support learning with materials (Grant, Peterseon, & Shojgreen-Downer, 1996; Kazu & Yeşilyurt, 2008). In general, teachers develop, choose, and adapt materials for children's education. In this context, Suydam and Higgins (1977) stated that materials should be embraced as a tool for increasing teachers' effectiveness. Developing materials has a significant impact on children's development and learning because students' learning motivation is increased with the help of materials (Bilgen, 1994); children's senses are included in the learning process, learning is more permanent and it

is important to use materials in a well-designed and planned way (Ornstein & Lasley, 2000).

Conclusion and Recommendations

The current study was conducted with the aim of revealing preschool education teachers' views on material development courses and the effects of these courses on their professional teaching lives. All the findings were presented under three headings; teachers' thoughts on the course, teachers' usage of materials in their teaching professions, and the places the courses have in teachers' personal lives. According to the results of the study, the teachers recognized the importance of material development in preschool education but they did not show the same level of competence in practice. Most of the teachers used materials that they had developed in their university education and they also developed materials to meet their children's needs and interest. The preschool teachers considered material development courses as being significant for the teacher education program by referring to their positive experiences about the course and the use of materials in education. Furthermore, the materials have significant effects on preschool education, and so skills and knowledge about material development are transferred to teachers' professional teaching life and personal lives.

However, while the current study aims to reveal how material development courses reflect on the preschool teaching profession, the Turkish Council of Higher Education had just updated the teacher education programs and all materials courses had been removed from the preschool teacher education program at the time this study was reported. Therefore, all the disadvantages of material development courses mentioned by the teachers in this study are mitigated. When considering the international teacher education program, it is seen that the courses in the undergraduate program include material-related ones. By improving the quantity and quality of material development courses, the suggestions of teachers about these courses could have been realized.

This study was limited to only 19 teachers' experiences about material development. Furthermore, the lack of use of visuals relating to the materials of the participating teachers could be considered as a limitation of this study. Thus, future research could consider data diversification and obtaining a deeper level of data from interviews.

A number of recommendations are made based on the obtained results of this study:

- Material development courses should be included in preschool teacher education programs;
- The duration of material development courses should be longer than one course delivered in a single semester;
- Material development and the use of materials in education could be addressed within other courses in the preschool teacher training program to address time-related problems, and the importance of using materials could be reinforced;
- Individual and group work could be used within material development courses so that students' individual differences can be addressed by the instructor;
- Different materials could be used with children to assess the materials' pros and cons;

- Materials could be shared in exhibitions and academic meetings to provide samples to the wider preschool education field; and,
- Longitudinal research could be conducted to study the changing thoughts and attitudes of teacher candidates with respect to material development courses once they become active experienced teachers.

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Determination of Primary Education Teachers' and Preschool Education Teachers' Views on School Readiness

Okul Olgunluğuna İlişkin Sınıf Öğretmenlerinin ve Okul Öncesi Eğitim Öğretmenlerinin Görüşlerinin Belirlenmesi

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ABSTRACT: In this study, it is aimed to determine the opinions of preschool teachers and classroom teachers about school readiness. As in the current situation, since this research is aimed to be a qualitative approach, the research is a case study of qualitative research type. In the study, interviews were conducted with a total of 25 teachers including 15 primary school teachers and 10 preschool teachers and the interviews were conducted through a semi structured interview form. Content analysis was performed on the data obtained from the interviews. As a result of the research, it was seen that the primary education teachers' definitions and expectations about school readiness were higher than the preschool teachers. According to this, both groups stated that social-emotional development, motor development, cognitive development and self-care skills were important for starting school. Preschool education teachers have made fewer definitions for these themes. It is observed that primary education teachers' expectations in terms of cognitive development and readiness are higher than preschool education teachers'. They stated that children who do not complete their 72 months experience problems such as peer communication, lack of self-confidence, inability to perform self-care skills. In this respect, it is stated that children will have negative experiences in education as they cannot reach school readiness yet**.**

Keywords: school maturity, school starting age, school readiness, primary education.

ÖZ: Bu çalışmada okul öncesi eğitim öğretmenleri ve sınıf öğretmenlerinin okul olgunluğuna yönelik görüşlerinin belirlenmesi amaçlanmıştır. Var olan durumun olduğu gibi, nitel bir yaklaşımla ortaya koyulmasını amaçlaması nedeniyle araştırma nitel araştırma türlerinden durum çalışması niteliğindedir. Araştırmada 15'i sınıf öğretmeni, 10'u okul öncesi eğitim öğretmeni olmak üzere toplam 25 öğretmen ile yarı yapılandırılmış görüşme formu kullanılarak görüşmeler gerçekleştirilmiştir. Görüşmelerden elde edilen verilere içerik analizi yapılmıştır. Araştırma sonucunda sınıf öğretmenlerinin okul olgunluğuna ilişkin tanımlamalarının ve beklentilerinin okul öncesi eğitimi öğretmenlerinden daha fazla olduğu görülmüştür. Buna göre her iki grup da okula başlamada sosyal-duygusal gelişimin, motor gelişimin, bilişsel gelişimin ve özbakım becerilerinin önemli olduğunu ifade etmişlerdir. Okul öncesi eğitim öğretmenleri bu temalar altında daha az tanımlama yapmıştır. Sınıf öğretmenlerinin özellikle bilişsel gelişim ve olgunluk bakımından beklentilerinin daha fazla olduğu sonucuna arılmıştır. Öğretmenlerin görüşleri doğrultusunda, 72 ayını doldurmayan çocukların birinci sınıfa başlamaları durumunda akran iletişimi, özgüven eksikliği, özbakım becerilerini gerçekleştirememe gibi sorunlar yaşadıklarını sonucuna varılmıştır. Bu yönüyle çocukların henüz okul olgunluğuna erişemedikleri için eğitim hayatlarında olumsuzluklar yaşayacağı belirtilmiştir.

Anahtar kelimeler: okul olgunluğu, okula başlama yaşı, okul hazırbulunuşluğu, sınıf eğitimi.

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Introduction

Beginning to school starts a period of adaptation that can be effective throughout the educational life of children. Beginning school is one of the biggest confrontations of individuals in early childhood (Gündüz & Özarslan, 2017). This is because for the first time the child is confronted with a curriculum and participates in planned activities in a disciplined manner. Therefore, the characteristics of the child are critical to the educational life as they begin this initial learning experience. The knowledge, skills, achievements and behaviors of children in preschool period constitute the basis for their subsequent learning and experiences (Özaslan, 2014).

The concept of School Readiness which forms the basis of school learning, is a concept that should be considered in terms of students who start school in Turkey as well as in other countries. Görmez (2007) refers to school readiness as a concept that significantly affects the educational life of the student both at the present time and in the future. Yavuzer (1985) defines school readiness as physical, emotional, mental and social readiness. Koca (2016), the concept of school readiness, means that the child is ready for school in the mental, social, emotional and physical sense. It also states that it achieves the level of development that successfully identifies school education and shows a variable structure for each child (Koca, 2016). Yazıcı (2002) mentioned similar developmental features and stated that these developmental characteristics will vary from individual to individual (Gündüz & Çalışkan, 2013). When all these definitions regarding school readiness are examined, all of them underline the same points. Preparing for learning, adapting to school, being in the school emotionally, being at a sufficient level of physical development and being developed in terms of social relations can be expressed as school readiness. However, there are also examples in which school readiness is evaluated for readiness (Cinkılıç, 2009).

According to all these definitions, school readiness; It can be defined as the child's social and emotional readiness to start school and readiness to read and write. This readinesses can also be thought of as school readiness because they are the behavior required for a readiness behavior to occur. If students have these behaviors, school readiness is realized (Erna, 2011). For example, in terms of the mathematics curriculum, the individual needs to learn the numbers. It will then be able to gain the ability to perform four operations, it is not expected to gain four processing skills without learning the numbers, and so knowing the numbers is readiness for the four processing skills and also the prerequisite skill. Accordingly, the concept of school readiness can be defined at two levels, namely learning readiness and school readiness, and it is necessary to have the school and the readiness to learn in order to realize a successful educational life both emotionally, socially and cognitively.

School maturity or school readiness, expressed by school readiness, actually means being ready for primary school. Students' physical, mental, social and emotional development in terms of readiness, students to come to a certain level and to be ready to perform the desired skills successfully in school (Ülkü, 2007). Oktay (1983) mentioned four basic factors that play a role in readiness to read. Görmez (2007) describes four main factors as follows:

Physical factors (physical development, growth, diseases). Physical development generally refers to the physical development and changes that have taken place as a physical structure since the birth. The physical development of the child significantly

affects successful teaching. Because learning with physical maturation is related to each other. This situation becomes evident especially in primary education. Children with slow physical development may experience various difficulties as a result of slow development. In order to positively affect the physical development, behaviors that will be gained will also help children to develop socially and more realistic individual goals (Özaslan, 2014).

Mental factors (intelligence, language). These qualifications are closely related to intelligence factor as well as knowledge, skills, abilities, interests, and desires (Cinkılıç, 2009). Mental features such as making connections between situations, identifying and differentiating features of objects, problem solving, focusing and maintaining that focus and self regulations are effective in the process of learning. The fact that the child has access to mental development will bring about new learning in school and easily adapting to school (Kahramanoğlu, Tiryaki, & Canpolat, 2014). Mental factors are associated with language as well as intelligence. According to Sevinç (2005), the language; as it is one of the main learning paths, it is of great importance both in oral and written form.

Emotional factors (expressing emotions, separation from mother, being sad). Being aware of the feelings of the child, knowing himself, knowing his competences and insufficiencies, increasing his / her control over his emotions by knowing how he will behave, thus expressing his ability to balance the expectations of the inner world and the environment (Özaslan, 2014). If the child is emotionally withdrawn or very attached to his / her mother, he / she will remain in a recessive position in social relations and responsibilities within the classroom, thus making the adaptation process difficult (Görmez, 2007; Oktay, 1983).

Social factors (the quality of the family's relationship with the child, the opportunities provided by the social environment, etc.). Socialization is a basic social process which means that the child learns the culture of the society and the role it has in society (Kandır & Alpan, 2008). Children understand that they do not accept school behavior at home when they start school and that many behaviors accepted by their parents are not accepted at school and they realize that they need to develop different behaviors at school (Senemoğlu, 1994). This process is important in terms of ensuring that the child passes his / her self-confidence and self-esteem competencies.

These developmental characteristics can be taken into consideration and there are some opinions about the age of the child to be taken into consideration. There are several countries where the age criterion is considered as a criterion for school readiness. For example, the starting age for compulsory education is 6 years in Germany, Ireland, Estonia, France, Italy, Austria, Poland, USA, Australia, Korea and Japan. 7 children in Bulgaria, Finland and Sweden, 5 in Hungary, the Netherlands and Malta, and 4-5 years in the United Kingdom start compulsory education (UNESCO, 2011; cited in: Güven, 2012). Age criterion is used to starting school in Turkey. Until the school year 2012-2013, children started school in December when they completed 72 months of school year. In 2012, the school started to change at the beginning of the school year and the first grade of the primary schools started to be recorded in the first 66 months of the year in which the records were made. Children between 60 and 66 months of age who are considered to have sufficient development characteristics that do not meet this age criterion are enrolled in the first year of primary school with their

written request. School directorates, aged 66, 67 and 68 months of the children who obtain the right to register the petition of parents; 69, 70 and 71 months of age are not ready to start primary school with a medical report that can be directed to preschool education or can postpone a year of records (Regulation for Primary Education Institutions, 2014).

This practice brought with it the possibility that the students of different age groups were in the same class, and the cases where students from different age groups were educated in the same class were frequently encountered. This situation brought about discussions about school readiness. Because some children's developmental stages can be slower or faster than others. Children should be evaluated whether they are ready for school in terms of cognitive, social-affective and psychomotor development areas. Research has revealed that both the education and life achievement of the child are ready to start school and that the age is not sufficient to start school. According to the report prepared by the Turkish Medical Association on the age of start of school, it was stated that the skills such as hand-eye coordination in children before the age of six cannot be achieved, the fine motor skills will not be at the expected level, the abstraction, focus and sustaining of the skills will not be sufficiently developed so that the learning speeds are slower than the other students. (Turkish Medical Association [TTB], 2012).

Many studies at the literature have analysed the perspectives of preschool teachers, primary school teachers and parents on school readiness. In a study conducted in Australia South Africa, China, and Germany, the teachers placed more emphasis on children's adjustment to the school setting, their attitudes and feelings towards school and learning and less on actual knowledge but the latter was deemed more important by the parents (Arndt, Rothe, Urban, & Werning, 2013; Chun, 2003; Dockett & Perry, 2004; Margetts & Phatudi, 2013). In the USA, preschool teachers tended to view the purpose of the child's preparation (school readiness) as helping to meet the social demands of the school, such as conveying their desires and thoughts, following directions, sharing and taking turns, thus attributing these factors greater priority over the development of academic skills (Lin, Lawrence, & Gorrell, 2003). Einarsdottir (2006) states that primary school and preschool teachers have different opinions about school readiness. In addition, states that the differences between preschool and primary school teachers' practices and beliefs will affect student achievement. Furthermore many studies examining school readiness revealed variables related to school readiness (Baker et. al., 2003; Lau, Li, & Rao, 2011; McClelland, Acock, & Morrison, 2006; McIntyre, Blacher, & Baker, 2006; Margetts, 2009; Rao, Sun, & Zhang, 2014; Sy & Schulenberg, 2005). The studies emphasize that identifying related concepts is important for revising the programs.

It is stated that the age of school start is important when the field is examined in summer, the children who start the school without being ready for school and the teachers who teach different age groups expect some problems (Canbulat & Yıldızbaş, 2014; Gündüz & Çalışkan, 2013; Gündüz & Özarslan, 2017; Kahramanoglu, Tiryaki, & Canpolat, 2014; Koçyigit & Saban 2014; Ülkü 2007). Therefore, the decision to start school is a critical decision that can have important consequences in the life of the individual because of its future effects. In the 2017-2018 academic year, 60-66, 66-72-84 children were trained together. The idea that students should not start school at the

beginning of the first year, even if they do not have the necessary skills of the first year, and that the preschool students who do not reach the school readiness should not start the first year, brought the preschool teachers and the class against each other. How the preschool and classroom teachers define the skills required by the first grade, how they make sense of school readiness and the advantages and disadvantages of mixed age group students studying in the same class are examined by taking the opinions of the teachers. determine the criteria to be taken. In this study, it was aimed to determine the opinions of preschool teachers and 1st grade teachers about school readiness. In response to this general objective, the following sub-objectives were sought.

1. What are the skills and behaviors of preschool education and classroom teachers about the school readiness that the child considers necessary to begin their first year?

2. What are the opinions of the students who have not completed 72 months of preschool education and classroom teachers about the advantages and disadvantages experienced in the first grade?

Method

In this study, it was aimed to get the opinions of preschool education and classroom teachers about school readiness of 66-72-84 months old children. In this respect, research is a case study of qualitative research types.

Participants

In the study, the opinions of primary school teachers and preschool teachers about the school readiness were used. Preliminary interviews were conducted with the teachers about the research, and 25 teachers who volunteered to participate in the research were consulted. Teachers' professional experience and the environmental conditions of the school were considered important in terms of data diversity and the opinions of teachers with different characteristics were included in the study. It was aimed to reach teachers with different characteristics in order to provide data diversity in the identification of participants.

Table 1

Demographic Features of Participants

		Primary education teachers	Preschool education teachers
Gender	Female	9	10
	Male	6	-
Relationship status	Single	3	5
	Married	12	5
Tenure	1-10 years	6	5
	11-20 years	4	3
	21+ years	5	2

School type	Private	8	4
	Public	7	6
Socioeconomic status	Low	3	2
	Middle	5	4
	High	7	4

Table 1 shows that demographics features of participants. 15 primary education teachers and 10 preschool teachers participated in the study. Of the first grade teachers participating in the study, 9 were female, 6 were male and their age ranged from 22 to 59 years. Teachers 'professional experience 1 to 40 years, the socioeconomic status of the students of the school in the low socioeconomic status (LSL), middle socioeconomic level (MSL) and high socioeconomic level (HSL) were asked to define the teachers, 3 of the schools where teachers work LSL, 5' i MSL and 7 were in HSL categories. While one-to-one quotations from teacher opinions were made, codes like PreF1, PreM1 were used (Pre: preschool education teacher, F: famele, M: male).

10 of the preschool education teachers who participated in the study were women and their ages ranged from 22 to 45 and their professional experience ranged from 1 year to 17 years. The teachers were asked to define the socioeconomic status of the school students as low socioeconomic level (LSL), middle socioeconomic level (MSL) and high socioeconomic level (HSL) and classed 2 of them as LSL, 4 MSL and 4 of them as HSL. While quotations from preschool education teachers, Pri1, Pri2 codes were used (Pri: Primary education teacher, gender figures were not used in codes, because all primary education teachers who are participants are female at the research).

Data Collection Tools and Data Collection

The most commonly used data collection method in qualitative research is interviews. Interview is a powerful method used to reveal the perspectives, experiences, feelings and perceptions of people (Yıldırım & Şimşek, 2006). The interviews were conducted with teachers using a semi-structured interview form.

During the preparation of the semi-structured interview form (Interview Form for School Readiness), first of all, the literature was searched for the sub-objective of the study and the questions that were sought. Then, two preschool education teachers who are studying in master's degree in the field of basic education and three primary education teachers are studying in master's degree in the field of basic education were asked to write their opinions about the school readiness and observations. The items were formed considering the composition of the teachers and the literature review. A total of three measurement assessors, one of whom was one of the researchers, was consulted and questions were arranged in line with their suggestions. Finally, by taking the opinion of two Turkish language experts, the comprehensibility of the questions was checked and the final form was given. In the interview, questions such as "What do you think is school readiness?" "What skills and behaviors do you think are necessary for the child to start the primary education?" What skills and behaviors do you think are necessary for the child to start the preschool education?" were asked the teacher. Care was taken to ensure that questions and guidelines were clear.

The teachers who participated in the study voluntarily conducted face to face interviews between 15-25 minutes. During the interviews, a voice record was taken with the permission of the participants, one of the researchers was a reporter while the interviews were made with 5 teachers who did not want to take voice record and the accuracy of the notes taken at the end of the interview was checked by the participant.

Analysis of Data

The data obtained at the end of the data collection process were analyzed by content analysis, technique which includes the identification, coding and categorization of the main patterns (Yıldırım & Şimşek, 2006). At this stage, all data obtained from the interviews were converted into written data. Codes were made separately by both researchers, then categories and finally themes were created. After this process, the coding of the researchers was compared and the names given to the categories and themes were decided by considering the literature. Inter-interrater agreement (Miles & Hubberman, 2007) was compared and obtained as 0.89 for the first sub-goal and as 0.82 for the second sub-goal. One researcher performed the coding process twice at two different times, and the fit between the two ciphers was calculated as 0.92. Obtained coefficients constitute the evidence of inter-research compliance (Tavşancıl & Aslan, 2001).

Results

This section presents the findings and comments about the research questions.

What are the skills and behaviors of preschool education and classroom teachers about the school readiness that they think is necessary for the child to start the first year?

As a result of the analysis of the data obtained from the interviews, the distribution of the opinions of the participants related to this research question is summarized in Table 2.

Table 2

The Opinions of Preschool and Classroom Teachers about the Knowledge Skills an Behaviors Required for School Readiness for a Student to Start First Grade

Preschool Education Teachers		Theme	Classroom Teachers	
Category	**f**		Category	**f**
Social communication	6	Social Emotional Evolution	Social communication	8
Obeying the rules	3		Obeying the rules	8
			Self-knowledge and self-expression	3
			Awareness of responsibility	1
			Emotional independence	1
			Self-confidence	5
Using fine motor skills and gross motor skills	10	Motor Development	Using fine motor skills and gross motor skills	11
Holding the pen correctly	5		Holding the pen correctly	15
Draw lines with the desired quality	6		Draw lines with the desired quality	8

			Physical development	1
Follow the instruction	3	Cognitive Development	Follow the instruction	5
Attention (Focus)	4		Attention (Focus)	4
Mathematical skills	6		Mathematical skills	3
Cause-Effect Relationship	4		Cause-Effect Relationship	4
Remember what you perceived	3		Remember what you perceived	5
To be able to go to the bathroom on its own	4	Self-Care Skills	To be able to go to the bathroom on its own	7
To be able to wear clothes without help	5		To be able to wear clothes without help	8
Adequate and balanced nutrition	2		Adequate and balanced nutrition	5

In Table 2, a teacher's opinions about the knowledge skills and behaviors required for school readiness to begin first grade: Social communication, obeying rules, self-knowledge and expression, emotional independence, awareness of responsibility, self-confidence, using fine motor skills and gross motor skills, holding the pen correctly, draw lines with the desired quality, physical development, follow the instructions, attention (focus), mathematical skills, cause-effect relationship, remember what you percived, to be able to go to the bathroom on its own, to be able to wear clothes without help, adequate and balanced nutrition categories. When the Table 2 is examined, according to these opinions, the answers to the question of what are the skills and behaviors required for school readiness in order for a student to start the first grade of preschool and classroom teachers are categorized and classified under four different themes. Following are the theme and the categories included in each theme.

Social-Emotional Development

Under the theme of Social-Emotional Development, categories related to the emotional and social development of children are included. Below is a description of each category.

Social communication: The student expresses the message he wants to convey to his friends and teacher by gestures or verbally.

> "A student should be able to borrow the tools and equipment that are not in his possession from his friend." [Pri4]

Obeying the rules: It is the student's compliance with the rules determined by the teacher in the classroom environment.

> "A student needs to be able to reach the class from the environment where a student is in when he/she hears the ring." [PreM1]

Self-knowledge and self-expression: To know the student himself and his physical characteristics.

> "A student must be able to recognize and express himself / herself for the first year." [PreM3]

Awareness of responsibility: Student being able to accomplish his/her responsibilities or perform the tasks given by the teacher.

> "The student should do the given homework and show it to his/her teacher" [PreF4]

Self-confidence: The student's confidence in achieving a task is a task.

"I'm doing drama activity to strengthen communication within peers." [Pri2]

Emotional independence: A student who will start primary school is able to leave the family easily during school hours and adapt to the school.

"A student who starts the first year should easily leave his / her parents." [PreF3]

Motor Development

According to the Motor Development theme, knowledge and attitudes towards school readiness to start first grade according to both primary school teachers and preschool teachers are as follows: using fine motor skills, cutting and gluing, providing pen control, holding the pen correctly, drawing the lines at the desired quality. In addition, classroom teachers included physical development as a sub-category of the theme of motor development.

Using fine motor skills and gross motor skills: Stacking objects side by side, cutting, folding, rounding, gluing, painting, painting, drawing, etc. skills requiring hand coordination and skills such as have to be developed are jumping, running, climbing, such as the development of great fine motor and gross motor skills is to be developed (MEB, 2013).

"The student's hand-eye coordination needs to be improved." [Pri5]

Holding the pen correctly: After the pen is held with the index and the thumb, the action is supported with middle finger (Erk, 2015).

"I think the ability to hold the pen right must have been achieved." [PreF7]

Draw lines with the desired quality: Students can draw basic and vertical lines in a proper way.

"The student should be able to draw lines properly through dots." [PreM2]

Physical development: The development of all organs that make up the body. It refers to physical properties such as height and weight.

"A student who is starting the first grade must have completed his / her physical development." [PreM5]

Cognitive Development

Information skills and behaviors classified under the theme of Cognitive Development are as follows: To be able to apply directives, attention span, to count forward and backwards in mathematics activities, to group according to the properties of objects and assets. In addition, preschool teachers have included the sub-category of the theme of cognitive development as remembering the comprehended perception and cause and effect relationship. In the following part, the explanations of these categories and the opinions of the participants were presented.

Follow the instructions: The student being able to follow the path and completing the activity.

"When I asked the children to put the colored pens on the table into their locker and bring the scissors from their cupboard, the monthly younger children could hardly follow the instructions while the older children could put the color pens in his locker and bring the scissors in his cabinet." [Pri3]

"The students must be able to follow the instructions and complete the activity in the planned time." [PreM1]

Attention (focus): The student paying attention to an object, an event or a situation.

> "A student who reaches school readiness should be able to pay attention to what they listen to" [PreM1]

Mathematical Skills: Counting rhythmically from 1 to 20 and sorting numbers

> "Students should be able to do addition and subtraction. Also know the names of geometric shapes." [PreM2]

Cause- effect relationship: the student is able to predict the causes of a certain situation or to predict the results while the reasons are given.

> "A student who has reached school readiness can understand the cause and effect of an event and situation." [Pri4]

Remember what you perceived: re-telling an object, situation and event after a while that he / she has encountered before.

> "The teacher puts 5 different objects on the table, after one of the objects is removed the student can find out which object is missing." [Pri3]

Self-Care Skills

Information skills and behaviors classified under the theme of Self Care Skill are as follows: To be able to go to the toilet on their own, to wear their clothes without help, and to have a sufficient and balanced diet.

To be able to go to the bathroom on its own: The student can do his / her toilet on his/her own.

> "A student must be ready for primary education and must have the habit of going to the toilet alone." [Pri4]

To be able to wear clothes without help: Students can wear their own clothes.

> "The student who started the first year should be able to change his clothes when he is sweaty." [PreF6]

Adequate and balanced nutrition: It is the ability of students to eat and drink enough food and drinks during lunch time.

> "The student, who will start first year, is able to catch older students in months when his / her nutrition is sufficient and balanced." [PreM5]

A total of 18 categories were created under the total theme of social-emotional development, motor development, cognitive development and self-care skills. While almost all of these categories have opinions of classroom teachers, it has been found that preschool teachers do not express opinions in all of these categories. According to both primary teachers and preschool teachers, knowledge and skills for school readiness are as follows: social communication, adapting to class rules, fine motor skills and gross motor skills, holding the pen correctly, drawing lines in the desired quality, following the instructions, attention (focus), math skills, cause-and-effect relationship, recall what they perceive, go to the toilet on their own, wear their clothes without help, adequate and balanced nutrition. In addition to this, classroom teachers also included emotional independence, responsibility, self-confidence, self-knowledge and self-expression skills. Accordingly, it can be stated that the primary education teachers make more detailed definitions.

Table 3 presents the findings of what are the opinions of pre-school education and classroom teachers about the situations in which students who do not fill 72 months will live in the first grade.

Table 3

Distribution of Preschool and Classroom Teachers' Expectations of First Year Students at 60-66-72 months old.

Preschool Education Teachers		Theme	Classroom Teachers	
Category	f		Category	f
Difficulty in self-expression	1	Social - Emotional Development	Difficulty in self-expression	4
Low self-confidence	1		Low self-confidence	2
			Insufficient awareness of responsibility	6
			Communication problems with peers	4
			Lack of emotional independence	3
			Difficulty in obeying the rules	5
Insufficiency of fine motor skills development	4	Motor Development	Insufficiency fine motor skills and gross motor skills	5
			Difficulties in holding pen	6
Inability to remember what they perceived	2	Cognitive Developmen	Inability to remember what they perceived	6
			Failure to follow instructions	2
			Lack of mathematical skills	10
			Failure to conduct cause-effect relationship	4
Not being able to go to the bathroom on its own	2	Self-Care Skills	Not being able to go to the bathroom on its own	3
Inadequate and balanced nutrition	2		Indequate and balanced nutrition	1
			Not being able to wear clothes without help	7

Table 3 when examining both the classroom teachers and preschool teachers reported difficulty in self-expression, low self- confidence, insufficiency of fine motor skills development, inability to remember what they perceived, not being able to go to the bathroom on its own, inadequate and balanced nutrition, opinions expressed in the classroom, primary education teachers also reported insuffucent awareness of responsibility, It was found that communication problems with peers reported their opinions in the categories of failure of follow instructions, lack of mathematics skills, failure to conduct cause-effect relationship, and difficulty in holding pen.

Social - Emotional Development

Social-Emotional Development classified under the theme of difficulty in self-expression, low self-confidence, lack of awareness of responsibility, insufficient awareness of responsibility, communication problems with peers, difficulty in obeying the rules, and lack of emotional indepedence categories are explained and sample statements are included.

Low self-confidence: A student does not have enough self-confidence to achieve a task.

> "It is seen that students who have not completed their 72 months do not have enough self confidence. He can't raise a finger to the question he knows." [PreM4]

Communication problems with peers: The student can not express the message he wants to convey to his friends by gestures, mimics or verbally.

> "They're having trouble making friends." [Pri1]

Insufficient awareness of responsibility: Student not being able to fulfill his responsibility nor the task given by the teacher.

> "Students who have not reached the required maturity, forget to take given homework to the home, they do not bring their work to school." [PreF2]

> "The student who has not completed his 72th month of age does not enter the class on time because he has difficulty in taking his books to go to the class where the branch course will be held." [PreM1]

Difficulty in self-expression: It is hard for the student to express himself/herself and his physical characteristics.

> "My students who did not complete their 72th month did not participate in activities other than reading-writing activities because they could not express themselves." [PreF3]

Difficulty in obeying the rules: It is the student's failure to obey the rules determined by the teacher in the classroom environment.

> "While the students study the sound they have learned with the play dough and they pass to the reading study, the little students continue to play the play doughs against the purpose of the lesson." [PreF8]

Lack of emotional independence: the student's difficulty in leaving his mother.

> "Sometimes she wants to see her mother and she starts to cry and we have to call her mother." [PreF9]

Motor Development

According to the opinions of the Motor Development theme, the primary education teachers have created two categories of students who are younger than the students under the theme. These are: insufficiency fine motor and gross motor skills development and difficulty holding the pen. Preschool teachers have created a category for students who are younger than the students under the theme of motor development. This category; fine motor skills development is not enough.

Insufficiency of fine motor skills development: Not being able to do activities that require hand-eyer coordination (cutting, sticking, etc.)

> "Monthtly younger students have a hard time keeping a pen as their motor skills are weak." [PreF6]

Difficulties in holding pen: After holding the pen with the thumb and the index finger, not being able to hold the pen after the support from the middle finger (Erk, 2015).

> "Students who are younger than 72 months are not able to hold the pen. Therefore, cannot write legible texts or draw clear lines." [PreM3]

Cognitive Development

According to the opinions categorized under the theme of Cognitive Development, they formed four categories in which the younger students lived in the classroom. These are: Inability to remember what they perceived, failure to follow the instructions, lack of mathematics skills, and failure to conduct cause-and-effect relationship. All preschool teachers who participated in the interview expressed their opinion only in the category of inability to remember that students who were younger in months were exposed to cognitive development.

Inability to remember what they perceived: Not being able to tell the object, the situation and the event after a while.

Failure to follow instructions: Student not being able to follow the instructions given by the teacher and failing to complete the task.

> "Monthly younger students cannot follow the instructions given." [PreF6]

Lack of mathematical skills: Cannot count 1 to 20 rhythmically.

> "In mathematics, this difference is obvious. Monthly younger students are challenged." [PreF8]

Inability to conduct cause-effect relationship: The student is asked to open-ended questions, can not express his thoughts about the outcome of any event or situation and have difficulty in finding the possible causes of a given situation (MEB, 2013).

> "He cannot predict the results of the behaviors or the behaviors expected from him. The student who cannot perceive the causes and consequences of a behavior cannot protect himself from the dangers." [Pri3]

Self-Care Skills

According to the opinions categorized under this theme, both preschool and classroom teachers have created two categories for the situations in which the younger students live in the classroom. These are: Not being able to go to the bathroom on its own, and inadequate and balanced nutrition.

Not being able to go to the bathroom on its own: The student himself can not do his work for the needs of the toilet.

> "They can not do their own work, you need to have skills such as cleaning toilets." [Pri5]

Inadequate and balanced nutrition: It is the ability of students to eat and drink enough food during lunch times.

> "Even if the student who is going to the first year is younger in months, there is no clear difference between the other students." [PreM5]

Not being able to wear clothes without help: A student can not wear the clothes alone, help other people to wear clothes.

> "Students who have not completed their 72 months have difficulty changing their clothes by themselves. Also when he goes to the toilet he can not unbutton on his trousers and then can not unbutton on his trousers." [PreF6]

Conclusion and Discussion

In the research, the answer to the question of the knowledge skills and behaviors required for a first year student's school readiness is sought by discussing with the classroom teachers and preschool education teachers. Preschool teachers and primary education teachers stated that social-emotional development, motor development, cognitive development and self-care skills are important in the knowledge skills and behaviors required for school readiness in order to start a first grade of students within the framework of their own opinions.

While preschool education teachers who participated in the research stated that it is important to follow social communication and rules; In addition to the rules of social communication, the classroom teachers stated, as well as the ability to recognize and express the self emotional independence, sense of responsibility and self-confidence are important. Preschool teachers and primary education teachers have said that social communication is important. In addition, primary education teachers stated that it is important to observe class rules as well as social communication. One of the main problems raised in the studies conducted with the classroom teachers in the literature is the problems in obeying the rules of the class (Eby, Herrell, & Jordan, 2011; Gül Kapçı, Artar, Avşar, Çelik, & Daşçı, 2015). The findings of the research support this.

Preschool education teachers say that they are required to using fine motor skills and gross motor skills, to hold the pen correctly and to draw the stripes to the desired quality for school readiness. In addition to this view, classroom teachers stated that line study and physical development were determinative for school readiness. According to the opinions of preschool education teachers and classroom teachers, it is stated that the learners' use of fine motor skills and gross motor skills is necessary for school readiness. However, primary education teachers stated that it was more important to hold the pen correctly. Preschool teachers and classroom teachers stated that following the instruction, attention span, and mathematics were necessary for school readiness. In addition, the preschool teachers who participated in the study stated that in addition to these opinions, remembering the cause and effect relationship and perceived perception were the determinants of school readiness. Classroom teachers stated that it was more important for a student to start first grade to be able to follow the instructions in the classroom. The child's characteristics such as his/her psychological maturity, temperament and social skills, especially the quality of his/her relationship with peers, intelligence and learning skills are important on the school readiness (Baker, et al., 2003; Lau, Li, & Rao, 2011; McClelland, Acock, & Morrison, 2006; McIntyre, et al., 2006; Margetts, 2009; Sy & Schulenberg, 2005). The findings of the research support this.

Preschool teachers and classroom teachers stated that they could go to the toilet on their own, to wear their clothes without help and to provide adequate balanced nutrition for school readiness. Kaul and Sankar (2009), emphasize the importance of nutrition in preschool education, Before the starting to school, balancid nutriton is so important for the student. The raseults of research Show that, adequate and balanced nutrition has a important role for school readiness. This result is consistent with the literature (Dalli, Barbour, Cameron, & Miller, 2017). There are some application about measure of children healty before the starting school. This application involve six item: immunization, supplementary nutrition, health check-ups, referral services, preschool

nonformal education, and nutrition and health education. This six factor could be indicator for readiness (Kaul & Sharma, 2017), but don not forget that the factors focus on just nutrition and health for readiness. Preschool teachers and primary education teachers found that, it is more important to wear clothes without help for students who would start first grade. According to the results of the study, it can be said that the use of social communication, the use of fine motor skills and gross motor skills, keeping the pen right, obeying the rules, obeying the mathematical skills, the instructions and wearing the students' clothes without help.

According to the preschool teachers and classroom teachers participating in the research, 66-72 and 84-month-old students receive education and training in the same class leads them to not have enough confidence in self-expression. At the same time, unlike the preschool teachers, the primary education teachers stated that the students who were younger in months were responsible for their responsibilities and that they had communication problems with their peers.

In the National School Readiness Indicators Initiative (2005), the school readiness perspective was extended to cover different domains, such as motor development and physical well-being; social and emotional development; approaches to learning; development of language and cognition, and general knowledge. Preschool teachers and classroom teachers stated that fine motor skills development was not sufficient in the same class of students. The majority of the teachers stated that the students who were younger than the others in the activities which included the gains for fine motor skills use in the classroom, were tired easily, observed that they were bored and they experienced lack of confidence for being behind in these activities. Moreover, the majority of preschool teachers stated that 66-72 month period is one of the periods where brain development and synaptic connections and the rate of establishment are the most intense and the cognitive development is the fastest, children at this age grow very rapidly. In this case, it is concluded that students who are younger than others cause delays in their language, cognitive, motor, social and emotional development. In addition, the fact that 66-72-84 students are in the same class has a negative impact on the academic success of young children. Classroom teachers agree that the most important problem in the social emotional development of the students who have not completed 72 months is due to their inability to fulfill the responsibility of the students.

Classroom teachers mostly stated that students who did not complete their 72 months of education did not provide the course materials. In this context, it can be concluded that the responsibility of the young students is insufficient. Classroom teachers say that students who have not completed their 72 months are not able to list objects that they do not recognize numbers from 1 to 20; Therefore, we can conclude that students who have not completed 72 months have difficulty in their math skills. Meisels (1998) states that classroom teachers do not give much importance to cognitive skills. The results of this study do not coincide with this finding. In particular, classroom teachers indicate that cognitive characteristics are important. It is thought that this is due to the differences in cultural differences and applied program differences and the expected behavior of the students in the first year.

The primary education teachers who participated in the research stated that the students who were younger in months stated that they had difficulty in line studies and writing activities because they had fine motor skills development, said they were tired

easily, they did not want to do cutting and paste activities. Therefore, it can be concluded that students who have not completed their 72 months are left behind in the development of fine motor skills compared to other students. Santo (2006) and Meisels (1998) state that physical health and skills are important in school readiness. Teachers' opinions support this. Some primary education teachers stated that students who did not complete their 72th month had to unbutton their trousers when they went to the toilet and had difficulty unbuttoning and that the parents of these children were trying to solve the problem by passing a rubber to their children's pants. It can be concluded that these parents do not have any knowledge of fine motor skills development, which is one of the most important skills a student must have in order to begin the first year. Gökçen (2004) stated that children who start school should be able to perform self-care skills such as dressing and feeding on their own. Teachers' opinions support this.

At the end of the research, especially the opinions of the primary education teachers indicate that if the students who have not completed the 72th month start their first year, the child will have a negative impact on the school life due to their cognitive, social, affective and psychomotor insufficiency. It is consistent with the findings in the literature that the development of the individual is not from a single angle and that all areas of development are important in school readiness (Gül Kapçı, et al., 2015; Haydon, 2013; Koca, 2016; Özaslan, 2014; Ülkü, 2007). It is thought that the reason of class behavior of teachers is that they have more behaviors and characteristics definition about school readiness, they have mastered the behaviors of the first class and they can observe them more clearly and objectively.

Teachers who participated in the study also evaluated the school readiness based on what children can or cannot do. It was not approached from the perspective of whether the behaviors required by the program were appropriate for the development process of the children. School readiness are dependent on the quality of the education offered, and developmentally appropriate curriculum (Schweinhart & Weikart, 1997). Duncan and Magnusan (2013), and Rao, Sun, and Zhang (2014), stated that early childhood education and school readiness depend on the school's program. Düşek and Dönmez (2012) state that preschool programs should be appropriate to the developmental characteristics of children. Accordingly, the childrens' age, developmental characteristics and applicability of the program should be taken into consideration when preparing the program. Some characteristics of the school environment, such as the school atmosphere, the curriculum structure and the strategies adopted by the teacher in the classroom, have also been associated with the academic and socio-emotional outcomes of the child who are student at primary school and preschool (MacNeil, Prater, & Busch, 2009; Perry & Weinstein, 1988). Teachers' experiences are known to be effective in adapting students to school (Caprara, Barbaranelli, Steca, & Malone, 2006; Clotfelter, Ladd, & Vigdor, 2007; Harris & Sass, 2011). Accordingly, it can be argued that teacher characteristics are also effective in school readiness.

Suggestions

The student should not only be judged by his/her biological age, but also to assess the suitability of the first grade by taking into account the developmental characteristics of the student. In addition to this, the students should be able to learn

about the cognitive, language, motor, social and emotional development of the students about school readiness. The readiness of the student should be measured. Preschool and classroom teachers should be given in-service training courses related to school readiness. Class numbers should be reduced and students should be motivated and encouraged. The physical characteristics of the school should be evaluated for the developmental characteristics of children. The methods and techniques used in the class should be diversified. Following the development stages of the student from the preschool period, meetings and discussions should be organized and seminars should be organized to raise awareness of the families by field experts or teachers. The number of activities for the development of fine motor skills skills of the students should be increased in the preschool period.

It should be noted that school readiness is not only related to the characteristics of children. The importance of the program in school readiness should be considered. Accordingly, the applicability and developmental characteristics of the students should be taken into consideration while developing the program that is preschool and primary school. Preschool education programs should include the family education, because the parents have a important role on the school readiness. Thus family and teachers should be in communucation.

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Investigating Spatial Thinking Skills of Prospective Preschool Teachers*

Okul Öncesi Öğretmen Adaylarının Uzamsal Düşünme Becerilerinin İncelenmesi

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ABSTRACT: The aim of this study was to investigate prospective preschool teachers' spatial thinking skills in terms of gender, class standings, type of high school they previously graduated from and whether they attend a course on early mathematics education or not. Survey Method was used in this study. A total of 132 prospective preschool teachers who were attending a preschool teacher training program at a state university in Turkey participated in this study. Santa Barbara Sense of Direction Scale (SBSOD) and Spatial Ability Self-Report Scale (SASRS) were used as the data collection tools. Correlation Analysis was used to investigate correlation between the scores of two scales. ANOVA, Independent-Samples T-Test, Kruskal Wallis-H Test and Mann Whitney-U Test were used according to the assumptions of parametric tests. A positive correlation was found between the scores of two different scales. Differences between the mean scores of participants in terms of gender, class standings, high school types and whether they attended a course on early mathematics education or not, were not statistically significant for each assessment scale, as other results of this study.

Keywords: preschool education, prospective teachers, spatial thinking skills, early mathematics education.

ÖZ: Bu araştırmanın amacı, okul öncesi öğretmen adaylarının uzamsal düşünme becerilerinin cinsiyet, sınıf düzeyi, mezun olunan lise türü ve erken çocukluk matematik eğitimi dersini alıp almama durumları açısından incelemektir. Araştırmada Tarama Yöntemi kullanılmıştır. Araştırmaya Türkiye'de bir devlet üniversitesindeki okul öncesi öğretmen eğitimine yönelik bir programa devam eden 132 okul öncesi öğretmen adayı katılmıştır. Veri toplama araçları olarak Santa Barbara Yön Hissi Ölçeği (SBSOD) ve Uzamsal Beceri Öz-Değerlendirme Ölçeği (SASRS) kullanılmıştır. İki ölçeğin sonuçları arasındaki ilişkinin incelenmesi için Korelasyon Analizi, parametrik testlerin varsayımlarını karşılama durumlarına göre ANOVA, T-testi, Kruskal Wallis-H Testi ve Mann Whitney-U testi uygulanmıştır. Araştırmanın bir sonucu olarak, kullanılan iki ölçme aracı puanları arasından pozitif yönde bir ilişki bulunmuştur. Araştırmanın diğer sonuçları olarak her iki ölçme aracı için, katılımcıların cinsiyet, sınıf düzeyi, lise türü ve erken matematik eğitimi dersini alma durumları açısından ortalama puanları arasında istatistiksel olarak anlamlı bir farklılığın olmadığı ortaya çıkmıştır.

Anahtar kelimeler: okul öncesi eğitimi, öğretmen adayı, uzamsal düşünme becerileri, erken matematik eğitimi.

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Introduction

Spatial thinking is a complex way of thinking. It is a combined understanding of "space", "representation" and "reasoning". We may also consider this style of thinking as a tool for determining problems about space, finding appropriate solutions for them and explaining these solutions (National Research Council, 2006). Understanding of spatial relationships begins at very early years of human life, and early years are critical for development of brain structures and functions for spatial reasoning (Gersmehl & Gersmehl, 2007). Children have a great potential of spatial knowledge and thinking when they are at ages of school entry (Bryant, 2009). Spatial thinking is essential for some learning areas, especially geometry (Bryant, 2009; Fuson, Clements, & Backmann-Kezez, 2010). This thinking skill predicts students' success in Mathematics, Engineering and Science (Newcombe, 2010; Newcombe & Fick, 2010). Besides art, architecture, graphics, computer sciences, Biology, Physics, Chemistry, Geology, Geography, and Medicine require one to gain this skill (Ontario Ministry of Education, 2014). As a summary, spatial thinking skills are essentials and predictors of STEM (Science, Technology, Engineering, Mathematics) learning and achievements (Twyman, Friedman, & Spetch, 2007). Spatial thinking even contributes to socializing in preschool educational environments (Alaswad, 2013) and children's social skills (Newcombe, 2013).

We may provide some examples of spatial thinking such as composing objects physically, visually or both physically and visually, orientation, non-verbal reasoning processes, finding our way, imagining the amount or proportion of objects, creating and reading maps, tables or graphs, visualization, locating an object, remembering the locations of objects, perspective taking, decomposing objects physically, visually or both physically and visually, creating or designing an object, manipulating objects, imagining the routes or movements of objects in space, understanding the relationships and connections between objects' 2- or 3-dimensional representations, comparing the characteristics of objects and creating diagrams with objects (Ontario Ministry of Education, 2014). In prekindergarten through grade 2, all children are expected to (National Council of Teachers of Mathematics, 2000);

> (…) describe, name and interpret relative positions in space and apply ideas about relative positions. Describe, name and interpret direction and distance in navigating space and apply ideas about direction and distance, in terms of specific locations and describing spatial relationships. For using visualization and spatial reasoning, they are expected to create mental images of geometric shapes using spatial memory and spatial visualization.

According to recent studies, opportunities that are offered to children, some special teaching strategies or special programs contribute to children's spatial awareness, as well as their usage and development of spatial thinking skills (Adak-Özdemir & Güven, 2014; Casey et al., 2008; Clements & Sarama, 1995; Collier, Perlman, & Fisette, 2009; Davis & Hyun, 2005; Ehrilch, Levine, & Goldin-Meadow, 2006; Gabrielli, Rogers, & Scaife, 2000; Hacısalihoğlu-Karadeniz, 2005; Keren, Ben-David, & Fridin, 2012; Olver, 2013; Shutts et al., 2009; Twyman, Friedman, & Spetch, 2007; Üstün & Akman, 2003; Van Nes & Van Eerde, 2010).

Considering the nature of early childhood education, activities, plans, programs and teaching-learning processes should be combinations of games, fun activities, hands-on experiences, concrete and creative learning experiences. In summary, appropriate

activities for children should be offered. Educators should prepare safe, comfortable and easeful environments which contain rich, high-quality and appropriate manipulatives to support children's experiences in spatial thinking (Brillante & Mankiw, 2015). Educators should be aware of children's spatial thinking skill levels. They should also support children. They should consider and act responsibly towards children's proximal developmental zones for them to design appropriate educational activities and plans (Cohen & Emmons, 2016). They should also be aware of the essential nature of early years, contribution of spatial thinking skills on cognitive development, the critical nature of individual differences and contribution of critical and motor activities to spatial thinking skills for them to offer effective, rich, quality and appropriate learning experiences (Newcombe & Fick, 2010). This is because they have dual roles and responsibilities of both offering appropriate educational practices and guiding parents to support children's spatial skills (Singh, Chhikara, Kaur, & Sangwan, 2005).

Some studies show us that early childhood educators have inadequate knowledge and skills on spatial thinking (Atit, Miller, Newcombe & Uttal,2018; Marchis, 2017), while one reported these levels to be average (Abay, Tertemiz, & Gökbulut, 2018), even one says lower then prospective early science and mathematics teachers (Erkek, Işıksal, & Çakıroğlu, 2011; Erkek, Işıksal, & Çakıroğlu, 2017). Considering that educators' levels of spatial thinking skills and knowledge affect children's achievement in spatial thinking (Akerson, 2011), these levels should be improved. Dillaha (2018) revealed that preschool teachers' spatial abilities affect their usage of mathematical tasks in some other basic mathematical skills.

Educators' insufficient knowledge or skills on spatial thinking cause them to feel anxiety about spatial thinking (Dursun, 2010), and their anxiety about spatial relationships affect both their own spatial skills and children's achievement in spatial thinking skills (Erkek, Işıksal, & Çakıroğlu, 2011; Gunderson, Ramirez, Beilock & Levine, 2013). According to another study, educators' pedagogical knowledge on spatial relationships and their spatial thinking skills are directly linked to early geometry instructions (Otumfuor & Carr, 2017).

It was revealed that early childhood educators rarely include activities on spatial thinking in their activity plans (Helenius et al., 2014; Zambrzycka, 2014). In addition to this, their level of considering spatial conditions when they create learning environments vary by their characteristics such as age, type of school they work for, age group they work with and year of service (Pedük, Yıldızbaş, & Aygün, 2014). Learning environments have their own spatial characteristics, such as their visuality and architecture (Løkken & Moser, 2012) as a spatial frame (Shmis, Kotnik, & Ustinova, 2014), and they reflect these characteristics onto these. Therefore, educators and teacher training programs have important roles on spatial thinking skills in early childhood education (Newcombe & Fick, 2010; Uttal et al., 2013; Verdine, Golinkoff, Hirsh-Pasek & Newcombe, 2014). Implementing special training programs on spatial teaching for early childhood educators positively affects their knowledge and skills on spatial thinking (Akerson, 2011; Berciano & Gutierrez, 2015).

In this study, it was aimed to investigate prospective preschool teachers' spatial thinking skills in terms of gender, class standings, types of high schools they previously graduated from and having taken a course on early mathematics education which is offered during their preschool teacher training programs. "Whether prospective

preschool teachers' spatial thinking skills vary by their gender, class standings, high school types and attending early mathematics education course or not" was questioned. It may be useful to modify or develop a preschool teacher training program for better "spatial teaching".

Method

In this study, prospective preschool teachers' spatial thinking skills were investigated by using two different assessment scales for data triangulation. Survey Method was used in this study. This method ensures us to investigate events, facts or situations on a descriptive level and as exactly how they are (Şimşek, 2012).

Participants

A total of 132 prospective preschool teachers (11 male and 121 female) participated in this study. They were selected by using *Convenience Sampling* method. Participants' proximity to our institution and their practicality to work with were decisive (Creswell, 2012). Participants were on four different class levels of a preschool teacher training program at a state university in Turkey. Some demographic information about participants is shown in Table 1.

Table 1

Demographic Information about Participants

Demographics	Categories	*n*	%
Gender	Male	11	8.33
	Female	121	91.66
	Total	132	100
Class Standings	Freshman	34	25.75
	Sophomore	36	27.27
	Junior	35	26.51
	Senior	27	20.45
	Total	132	100
High School Type	Vocational High School	44	33.33
	Non-Vocational High School	88	66.66
	Total	132	100
Early Mathematics Education Course	Have Attended	98	74.25
	Have not Attended	34	25.75
	Total	132	100

Data Collection Tools

Two different assessment scales were used as data collection tools. One of them was "Santa Barbara Sense of Direction Scale" (SBSOD) which was developed by Hegarty et al. (2002) and adapted to Turkish language and culture by Turgut (2014). Cronbach's Alpha value was reported as .888 in the validation study of SBSOD. It was

found to be .774 in our study. SBSOD has Likert-type items about directions, remembering the locations of objects, intuition of direction, using a map and creating a mental image.

The other assessment scale was "Spatial Ability Self-Report Scale" (SASRS) which was developed by Turgut (2015). Cronbach's Alpha value was reported as .808 and .818 for split-half analysis in the validation study of SASRS. It was found to be .861 for the whole scale, in our study. SASRS has Likert-type items about mental rotation, creating a mental image, creating an appropriate figure for mental images, navigation, creating a mental map and remembering the characteristics of objects.

Data Collection Procedures

Participants were firstly informed about the aim of this study. They were informed that the data would be used only for this study based on ethical and scientific principles. Thereafter, they were kindly requested to participate in this study. They were not requested to provide their personal information such as their real names. However, they were expected to provide some information about their gender, class standings, types of high school they previously graduated from and whether they attended an early mathematics education course or not. Participants were given written forms of assessment scales separately to prevent interaction between them during the data collecting procedures. Fully filled and matched forms of the assessment scales were considered as the data to be analyzed.

Data Analysis

Participants were given pseudonyms as G1TC1 through G1TC34 for freshmen, G2TC1 through G2TC36 for sophomores, G3TC1 through G3TC35 for juniors and G4TC1 through G4TC27 for seniors. These pseudonyms were also used as codes. SBSOD is a seven-point Likert-type scale. Participants were expected to reflect their ideas by marking one of the seven different points from absolutely agree to absolutely disagree. SASRS is a five-point Likert-type scale scored from absolutely disagree to absolutely agree. Participants' levels of answers were scored from "0" to "6" for SBSOD and from "0" to "4" for SASRS.

ANOVA and Independent-Samples T-Test were used to analyze the data obtained by using SBSOD. Kruskal-Wallis Test and Mann-Whitney U Test were used to analyze the data obtained by using SASRS. These analysis methods were used according to the assumptions of parametric or non-parametric tests for the scores of each scale.

Results

The results of this study were presented under five different subtitles as results for gender, class standings, high school type, attending an early mathematics education course and correlation between the scores of the assessment scales.

Results for Gender

As a result of this study, difference between the mean scores of participants according to the T-Test results of the SBSOD scores for gender was not statistically significant. ($t(130)= .851$, $p=.396$). T-Test results are shown in Table 2.

Table 2

T-Test Results of SBSOD Scores for Gender

Groups	*n*	$\bar{x}$	*ss*	*df*	*t*	*p*
Male	11	50.73	15.666	130	.851	.39*
Female	121	54.34	13.283			

*p> .05

Besides, Mann-Whitney U Test results of SASRS scores for gender showed us the same result. According to SASRS results, difference between the mean scores of participants for gender was not statistically significant (U=460.500, p=.091). Mann-Whitney U test results are also shown in Table 3.

Table 3

U Test Results of SASRS Scores for Gender

Groups	*n*	$\bar{x}$	*ss*	*df*	*U*	*p*
Male	11	85.14	936.50	130	460.500	.91*
Female	121	64.81	7841.50			

*p> .05

Results for Class Standings

Prospective teachers were from four different class standings of a preschool teacher training program. As another result of this study, there were no statistically significant differences between the mean scores of participants by class standings according to ANOVA results of SBSOD (F(3.128)=.581, p=.629). Table 4 shows ANOVA results.

Table 4

ANOVA Results of SBSOD Scores for Class Standings

	S.S	*df*	*M.S.*	*F*	*p*	*η2*
Between Groups	319.084	3	106.361	.581	.629	.001
Within Group	23437.726	128	183.107			
Total	23756.811	131				

*p> .05

Kruskal-Wallis Test results showed us the same result. According to SASRS test results, difference between the mean scores of participants from different class standings was not statistically significant (χ^2=3.142, df=3, p=.370). Kruskal Wallis Test results are also shown in Table 5.

Table 5

Kruskal-Wallis Test Results of SBSOD Scores for Class Standings

Groups	*n*	*M.R.*	*df*	χ^2	*p*
Freshman	34	69.62	3	3.142	.370
Sophomore	36	68.06			
Junior	35	57.06			
Senior	27	72.74			

*p> .05

Results for High School Type

We had two groups regarding the types of high school participants graduated from. These were vocational high schools and non-vocational high schools (other types of high schools). According to T-Test results, difference between the mean scores of the two groups for SBSOD was not statistically significant (t(130)=1.121, p=.264). T-Test results are presented in Table 6.

Table 6

T-Test Results of SBSOD Scores for High School Type

Groups	*n*	$\bar{x}$	*ss*	*df*	*t*	*p*
Vocational	44	52.18	13.274	130	1.121	.26*
Non-Vocational	88	54.97	13.541			

*p> .05

Considering the results for SASRS, we may see the same results for difference between the mean scores of two groups. Mann Whitney U Test results showed us that difference between the two groups was not statistically significant (U=1785.000, p=.466). Mann-Whitney U test results are also shown in Table 7.

Table 7

U Test Results of SASRS Scores for High School Type

Groups	*n*	$\bar{x}$	*ss*	*df*	*U*	*p*
Vocational	44	63.07	2775.00	130	1785.000	.46*
Non-Vocational	88	68.22	6003.00			

*p> .05

Results for Attending an Early Mathematics Education Course

Another result of this study for the facts we may accept as variables was about taking a course on early mathematics education. We had two groups as participants attended an early math education course and those who did not. According to T-Test

results, difference between the mean scores of two groups for SBSOD was not statistically significant (t(130)=1.293, *p*=.198). T-Test results may be seen in Table 8.

Table 8

T-Test Results of SBSOD Scores for Early Mathematics Education Course

Groups	*n*	$\bar{x}$	*ss*	*df*	*t*	*p*
Have attended	98	51.47	12.529	130	1.293	.19*
Haven't attended	34	54.93	13.726			

*$p > .05$

Again, we faced similar results for SASRS scores. Difference between the mean scores of two groups was not statistically significant according to Mann-Whitney U Test results (*U*=1560.000, *p*=.581). These results may be seen in Table 9.

Table 9

U Test Results of SASRS Scores for Early Mathematics Education Course

Groups	*n*	$\bar{x}$	*ss*	*df*	*U*	*p*
Have attended	98	69.62	2367.00	130	1560.000	.58*
Haven't attended	34	65.42	6411.00			

*$p > .05$

Results for Correlation between Scores of Assessment Scales

Two different assessment scales were used to obtain the data. A positive correlation between the scores of SBSOD and SASRS was found in this study (r(130)=.001, *p*<.01). Therefore, we may consider that the data obtained by using two different assessment scales were consistent.

Discussion and Conclusions

In Turkey, female students are attending preschool teacher training programs tens of times more than male students. It is the reality. However, gender is being widely investigated in terms of whether it is an influential factor on spatial thinking skills or not (Abay, Tertemiz, & Gökbulut, 2018; Dursun, 2010; Erkek, Işıksal, & Çakıroğlu, 2017; Hacıömeroğlu & Hacıömeroğlu, 2017; Maiorana, 2014; Newcombe, 2013; Vander Heyden, van Atteveldt, Huizinga, & Jolles, 2016). This is why we aimed to investigate gender as a factor for prospective preschool teachers. As a result of this study, there was no statistically significant difference between the mean scores of male and female prospective preschool teachers. Similar to the results of this study, Maiorana reported that there was no statistically significant difference between spatial thinking skills of college students in terms of gender (Maiorana, 2014). In the studies by Abay, Tertemiz, and Gökbulut and Newcombe, it was revealed that there is no statistically significant difference between male and female teachers' spatial thinking skills (Abay, Tertemiz, & Gökbulut, 2018; Newcombe, 2013). Similarly, Hacıömeroğlu and Hacıömeroğlu could

find no statistically significant difference between male and female elementary teachers' spatial thinking skills (Hacıömeroğlu & Hacıömeroğlu, 2017). However, some studies revealed that, male preservice teachers had higher levels of spatial thinking skills than females, and female preservice teachers had higher levels of anxiety than male preservice teachers (Dursun, 2010; Erkek, Işıksal, & Çakıroğlu, 2017; Ramirez, Gunderson, Levine & Beilock, 2012). In addition to these studies, Vander Heyden et al. revealed that children's choices for activities which require spatial thinking skills may vary by gender, but there are no statistically significant differences between boys' and girls' spatial thinking skills (Vander Heyden, van Atteveldt, Huizinga, & Jolles, 2016). The numbers of male and female participants (11 to 121) might not be enough, or there may be some other factors to be investigated related to gender as a factor influencing spatial abilities.

As a result of this study, it was found that difference between the mean scores of participants was not statistically significant in terms of their class standings. We were expecting a significant difference between the mean score of freshmen and other class standings. Freshmen did not attend a course on early mathematics education, the results were not the ones we were expecting. Whitley-Morris (2018) studied with students in grades from 2 to 8. They revealed that there was no statistically significant difference between children's spatial thinking skills in terms of their grade level. On the other hand, Farrell (2017) studied older groups. Participants between the ages of 40 years and 70 years participated in their study. It was revealed that there was no statistically significant difference between the age groups. They explained that task difficulties or other reasons may cause slight differences. Nevertheless, Maiorana's (2014) study revealed that college students' spatial thinking skills vary by their class standing. Van der ven, Van der maas, Straatameier & Jansen (2013) studied elementary school children. In their study, it was found that children were getting well on spatial thinking skills and activities which require spatial thinking skills by grade levels. They also studied elementary school children in the same theme. They revealed that spatial thinking skills vary by grade levels. Maybe, spatial thinking skills are more changeable in early years of life and become more constant by the years by the help of experiences on spatial thinking skills. Close ages of participants of our study may be the reason for these results.

As a result of this study, no statistically significant difference was found between the mean scores of participants in terms of the types of high schools (vocational, non-vocational) they graduated from. In Turkey, most students who attend preschool teacher training programs previously graduate from vocational high schools. They are offered vocational courses more than mathematics and science courses. Considering the relationship between spatial thinking skills, mathematics and science (Newcombe, 2010; Newcombe & Fick, 2010), we aimed to investigate that, whether prospective preschool teachers' spatial thinking skills varied by high school type or not. The results of this study showed they did not. In contrast, Kayhan (2005) revealed that students' spatial thinking skills vary by their high school type. Indeed, there is a lack of studies on students' spatial thinking skills in terms of high school types. Every high school has its own curriculum or course types. We thought it may affect students' spatial thinking skills. Participants' closer ages and their lack of reception of any spatial education may have caused these results.

Prospective preschool teachers who attend a preschool teacher training program in Turkey are offered a course on early mathematics education. This course contains some sections such as essential mathematical skills, mathematics teaching strategies, children's cognitive development in early childhood period. We were wondering whether this course affects prospective teachers' spatial thinking skills or not. In this study, it was found that there was no statistically significant difference between participants' mean scores of spatial thinking skills in terms of attending an early mathematics education course. Wei, Yuan, Chen & Zhou (2012) reported that undergraduate students' spatial thinking skills are strongly correlated with their mathematical performances. Turgut and Yılmaz (2012) stated that prospective primary mathematics education teachers' academic successes and spatial thinking skills are positively correlated. Early mathematics education course's lack of inclusion of some special sections on spatial thinking or prospective teacher's closer scores for entering the teacher training program, may have caused this result.

Recommendations

Preschool teachers' spatial thinking skills and their implementations, teachers' anxieties, beliefs, views and attitudes towards spatial thinking should be studied more. The effects of teachers' spatial thinking skills on preschool children's spatial abilities are an important theme. Finally, studies should be conducted on creating special learning environments, materials (manipulatives) and instructions to develop children's spatial thinking skills.

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The Effect of Puzzle-Based Learning on Secondary School Students' Attitudes and Their Self-Efficacy Beliefs in English Lesson*

Bulmaca Temelli Öğrenme Yaklaşımının Ortaokul Öğrencilerinin İngilizce Dersine Yönelik Tutumlarına ve Öz-Yeterlik İnançlarına Etkisi

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ABSTRACT: The overall aim of this research was to examine the effectiveness of puzzle-based learning approach on secondary school students' attitudes and their self-efficacy beliefs in English lesson. The research employed the mixed model and quasi-experimental design with pre-test/post-test was applied. The working group was consisted of the 8th grade students who were selected from two classes and who learned at Elbistan Secondary School during the 2017-2018 academic year. The study was conducted with two groups; experimental group and control group. While lessons were taught based on puzzle-based learning approach in experimental group, in control group the lessons were taught according to the suggested methods of English lesson curriculum. At the end of the study, experimental group students' attitudes and self-efficacy beliefs in English lesson scores increased within groups and between groups. The activities which were carried out in the context of puzzle-based learning were considered as effective applications by students. Observations done during the implementation process of puzzle-based learning in experimental group revealed that the students had fun and learned, and their active participation increased during lessons.

Keywords: English lesson, puzzle-based learning, attitude toward English, self-efficacy beliefs in English.

ÖZ: Bu araştırmanın genel amacı, bulmaca temelli öğrenme yaklaşımının ortaokul sekizinci sınıf öğrencilerinin İngilizce dersine yönelik tutum ve İngilizce öz-yeterlik inançlarına etkisini belirlemektir. Çalışmada hem nicel hem de nitel verilerin birlikte yer aldığı karma model kullanılmış ve deneysel desen olarak öntest-sontest kontrol gruplu yarı deneysel desen tercih edilmiştir. Çalışma grubu, 2017- 2018 eğitim-öğretim yılında Kahramanmaraş ili Elbistan ilçesindeki bir ortaokulun iki şubesindeki sekizinci sınıf öğrencilerinden oluşmaktadır. Araştırma, biri deney grubu diğeri kontrol grubu olmak üzere iki grupla uygulanmıştır. Deney grubunda dersler bulmaca temelli öğrenme yaklaşımına göre işlenirken, kontrol grubunda dersler İngilizce dersi öğretim programın öngördüğü yöntemlere dayalı olarak işlenmiştir. Çalışmanın sonucunda, bulmaca temelli öğrenme yaklaşımının uygulandığı deney grubu öğrencilerinin grup içinde ve gruplar arasında İngilizce dersine yönelik tutumlarının ve İngilizce öz-yeterlik inançlarının olumlu yönde arttığı ortaya çıkmıştır. Bulmaca temelli öğrenme bağlamında gerçekleştirilen etkinlikler, öğrenciler tarafından etkili uygulamalar olarak değerlendirilmiştir. Deney grubunda uygulama sürecinde yapılan gözlemler sonucunda bulmaca temelli öğrenme etkinlikleri aracılığıyla öğrencilerin eğlenip öğrendikleri ve derslerde aktif katılımlarının arttığı görülmüştür.

Anahtar kelimeler: İngilizce dersi, bulmaca temelli öğrenme, İngilizce dersine yönelik tutum, İngilizce öz-yeterlik inancı.

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Introduction

Language plays an important role in communication. Among the most used languages, English is regarded as global common language used by people with different native languages. For this reason, many countries emphasize the importance of learning English to their citizens. As a foreign language, English is considered as being in the first foreign language position in Turkey. In Turkey, students do not learn English in natural environment, so it is common that they have experienced a great number of difficulties during foreign language learning process. Various reasons may lead most of Turkish students to think that studying English is a waste of time and effort. When individuals cannot understand English grammar, vocabulary, expressions, etc., they may easily lose their motivation to learn English and this situation may cause failure in language teaching and learning process. At this point, one of the leading factors that plays a significant role in students' academic and English learning success is how individuals perceive English. Thus, it is of great importance to explore the students' attitudes toward English as a foreign language, their English self-efficacy beliefs and how their attitudes and self-efficacy beliefs affect their progress in learning English. Individuals' characteristics may vary due to their past experiences, psychological structures and socio-economic environment in which they grow. Thus, individuals' attitudes toward foreign languages and self-efficacy beliefs should be taken into account in the process of foreign language learning. Various teaching methods and techniques are utilized in order to provide positive developments for their characteristics during the process of learning a foreign language. In recent years, there has been a shift from teacher-centered traditional classes to learner-centered teaching environment in which learners are responsible for their learning processes and teachers serve as a guide and facilitator (Atkinson, 2003). In this context, the use of puzzles in the foreign language teaching process is considered as a tool that allows teachers to juice up the learning environment and class activities and to make students alive by creating difficulties and fun at the same time (Aziza, 2013; Vaishnav, 2015). Puzzle-based learning is a fundamental approach to develop thinking skills. This approach aims to encourage students to think about how to solve problems. The aim is also to motivate students and improve problem-solving skills by discussing various puzzles and solution strategies (Meyer, Falkner, Sooriamurthi, & Michalewicz, 2014). According to Michalewicz and Michalewicz (2008), the features of puzzle-based learning are as follows:

- Learning is carried out with challenging, open-ended problems.
- Students work in small collaborative learning groups.
- The teacher takes the role of "facilitator" of learning process.

The puzzle-based learning approach can be easily applied to all levels of education and different courses and the studies about puzzle-based learning have been carried out in mathematics, engineering, language teaching, biology, etc. The use of puzzles enhances both students' problem-solving skills and their abilities to think critically; moreover, it increases the students' participation in the classroom (Öztürk & Gök, 2015). There are two main reasons why puzzle-based learning should be included in curricula:

- Puzzles are autotelic, in other words, they have their own goals without being related to anything else, and they are naturally fun (Öztürk & Gök, 2015). As Danesi (2004) stated, we as humans have an eager spirit to solve puzzles. The

puzzle instinct is at the core of human nature, like humour, language, art, music and other creative factors that distinguish humanity from all other species. Exploring puzzles is natural for those who want to experience tension and pleasure in understanding events. A learning situation based on puzzle-based learning is designed to help the learner experience this wonderful experience.

- Puzzles are, naturally, tools that can be used to develop competencies such as independent reasoning and critical thinking that can form the basis for students' problem-solving skills as they are fun and impressive. Puzzle-based learning is rapidly becoming a major part of curricula, as there is no guarantee that traditional education will provide students with sufficient practice and experience to improve problem-solving skills (Meyer et al., 2014).

The use of puzzles in foreign language classes has various benefits such as vocabulary, correct use of spelling and punctuation, less threatening classroom environment, recall of information and memory, and motivation of students (Aziza, 2013; Bouteliaten, 2010; Fadel, 2005). These are explained as follows:

Motivation: Most language teachers are of the view that students' motivation is one of the most significant factors affecting the success or failure of learning English. In other words, motivation directs the student toward success. Slavin (2003) considers motivation as one of the most important elements of effective teaching. It is generally accepted that some students are better than others when learning a language and this situation is often related to motivation rather than intelligence. Also, Slavin (2003) notes that it is teachers' job to provide motivation for students and to engage in activities that encourage them to learn. Thus, puzzles can help to achieve the goal in foreign language classes, especially in vocabulary learning. So, puzzles can provide students with the necessary warning that they should make more efforts to learn a language (Fadel, 2005).

Vocabulary: In order to be able to perform any puzzle activity, students must have the ability to identify and understand the idiom, the word, and this can be done by acquiring new vocabulary items. Therefore, after doing a lot of puzzle activities, students will learn some words and phrases they did not know before, and this usually gives them the chance to win new vocabulary. Students can use new words in speaking and writing activities and influence their teachers. By this way, confidence of the students may increase (Aziza, 2013; Bouteliaten, 2010).

Proper writing and spelling: A student trying to solve a puzzle activity must first understand the tips that lead him/her to answers. If the student cannot answer a specific puzzle question, then he/she can use dictionary to get the right answer and learn the exact spelling. This will enable student to develop the skills and competencies needed to practice writing, spelling, pronunciation, and even word recognition (Aziza, 2013; Bouteliaten, 2010).

Less threatening classroom environment: Another benefit of using puzzles in teaching environments is that for students who solve test questions, try to cope with challenging assignments, learn to deal with different lessons, puzzles are more entertaining and playful, and this makes classroom environment more comfortable and less threatening for the student (Aziza, 2013; Bouteliaten, 2010).

Remembering information: Teachers can easily create puzzles about their lessons and topics in a short time. If they create specific puzzles for the lesson, students

can more easily recall the information and recall it to memory (Aziza, 2013; Bouteliaten, 2010).

The following studies may be encountered in literature related to the use of puzzle-based learning. Crossman and Crossman (1983) aimed to determine the benefits of using puzzles in teaching environments and found out that puzzles provided an entertaining environment for learning. Franklin, Peat, and Lewis (2003) applied research about the use of games and puzzles to determine whether 1st grade biology students were benefiting from learning card games and puzzles in class. The students stated the contribution of using the games and puzzles to active learning, repetition, and entertaining environment. Akkan (2005) investigated the effectiveness of puzzles on academic achievement of primary school students in mathematics courses and found out its positive effectiveness compared to traditional teaching methods. Songur (2006) studied the effects of mathematics course with game and puzzles on achievement and retention levels of 8th grade primary school students and determined positive effects of this method on these variables. Weisskirch (2006) examined the effect of puzzle activities on repetition of the subjects and students declared that this method was more interesting, effective, and entertaining compared to traditional methods. Nassar (2009) aimed to reveal the effect of the use of puzzles in the development of critical thinking and academic achievement in mathematics and proved the effects of puzzles on these variables. Vossoughi and Zargar (2009) found out the positive effect of word puzzles on students' vocabulary development. Alemi (2010) determined the contribution of vocabulary games and puzzles to students' vocabulary. Bouteliaten (2010) determined the effectiveness of using puzzles as an instructional technique to improve the knowledge of English learners about new foreign vocabulary items. Merrick (2010) studied the adaptation of puzzle-based learning to introduction of a computer programming lesson and identified the contribution of this adaptation to the increase of students' interest and critical thinking skills. Sholikhah (2011) determined the influence of puzzle activities in increasing the vocabulary of commonly used words of 5th grade students. Gürdal and Arslan (2011) tried to explain Turkish vocabulary teaching methods to foreigners through game and puzzle activities and ascertained positive effect of these activities on students' interests and learning experiences. Aslan (2012) presented the activities about how to use the puzzle technique in "Ataturkism" unit and specified the effect of puzzle activities on students' concept learning situations. Aydemir (2012) found out the positive effects of online puzzles on the retention of 10th grade students of vocational high schools. Chen, Lin, Looi, Shao, and Chan (2012) showed the development of arithmetic skills through puzzle games played with cooperation. Kaymakçı (2012) specified the effect of puzzles on the increase of students' active participation in social studies lessons. Öztürk, Gök, and Takımcıgil (2013) aimed to present the theoretical foundations, application areas, and sample-finding activities of puzzle-based learning approach and to raise awareness about the qualities of puzzles by making a literature search related to puzzle-based learning. Kestha and Al-Faalet (2013) determined the effectiveness of puzzle-based learning on the development of 10th grade students' vocabulary. Aziza (2013) identified positive role of puzzles in improving vocabulary by learning new words. Njoroge, Ndung'u, and Gathigia (2013) determined the impact of puzzle-based learning on development of students' vocabulary in foreign language classes. Orawiwatnakul (2013) found out the positive effects of puzzles on

students' vocabulary and their motivations. Kızıl (2015) aimed at revealing the impact of concept puzzle activities on academic achievement in social studies lesson of 6th grade students. Namlı (2016) aimed to determine the influence of Sudoku, Futoshiki and Kakuro on 8th grade students' academic achievements and attitudes toward mathematics lesson.

The following studies have important results regarding self-efficacy in learning foreign language: Huang and Shanmao (1996) examined the relationship between self-efficacy and academic achievement of English as a second language and determined a significant relationship between self-efficacy and academic achievement variables. Çubukçu (2008) aimed to reveal the relationship between the level of anxiety and self-efficacy beliefs of students studied in foreign language department and didn't find any significant relationship between these variables. Tılfarlıoğlu and Cinkara (2009) investigated foreign language self-efficacy levels of university students studying foreign language teaching and found out their high-level self-efficacy levels during the process of learning English. Anaydubalu (2010) indicated the positive relationship between students' self-efficacy and their performance in English learning. Başaran (2010) found out the change of language learning judgments and self-efficacy beliefs of university students who learn English as a foreign language depending on their use of the podcasts as a language learning tool. Motlagh, Amrai, Yazdani, Abderahim, and Souri (2011) revealed the positive relationship between students' self-efficacy perceptions and their academic achievements. Meral, Çolak, and Zereyak (2012) determined the significant effect of self-efficacy on students' academic performances. Raoofi, Tan, and Chan (2012) specified positive relationships between students' self-efficacy beliefs and their interests in learning foreign language. Gömleksiz and Kılınç (2014) determined that 12th grade students were at medium level related to English self-efficacy beliefs. Memduhoğlu and Çelik (2015) determined that self-efficacy perceptions of prospective teachers were approximately at medium level. Yangın Ersanlı (2015) examined the relationship between academic self-efficacy levels and language learning motivations of the 8th grade students.

The attitudes toward foreign language have been taken into account in the following studies: Yang and Lau (2003) conducted a study to reveal the attitudes of higher education students toward English and the data emphasized the importance of this attitude about the use of English. Baş (2009) studied the effects of cooperative learning and traditional foreign language teaching methods on students' attitudes toward English lesson and retention of their achieved knowledge and found out its positive effects on these variables. Kılıç (2009) aimed to reveal the effect of creative drama method on students' English speaking skills and attitudes toward speaking English and determined the contribution of drama. Baş (2010) analyzed the positive effects of brain-based learning method on students' achievement levels and their attitudes toward the lesson in the 6th grade English lesson. Çimen (2011) specified significant correlations between attitudes of university students toward English and their self-efficacy perceptions. Çolak (2013) found out the positive effects of English communication activities organized in Second Life program on foreign language self-efficacy beliefs and social presence of Computer Education and Instructional Technology students who studied distance education. Doğru (2014) tried to find out the effect of guided imagery activities on university students' attitudes related to English lessons. Kartal (2014)

demonstrated the effect of English course applied by cooperative learning method on university students' foreign language attitudes. On the other hand, in Avcı's (2015) study the station technique didn't affect students' attitudes toward English lesson. Akın (2016) investigated the effect of creative drama method on high school students' reflective thinking skills and attitudes toward English lesson. Şahin (2016) specified the positive effect of teaching English through stories on students' reading comprehension skills, vocabulary, and their attitudes toward English lesson.

Unlike the aforementioned studies, this study explored the effect of puzzle-based learning both on students' attitudes toward English lesson and their self-efficacy beliefs in English together through using quantitative and qualitative data. In this regard, the problem statement was determined as "What is the effect of puzzle-based learning approach on secondary school students' attitudes and their self-efficacy beliefs in English lesson?"

Aim of the Research

The overall aim of this research was to explore the effect of the puzzle-based learning approach on secondary school students' attitudes and their self-efficacy beliefs in English lesson. In accordance with this main aim, answers to the following questions were sought:

1. Is there a significant difference between pre-test and post-test scores of the students' attitudes and their self-efficacy beliefs in English lesson within experimental group based on puzzle-based learning approach?
2. Is there a significant difference between pre-test and post-test scores of the students' attitudes and their self-efficacy beliefs in English lesson within control group in which proposed teaching methods of English lesson curriculum were applied?
3. Is there a significant difference between experimental group based on puzzle-based learning approach and control group in which proposed teaching methods of English lesson curriculum were applied in terms of post-test scores of students' attitudes and their self-efficacy beliefs in English lesson?
4. Is there a significant relationship between students' attitudes toward English lesson scores and their English self-efficacy belief scores?
5. What are the students' opinions in relation with puzzle-based learning activities?
6. What are the students' observed behaviors in English classroom in which the puzzle-based learning approach is used?

Methodology

Research Design

This research employed mixed method, which is expressed as a research method that involves collecting and analyzing together or consecutively the qualitative and quantitative data in the same research (Creswell, Plano Clark, Gutmann, & Hanson, 2003). Students' attitudes and self-efficacies were measured by qualitative research methods, and observation and interviews were also made as qualitative research methods to obtain the detailed and depth data from working group. The quantitative dimension of the study was conducted depending on the pre-test-post-test control group

+pattern which was based on quasi-experimental design. In qualitative dimension, semi-structured interviews and unstructured observation method were used.

Participants

The study group included 8-K and 8-I classes who were studying in a secondary school in Elbistan province of Kahramanmaraş in 2017-2018 academic years. As the study was carried out in a school in which one of the researchers was working, the convenience sampling model was used in grouping experimental and control groups (Yıldırım & Şimşek, 2018). The sample consisted of 51 students (27 students in experimental group and 24 students in control group). In order to select the experimental and control groups in a balanced manner before the study, attitude scale for the English course and the English self-efficacy scale were applied to the students studying in the 8-I-İ-K-L classes as pre-tests. According to pre-test scores, two groups which had no differences between them were chosen. Pre-test scores showed that, there was no significant difference between students' attitudes toward English lesson [$t(49)=1.1$, $p>.05$] and between their self-efficacy beliefs in English [$t(49) =.40$, $p>.05$].

Teaching-Learning Processes in Experimental Group

Teaching-learning process in experimental group of the research was organized in accordance with puzzle-based learning approach. English courses were conducted with 27 students in the first and second semester of 2017-2018 academic years in "Cooking, Communication, Internet and Adventures" units. Experimental process lasted 15 weeks and for this period fifteen lesson plans were prepared in accordance with puzzle-based activities. Several examples of puzzles used in research were presented in Appendix. In lesson plans, at least two puzzle activities for each of four course hour were applied to students. During applications, the researcher was a guide and provided feedback and corrections to the students when needed. Thanks to frequency of application of puzzle activities, learning of students was reinforced. In puzzle activities, students were at the centre of learning process and were responsible for their own learning.

Teaching-Learning Processes in Control Group

The lessons including "Cooking, Communication, Internet and Adventures" units in the control group were processed by the instructor of the course for 15 weeks. The teacher of control group used the textbook as a main resource within the scope of the 8th grade English curriculum and studied the lessons depending on the acquisitions in the guidance of teacher guidebook.

Data Collection Tools

The research deployed *Attitude Scale toward English Lesson* (Erdem, 2007), *Self-Efficacy Belief Scale for English* (Hancı Yanar & Bümen, 2012), *Interview Form* and *Observation Form* developed by researchers as data collection tools.

Attitude Scale toward English Lesson developed by Erdem (2007) was used to measure the attitudes of students approach toward English course based on puzzle-based learning. The scale consists of 28 items. As a result of basic component analysis, scale items were collected under one dimension. Kaiser-Meyer Olkin (KMO) value, which is used as a measure of sample adequacy in factor analysis, was found to be .96 for this

data set. The Cronbach's alpha coefficient of attitude scale toward English course developed by Erdem was found to be .97. In this study, Cronbach's alpha coefficient was re-calculated for pretest data as .88 and for posttest data as .89. Cronbach's alpha reliability coefficient normally ranges between 0 and 1. The closer Cronbach's alpha coefficient is to 1.0 the greater the internal consistency of the items in the scale. In other words, the higher the score, the more reliable the generated scale is (Gliem & Gliem, 2003; Reynaldo & Santos, 1999). In this context, the values of the scale can be considered as a high reliability coefficient.

Self-Efficacy Belief Scale for English developed by Hancı Yanar and Bümen (2012) was used to measure the secondary school students' self-efficacy beliefs in English course based on puzzle-based learning approach. The scale consists of 34 items and four dimensions: Reading, writing, listening and speaking. Its KMO coefficient was found to be 0.97. Confirmatory factor analysis was performed to test that the scale was four-dimensional. Besides, the Cronbach's alpha coefficient of self-efficacy belief scale for English was calculated by Hancı Yanar and Bümen to be .97 for the whole scale. The coefficients of subscales were indicated to be .92 for reading, 0.88 for writing, 0.93 for listening, and 0.92 for speaking dimension. In this study, Cronbach's alpha coefficient was re-calculated for pretest data as .97 and for posttest data as .96. These values can be accepted as the indicator of high reliability.

A Semi-Structured Interview form was prepared by researchers to obtain data on the qualitative dimension of the research. In order to ensure the content, structure and language validities of the interview form, opinions of a specialist in Educational Sciences, a Turkish teacher and an English teacher were received. Feedbacks from experts were taken into consideration and some arrangements were made related to sentence structure of questions. The interview form consisted of five open-ended questions and through this form, students' opinions about the positive and negative aspects of puzzle-based learning approach were determined.

Unstructured Observation Form prepared by researchers was conducted in order to investigate students' behaviours during puzzle-based applications. The form was used in the experimental group where puzzle-based learning approach was applied. Unstructured observation is a method that gives the observer freedom to access and record information. It is done in natural environments where behaviour occurs and is often performed through participatory observation role in which researcher is involved (Büyüköztürk, Kılıç Çakmak, Akgün, Karadeniz, & Demirel, 2016; Yıldırım & Şimşek, 2013). On the observation form, there were blanks which were filled by the data about the date, time, name, theme of the course, and observation notes related to students' status, learning-teaching activities and students' attractions toward the course.

Data Collection Process and Analysis

For the students both in experimental and control groups, attitude scale toward English lesson and English self-efficacy belief scale were applied as pre-test and post-test. Dependent and independent groups t-test analyses were used during quantitative data analysis. The data of observations were collected during fifteen-week experimental procedure by taking notes on semi-structured forms and analysed by descriptive analysis. The findings determined from the observation data were presented as anecdotes. Besides, the data of interviews were obtained at the end of the study via face

to face interviews by writing students' answers on interview forms. Questions in the interview form were asked to 27 experimental group students. The duration of interview with each student lasted approximately fifteen minutes. The data of interviews were analysed by content analysis technique. The data were read word by word and codes were determined from interview data. For the reliability analysis of the data obtained by interview form, Miles and Huberman's (1994) reliability formula was used. The researcher and the expert came to agreement in 24 codes on interview forms while in 6 codes they experienced disagreement and they consulted on the codes in which the differences were determined. The disagreement was especially originated from technical and scientific labels of the codes (i.e. self-confidence, active participation, permanent learning, visual memory, thinking skill, speaking skill). At the end, final versions of the codes were agreed and presented in the tables. When the code numbers obtained were substituted in the formula, the reliability was calculated as .80. According to this value, interview data were accepted as reliable.

Findings

Findings Related to Experimental and Control Groups Students' Attitudes toward English Lesson and Their Self-Efficacy Beliefs in English

Findings of dependent groups t-test analysis related to experimental group students' pre-test and post-test scores of their attitudes toward English lesson are depicted in Table 1.

Table 1

Dependent Groups t-test Findings for Pre-test and Post-test Scores of Experimental Group Students' Attitudes toward English Lesson

Measuring	*N*	$\bar{X}$	*S*	*sd*	*t*	*p*
Pre-test	27	81.59	2.30	26	8.86	.000*
Post-test	27	108.74	9.60			

*p<.05

As seen in Table 1, puzzle-based learning approach led to a significant increase within experimental group students' attitudes toward English lesson, t(26)=8.86, p<.05.

Table 2 displayed the findings related to dependent groups t-test analysis for control group students' pre-test and post-test scores of their attitudes toward English lesson.

Table 2

Dependent Groups t-test Findings for Pre-test and Post-test Scores of Control Group Students' Attitudes toward English Lesson

Measuring	*N*	$\bar{X}$	*S*	*sd*	*t*	*p*
Pre-test	24	84.54	10.83	23	1.17	.251
Post-test	24	80.33	14.82			

As observed in Table 2, no significant difference was identified across pre-test and post-test scores of the control group students' attitudes toward English course, where English curriculum was applied, t(23) = 1.17, *p*>.05.

Findings of independent groups t-test analysis related to control group and experimental group students' post-test scores of their attitudes toward English lesson are presented in Table 3.

Table 3

Independent Groups t-test Findings for Post-test Scores of Experimental and Control Group Students' Attitudes toward English Lesson

Group	*N*	$\bar{X}$	*S*	*Sd*	*t*	*p*
Experimental	27	108.74	15.34	49	6.70	.000*
Control	24	80.33	14.82			

*p<.05

As shown in Table 3, independent groups t-test results regarding post-test scores of experimental and control groups students' attitudes toward English lessons revealed a significant difference in favor of experimental group, t(49)=6.70, *p*<.05.

Findings of dependent groups t-test analysis related to experimental group students' pre-test and post-test scores of their English self-efficacy beliefs are given in Table 4.

Table 4

Dependent Groups t-test Findings for Pre-test and Post-test Scores of Experimental Group Students' English Self-Efficacy Beliefs

Measuring	*N*	$\bar{X}$	*S*	*sd*	*t*	*p*
Pre-test	27	81.33	20.60	26	10.66	.000*
Post-test	27	109.88	25.62			

*p<.05

As seen in Table 4, puzzle-based learning approach caused a significant increase within experimental group students' English self-efficacy beliefs, t(26) = 10.66, *p*<.05.

Findings regarding dependent groups t-test analysis related to control group students' pre-test and post-test scores of their English self-efficacy beliefs are given in Table 5.

As seen in Table 5, there was found no significant difference between control group students' pre-test and post test scores of English self-efficacy beliefs, where English curriculum was applied, t(23) = 2.78, *p*>.05.

Table 5

Dependent Groups t-test Findings for Pre-test and Post-test Scores of Control Group Students' English Self-Efficacy Beliefs

Measuring	*N*	$\bar{X}$	*S*	*sd*	*t*	*p*
Pre-test	24	83.42	20.94	23	2.78	.086
Post-test	24	93.46	16.06			

Findings of independent groups t-test for control group and experimental group students' post-test scores of English self-efficacy beliefs are presented in Table 6.

Table 6

Independent Groups t-test Findings for Post-test Scores of Experimental and Control Group Students' English Self-Efficacy Beliefs

Group	*N*	$\bar{X}$	*S*	*Sd*	*t*	*p*
Experimental	24	93.46	21.05	49	2.48	.016*
Control	27	109.89	25.62			

*$p < .05$

Table 6 depicts t-test results of the independent groups regarding post-test scores of experimental and control groups students' English self-efficacy beliefs. Accordingly, a significant difference was determined in favor of experimental group, $t(49)=2.48$, $p<.05$.

Correlation analysis was carried out to determine whether there was a significant relationship between secondary school 8th grade students' attitudes toward English lesson and their English self-efficacy beliefs. the analysis results showed that there was a weak and positive correlation between students' attitudes toward English lesson and English self-efficacy beliefs according to *pre-test* results of students in *experimental group* (Pearson's $r=.24$, $p<.05$). On the other hand, according to *post-test* results of students in *experimental group*, there was a moderate and positive correlation between students' attitudes toward English lesson and English self-efficacy beliefs (Pearson's $r=.38$, $p<.05$). According to the *pre-test* results of *control group*, there was a weak correlation in opposite direction between their attitudes toward English lesson and English self-efficacy belief scores group (Pearson's $r=-.12$, $p<.05$). Finally, according to the *post-test* results of *control group*, there was found a positively weak correlation between the attitudes toward English lesson scores and English self- efficacy belief scores (Pearson's $r=.28$, $p<.05$).

Findings of Experimental Group Students' Opinions toward Puzzle-based Learning Approach

Students' answers to the question whether puzzle activities used in English lesson contribute to their learning are given in Table 7.

Table 7

Students' Answers Related to Contribution of Puzzles to Their Learning

Codes	*f*
Useful in learning	27
Vocabulary	17
Writing of words	15
Fun and instructive	10
Permanent learning	7
Interest to the lesson	4
Preparation for exams	3
Visual memory	3
Thinking skill	1

As seen in Table 7, all students (27/27) thought that puzzle activities used in their English lessons contributed their learning and these activities were useful. More than half of the students (17/27) expressed that puzzles improved their vocabulary. 15 of 27 students stated that they corrected their mistakes in writing of words thanks to puzzle activities and wrote them correctly. Nearly half of the students (10/27) found puzzle activities fun and instructive and expressed that they learned by having fun. Several of the students (7/27) stated that they learned especially words and phrases permanently thanks to puzzle activities. 4 of 27 students indicated that their interests to English lesson increased via puzzles. A small number of students (3/27) had the idea that puzzles prepared themselves for English exams to get high marks. 3 of 27 students stated that they strengthened their visual memories related to pictures at puzzle events and learned with the visuals of the words. Only 1 of 27 student said that puzzle events contributed to his/her thinking skills.

Some of the students' views on this subject are as follows:

> "I think puzzle activities are very useful because I can learn correct spelling of words thanks to these activities. It also helps me remember words I forgot."
>
> "Yes, I think it contributed, because in a lesson like English that requires repetition and memorization, the spelling and pronunciation of words must also be used correctly. Puzzle activities fit this framework exactly."
>
> "Yes, puzzle activities we do in English lesson contribute to us in many ways. In addition to learning the spelling of words, we can learn both their pronunciations and their meanings. Also, it has a lasting effect for us, which increases success."
>
> "Crossword puzzle activities have expanded my vocabulary knowledge. I learned both spelling and pronunciation of words better. I have learned to express a word by using other English words."

Table 8 gives answers related to students' interests and desires toward the lesson, their active participation, and their beliefs for success.

As can be seen in Table 8, a large majority (21/27) of students stated that puzzle activities in English classes had a positive effect on their active participation in English lessons. More than half of the students (16/27) stated that puzzle activities increased their beliefs for success in English. Some of the students (7/27) stated that puzzle

activities contributed for permanent learning and these activities were fun (6/27). 6 of 27 students had the idea that the activities were partially effective for them. Only a few students (4/27) stated that they actively participated in the class thanks to puzzle activities and they gained self-confidence by this way. A small number of students (3/27) declared the opinion that their desire for studying English lesson increased via puzzle activities.

Table 8

Students' Answers Related to the Effect of Puzzles on Their Interests, Desires, Active Participation, and Beliefs

Codes	*f*
Effective in active participation	21
Belief for success	16
Permanent learning	7
Fun	6
Partly effective in learning	6
Self-confidence	4
Desire for studying lesson	3

Some of the students' views on this subject are as follows:

> "In our English lesson, our teacher's puzzle activities increased my interest to the lesson. I also believe that I have improved myself positively in point of active participation during lessons."
>
> "Yes, it did because even if there is no information about a word in activities, I can complete the activity thanks to clues given and this increases my self-confidence by creating the idea that I can do it. Also, because I can learn words more easily thanks to puzzles, I am able to attend the lesson more than before. This makes me more successful both in lessons and in exams."
>
> "Actually, I'm interested in English lesson, but I can't ignore pluses that these puzzle activities add to us. I realized that my interest in lessons increased even more thanks to puzzle activities we did."

Students' answers about the necessity of puzzle activities in English lesson are given in Table 9.

As depicted in Table 9, all students (27/27) think that puzzle activities should take place in English lessons. More than half of the students (18/27) stated that puzzle activities helped them learn vocabulary. Nearly half of the students (12/27) declared that the activities were very fun. 9 of 27 students stated they learned vocabularies and phrases easily and permanently. A few of the students (4/27) believed that these activities were necessary for active participation. Few students (2/27) expressed puzzles were effective in preparing for exams and these activities should take place more frequently in English lessons. Only one student stated that puzzles improved speaking skill and another student thought that different types of puzzles should be applied.

Table 9

Students' Answers to the Necessity of Puzzle Activities in English Lesson

Codes	*f*
It should take part in lesson	27
Vocabulary learning	18
Fun	12
Permanent and easy learning	9
Active participation	4
Preparation for exams	2
Frequency of implementation of puzzles	2
Speaking skill	1
Different types of puzzles	1

Some of the students' views on this subject are as follows:

"I think puzzles should take place in English classes. Because I think such activities attract attention of those who cannot or do not like this course."

"In my opinion, puzzle activities are necessary for the course because first of all, the lessons are now more enjoyable and as students we can attend English lessons more than before. This situation increases our desires to learn. Secondly, when we do puzzle activity after learning words, it reinforces what we learn and this increases our course performance."

"From my point of view, puzzles should be in English lessons because English isn't composed of only some grammatical rules, in fact it is relevant to vocabulary knowledge. Through these puzzles, more words are learned. We can learn both spelling and the pronunciation of words and this increase my efficiency in the lesson."

The answers given by the students about the use of puzzle activities in the other lessons are given in Table 10.

Table 10

Students' Answers about Using Puzzle Activities in Other Lessons

Codes	*f*
It should be in other lessons	22
Instructive	14
Fun	7
Unnecessary	5
Concept learning	3

As seen in Table 10, majority of students (22/27) suggested that puzzle events should be included in other lessons. Nearly half of them (14/27) evaluated puzzles as instructive. Some of the students (7/27) thought that puzzles were entertaining during lessons. A few of the students (5/27) stated that puzzles were unnecessary for use in other lessons. On the other hand, few students (3/27) declared that puzzles should be used in learning of the concepts in other lessons.

Some of the students' views on this subject are as follows:

> "I would like to have puzzle activities in other classes because if we want to succeed, we need to learn concepts instead of memorizing them. Although there are many ways to learn well and effectively, I think one of the most enjoyable and easiest ways is puzzle activities".
>
> "I don't think puzzles are necessary for all courses, especially for numerical courses. We used it effectively in English because it was very useful in learning words and expressions, but I don't think it is very useful for math class."
>
> "In my view, puzzles should be used in other lessons. For instance, using puzzles in Revolution History and Kemalism lesson can enable us to learn the concepts about lesson better and lessons can be more enjoyable."

Findings Regarding Observations of Experimental Group Students During the Application of Puzzle-Based Learning Approach

The highlighted qualitative findings of observations in experimental group through 15-week period are as follows:

- It was observed that interaction of students with their friends and teacher increased during lessons when puzzle activities were used.
- It was seen that students communicated with their friends and teacher especially when they suffered about writing of words during puzzle activities.
- During the activities, the teacher was generally in a guiding and directing position and tried to answer students' questions.
- It was observed that students had fun with the use of puzzles in lesson. Also they enjoyed puzzle activities when they did in their spare time.
- There was a considerable rise in students' interests to lessons. It was observed even students who were irrelevant and less interested in course in which regular curriculum was used were actively trying to make puzzles during puzzle activities.
- As students completed puzzles, they realized that they could learn more words easily and they wanted more puzzle activities to attend lessons more actively.
- The relaxed and fun classroom environment that occurred when puzzle events were practiced sometimes caused a slight increase in noise level.
- During the solutions of puzzles, there was an intense desire about participating to the activities.

Results, Discussion and Suggestions

The research results are presented as follows:

- Puzzle-based learning approach in English language class increased students' attitudes toward English lesson positively within the group.
- English curriculum had no effect on the students' attitudes toward English lesson within the group.
- Puzzle-based learning approach was more effective about increasing students' attitudes toward English lesson than English curriculum.
- Puzzle-based learning approach in English language class increased students' English self-efficacy beliefs within the group positively.
- English curriculum did not affect students' self-efficacy beliefs within the group.
- Puzzle-based learning approach was more effective about increasing students' English self-efficacy beliefs than English curriculum.

- As students' attitudes toward English lesson in experimental group increased, students' English self-efficacy beliefs also increased. Also, this correlation increased after the study compared to beginning of the study. However, before the study, as the level of control group students' attitudes toward English increased, their English self-efficacy beliefs decreased. On the other hand, after the study, control group students' self-efficacy beliefs in English increased as their attitudes toward English increased.
- According to students' views, the use of puzzle-based learning approach in English course had positive effect. In this context, puzzle-based learning had a positive influence in improving students' general English language skills and their writing skills in English, in correcting mistakes they made in writing, in making classroom environment fun and instructive, in increasing student's lesson awareness, in strengthening students' visual memories, in increasing students' beliefs in achievement, their self-confidence and desire to study.
- Students' ideas indicated that puzzle activities should take place both in English classes and in other lessons, because it had positive effects on the formation of a fun classroom environment, students could learn new words easily and permanently, it could ensure active participation of students during lessons.
- As a result of observations, which were made in experimental group during the implementation process, students were found to learn by having fun and their active participation during lessons increased. Also, the implementation constituted an intense interaction among students in learning process.

The research results revealed that puzzle-based learning approach increased students' attitudes toward English lesson positively. Similar to the results of this research, Crossman and Crossman's (1983) study showed that puzzles provided an amusing teaching environment, developed authenticity, benefited students' learning, and increased interest in study habits. Based on this result, puzzles used in classroom environments can be fun, supportive and motivating to participate and they can attract attention of the student to the lesson and subject so student can have a behavioral attitude willing to perform the puzzle activity. Similarly, Franklin et al. (2003) indicated that puzzles created fun learning environment. Besides, Yang and Lau (2003) stated that free choice of English courses at the university helped students to obtain the language needed for career and personal development, and they also realized how important it was to have a positive attitude toward the use of English. Accordingly, Songur (2006) revealed that lessons with puzzle activities made easier for students to remember vocabularies, affected students' attitudes toward English lesson positively and increased students' success. At that point, individuals can continue to participate in puzzle activities because they have fun while doing it and it can be thought that this situation will allow students to have positive attitudes toward the course. Weisskirch (2006) drew the conclusion that puzzles had made learning process more interesting and they were more effective time when students were working together. Baş (2009) studied students' attitudes toward English course in which brain-based learning method was applied and concluded that it was more beneficial than the course applied with traditional teaching methods. Similarly, in this study, students in experimental group, in which puzzle based learning method was applied, had higher attitudes toward the English course than the students in the other group. Correspondingly, Kılıç (2009) stated that the use of creative

drama method in foreign language classes positively influenced students' attitudes toward speaking in English. In a study that measured the effect of imagination activities on the success, interest and attitudes of university students toward English courses, Doğru (2014) found out imagination activities had a statistically significant effect on the success and interest level of the imagination activities but there was no significant effect of the imagination activities on the attitude. In this context, the result of this study contradicts the results of our research. Similar to the results of this study, Kartal (2014) concluded that the application of cooperative learning method improved students' attitudes toward English course positively. Also, Akın (2016) came to the conclusion that there was a positive development in the attitude and reflective thinking levels of the experimental group students who applied the drama method.

Another research result suggested that puzzle based learning approach had a positive effect on students' self-efficacy beliefs. Self-efficacy belief is accepted as an important variable on students' various behaviors. Michalewicz & Michalewicz (2008) argued that the characteristics of the puzzle-based learning approach had a facilitating role in learning, and that students could work in small collaborative learning groups and that they were able to perform desired behaviors. Based on this, it can be said that in the context of puzzle-based learning approach, English lessons containing educational puzzles can increase the belief that an individual can achieve the objectives of the course and increase self-efficacy perception of the student. Tılfarlıoğlu and Cinkara (2009) emphasized the importance of students' self-efficacies in language learning process. It was seen that the results of these two studies were similar, considering that the use of puzzles in English lessons increased self-efficacy beliefs of students. Similarly, Motlagh, Amrai, Yazdani, Abderahim, and Souri (2011) declared that self-efficacy perception was an important factor in academic achievement. Yusuf (2011) revealed that self-efficacy beliefs significantly increased learning achievement. Meral, Çolak, and Zereyak (2012) found that students' self-efficacies significantly affected their academic achievements. Furthermore, in Meral, Çolak, and Zereyak's (2012) study it was concluded that students who had high self-efficacy perception were more active in English, their attendance was high, permanent learning was achieved, and beliefs in achieving English were increased. In present study it came to the conclusion that, puzzle-based learning approach had a positive effect on students' self-efficacy beliefs in English. Parallelly, Başaran (2010) indicated that podcasts had positive effects on some language learning judgments and self-efficacy beliefs. This result was similar to the study showing that puzzle based learning approach had a significant difference when compared to the teaching environments where usual English language curriculum was used in terms of the effects to students' self-efficacy beliefs. Also, Raoofi et al. (2012) stated that various factors such as the use of strategy, students' interests and experiences increased their self-efficacy levels. In Çolak's (2013) study conducted to examine the effect of communication activities on self-efficacy beliefs in English lessons, it was observed that participants' self-efficacy beliefs in communicating in English increased.

In the study, all the students in experimental group indicated that puzzle-based learning approach was an effective method of learning English in terms of different aspects. Similar results emerged in the relevant studies: Akkan (2005) concluded that puzzle activities were more effective than traditional methods. Also, Baş (2010) found a significant difference in favor of experimental group in which learning strategies

teaching was applied. Merrick (2010) found that synthesis of puzzle-based learning concepts with existing course content increased students' learning experiences, interests to lesson, and participation in lectures. Additionally, Gürdal and Arslan (2011) stated that puzzle types such as square puzzles, spiral puzzles, word hunting, word placement, picture puzzles, pyramid puzzles, and picture square puzzles increased students' knowledge and enabled them to learn by doing. Similar to this study, Aslan (2012) used puzzles in Republic of Turkey History of Revolution and Ataturkism lesson and stated that because of abundance of abstract concepts, direct instruction technique bothered students during lessons and so the activities which students could take active role such as puzzles, should be applied. Correspondingly, Kaymakçı (2012) had come to the conclusion that students were usually more active in solving puzzles and having fun while learning. Öztürk et al. (2013) concluded that puzzle-based learning had attracted learners, made the lesson fun, and increased student participation. Besides, Kestha and Al-Faalet (2013) found the necessity of implementing puzzle-based learning method in English teaching by shedding light on the achievements of students and on techniques that emphasized organizing information for long-term learning.

As a supportive result for students' ideas indicating positive effect of puzzles on vocabulary learning, Vossoughi and Zargar (2009) indicated that word puzzles affected students' vocabulary development process positively. Bouteliaten (2010) had come to the conclusion that students learned almost all of the words which they didn't know by using puzzles in foreign language classes. Similarly, in this study's result students indicated they were especially aware of the fact that puzzles played an important role in development of their vocabulary knowledge. Similar to this study, Orawiwatnakul (2013) stated that puzzles helped students acquire vocabulary knowledge. As a result of Sholikhah (2011) study, it was revealed that the use of puzzle activities was effective in learning common words. Furthermore, Njoroge et al. (2013) concluded that the use of puzzles in teaching English as a second language was an effective strategy of teaching vocabulary and helped students expand their vocabulary knowledge. It was a complex process to learn the meanings and pronunciations of words in foreign languages and rules of spelling (Nagy & Scott, 2000). Therefore, it can be said that the applied approach was effective in contributing to students' vocabulary learning.

Based on the results of this study, the following suggestions are presented for practical and research purposes:

- It was shown in a qualitative context that the program prepared by puzzle-based learning approach had positive effects on creating fun classroom environment, providing active participation of the students, enhancing the belief in achievement and providing permanent learning in the students. Besides, this approach enhanced the students' attitudes and self-efficacy beliefs. For this reason, puzzle-based learning-based activities may be used in other lessons by teachers for similar effects.
- In interviews with students, the students were determined to be willing to do puzzle activities in lessons. Thus, the puzzle-based activities may be used for increasing their willingness toward the lesson.
- This research may be considered as the first that was applied in English lesson in Turkey in reachable literature. For this reason, the results of future studies may be comparable to those of present study.

- This research was conducted in 8th grade English course in the units "Cooking, The Communication, The Internet, Adventures". Similar research can be designed for other units and subjects of English lesson.
- In present study, the effects of the puzzle-based learning approach on the students' attitudes and self-efficacy beliefs were measured. In another study, the effect of this learning approach on academic achievement can be measured.

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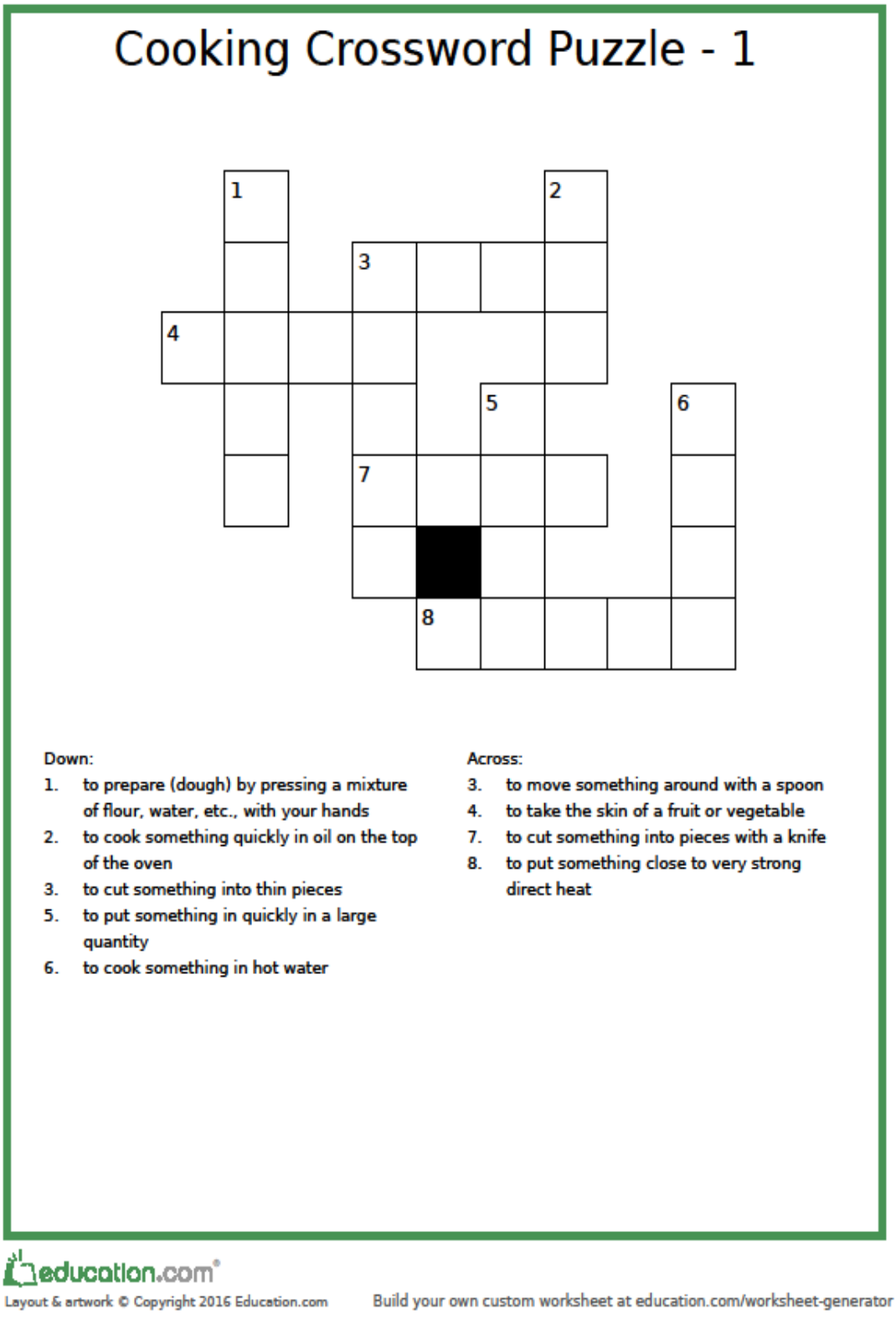
Appendix


Cooking Crossword Puzzle - 1
Down:
1. to prepare (dough) by pressing a mixture of flour, water, etc., with your hands
2. to cook something quickly in oil on the top of the oven
3. to cut something into thin pieces
5. to put something in quickly in a large quantity
6. to cook something in hot water
Across:
3. to move something around with a spoon
4. to take the skin of a fruit or vegetable
7. to cut something into pieces with a knife
8. to put something close to very strong direct heat
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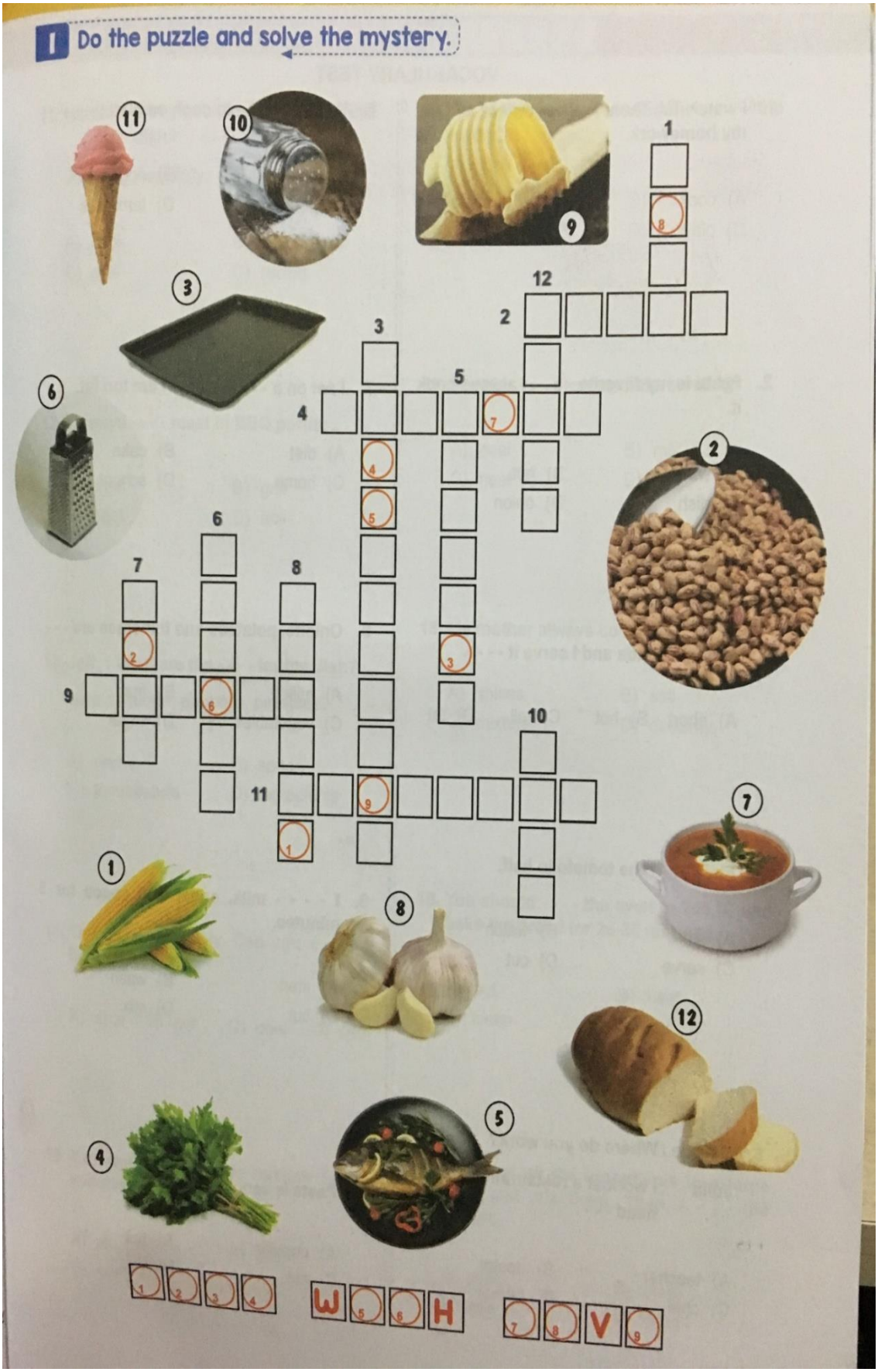
Build your own custom worksheet at education.com/worksheet-generator

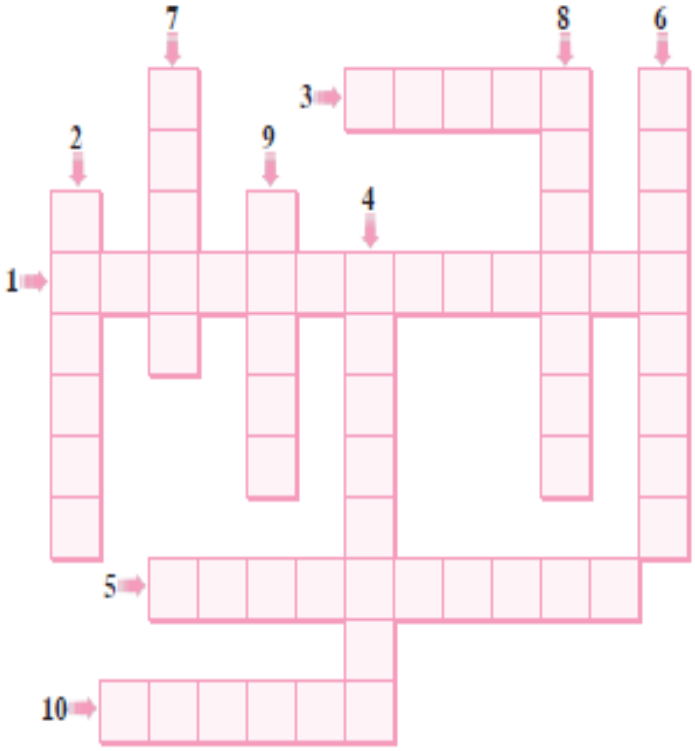

I Do the puzzle and solve the mystery.
W H V

Across

1. a writing system using picture symbols
3. the main ways that people receive information and entertainment
5. giving and receiving
10. very special or unusual

Down

2. very large animals that live in the sea
4. the system of words or signs that people use to express thoughts and feelings to each other
6. You ask someone, argue with someone or give reasons to someone when you cause that person to do something.
7. When something bad or unfair happens, you have this strong feeling.
8. very old
9. funny stories



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An Examination on the Opinions of Teachers Regarding the Use of Impression Management Tactics

İzlenim Yönetimi Taktikleri Kullanımına İlişkin Öğretmen Görüşlerinin İncelenmesi

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ABSTRACT: The purpose of this study was to examine the opinions of teachers regarding the use of impression management tactics. Phenomenological pattern from qualitative research patterns was used in this study. The study group was comprised of 13 teachers working at the secondary schools in the province of Gaziantep during the 2017-2018 academic year. Semi-structured interview form was used in the study for data acquisition. Based on the findings obtained from the analyses. Teachers use different impression management tactics at school. The teachers expressed their opinions on constructing an impression that they will be successful at a task, avoiding considerations of incompetence, giving importance to friendly relations and being an exemplified employee by taking part in out of work hour tasks. It was determined as a result of the study that teachers use different tactics for generating the desired impression on others by using different tactics subject to cases and individuals and that they put in an effort to manage the impressions related with themselves. Teachers who take on important roles and responsibilities with regard to adding new knowledge, skills and values to themselves, students and society should generate a positive impression on individuals around them with their attitudes and behaviors.

Keywords: impression management tactics, teacher, school.

ÖZ: Bu araştırmanın amacı, öğretmenlerin izlenim yönetimi taktikleri kullanımına ilişkin görüşlerinin incelenmesidir. Araştırmada nitel araştırma desenlerinden olgubilim deseni kullanılmıştır. Araştırmanın çalışma grubunu, 2017-2018 eğitim-öğretim yılında Gaziantep'teki ortaokullarda görev yapan 13 öğretmen oluşturmuştur. Araştırmada veri toplama aracı olarak, yarı yapılandırılmış görüşme formu kullanılmıştır. Veriler içerik analizi yöntemiyle analiz edilmiştir. Analizlerden elde edilen bulgulara göre, öğretmenler okul ortamında çeşitli izlenim yönetimi taktikleri kullanmaktadırlar. Öğretmenler bir işi başaracaklarına ilişkin izlenim oluşturma, yetersiz görünmekten kaçınma, arkadaşlık ilişkilerine önem verme ve mesai saatleri dışında da verilen görevlerde yer alarak örnek çalışan olma ile ilgili görüş belirtmişlerdir. Araştırma sonucunda öğretmenlerin duruma ve kişiye göre farklı taktikler kullanarak çevrelerindeki bireyler üzerinde istenilen izlenimleri oluşturma ve kendileriyle ilgili oluşan izlenimleri yönetmek için çaba gösterdikleri belirlenmiştir. Kendilerine, öğrencilere ve topluma yeni bilgi, beceri ve değerlerin kazandırılmasında önemli rol ve sorumluluklar üstlenen öğretmenlerin, sergiledikleri tutum ve davranışlarıyla çevrelerindeki bireyler üzerinde olumlu bir izlenim oluşturmaları gerekmektedir.

Anahtar kelimeler: izlenim, izlenim yönetimi, taktik, öğretmen.

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Introduction

It is known that humans as a social being are in continuous interaction with their environments. They generate certain impressions on individuals around them either consciously or unconsciously while at the same time forming their own impressions of others over time. These acquired impressions play a determinant role in the development of relationships (Doğan & Kılıç, 2009). Individuals who are interested in what others think about them shape their behaviors to manage the impressions of others (Çetin & Basım, 2010). In other words, individuals who aim to generate the desired impressions in others regulate their behaviors accordingly. It is very important for individuals to generate a positive impression during the impression management process. Because they have to influence the thoughts, beliefs and behaviors of others in order to reach their goals (Khadyr, 2016). Different impression management tactics can be used when faced with similar cases since every individual has different personal characteristics (Higgins, Judge & Ferris, 2003; Schütz, 1998). As can be understood from this expression, different factors (personal characteristics etc.) are effective in the selection of different impression management tactics.

Impression management is comprised of methods that have been used for a very long time by individuals to impress others and display their superiorities by using their knowledge, skills and characteristics and their physical attractiveness through the use of clothing, accessories etc. (Oğuzhan, 2015). The concept of impression management was first defined by Goffman (1959) as behaviors of individuals for influencing the perceptions of others with regard to themselves (Akgün, 2009; Erdem, 2008; Kasar, 2011). Impression management has been defined differently by different researchers in literature as the process through which individuals attempt to influence the impressions other people form of them through the use of information conveyed to others (Demir, 2002; Gardner & Martinko, 1988; Tatar, 2006; Wayne & Liden, 1995;); the process by which individuals attempt to control the impression others form of them (Bolino & Turnley, 1999; Leary & Kowalski, 1990) conscious or unconscious efforts of an individual to control their personal image held by other individuals (Kacmar & Carlson, 1994; Ralston & Kirkwood, 1999) and the processes through which individuals change, regulate and manage the perceptions of others towards themselves for reasons such as displaying accepted behaviors during their interactions with others, avoiding negative perceptions and preventing the formation of such perceptions (Alev, 2018).

Impression management has been used mostly in the fields of social psychology and personality psychology during the 1960's and 1970's. Afterwards, the importance of impression management in behaviors displayed during interpersonal interactions was started to be realized during the 1980's (Leary & Kowalski, 1990) after which it became a key concept in organizational environments as well (Akgün, 2009; Demiral, 2013; Rosenfeld & Giacalone, 1991; Rosenfeld, Giacalone & Riordan, 1995; Ünaldı, 2005). Because individuals resort to various tactics of impression management for reasons such as obtaining financial and social benefits as well as having a positive identity accepted by others (Singh & Vinnicombe, 2001).Impression management tactics are expressed in various forms as; impression management strategies (Caillouet & Allen, 1996; Crane & Crane, 2002), impression management behaviors (Drory & Zaidman, 2007; Wayne & Green, 1993), impression management tactics (Demir, 2002; Demiral, 2013; Gilmore, Stevens, Harrell-Cook & Ferris, 1999; Gwal, 2015; Kacmar & Carlson, 1999; Kacmar,

Harris & Nagy, 2007; Kasar, 2011; Lievens & Peeters, 2008; Mohamed, Gardner & Paolillo, 1999; Shoko & Dzimiri, 2018; Tsai, Chen & Chiu, 2005; Türköz, 2010). The researchers have preferred the use of the "tactic" concept in this study which has been accepted by majority of the researchers. Based on the classification by Jones and Pittman (1982), the frequently used and generally accepted tactics in literature are ingratiation, self-promotion, exemplification, supplication and intimidation (Bolino, Kacmar, Turnley & Gilstrap, 2008) the reliability and validity studies of which have been carried out by Bolino and Turnley (1999) within the scope of a scale. Details on these tactics are provided below.

The individual displaying behaviors that will be considered as pleasant by others, using words of praise for them and acting as if he/she thinks the same way is known as the ingratiation tactic (Zaidman & Drory, 2001). Individuals who use this tactic aim to achieve positive opinions of themselves in individuals they interact with (Alev, 2018). Individuals who aim to self-promote intend to suggest to the target audience that they are competent, skilled and successful individuals (Kacmar et al., 2007; Liden & Mitchell, 1988; Schütz, 1998). Tactics to create the impression that individuals use either unconsciously or unconsciously in both work and social life appear as an important concept in terms of increasing success and happiness (Nartgün, Zafer, Kepekcioğlu, & Selvi, 2013). In other words, individuals strive to promote perceptions of competence in others around them. While individuals who use the exemplification tactic sometimes work during the weekends do not leave their workplaces even during off-work hours thereby evoking impressions in both their colleagues and managers that, "I am very diligent, I devoted myself to my organization, I am an exemplary employee etc." (Türköz, 2010). They strive to build an impression on others that they are exemplary individuals who are attached to ethical values such as honesty and devotion (Leary, 1996; Schütz, 1998).

Even though impression management tactics are used for evoking positive impressions; in some cases supplication and intimidation tactics are also used which may result in negative impressions. Individuals who use the tactic of supplication (Demir, 2002) use their shortcomings and weaknesses to impress others. Moreover, they try to manage the impressions of others by emphasizing their weaknesses to earn sympathy and thus receive help from individuals around them (Kasar, 2011). Supplication is the only tactic that uses weakness to evoke an impression of an individual in need of help. This tactic is the opposite of self-promotion and those who use this tactic generally have weak and submissive personality characteristics (Bolino et al., 2008; Lai, Lam & Liu, 2010). Whereas intimidation is known as a tactic used by the party in power (Tatar, 2013), intimidation tactic, as indicated by Jaja (2003), is generally used in superior-subordinate relationships during cases of salary increase, performance evaluation and award distribution if the superior has a say in these issues and in cases of relationships based on hierarchy. In other words, it can be expressed that this tactic can be used as a tool of enforcement by superiors with greater legal power and a classical management approach who want higher performances.

Teaching is not a one-way process in which certain information is transferred to students. Because respect and love towards the school, society and friends can only be attained at schools and teachers play an important role in the development of attitudes and behaviors as well as the formation of opinions on the world. Hence, it is critical that

teachers display positive behaviors accepted by everyone (Oğuzhan, 2015). On the basis of this expression, it can be stated that teachers who work at schools as an educational organization may resort to impression management tactics for reasons such as being successful and leaving a positive impression on other teachers as well as school administrators thus earning awards or creating an impression of success for serving in different positions (such as administrators).

Teachers play an important role at schools as social systems due to their positions and the fact that they may inflict various changes in the lives of students. Thus, the expressions used by teachers, their deeds and the tools they use during teaching activities are effective on the attitudes and behaviors of their colleagues, students and their guardians (Oğuzhan & Sığrı, 2014). In this context, it is considered important for teachers that they form positive impressions and act as role models for students and other individuals around them. Because teachers who give importance that their behaviors are in accordance with the situations they are in or individuals who are experiencing the same situations want other individuals around them to have positive opinions of themselves and thereby try to act accordingly (Demir, 2003). In other words, teachers are in continuous interaction with students, teachers and administrators in the school environment as well as with various other individuals outside the school. During these interactions they sometimes evaluate themselves based on the feedback they receive from individuals around them. It can be stated as a result of the evaluations made that it is important for teachers to determine their shortcomings, try to overcome them and act as exemplary individuals to others around them with their attitudes and behaviors. Teachers give importance to the impressions they leave on other individuals, try to determine their shortcomings and overcome them thereby leaving a positive impression with their attitudes and behaviors.

As a result of the literature review, various researches have been carried out regarding the use of impression management tactics of teachers, but the level of their use of impression management tactics or individual and organizational values (Karakuş & Alev, 2016), general self-efficacy and emotional labor (Alev & Bozbayındır, 2018), virtual shift (Nartgün, Ekinci, Limon & Tükel, 2017), ethical climate and leader-member interaction (Oğuzhan & Sığrı, 2014). Therefore, the research was conducted in a qualitative research design in order to obtain detailed information about the selection and use of impression management tactics of teachers. It is considered that the evaluation of the findings obtained by comparing them with previous studies with quantitative research method will contribute to the literature.

In this regard, the purpose of this study was to determine the opinions of teachers on the use of impression management tactics. For this purpose, the answer to the following question was sought: “What are the opinions of teachers on the use of impression management tactics?”

Method

Study Model

The present study was carried out using the phenomenological pattern from among qualitative research methods. In qualitative analyses, an incident or case is examined from the perspective of individuals (Ekiz, 2013). Whereas the

phenomenological pattern enables us to think on cases which we are aware of but do not have an in-depth and detailed understanding about (Yıldırım & Şimşek, 2013) and it aims to define the experiences of individuals with regard to a certain concept or case (Creswell, 2016). Therefore, the opinions of teachers on the use of impression management tactics were tried to be examined in-depth via qualitative research method.

Study Group

The study group was selected by way of purposeful sampling which is one of the sampling methods used in qualitative researchers. Purposeful sampling involves the selection of certain units (individuals, groups, etc.) "based on a specific purpose rather than randomly" (Teddlie & Yu, 2007). As the aim of the study was to determine the use of impression management tactics of secondary school teachers, the study group consisted of 13 teachers working in secondary schools. In this context, the study group was comprised of 13 secondary school teachers working at the Gaziantep province. Of the teachers, 6 were male, 7 were female; 3 were married, 10 were single. With regard to the age variable, 10 of the participants were between the ages of 21-30, whereas 3 were between the ages of 31-40. Of the teachers who were selected to participate in the study, 11 had an experience of between 1-9 years and 2 had an experience of 10-19 years. Twelve of the teachers had bachelor degrees and 1 had graduate degree.

Data Acquisition Tool

The data were acquired via semi-structured interview method. Interview is defined as a data acquisition method during which the interviewer asks a series of questions to the interviewee for acquiring information (Christensen, Johnson & Turner, 2015). Interview is a powerful method for data acquisition. Because there is a one-to-one interaction between the researcher and the interviewee in this method (Teddlie & Tashakkori, 2015) and the interviewer has the freedom to ask previously prepared questions on a certain topic as well as to ask additional questions for acquiring more detailed information (Yıldırım & Şimşek, 2013). For this purpose, a semi-structured interview form was prepared on the opinions of teachers regarding the use of impression management tactics. Research was made on the concept of impression management from both national and international sources while preparing the questions included in the form. Afterwards, the questions that are considered to be included in the form were prepared. Opinions of three faculties members expert in this field were taken on the prepared questions after which a pilot application was conducted with two teachers. The form was finalized after the pilot application in accordance with opinions and suggestions of teachers and the questions in the semi-structured interview form were directed to the teachers in the study group.

Data Acquisition and Analysis

Qualitative methods generally enable the acquisition of in-depth information on a small number of people and cases (Patton, 2014). For this purpose, the point at which the data started to repeat itself or in other words the point at which the data reached a certain level of saturation was taken into consideration when determining the number of participants. Accordingly, semi-structured interviews were conducted with 13 secondary school teachers within the knowledge of the school principal and teachers after taking

the required permits. The physical conditions of the interview location were examined prior to starting the interviews in order to ensure that the interviews are carried out in a suitable environment. The interviews were started after providing a short briefing on impression management tactics to the participants. The interviews were carried out face-to-face for about 30-45 minutes and all interviews were recorded based on the voluntariness of the participants. The interviewed teachers were given codes as; K1: Participant 1, K2: Participant 2, K3: Participant 3.

Content analysis was used for data analysis. Similar data are grouped around certain concepts and themes in content analysis which is frequently used in qualitative studies (Stemler, 2001) after which they are organized and interpreted in an understandable way for readers (Yıldırım & Şimşek, 2013). Voice records for each participant were uploaded to the computer environment during the first stage of content analysis and raw data texts were organized. Qualitative data analysis software ATLAS.ti 7.5.18 was used for generating a coding key for analysis and for the coding of the data accordingly. The concepts used in literature and the data acquired during the interviews were used while determining the codes. Thematic coding was carried out taking into consideration the similarities between the concepts and themes were generated from the codes. Care was given during thematic coding that the selected themes and sub-themes form a meaningful whole. After the themes and codes were interrelated and arranged, interpretations related with the purpose of the researchers were included. Strict attention was given to include expressions exemplifying certain opinions while presenting the opinions of the participants. The […] sign was used to indicate that the opinion is continuing either before or after the provided expression.

Validity and Reliability Studies

Studies on credibility (internal validity) and transferability (external validity) were carried out for ensuring the validity of the study. Credibility is the extent to which a research account is believable and appropriate, with particular reference to the inference of the researchers regarding the causality of the observed relationship (Christensen et al., 2015). The duration of the interviews made with the participants was kept as long as possible for ensuring credibility thereby striving to obtain detailed information. Moreover, evaluations on data acquisition process, data analysis and results were carried out with experts on the study topic and qualitative research methods. Three teachers were asked to read and control the interview forms prepared by the researchers in accordance with expert opinions. After the interviews were transcribed in a digital environment, the teachers were asked to read them for determining whether they reflect their own opinions or not. Another study carried out for validity was transferability which is related with the extent to which the study results may be transferred to and generalized for other environments (Miles and Huberman, 2015). A detailed description was made within the scope of the transferability study which can be defined as the rearrangement of the concepts and themes emerging from the raw data acquired and the transferring of this data to the reader without adding any interpretations (Yıldırım & Şimşek, 2013). Studies on credibility (internal validity) and repeatability (external validity) were carried out within the scope of reliability studies (Yıldırım & Şimşek, 2013). Attention was given to code the data with the right expressions and to unify these codes under proper themes during data analysis in order

to ensure consistency which is defined as the relative constancy of the study process with regard to time, researcher and place (Miles & Huberman, 2015). Moreover, consistency was tried to be attained among independent coders during data analysis. Opinions of four experts in the field of educational management were taken for this purpose. The formula of Miles and Huberman (1994) (Reliability = 27/27+2x100) was used as a result of which the ratio of consensus among coders was determined as 0.93. The most important precaution that the researcher could take for repeatability was providing detailed and clear data on the basic stages of the study as well as the position and approach of the researcher (Yıldırım & Şimşek, 2013). Therefore, the stages of recording data, coding and thematics have been tried to be explained in detail.

Results

Thematic and conceptual codings related with the use opinions of teachers on the use of impression management tactics are provided in Table 1.

Table 1

Thematic and Conceptual Codings Related with the Use Opinions of Teachers on the Use of Impression Management Tactics

Theme	Sub-theme	Conceptual Codings/Concepts and Sub-Concepts	*f*
Impression Management Tactics	Supplication	Asking for help in difficult tasks	9
		Hiding competence	7
		Doubting experience/education	6
	Self-promotion	Creating an impression of success	11
		Avoiding an appearance of incompetence	10
		Avoiding negative impressions	12
		Appearing as determined	9
		Appreciation of successes	6
		Forming an impression of a qualified individual	2
	Ingratiation	Giving importance to friendly relations	10
		Being a positive role model	11
		Striving to ingratiate the courses	8
		Acting sincere	5
	Exemplification	Taking part in extra tasks/duties	8
		Helping others	10
		Working out of hours	7
		Not striving to present one's qualities	4
		Displaying natural behaviors	3
	Respect to Differences	Being open to different opinions and suggestions	13
		Acting calm when faced with different opinions	9

	Avoiding insistence to impose ideas	2
Intimidation	Reacting to oppositions	4
	Trying to impose ideas	4
	Arguing with the opposing party	3
Avoiding Assignments	Not taking part unless mandatory	7
	Unwillingness to take part in assignments	5
	Not taking part in out-of-hours assignments	6

As can be seen in Table 1, a total of seven sub-themes were determined as a result of the analysis of the opinions of teachers on the use of impression management tactics which are, "supplication, self-promotion, ingratiation, exemplification, respect to differences, intimidation and avoiding assignments".

Teachers put forth their opinions under the *"supplication"* sub-theme respectively as; Asking for help in difficult tasks (*f*=9), hiding competence (*f*=7), Doubting experience/education (*f*=6). One of the teachers expressed his opinion with regard to asking for help for overcoming difficult tasks and difficulties as follows:

> "At this point, I try to make use of the knowledge and experience of others around me when I need to overcome difficulties. I ask them to help me in my research to overcome this situation." (K2)

Based on the above expression, it can be put forth that teachers will try to overcome difficulties and difficult problems by asking for help from others around them. Whereas some of the teachers indicated that they will avoid taking part in assignments they do not want or being involved in an unpleasant task by making an impression on others that they are not competent even though they have sufficient knowledge to take part in this task. A quotation from the opinions of a teacher is provided below:

> "[…] I try to create an impression that I do not have sufficient knowledge. If it is something I will enjoy, I volunteer but if not, why should I do something that I do not enjoy! I can act as if I don't know anything about it and this is something that I do frequently. Because I would prefer doing things that I enjoy."(K3)

As is expressed above, teachers may prefer to resort to the supplication tactic by hiding their competence or by forming an impression that they have no knowledge of the subject when faced with unpleasant tasks they do not want to take part in.

Teachers who strive to leave a qualified and positive impression on others indicated their opinions respectively as follows; Creating an impression of success (*f*=11), avoiding an appearance of incompetence (*f*=10), avoiding negative impressions (*f*=12), appearing as determined (*f*=9), appreciation of successes (*f*=6), forming an impression of a qualified individual (*f*=2). One of the teachers stated the following opinions on forming an impression of a qualified individual with confidence on his experience and education:

> "I try to leave an impression on others that I may successfully complete the tasks that I start with confidence on my experience and education. Perhaps it is not something that I can do by myself. I am forced to leave such an impression to convince other people as well. I try to leave such an impression by using expressions such as, I have been trained for this or this is how it should be done."(K7)

Accordingly, it is understood that teachers who have confidence in their experience and education will strive to leave a positive impression on those around them. Whereas one of the teachers who stated that he will not hide his knowledge if he is sufficiently informed in that issue and that he will carry out the assigned duties in addition to leaving an impression of success expressed his opinions on this issue as follows:

> "I do not try to leave an impression of incompetence in a field at which I am competent and I try to do it deservedly even if I do not enjoy it. Because this is something related with behavior, with inner conscience. If this is my responsibility, I have to do it no matter what." (K12)

As can be understood from the above expression, teachers who are of the opinion that they are competent at a certain subject try to complete the assigned duties and responsibilities even if they do not want to do so in order to avoid leaving an impression of an incompetent person.

The opinions of teachers on the "*ingratiation*" sub-theme can be listed respectively as; Giving importance to friendly relations (*f*=10), being a positive role model (*f*=11), Striving to ingratiate the courses (*f*=8) and Acting sincere (*f*=5). Some of the teachers emphasized the importance of friendly relations and expressed opinions in favor of the necessity of improving relationships. One of the teachers expressed his opinion as follows:

> "I would like to help the people around me regarding a subject that I am competent in and improve our friendly relations. For instance, let's say I prepared a homework on that day which I really liked. I take it to my friends thinking that they can also benefit from it. I do this to improve our friendship." (K3)

The above expression is related with helping others related with a subject that the individual is competent in and accordingly the improvement over time of friendly relations in a positive communication environment. One of the teachers who has an objective of helping others around him to improve their friendly relations expressed his opinions as follows:

> "I try to help others around me regarding subjects that I am competent in. As I said, friendly relations are very important for me. I do everything in my power to improve such relations." (K6)

It can be observed based on this expression that importance is given to improving friendly relations and that the roles played by sharing of information and helping others have been mentioned.

Some of the teachers used expressions on the importance and necessity of being a positive role model under the sub-theme of ingratiation. One of the teachers stated his opinions as follows:

> "With regard to social position, teachers are individuals who display exemplified behaviors thereby setting up a role model for the students and the environment. Accordingly, I try to teach my lessons after having a good command of the topics that I will teach." (K10)

The above expression emphasizes the necessity for teachers of being a positive role model for both the students and the people around them due to their social standing.

Teacher opinions under the theme of *"exemplification"* have been determined respectively as; Taking part in extra tasks/duties (*f*=8), helping others (*f*=10), working out of hours (*f*=7), not striving to present one's qualities (*f*=4), displaying natural

behaviors (*f*=3). Citations from the opinions of participants on various categories are given below.

One of the teachers expressed his opinions on helping others by taking part in extra duties and thus establishing a positive impression as well as on the subject of leaving a positive impression as follows:

> "I would like to take part in duties which will enable me to help others around me. For example, if a library will be set up at the school, this is actually done for students. If we do this together with our friends, our relations improve and we will have done something for the school."(K6)

Based on this expression, it is understood that teachers pay regard to the benefits of the school and the students while taking part in extra duties outside the scope of their job definitions for helping others, leaving a positive impression and improving relations.

One of the teachers who indicated that he will strive to carry out his duties deservedly without refraining from any duties in fields that he is competent in stated his opinions on this issue as follows:

> "If I consider myself competent with regard to knowledge and experience in a certain subject, I do not avoid any duties and I try to do the best I can." (K5)

As is stated above, teachers who are of the opinion that they are competent in a subject indicate that they will try to do their best when assigned duties related with that specific subject.

One of the teachers who expressed his opinion that in addition to taking part in assignments, he would work out of hours if necessary to help other people and finish the duties that could not be completed during work hours stated the following:

> "If I want to stick to my plan, there is no problem. I would even do what I have to do outside of work hours. If only I want to do it by heart. I would not come if someone forces me to anyway. I would never avoid extra duties." (K3)

It is indicated here that the individual would work even out of hours to complete the tasks at hand for duties that are carried out voluntarily and not enforced by anyone else.

Teachers stated their opinions for the "*respect to differences*" sub-theme respectively as follows; being open to different opinions and suggestions (*f*=13), acting calm when faced with different opinions (*f*=9) and avoiding insistence to impose ideas (*f*=2). Citations from the opinions of the participants are provided below.

One of the teachers who stated that he would tolerantly approach his colleagues, students and guardians with contrary opinions to those of himself, that he would respect the differences and be open to different opinions and suggestions thereby expressing his opinions as follows:

> "I would tolerate those who are not of the same opinion with me. I mean every individual has their own way of thinking. For instance, if the child is thinking wrong, I would try to make him/her correct these mistakes. If they are not very wrong and if he/she is just thinking differently, I think we should be tolerant. He/she is also an individual with different thoughts. I think we have to respect this." (K9)

It is stated in the above expression that one should approach different opinions and suggestions of students tolerantly but that the mistakes if any should be corrected in some cases.

One of the teachers expressed the following opinions on the importance and necessity of remaining calm when faced with different opinions and expressing one's self without hurting the thoughts and emotions of the other:

> "I do not easily reflect my real emotions to people who cause hindrances for me when trying to implement my decisions. Because I lose that individual if I get angry or enraged. But I am of the opinion that it would be best if we say what I mean not bluntly but by way of other things. It is easy to lose someone but difficult to win them." (K6)

Here, it is emphasized that one should act calmly when faced with individuals who pose hindrances for the implementation of decisions and that emotions should be regulated before being reflected onto others.

It was observed when the opinions of teachers on the use of impression management tactics were examined that they strive to leave a positive impression through ingratiation, self-promotion and being respectful to different opinions and suggestions but that they sometimes prefer to impose their opinions and thoughts on others thereby standing out as an individual who is contending with challenges and defending their opinions. Accordingly, citations are given below for the opinions of various teachers who have indicated their opinions under the sub-theme of "*intimidation*" respectively as follows; Reacting to oppositions (*f*=4), trying to impose ideas (*f*=4), arguing with the opposing party (*f*=3). One of the teachers put forth the following expression with regard to reacting to opposition:

> "I generally act in a stubborn manner when I am faced with oppositions for implementing my decision or when I am prevented from carrying out my duties. It becomes apparent that I am angry. I mean, if I really want to do this and I believe that it has to be done, I may be angry at the opposition and I generally reflect this." (K11)

It is observed that the individual who has expressed the above opinions will struggle with opposing individuals and that negative emotions such as anger will be reflected to others.

One of the teachers who indicated that he would try to impose his opinions on people with different opinions expressed his considerations as follows:

> "I would make them feel that they will experience difficulties if they continue to say what they know even if I give sufficient information on a topic that I am competent in and I would force them to share my opinion." (K13)

As can be understood from this expression, teachers who want to impose their opinions and thoughts strive to ensure that other people also share their opinions when they are sufficiently competent in a subject.

Finally, the opinions of teachers regarding the "*avoiding assignments*" sub-theme were respectively as follows; Not taking part unless mandatory (*f*=7), unwillingness to take part in assignments (*f*=5) and not taking part in out-of-hours assignments (f=*6*). Some of the teachers indicated that they would be unwilling to take assignments related to different tasks unless it is obligatory and that they would not prefer to do so. One of the teachers expressed his opinions on this issue as follows:

> "I would perhaps be unwilling if they tried to assign me some tasks outside the scope of my duties during period that I am quite busy. Because in that case it may be difficult for me to stick to my plan. For instance, my own duties could be affected if I have to enter a lesson for another class. However, I would still do it if somehow I have to, I would teach the course whatever it is and I would not have that time spent freely." (K8)

It is stated in the above expression that appointed tasks will be carried out even if unwillingly when they are asked to carry out a task that is not within the scope of a specific plan. While one of the teachers who stated that he would openly express his opinions in case he does not wish to take part in an assignment that he is unwilling about stated his considerations as follows:

> "If I have sufficient knowledge but I do not want to take part in that assignment, I would make others around me feel that I have sufficient knowledge but that I do not want to be a part of that assignment and people would feel it. Indeed, if they are people who know me they would know and understand, but still I would express my thoughts directly. I can say that I will not take part in this task, because it contradicts with my understanding of education. I mean of course I would state it using a suitable language." (K2)

As indicated above, teachers who do not want to take part in an assignment despite having sufficient knowledge try to express their thoughts about this issue using a proper language and without hurting the feelings of other individuals.

Discussion, Conclusion, and Suggestions

It was concluded as a result of the study carried out for determining the opinions of teachers regarding the use of impression management tactics that teachers generally resort to impression management tactics at school environments. In addition, it was also observed that different tactics are used depending on the individual and the incident at hand. It was determined as a result of the study that teachers who use impression management tactics mostly prefer using tactics that will leave a positive impression such as self-promotion by creating an impression of success; ingratiation by giving importance to friendly relations and being a positive role model; respect to differences by being open to different opinions and suggestions and exemplification by working out of hours and taking part in extra tasks/duties. However, it was also determined that they sometimes also resort to the use of tactics that will result in a negative impression of themselves such as supplication by asking for help, intimidation by reacting to oppositions as well as by avoiding assignments.

It is important that teachers should be role models towards the individuals around them due to their profession and leave positive impressions on both students and other stakeholders of the school (Karakuş & Alev, 2016). As a result of a study conducted by Nartgün, Ekinci, Limon, and Tükel (2017), teachers rarely used the tactic of introducing their qualifications; self-pitifulness, being an exemplary individual, asking for help and noticing their own importance by force. Similarly, Demiral (2016) found in his research that although employees use impression management tactics of varying importance, they try to introduce their qualifications most.

Based on the study results, the opinions of teachers on the use of impression management tactics were classified under the sub-themes of self-promotion, ingratiation and exemplification. Accordingly, teachers stated opinions on leaving an impression of success, avoiding appearing incompetent, giving importance to friendly relations and exemplification by way of taking part in assignments outside of work hours. Similarly, it has been indicated in various other studies on the issue (Gwal, 2015; Harris, Kacmar, Zivnuska & Shaw, 2007; Shoko & Dzimiri, 2018; Turan, 2018) that the tactics of self-promotion and ingratiation are used more in comparison with the tactics of exemplification, intimidation and supplication.

Ellis, West, Ryan and DeShon (2002) carried out a study as a result of which it was determined that the participants use impression management tactics and resort more to the tactics of self-promotion, exemplification and ingratiation. The objective of self-promotion is not to appear as a good individual to others as in the case of ingratiation but to be considered as a competent and skillful individual (Akdoğan & Aykan, 2008; Ünaldı, 2005). As an example, a teacher trying to evoke an impression that he/she is skilled and well-informed for being appointed to future administrative positions may use this tactic for putting forth behaviors that will leave an impression on others that he/she is the best candidate for the job in question. Indeed, teachers in the present study stated that they will avoid leaving a negative impression in others related with a subject they are competent in and that they will strive to convince others regarding the rightness of their ideas if they believe that they have sufficient knowledge. Moreover, some of the teachers indicated that they will put in extra effort to establish an effective relationship with students in the classroom in order to leave an impression as a determined and self-confident individual.

It was determined that exemplification is one of the tactics that is most frequently used by teachers in the school environment. Individuals who use the exemplification tactic strive to leave an impression on others that he/she is an individual that should be exemplified due to his/her commitment to moral values such as honesty and devotion (Leary, 1996; Schütz, 1998). Individuals who use this tactic go to their jobs earlier, leave late, take work to their homes and do not use their leave of absence periods. In addition, such individuals also seem eager for difficult tasks (Tabak, Basım, Tatar & Çetin, 2010; Ünaldı, 2005), help other individuals at the work environment and try to create an impression that they are very busy (Kasar, 2011). It was also determined as a result of the study that some teachers are present at the school outside of course hours and during the weekends thereby using the exemplification tactic by improving the physical conditions of the school, helping students with low academic success or those who are preparing for examinations.

It was concluded as a result of the study that teachers generally turn to tactics such as self-promotion, exemplification, ingratiation to leave positive impressions on people around them; however, it was also indicated that they may sometimes use tactics such as supplication and intimidation that will leave negative impressions on other individuals. Individuals who resort to the use of the supplication tactic want to emphasize their weaknesses and shortcomings for receiving protection and support (Bolino & Turnley, 1999). It can be stated that a teacher asking for help to use technological tools such as computers, slide projectors and smart boards or a friend of the teacher acting as replacement for recess duties if the teacher in question cannot fulfill this duty due to his/her sickness can be given as examples to the reflections of this tactic in education.

It is possible to make suggestions for both implementers and researchers based on the study results. Suggestions for implementers; teachers improving themselves in line with the requirements of the age we live in, adapting to the innovations and changes; teachers organizing and taking part in various in-service training activities, seminars and workshops for ensuring that they are open minded individuals instead of acting as an obstacle to change. Teachers who assume various responsibilities to bring in new knowledge, skills and values to students and the society in the long run should

be educated as individuals who will act as role models to the society rather than taking part only at a position of carrying out the duties of education and teaching. Suggestions for researchers can be indicated as follows: it has been observed that related studies have generally been carried out via quantitative methods. Hence, qualitative or mixed method studies can be carried out on the use of impression management tactics for making an in-depth and detailed evaluation of the impression management concept on education. The study was carried out on a sample group comprised of teachers. Future studies can be carried out for determining the opinions of administrators as well as teachers.

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A Thematic Content Analysis of the Qualitative Studies on FATIH Project in Turkey

Türkiye'de FATİH Projesi Kapsamında Yapılan Nitel Çalışmalara Ait Bir Tematik İçerik Analizi

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ABSTRACT: The aim of this study is to examine studies conducted within the Movement to Increase Opportunities and Technology (FATIH) project in order to reveal the current position of the project and to determine further research gaps. A method based on thematic content analysis was used for the study. Academic studies that have been analyzed in research were obtained from databases such as the Higher Education Council (HEC) National Thesis Center, TUBITAK ULAKBIM Social and Humanities Database, ERIC, and Google Academic. A total of 137 studies were analyzed within the scope of the study. Following the examination of the papers, the study included 54 academic-study-specific criteria which were grouped under five main themes. These themes are (1) general ideas about the FATIH project; (2) views, ideas, and suggestions for the implementation of the FATIH project; (3) studies on the equipment of the FATIH project; (4) studies on the training related to the FATIH project; and (5) studies evaluating and analyzing the FATIH project. Within the scope of the FATIH project, it was seen that several studies were done under the three. As a result of this thematic content analysis, it is stated that there is a need for new studies on teacher education, hardware infrastructure, and e-content related to the FATIH project. Furthermore, it is suggested that teacher training should be provided periodically, especially for special to each course and software aspect be used in learning and teaching activities of the project should be strengthened by further diversification.

Keywords: FATIH project, thematic content analysis, educational technology.

ÖZ: Bu çalışmanın amacı, FATİH projesi konusunda yapılan çalışmaları inceleyerek durum değerlendirmesi yapmak, projenin günümüzde geldiği noktayı ortaya koymak ve geleceğe yönelik yapılması gereken çalışmaları belirlemektir. Çalışmada tematik içerik analizi yöntemi kullanılmıştır. Araştırmada incelenen akademik çalışmalara Yüksek Öğretim Kurulu [YÖK] Ulusal Tez Merkezi, TÜBiTAK ULAKBİM Sosyal ve Beşeri Bilimler Veri Tabanı, ERIC ve Google Akademik gibi veri tabanlarından ulaşılmıştır. Çalışma ile ilgili olarak toplam 137 çalışmaya ulaşılmıştır. Çalışmaya belirli kriterler doğrultusunda 54 akademik çalışma dahil edilmiş olup, dâhil edilen çalışmaların incelenmesi sonucunda beş ana tema oluşturulmuştur. Bu temalar; (1) FATİH projesine ilişkin genel düşünceler, (2) FATİH projesinin uygulanmasına ait görüş, düşünce ve öneriler, (3) FATİH projesi ekipmanları ile ilgili yapılan çalışmalar, (4) FATİH projesi ile ilgili olarak yapılan eğitimlere ilişkin çalışmalar, (5) FATİH projesini değerlendirme ve analiz çalışmaları olarak ifade edilmiştir. FATİH projesi kapsamında en fazla çalışmanın 3. tema altında yapıldığı görülmüştür. Bu çalışma sonucunda FATİH projesi ile ilgili olarak özellikle öğretmen eğitimi, donanım altyapısı ve e-içerik konularında etkili çalışmaların yapılmasına ihtiyaç olduğu ifade edilmiştir. Çalışma sonucunda özellikle öğretmen eğitimlerinin belli branşlara özel, belirli aralıklarla tekrar eden bir şekilde yapılması ve projenin yazılım boyutunun daha fazla çeşitlendirilerek güçlendirilmesi önerilmiştir.

Anahtar kelimeler: FATİH projesi, tematik içerik analizi, eğitim teknolojisi.

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Introduction

In today's world, where information is easy to reach and is constantly increasing very rapidly, it is accepted everywhere that technological development is also progressing at an unprecedented pace in parallel with information (Solak, 2012). Depending on the technological development, the effects of technology seem to be felt seriously in educational sciences (Cücü, 2014). Developments and changes in technology have made it necessary for educational environments to keep up with the era and to use this technology in educational environments (Arıcan, 2014). Introducing new technologies into our lives causes many innovations to be reflected in the field of education (Yıldırım, Kurşun, & Göktaş, 2015). The rapid change of information, the fact that there are currently many ways to access information, and the active use of information technology (IT) by students have made the development of new ideas in learning and teaching systems as well as the presentation of the opportunities of e-learning systems to the students inevitable (Tüzün, Akıncı, Yıldırım, & Sarıkaya, 2013).

From this point of view, it has been emphasized that it is necessary to prepare and implement educational programs and teaching methods and tools by benefiting from science and technology in order to increase the quality of education in the Sixth Five-Year Development Plan (1990–1994), which entered into force in 1990, and the Seventh Five-Year Development Plan prepared in 1996 (as cited by Seferoğlu, 2010). For this purpose, one of the projects signed between the Ministry of National Education (MoNE) and the World Bank in 1990 was the "National Education Development Project." Within the scope of this project, various subprojects were carried out. These subprojects included the "53 computer pilot schools (CPS)" project and the "182 computer laboratory schools" project. The general objective of these projects is to extend computer-aided education and computer education using technology in the classroom (as cited by Sezer, 2011). After that, a course related to IT started to be taught in elementary schools for the first time with the Basic Education Project, which was put into practice by the MoNE in 1998 for the same reasons, and computer laboratories, computers, overhead projectors, TVs, and videos were supplied to schools within the scope of this project (as cited by Sezer, 2011). For similar reasons, the aim was to provide a fast, uninterrupted Internet connection to all schools with a protocol signed between the Ministry of Transportation and MoNE in 2003. In addition, in the Information Society Strategy (2006–2010) prepared by the State Planning Organization (SPO), there is a target related to the use of IT in our educational system, which is stated as follows: "Information and communication technologies will be one of the basic tools of the education process and students and teachers will be able to use these technologies effectively" (SPO, 2006). In the Information Society Strategy, it is also requested that the following objectives be fulfilled concerning the mission of the MoNE to enable the transition to an information society (MoNE, 2010a):

- ✓ Appropriate structures should be formed and e-content should be developed for individuals to develop themselves through lifelong learning approaches and e-learning.
- ✓ Every student who received secondary education should have the competence to use basic information and communication technology.

- ✓ One out of every three students should be able to benefit from e-education services through effective use of the Internet.
- ✓ Everybody should be given an opportunity to learn and use information and communication technology.
- ✓ Every other person should be an Internet user.
- ✓ The Internet should be turned into a reliable medium for all classes of the society.

The MoNE has put forward the vision of IT in relation to the use of IT in education and stated this vision as "Integrating education system with advanced technologies, supporting the education system with innovations, developing the education system continuously through measurement and evaluation and providing student-centered and project-based education by using information technologies" (MoNE, 2009). The ministry also implemented various projects as a requirement of the above-mentioned vision; projects such as Think Quest (MoNE, 2007), Intel Teacher Program (MoNE, 2004), Web Based Content Development (MoNE, 2007a), DynEd (URL, 2019), and Cisco Network Academy (MoNE, 2006a) are examples of these projects. The Movement to Increase Opportunities and Technology (FATIH) project in education was designed by the SPO to meet the objectives set out in the Information Society Strategy and achieve the above-mentioned strategic objectives (MoNE, 2010a). The aim of this project, which was announced through a protocol between the MoNE and the Ministry of Transportation in 2010, is to provide notebook computers, LCD panel interactive boards, and Internet network infrastructures to 620,000 classrooms at schools in the preschool, primary, and secondary levels, with the aim of providing an equal opportunity in education and training, improving the technology in our schools, and enabling the effective use of IT tools in classes in a way that will engage more senses in learning/teaching processes (MoNE, 2010d). The FATIH project consists of five main components:

(1) Providing hardware and software infrastructures

(2) Providing and managing educational e-content

(3) Using efficient IT in curricula

(4) In-service training of teachers

(5) Ensuring conscious, secure, manageable, and measurable use of IT (MoNE, 2010c).

With the FATIH project, the aim is to enable teachers to demonstrate their lessons more effectively through the hardware and software infrastructures that will be provided to the classes in the learning/teaching process of IT tools in order to provide an equal opportunity in education and training and to improve the technology in schools (Alkan, Bilici, Akdur, Temizhan, & Çiçek, 2011). Within the scope of providing and managing e-content, electronic content will be provided to be used as teaching material in teaching programs and as auxiliary course material. It is planned that this e-content will consist of learning material supported by multimedia components, such as audio, video, animation, presentations, photos/pictures, and interactive e-books (MoNE, 2010c).

For teaching programs to be supported by active IT use through effective use of IT in teaching programs, it is planned to renew teacher guidebooks in a way that will

make them include the effective use of educational infrastructures and educational e-content provided to the classrooms of our schools (MoNE, 2010c). Effective use of IT in teaching programs is planned to be performed through face-to-face and distance learning and in-service training activities in order to develop the skills of using hardware infrastructures provided to the classes, educational e-content, and teacher guidebooks that were adapted to IT effectively for teachers working within the body of the MoNE (MoNE, 2010c). In order to provide conscious and safe IT uses with network infrastructures and broadband Internet usage, it is aimed to establish the necessary hardware and software infrastructures and set the required regulations for providing conscious and safe use of the Internet along with IT tools in the teaching/learning process (Tuncel, 2012).

Created in 2010, the FATIH project is a comprehensive, high-budgeted project that aims to make radical changes in the field of education and to restructure the educational system by integrating information and communication technology with education (Ekici & Yılmaz, 2013). Taking the current technology and educational developments into consideration, the FATIH project is considered to be of great importance for our country (Atalay, Saban, & Çoklar, 2016). From this point of view, many studies have been performed in our country on this project and its components. In a study conducted by Ayvacı and Başak (2016), it was stated that a total of 142 studies were carried out on the FATIH project, including 73 articles, 41 papers, 17 theses, and 1 book section, among four types of publications between 2010 and 2015. On the other hand, the number of studies carried out in this area increased with the establishment of the project's infrastructure in all cities and school types. In some of these studies, teachers examined the perspectives of using smart boards and tablet PCs within the FATIH project (Sözen & Coskun, 2017). In some other studies, there were trials to put forward general thoughts related to the FATIH project (Aktaş, Gökoğlu, Turgut, & Karal, 2014; Altın & Kalelioğlu, 2015; Baz, 2015; Çiftçi, Taşkaya, & Alemdar, 2013; Genç & Genç, 2013; Şahin, Aktürk, & Çelik, 2013). In addition, in some studies, views, thoughts, and suggestions related to the pilot implementation of the FATIH project have been emphasized (Altın, 2014; Ayvacı, Bakırcı, & Başak, 2014; Dursun, Kuzu, Kurt, Güllüpınar, & Gültekin, 2013; Keleş, Öksüz, & Bahçekapılı, 2013; Özkan & Deniz, 2014). In other studies, researches on the equipment of the FATIH project (interactive boards, tablet computers, and Z-books) have been conducted (Akcay, Arslan, & Guven, 2015; Dağlı, 2014; Guven, 2014; Kamacı & Durukan, 2012; Kaysı & Aydın, 2014; Olgun, 2012; Pamuk, Çakır, Ergun, Yilmaz, & Ayas, 2013; Seyitoğlu, 2014; Tercan, 2012; Uzun, 2013). On the other hand, there are also studies regarding in-service training conducted related to the FATIH project in the literature (Bayrak, 2012; Gök & Yıldırım, 2016; Kefeli, 2013). Apart from these studies carried out in different fields, there are researches in the literature including a situation analysis related to the FATIH project (Akıncı et al., 2012); an evaluation made on the FATIH project (Ekici & Yılmaz, 2013); a descriptive analysis study conducted by Dinçer, Şenkal, and Sezgin (2013); a content analysis study on the FATIH project (İslamoğlu, Ursavaş, & Reisoğlu, 2015); and studies conducted by Biçer and Koç (2014) in which empirical studies on the FATIH project are analyzed. In an evaluation study conducted by Ekici and Yılmaz (2013), the FATIH project was evaluated within the framework of the Project Management Cycle criteria, and it was concluded that the FATIH project was not

designed according to the project development logic; therefore, it cannot be integrated within the educational system. In a study conducted by Dinçer et al. (2013), studies carried out on the teachers, students, parents, and instructors related to this project were reviewed separately, and it was stated that a great majority of these studies were about perception and attitude. On the other hand, it was revealed that the actions expected from the teachers within the scope of the project cannot be fulfilled by them in a short time, parents should be involved in the project more effectively, and project documents need to be handled more extensively. In a content analysis study conducted by İslamoğlu et al. (2015), studies on the FATIH project between 2011 and 2014 were examined with respect to the types of publications, research methods, research subjects, citation status, study fields of the researchers, and data collection tools. As a result of that study, it was discovered that quantitative methods were the most used; subjects such as evaluating partner attitudes and body-of-literature reviews were chosen as the topics of research; research related to this project was mostly carried out by researchers who are working in the field of computer and instructional technology education; researchers mostly made use of attitude scales, interviews, and questionnaires as data collection tools; and only six of the 63 articles that were reviewed were published in Social Sciences Citation Index– (SSCI) indexed journals. In an analysis study conducted by Biçer and Koç (2014), researches were grouped into two main themes, studies conducted with teachers and studies conducted with students, and it was stated that these studies were generally carried out to measure attitudes and perceptions toward the use of hardware tools.

Although there are studies in different fields and topics related to the FATIH project in the literature as mentioned above, no thematic content analysis study was encountered on this topic. It is considered that a systematic and detailed thematic content analysis work on the FATIH project will contribute to this field; this is because, in these studies, it has not yet been revealed to what extent these components have been achieved, although approximately nine years have passed since the announcement of the project. On the other hand, researches examining all dimensions of the project are needed to sustain the FATIH project wholesomely (İslamoğlu et al., 2015). In this study, the aim was to perform a thematic content analysis that summarizes all of the academic studies carried out in Turkey within the scope of this project. At this point, it is of utmost importance to conduct meta-studies that are reliable and comprehensive and can interpret this pile of information and lead to new studies (Akgöz, Ercan, & Kan, 2004). For the reason stated above, in this study, the aim was to analyze the academic studies (articles, theses, and proceedings) performed in Turkey within the context of the FATIH project in terms of certain criteria and to synthesize the current situation. In line with this aim, we attempted to answer the following questions:

(1) On which subjects were the studies carried out within the FATIH project?

(2) What are the aims of the researches conducted under the subjects determined in the studies carried out within the scope of the FATIH project?

(3) What are the results obtained from the studies conducted within the scope of the FATIH project?

Method

In this study, the document analysis method, which is used in the qualitative research approach, was used. Document analysis involves the analysis of written material containing information regarding the facts or events that are intended to be investigated (Yıldırım & Simşek, 2006). The thematic content analysis (meta-synthesis) method, which is one of the content analysis methods, was preferred in this study. This meta-synthesis method was chosen because, in this study, there were trials to determine the similarities and differences in the subject area that can be reached with certain criteria and trials to investigate in depth similar or different aspects of the situation in the available studies (Dağhan & Akkoyunlu, 2015). Meta-synthesis includes synthesizing and interpreting researches that have been conducted on the same topic with a critical perspective through forming a theme or main template (matrix/template) (Çalık & Sözbilir, 2014). Meta-synthesis involves presenting the findings and interpretations of previously performed qualitative research in the context of a theme (Dinçer, 2018). In other words, meta-synthesis studies include reviewing the qualitative researches performed in a certain area again with a qualitative understanding and revealing their similarities and differences comparatively (Çalık & Sözbilir, 2014).

Scope and Process of the Study

Collection of data. We herein examined the academic studies carried out since 2010, when the FATIH project was announced to the public, until the end of 2016 (until the end of December), in line with the aims of the studies.

All academic studies conducted between those years were reviewed using the keywords “FATIH Project”, “FATIH Project in Education”, and “MoNE FATIH Project” in the databases of the Higher Education Council (HEC) National Thesis Center, TUBITAK ULAKBIM Social and Humanities Database, ERIC, Google Academic, and Scopus. As a result of these reviews, a total of 137 academic studies were reached, including 49 theses, 63 articles, and 25 declarations. All academic studies were separated in accordance with the inclusion and exclusion criteria described below, and all relevant studies were used in this study.

The criteria that were considered while including or excluding academic studies from the research:

- ✓ Studies should be included in the reviewed databases. We paid attention to make sure that the studies that were reviewed within the scope of this research are included in at least one of the above-mentioned databases (only one of the same studies in different databases has been taken) and were performed in Turkey.
- ✓ Studies should be published in the specified dates. We paid attention to make sure that the studies that were reviewed should be published between 2010 (the year when the FATIH project was announced) and 2016.
- ✓ Studies should be intended for the FATIH project. This thematic content analysis includes researches on the FATIH project. The expression of “FATIH” project was directly looked for within the available studies. Studies that included this expression were directly included in the content analysis. However, if the “FATIH” project expression was not part of the title of the study, the content of the study was examined and the study was included in the content analysis

provided that it contained the subcomponents of the "FATIH" project. Therefore, all researches belonging to any of the basic components of the FATIH project were included in this study.

- ✓ Studies should be appropriate to the research subject. All studies conducted in different areas related to the FATIH project and its subcomponents were included in the research.
- ✓ Studies should have appropriate research methods for meta-synthesis. Although there are different opinions regarding what kind of data will be used in thematic content analysis studies, it is stated that when the structure constituting the nature of the thematic content analysis is examined, it would be more appropriate to use qualitative data (Dinçer, 2018). As mentioned in the introduction of this research, as this study is a thematic content analysis, academic studies that are explicitly referred to as qualitative and mixed research in the methodology section were included in this meta-synthesis. All academic studies that include a quantitative research method, are not related to the FATIH project and its subcomponents, and have not been published in the specified date range were excluded from this review.

As a result of the evaluation made following the above-mentioned inclusion and exclusion criteria, 54 academic studies were included in this study. 32 of these studies were articles, 11 were theses, and 11 were proceeding papers. This study was not included in the quantitative method or the studies not related to the FATIH project or its subcomponents.

Coding processes of the studies included in the meta-synthesis. Studies that were collected within the scope of this research were subjected to detailed reviewing depending on each research problem; as a result, codes and categories were created for each theme. The concept of reliability in scientific research means whether the findings of the research reflect the truth; if so, to what extent it reflects the truth; and whether the same or similar results can be obtained when the research is carried out at different times or through different persons (Ekiz, 2013). For the reliability study of the coding process and generated themes, 10 studies were randomly selected from the themes that were determined by an academician who is an expert in thematic content analysis and compared, and it was seen that the researcher and the lecturer were in a great agreement.

In qualitative research, the concept of validity is the process of evaluating the findings that are well explained by the researcher and the participant accurately (Creswell, 2007). Three types of validity, stated by Sandelowski and Barroso (2007), for validity in thematic content analysis were taken into consideration for the validity of this meta-synthesis study (as cited by Aküzüm and Özmen, 2013).

(1) *Descriptive validity:* This is a type of validity that does not define the correctness of data based on facts. This is a meaningful and accurate description of each report that is used in the study.

(2) *Interpretative validity:* This provides a full and accurate representation of the researchers' understanding related to their perspective. In this study, the researchers completely relied on the data for stating the data obtained from the studies.

(3) *Theoretical validity:* This applies to the reliability of the researchers in interpreting the findings. This means depending on the method used to interpret the data for combining the information. For interpreting the data obtained in this study, the implementations projected by the methods that were selected in the study were performed.

Data Analysis

First, the researcher read the full texts of the publications that were included in this thematic content analysis study. Then, codes, categories, and themes were generated, taking into consideration the aims of the research and the research questions. All studies included in the thematic content analysis were analyzed in this way. Three weeks after this analysis, 10 randomized studies were selected among the analyzed studies and coded again according to the research questions and purpose of research, and they were then placed in the appropriate categories depending on these codes. Previous coding and subsequent coding were compared, and it was seen that the studies were collected under the same themes. From this point on, codes, categories, and themes were finalized. After this analysis was completed by the researcher, two academic members, who are experts in qualitative research, were asked to select 10 studies among the studies that were included within the scope of the project, to encode them, and to then place them under appropriate themes. The analysis of the 10 studies conducted by the academic member and the analysis of the researcher for the same studies were compared, and nine of them were found to be the same. After analyzing the data in this way, all studies reviewed in this research were collected under five main themes, one of which is given below.

Table 1

Themes, Categories, and Codes Generated in the Study.

Theme	Category (subject)	Code (purpose)
1. General opinions about the FATIH project	1.1. Opinions of high-school students and teachers about the project	1.1.1. Reviewing the opinions of high-school students and teachers about the project
		1.1.2. Reviewing the opinions of high-school teachers, students, and parents about the project
	1.2. Opinions of primary-school teachers about the project	1.2.1. Reviewing the opinions of classroom teachers about the project
		1.2.2. Reviewing the opinions of teachers in different branches about the project
		1.2.3. Reviewing the opinions of science and technology teachers about the project
		1.2.4. Determining the opinions of social sciences and classroom teachers about the project
	1.3. Opinions of school managers about the project	1.3.1. Determining the opinions of private-school managers about the project

1.4. Opinions of formatter and IT teachers about the project	1.4.1. Determining the opinions of IT teachers about the project 1.4.2. Reviewing the opinions of training formatter teachers about the project

All studies included within the scope of this research were analyzed as mentioned above and collected under five main themes as a result of these analyses. Data belonging to these themes are presented in the Findings section, and both matrices and frequency and percentage distributions were used. When analyzing the data, the steps followed by the researcher can be expressed as follows:

(1) Reviewing the studies within the scope of the research from the relevant databases

(2) Separating the publications within the scope of the study

(3) Determining the publications, publication information, title, author, research theme, purpose, method, pattern, and data collection tool

(4) Reviewing the purposes and research questions of the publications, determining the initial codes, and extending the codes by revising the publications again

(5) Determining the categories and themes by examining the codes

(6) Performing reliability analyses of codes, categories, and themes

(7) Finalizing the codes, categories, and themes by reviewing them again

Findings

All academic publications examined within the scope of this study were grouped under five main themes: (1) general ideas about the FATIH project; (2) views, ideas, and suggestions for the pilot implementation of the FATIH project; (3) studies on the equipment of the FATIH project; (4) studies on the training related to the FATIH project; and (5) other studies related to the FATIH project. The number and frequency of publications belonging to these themes are provided in Table 2.

Table 2

Percentage and Frequency Distribution of the Themes that were Generated as a Result of the Analysis

Research theme	Number (*n*)	Frequency
(1) General ideas about the FATIH project	12	21%
(2) Views, ideas, and suggestions for the pilot implementation of the FATIH project	10	18%
(3) Studies on the equipment of the FATIH project	18	32%
(4) Studies on the training related to the FATIH project	8	14%
(5) Studies on the evaluation and analysis of the FATIH project	6	15%
Total	54	100%

Studies Conducted Related to the General Ideas about the FATIH Project

General ideas about the FATIH project are reviewed under this theme. There are a total of 12 studies within the scope of this theme, in which the opinions of students, teachers, and parents about the project are presented. In some of these studies, only the opinions of classroom teachers about the FATIH project were examined (Çiftçi, Taşkaya, & Alemdar, 2013; Gürol, Donmuş, & Arslan, 2012), whereas in some of these studies, the opinions of classroom teachers and social studies teachers about the project were focused on (Karatekin, Elvan, & Öztürk, 2015). In another study, awareness, anticipation, and expectations of the teachers were investigated (Aktaş et al., 2014), whereas in some of these studies, the opinions of teachers and managers who are working at secondary-education institutions and students who are receiving education at these schools were investigated about the FATIH project (Altın & Kalelioğlu, 2015; Cücü, 2014). On the other hand, the perspectives of training formatter teachers (Baz, 2015; Türel & Tantaş, 2016) and IT teachers (Tantaş & Bahçeci, 2016) about the FATIH project were also reviewed. In studies that were conducted in relation to the FATIH project with classroom teachers, the teachers stated that this project is necessary and important. It was also pointed out by the teachers that there may be some difficulties with respect to the competency of teachers in IT and communication technology in the course of the implementation of the project. On the other hand, most of the classroom teachers stated that the project will positively contribute to academic achievement as the lessons will be taught with richer content. However, it was also stated that about half of the classroom teachers think positively about the question of whether the project can reach its goals. In a study conducted by Aktaş et al. (2014), it was revealed that the awareness of teachers about the project is very high but that they still have some difficulties related to the project. In a study conducted by Altın and Kalelioğlu (2015) with teachers who work at secondary-education institutions and students who receive education at these schools, it was stated that the FATIH project has some deficiencies in general terms and does not contribute to education according to the students and teachers. In another study conducted by Cücü (2014), secondary-school students stated that the FATIH project had a number of shortcomings in general, which is why they could not benefit from the project effectively, whereas teachers stated that technology was integrated into education and that this integration could have both positive and negative impacts on the students. Teachers also expressed that the FATIH project will provide more benefits for students who are receiving education in eastern and southeastern parts of Turkey. On the other hand, it can be said that this project is a promising study for the future, even if there are some shortcomings according to the teachers. Formatter teachers who took part in the FATIH project stated that this project contributed to their professional and personal development and that it helped them develop their social relations. They also stated that the project was sometimes exhausting because of the course programs and provided a low economic return (Baz, 2015). Türel and Tantaş (2016) stated in their research that IT teachers found the project useful in general, that there is a need to popularize the use of interactive boards, and that the related in-service training should be increased. Furthermore, it was stated by the teachers that the project should be explained in detail and that an Education Information Network (EIN) platform should be developed.

Studies Conducted Related to the Views, Ideas, and Suggestions for the Pilot Implementation of the FATIH Project

A total of 10 studies were included, and views, ideas, and suggestions for the pilot implementation of the FATIH project were collected under this theme. Some of these studies examined the opinions of primary- and secondary-school teachers (Banaoğlu, Madenoğlu, Uysal, & Dede, 2014; Keleş & Turan, 2015; Keleş, Dündar, Öksüz, & Bahçekapılı, 2013; Kurt et al., 2013; Özkan & Deniz, 2014). In another study, the perspectives of teachers and students were examined (Pamuk et al., 2013). In some of these studies, only the opinions of school managers were reviewed (Dursun et al., 2013), whereas other studies only focused on parents' opinions (Güllüpınar et al., 2013). In addition, there were some studies in which the views of students, teachers, administrators, and parents were examined together (Altın, 2014; Ayvacı et al., 2014).

The results of studies conducted in relation to the pilot implementation of the FATIH project showed that teachers use interactive boards continuously (Banaoğlu et. al., 2014), but they do not use tablet computers or multipurpose printers adequately. Moreover, researches revealed that the attention of ninth-grade students at secondary schools toward their lessons was decreased compared to primary-school students (Kurt et al., 2013). It was also stated that the teachers' technological competence is not at the desired level, which is related to the low level of in-service training. On the other hand, it was also found that teachers have technical problems related to tablet computers and interactive boards (Keleş, Öksüz, & Bahçekapılı, 2013; Kurt et al., 2013). Teachers stated that the content problem should be solved especially for the FATIH project to function properly.

In another study conducted under this theme related to opinions, thoughts, and suggestions about the pilot implementation of the FATIH project, the opinions of students and teachers about the project were investigated, and it was stated that teachers and students use interactive boards normally but rarely use tablet computers. On the other hand, it was also indicated that the interest and attitude of teachers and students toward the use of technology increased with the project (Pamuk et al., 2013). Besides, studies also showed that students do not bring the tablet computers that were distributed within the scope of the project (Ayvacı et al., 2014).

In a study conducted with school administrators within the scope of the pilot implementation, it was discovered that school administrators generally showed positive attitude toward the project. In addition, they indicated that tablet computers could have both positive and negative effects on the reading habits of the students and that elderly teachers at schools could have negative attitude toward the technologies that should be used for the FATIH project; however, this situation can be improved over time (Dursun et al., 2013). On the other hand, it was also stated by the school administrators that teachers do not have sufficient knowledge regarding the FATIH project and that they do not use the technologies related to the project adequately (Ayvacı et al., 2014).

In a study conducted with parents in relation to the pilot implementation of the project, it was found that parents had both positive and negative opinions regarding the project. These positive opinions were related to increasing the academic achievement of the students in their lessons, providing Internet infrastructures to schools, and the fact that the students do not have to carry their books anymore. On the other hand, the negative opinions were related to restricting the socialization of the students, the need to

use supplementary books besides the course books, the decrease in the reading habits of the students, and the excessive use of the Internet (Güllüpınar et al., 2013).

Studies Conducted Related to the Equipment of the FATIH Project

A total of 18 studies were conducted in relation to the equipment of the FATIH project under this theme. Most of these studies included the ones related to tablet computers and interactive boards, and these studies were followed by researches on e-books and Z-books.

Among the studies that were collected under this theme related to the use of tablet computers in education, there were studies in which the opinions of branch teachers were reviewed (İşçi & Demir, 2015), the opinions of research assistants were reviewed (Kamacı & Durukan, 2012), and the content of the tablet computers was evaluated (Kaysı & Aydın, 2014). On the other hand, there are studies related to determining the perception of students toward interactive boards (Emrem, 2014; Gençoğlu, 2013; Olgun, 2012; Seyitoğlu, 2015; Uzun, 2013) and the opinions of teachers regarding the usability problems of interactive boards (Bayrak, Karaman, & Kurşun, 2014). Apart from these studies, another research field included under this theme was determining the opinions of teacher candidates regarding e-books and interactive e-books (Özer & Kılıç Türel, 2015). There was also another study in which the usability of Z-books was evaluated (Dağlı, 2014).

In a study conducted in relation to the use of tablet computers in education, branch teachers stated that tablet computers save time, make classes enjoyable, and contribute to the academic achievement of the students. However, they also stated that tablet computers are not used to teach lessons because of some technical problems. On the other hand, the fact that the students' tablet computers cannot be controlled is considered another problem by branch teachers (İşçi & Demir, 2015).

In another study conducted on the use of tablet computers in education, research assistants stated that tablet computers will contribute to the academic achievement of the students and prevent the students from carrying heavy bags. In addition, it was also stated in the same study that tablet computers should have rich content and that teachers should be provided with in-service training on this topic (Kamacı & Durukan, 2012). In a study conducted by Kaysı and Aydın (2014), in which e-books were investigated as tablet computers, it was shown that there were no interactive components in these books that were examined within the scope of the study; that books were rich with visual items, videos, and audio files; and that although e-books are accessible, access to big-sized ones is very difficult.

In studies in which the perceptions of students related to interactive boards were reviewed, it was revealed that interactive boards provide diversity in terms of sources and that these boards are useful in saving time and controlling the classroom. Interactive boards also make the lessons more fun, contribute to the comprehensibility of the lessons, enhance interactions within the classroom, and facilitate the work of the students and teachers (Seyitoğlu, 2014; Ünal, 2015). It was also found that interactive boards are interesting thanks to their multimedia component and interesting aspects and that they increase students' interest in their lessons (Olgun, 2012), positively influence the students' attitude toward their lessons (Tercan, 2012), and have a positive impact on the visual opinions of the students (Emrem, 2014). In a study conducted by Bayrak et al.

(2014), who focused on the views of teachers in relation to the usability problems of interactive boards, it was stated that interactive boards have many problems arising from their hardware, software, and physical environments.

In a study conducted by Özer and Kılıç Türel (2015) with IT teacher candidates, it was found that they had high expectations toward interactive e-books and that the fact that students can respond to the content of these interactive e-books (through touching, selecting, marking, and changing) makes these devices more attractive.

In a study conducted by Dağlı (2014), a usability assessment of Z-books (rich books), prepared for a sixth-grade social studies lesson, was conducted through eye tracking and retrospective thinking-out-loud techniques. As a result of this study, it was stated that there is an object on the top right of the screen of the social studies Z-books that can distract the participants and that this object should be removed. Learning objects should be bigger and should be presented with a play button with which the participants are familiar; symbol of the concept game needs to be replaced with another symbol that represents the game better; and an acknowledge button should be put in a place in a way to which the participants are accustomed in the book. It was also revealed that not only the selected subject in the Z-books but also all the subjects in that unit are opened on the pages of the menu and changes in the subjects of the Z-books are not made at the level desired by the participants. On the other hand, it was also stated that the font size, color, and symbols used in the visual and bridge links of the social studies Z-books are presented in way that is parallel to what the participants expect and that the attention of the participants is directed to the pop-up window.

Studies on the Training Related to the FATIH Project

A total of eight studies were conducted on training within the scope of the FATIH project under this theme. Under this theme, there were studies in which the opinions of teachers regarding interactive board and technology integration courses were analyzed (Bayrak, 2012); a study for which an in-service training course was prepared, implemented, and evaluated in relation to interactive board use (Kefeli, 2013); a study in which the opinions and expectations of teachers toward in-service training courses provided within the scope of the FATIH project were determined (Gök & Yıldırım, 2016; Vural & Ceylan, 2014); a study in which the in-service training needs of teachers within the scope of this project were researched (Yıldız, Sarıtepeci, & Sefereoğlu, 2014); a study in which the opinions of the provincial coordinators of the FATIH project, the provincial trainer formatters, and FATIH project trainers related to the training provided to the in-service trainers within the scope of the FATIH project were determined (Arslan & Şahin, 2014); and a study in which the opinions of trainers who took charge of the project related to the training provided within the scope of the project were examined (Kılıç Türel, & Tantaş, 2016). In addition, there were studies in which the needs of teachers were determined within the scope of the FATIH project, an in-service training program was prepared by these needs, and this program was implemented and evaluated (Ayvacı & Başak, 2016).

In a study conducted by Vural and Ceylan (2014), the opinions of teachers related to the technology integration course prepared for the FATIH project were examined. At the end of the course, it was determined that the teachers are willing to use technology and are open to innovations in general; that they decide whether to use

interactive boards or not depending on their branches and the subject being taught; and that they do not know or use the content of the EIN that consists of interactive content. The teachers who participated in the study stated that such courses should be held at seminar periods rather than educational periods that a level group should be formed and training should be provided according to these groups, and that such courses should be continuous. In a study conducted by Gök and Yıldırım (2016) with 15 high-school teachers who took an in-service training course related to the FATIH project, the results showed that the teachers preferred special, practice-weighted in-service training for different branches that are longer and repeated at different time intervals.

In a study conducted by Bayrak (2012), it was observed that teachers mostly use interactive boards to motivate students and visualize the subject being taught in the lesson, with the aim of making multimedia presentations. Teachers who participated in the study also stated that they did not experience any difficulty while using interactive boards, that lessons for which interactive boards are used should be increased during university education, and that such training should be provided by the MoNE continuously. In addition, it was revealed that, at the end of the courses, the self-sufficiency level of the teachers in using interactive boards in their lessons was at the desired level.

In a study conducted by Kefeli (2013), it was found that, at the end of the in-service training courses prepared for the teachers, all the teachers found themselves competent in terms of using interactive boards and that courses should be designed in a way so as to provide an opportunity to the teachers to be able to practice. Teachers who participated in the study stated that such courses provided interactions between them because these courses included teachers from different branches and because arranging course content by different branches is hard.

Yildiz, Sarıtepeci, and Sefereoğlu (2014) found in their study that teachers need in-service training in the fields of "Use of Technology in Education" and "Use of Internet for Educational Purposes" the most within the scope of the FATIH project. On the other hand, it was also stated that teachers have difficulties finding e-content as well as difficulties with classroom management.

In a study conducted by Arslan and Şahin (2014), it was determined that more than half of the participants found training related to the FATIH project sufficient in terms of number, training hours, and content and that they stated that there was not any incomplete aspect in the training. They also expressed that this training had aspects that contributed to their personal and professional development, such as social interactions, learning new information, recognizing the project, and trips. In addition, the participants mentioned reluctance of the trainees, exhaustion, hardware problems, and problems arising from course hours as examples of the difficulties encountered during the FATIH project training. At the end of the FATIH project training, participants who took charge of the project training stated that their trainees told them that the training they received was necessary and useful.

Kılıç Türel, and Tantaş (2016) stated in their study that the training provided within the scope of the FATIH project should be practice based and that it will be more useful for the trainees if they participate in the training after taking basic computer courses. They also suggested that the resources of physical spaces where training is

provided should be improved and that the number of distance education centers used for training should be increased and the possibilities of should be increased. Another point that the instructors of the FATIH project pointed out was that the number of participants in the courses should be 15 or 16 as the number of computers in the classrooms where the courses are given is 16.

In a research carried out by Ayvacı and Başak (2016), it was stated that teachers did not receive university education within the scope of the FATIH project and that the in-service training provided is not enough. In-service training was prepared for only science teachers within the scope of the study, and teachers who participated in this training benefited from the training and improved themselves by filling the deficiency of knowledge.

Studies on the Evaluation and Analysis of the FATIH Project

Studies that were conducted within different fields were collected under other studies related to the FATIH project theme. The studies that were grouped under this theme will be mentioned separately, and the obtained findings will be presented.

Akgün, Yılmaz, and Seferoğlu (2011) conducted a comparative study of Vision 2023 Strategy Document and the FATIH project. As a result of that study, it was stated that a set of developed criteria, such as the determination and continuity of political will; raising the awareness of every institution, unit, and employee of the state in line with Vision 2023 and the objectives supporting this vision; and increasing the level of awareness in every part of the society about the activities and objectives of knowledge-based economy and establishing this economy, are also valid for the FATIH project.

An evaluation study was carried out by Ekici and Yılmaz (2013) on the FATIH project, and the results obtained from this study briefly indicated that the FATIH project is inadequate in the project analysis state, which constitutes the second phase of the Project Management Cycle, the objectives determined for the FATIH project are not clear, the way of reaching these determined objectives (in other words, the strategy) is not clear, the solutions provided for the problems encountered during the implementation of the project are not clear, no communication is established with the partners of the project and the partners are perceived only as practitioners in the project, and there is no structure to ensure that each stage of the project can be followed by the project partners. It has also been noted that the project is not adequately owned by its partners and that there are serious concerns related to the development of e-content in particular. In addition, the study revealed how the project's budget is distributed among its components and how it is managed. Another point that the researchers argued is that the evaluations made for the pilot implementation are not sufficient and that it is not appropriate to generalize the project throughout the country on the basis of these evaluation results. Finally, it is noted that there are no measurable indicators for the project results; only the quantity of the provided equipment can be determined; there are no measurable indicators for the productiveness, efficiency, and impact assessment of the project; and there are serious problems and concerns regarding the political, technical, and financial sustainability of the project.

Dinçer et al. (2013) analyzed the studies that were conducted within the scope of the project and shared the results of this analysis. According to the results obtained in this study, it was discovered that teachers had positive thoughts regarding the FATIH

project, but they did not find themselves competent enough concerning the use of technology in the project. On the other hand, as a result of studies conducted with students, it was observed that although the computer literacy level of the students increased, it is still not at the desired level, and it was also observed that the students have positive attitude toward the use of interactive boards in their lessons. In addition, as a result of the studies conducted with academic members and instructors, it was stated that many of them think that there are limitations related to the project equivalent to the benefits, they acquire the knowledge and keep abreast of all the latest developments related to the project through press organs; however, they still do not have sufficient information regarding the project because the project unit and universities do not cooperate sufficiently. Finally, it was stated in this study that there is no study on students' parents, which is a drawback.

In a study conducted by İslamoğlu et al. (2015), academic studies that were carried out between 2011 and 2014 on the FATIH project have been examined. As a result of that study, it was discovered that quantitative methods were used mostly in academic studies; subjects like evaluating partner attitude toward the project and body-of-literature reviews were mostly chosen as the topics of research; researches related to this project were mostly carried out by researchers who are working in the field of computer and instructional technology education; researchers mostly made use of attitude scales, interviews, and questionnaires as data collection tools; and only six out of the 63 articles that were reviewed were published in SSCI-indexed journals.

In a study conducted by Akıncı et al. (2012) to investigate what needs to be done in order to make the FATIH project successful, it was stated that the human factor should be primarily taken into consideration and that the weakest link of this project is that the technology investment made for the project has precluded the investments that should be made for teachers.

In a study conducted by Karabacak (2015), the FATIH project was evaluated according to the context, input, process, and product (CIPP) model. As a result of that study, it was discovered that problems such as software components, use of information and communication technology in curricula, educational e-content, in-service training, and conscious information and communication technology use are encountered in the "context" dimension of the project; problems such as the determination of instructional strategies, methods, and techniques that will be used in the e-content are encountered in the "input" dimension. In addition, it has been stated that planning for the nationwide generalization of the project has not been done.

In a study conducted by Tekin Bozkurt (2015), the readiness situation of school administrators and teachers for change was examined within the scope of the FATIH project. As a result of that study, it was stated that the readiness level of the participants for change is "good" for the FATIH project. It was also seen that the preliminary knowledge and exchange of views among colleagues are facilitating factors in this process. Besides, it was also revealed that the teachers have difficulties adapting to new material, and it was determined that the teachers lack some required skills, such as using technology and knowledge for technological field knowledge skills. It was also found that school administrators are in general supportive of the employees in this process but that, in particular, young employees expect more support from them.

Results, Discussion, and Suggestions

In this study, published qualitative studies that were carried out within the scope of the FATIH project in Turkey were reviewed through a thematic content analysis. The aim of the FATIH project is to enable effective use of IT tools in classes in a way that will engage more senses in learning/teaching processes in line with the targets of providing an equal opportunity in education and training and improving technology in our schools (MoNE, 2010d). Using technology more and more intensively in learning and teaching processes requires focusing on different perspectives for researchers conducting their studies in this field (Dağhan & Akkoyunlu, 2015). As a natural consequence of this situation, all studies reviewed in this meta-synthesis study were collected under five different themes. In this section, results and discussion will be outlined depending on the studies carried out under each theme.

In the studies grouped under the general opinions related to the FATIH project theme, classroom teachers stated that the project is necessary and important, that subjects will be taught lessons with richer content, and that they will have some difficulties related to the project in their opinion. The reason why particularly classroom teachers find this project important and necessary may be that classroom teachers need more visuality in their classrooms. This can be explained by the fact that elementary-school students are in the process of concrete transaction and classroom teachers want to create a learning environment that can draw their attention (Çiftçi, Taşkaya, & Alemdar, 2013). On the other hand, the fact that classroom teachers stated that they can experience some difficulties related to the project suggests that there are some shortcomings in the project. This is an indication that classroom teachers are also in need of in-service training at the point of project implementation (Aktaş, Gökoğlu, Turgut, & Karal, 2014; Pamuk et al., 2013).

Unlike classroom teachers, the expectations of teachers working in secondary education from the project can be said to be lower. The reason for this can be the fact that no e-content appropriate to different branches has yet been developed within the scope of the FATIH project (Türel, 2012). Students receiving education at secondary schools stated that they could not benefit from the project sufficiently. This may be related to the limitations of the tablets that were distributed within the scope of the project (Pamuk et al., 2013), although they are good in terms of hardware.

When the views of teachers and students about this project were examined, it could be concluded that not all teachers had the same opinion about the FATIH project and that they had different views. This situation varied according to the occupational seniority of the teacher, gender of the teacher, type of branch, and place and type of school in which the teachers are working. Therefore, stating different opinions about the same project applied in the whole country is a consequence of this situation.

All studies conducted in relation to the pilot implementation of the FATIH project indicated that teachers and students use interactive boards but do not use tablet computers; school administrators and parents expressed positive opinions regarding the project; the interest and attitude of teachers and students toward the use of technology increased; and teachers experienced some technical problems related to the tablet computers and interactive boards. On the other hand, it was also pointed out in the studies that the e-content needs to be enriched to benefit from the project. In short, it can be said that teachers are pleased with the richness and diversity that the project has

brought into the teaching/learning process, but they also expressed some dissatisfaction with the inadequacy of the e-content as well as some technical problems (Kurt et al., 2013).

It was revealed that teachers and students have positive attitude and thoughts toward interactive boards, which are among the equipment of the FATIH project. In a similar vein, teachers pointed out that tablet computers help save time, make lessons more enjoyable, and increase the academic achievement rate related to the use of tablet computers. However, they also stated that tablet computers are not used effectively because they cannot be controlled by the teachers and because of some technical problems and the insufficient amount of e-content. In studies conducted in relation to interactive boards, it was revealed that teachers and students expressed positive opinions regarding these devices. However, despite these positive considerations, it was also stated that teachers cannot fully utilize the potential of these devices (Kurt et al., 2013). In a study conducted with teachers, it was stated that there are usability problems arising from the hardware, software, and physical environments related to the use of interactive boards (Bayrak et al., 2014). On the one hand, it was expressed that interactive boards are not used sufficiently by teachers; on the other hand, it was stated that there are some problems related to using interactive boards. At this point, it can be said that teachers are in need of in-service training related to e-content and that solutions should be provided to the problems encountered while using interactive boards in order for the teachers to benefit from these devices more.

Regarding the training related to the FATIH project, it was found that teachers need in-service training related to the subjects of the "Use of Technology in Education" and "Use of Internet for Educational Purposes" the most, that they have positive attitude toward this training, and that they want the training to be practice based and to be repeated at certain intervals. In addition, the fact that teachers are in need of in-service training related to finding and preparing e-content is another conclusion drawn from the studies. Teachers, on the other hand, also stated that there should be course programs specific to each branch. In a research conducted by Izci and Eroglu (2016), it was revealed that the courses in which the teachers participated within the scope of the in-service training contributed to the context of technology integration in education, but still some problems were encountered concerning time, infrastructure, and practice. It can be said that the most important element for the success of the FATIH project is the "teacher" (Ekici & Yılmaz, 2013; Karataş, 2014; Kocaoglu, 2013). At this point, it is recommended that the in-service training be prepared by a specialized team as specific to different branches, practice based, and continuous (Pamuk et al., 2013).

In one of the other studies conducted within the scope of the FATIH project (Ekici & Yılmaz, 2013), it was stated that there are some problems in the analysis, implementation, and result parts of the project. In another study (Karabacak, 2015), it was stated that there are some problems related to the CIPP headings of the project. On the other hand, in another study (Dinçer et al., 2013), it was indicated that there is no sufficient cooperation with universities within the scope of the project and that teachers have several deficiencies although they show positive attitude toward the project. From all of these studies, it can be concluded that teachers are positive about the FATIH project but that there are several deficiencies, not all dimensions of the project are dealt with in detail, and more investments are needed for the human element in the project.

This is because the success of this project depends not only on the placement of the technological facilities that the project brings to the classrooms, but also on the capability of teachers and students to use these technologies appropriately (Hörküç, 2014). Even if all the necessary substructures and technical equipment are provided in this project, the maximum efficiency of the project cannot be obtained without improving the proficiency and competency of the teachers who are implementing it. However, according to the results of the reviews of the studies that have been conducted with the scope of the FATIH project, it is understood that the opinions of school administrators and teachers related to the implementation of the project are not focused sufficiently in spite of the large investments made in the FATIH project (Sezgin, 2014).

The following suggestions can be listed in consideration of the findings acquired from the studies that were reviewed:

(1) It can be suggested that teacher training should be provided as specific to certain branches continuously at certain intervals.

(2) It can be suggested that the software dimension of the project should be strengthened especially by increasing the diversification and brought in compliance with the use of teachers.

(3) Studies focusing on the implementations undertaken by the teachers in the field, namely, the fieldwork of the teachers, should be included in the researches that will be carried out within the scope of the FATIH project in order to be able to see the actual implementation of the project.

(4) It can be claimed that there is a need for studies that will reveal the realization of each of the main components of the FATIH project.

(5) Studies on the ideas of students and their families can be carried out.

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