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Nesibe Aydın Eğitim Kurumları tarafından yayımlanan *Eğitim ve Gelecek Dergisi* on altıncı sayısında sizinle buluşuyor. Dergimizin on altıncı sayısında yer alan çalışmaları siz değerli okurlarımıza sunuyoruz.

Eda Gürlen, Tuğba Cihan ve Nuri Doğan tarafından hazırlanan ***"Öğrencilerin Etkili Öğrenmelerinde Duyuşsal ve Motivasyon Engelleri"*** başlıklı çalışmanın amacı, Türkiye'deki lise öğrencilerinin karşılaştıkları öğrenme engellerini belirlemek ve değerlendirmektir. Söz konusu bu engeller, öz yeterlilik, öz düzenleme, profesyonel/ebeveyn/kardeş rehberlik desteğindeki eksiklik, öğrenme ortamı, başarısızlık, reddedilme, eleştiri ve yargılanma korkusu ve utanma gibi duyuşşal ve motivasyon boyutları açısından bu çalışmada değerlendirilmektedir.

Ayşegül Bayraktar ve Seher Yalçın tarafından hazırlanan ***"Öğretmen Adaylarının Öğretmenlik Uygulaması Dersi Kapsamında Sordukları Sorularının ve Geri Bildirimlerinin İncelenmesi"*** başlıklı çalışmanın amacı, Ankara'daki iki devlet ilköğretim okulunda Öğretmenlik Uygulaması dersi kapsamında uygulamalarını yapan öğretmen adaylarının soru sorma stratejilerini, verdikleri geri bildirimlerin türlerini ve sıklığını incelemektir.

Aliye Erdem ve Emine Seda Koç tarafından hazırlanan ***"Öğretmen Adaylarının Tercih Ettikleri Aktif Öğrenme Yöntem ve Teknikler"*** başlıklı çalışmanın sonucunda, öğretmen adayları tarafından en fazla tercih edilen aktif öğrenme yöntem ve tekniklerinin; soru-cevap, beyin fırtınası ve problem çözme olduğu belirlenirken dedikodu, mahkeme ve vızıltının en az tercih edilen yöntem ve teknikler olduğu tespit edilmiştir.

Gönül Onur Sezer ve Pınar Bağçeli Kahraman tarafından hazırlanan ***"Öğretmen Adaylarının Demokrasiye İlişkin Algıları"*** başlıklı çalışmada, öğretmen adaylarının demokrasiye ilişkin algılarının metaforlar yoluyla incelenmesine yönelik olarak nitel araştırma desenlerinden biri olan olgu bilim deseni kullanılmıştır. Araştırma kapsamına alınan farklı bölümlerde öğrenim gören öğretmen adaylarının demokrasiye ilişkin metaforlarını; eşitlik, güven, yaşam kaynağı ve özgürlük kavramlarıyla açıkladıkları belirlenmiştir.

Mustafa Yavuz ve Tuğba Cevriye Özkaral tarafından hazırlanan ***""Güç, Otorite ve Yönetim" Temasının Türkiye, Kanada (Alberta) ve İngiltere Sosyal Bilgiler Öğretim Programlarında Karşılaştırmalı Olarak İncelenmesi"*** başlıklı çalışmanın sonucunda; hak, sorumluluk, özgürlük, demokrasi ve anayasa konularının ortak olduğu ve üç ülkenin de programında yer aldığı görülmüştür. Aynı zamanda üç ülkenin de temaya ilişkin üst düzey düşünme becerilerine yer verdikleri saptanmıştır.

Şenol Şen, Lütfiye Varoğlu ve Ayhan Yılmaz tarafından hazırlanan ***"Tematik Bir Çerçeveden Bilişsel Yapılar ve Kavram Yanılgıları: Kimyasal Bağlar Örneği"*** başlıklı çalışmada; öğrencilerin kimyasal bağlar konusu ile ilgili kelime ilişkilendirme testi sonuçlarının belirlenen temalar çerçevesinde kavram haritalarıyla desteklenmesi, kavramları

ve kavramlar arası ilişkileri daha net bir şekilde yansıttığı için kavram yanılgılarının belirlenmesinde kolaylık sağladığı sonucuna ulaşılmıştır.

Alper Yetkiner, Ceren Karadeniz ve Zekiye Çıldır Gökaslan tarafından hazırlanan ***""Müze Eğitimiyle Tanışmayan Öğrenci Kalmasın" Müzede Gönüllü Eğitim Programı Uygulaması*"** başlıklı araştırma, Çağdaş Yaşamı Destekleme Derneği müze gönüllülerinin Ankara'da MEB'e bağlı bir ilkokulun 4. sınıf öğrencileriyle okulda ve Anadolu Medeniyetleri Müzesi'nde gerçekleştirdikleri müze eğitimi programının değerlendirilme sürecine odaklanmıştır. 2014 – 2017 yılları arasında sürdürülerek 985 öğrenciye ulaşan program, gönüllü müze eğitimcilerinin verdikleri eğitimin niteliğini ve hedeflere ulaşma düzeylerini saptamak için hazırlanmıştır.

Nazire Burçin Hamutoğlu, Merve Savaşçı ve Gözde Sezen-Gültekin tarafından hazırlanan ***"Dijital Okuryazarlık Becerileri ve E-Öğrenmeye Yönelik Tutum"*** başlıklı çalışmanın sonuçları; araştırmada yürütülen deneysel eğitimin katılımcıların e-öğrenme platformlarına yönelik tutumları üzerindeki etkinliğini göstermiştir. Buna ek olarak, regresyon testlerinin sonuçları, eğilimin dijital okuryazarlığın en önemli yordayıcılardan biri olduğunu göstermektedir.

Eğitim ve Gelecek Dergisi olarak gösterdiğiniz ilgi ve değerli katkılarınız için teşekkür ediyorum.

Gelecek sayıda buluşmak üzere…

Prof. Dr. Erten GÖKÇE

Eğitim ve Gelecek Dergisi Baş Editörü

Editorial

Journal of Education and Future published by Nesibe Aydın Education Institutions, meets you with the sixteenth issue. We present the studies in the sixteenth issue of JEF to our valuable readers.

The article titled ***"Emotional and Motivational Barriers to Effective Learning of Students"***, which is prepared by **Eda Gürlen, Tuğba Cihan and Nuri Doğan**, aims to determine and evaluate the learning barriers of high school students in Turkey. These barriers are examined from various emotional and motivational dimensions, such as self-efficacy, self-regulation, deficiency of professional/parental/sibling support and consultancy, learning environment, fear of failure, rejection, criticism and judgment and embarrassment.

The article titled ***"Examining Preservice Teachers' Questioning and Feedback in Teaching Practicum Course"***, which is prepared by **Ayşegül Bayraktar and Seher Yalçın**, examined the questioning styles of preservice teachers along with the frequency and types of feedback provided according to students' responses.

In the article titled ***"Active Learning Methods and Techniques Preferred by Teacher Candidates"***, which is prepared by **Aliye Erdem and Emine Seda Koç**, it was concluded that question-answer, brainstorming and problem-solving were the most preferred active learning methods and techniques while gossip, court and buzz were the least preferred ones.

In the article titled ***"Perceptions of Teacher Candidates Regarding Democracy"***, which is prepared by **Gönül Onur Sezer and Pınar Bağçeli Kahraman**, one of the qualitative research patterns was used. Teacher candidates, who participated in the research, from different departments explained democracy with metaphors regarding equality, respect, life source and freedom concepts. It is seen that the teacher candidates did not focus on especially cooperation and responsibility concepts.

In the article titled ***"A Study on Comparative Examination of the Theme "Power, Authority and Management" in the Social Studies Curriculums of Turkey, Canada (Alberta) and England"***, which is prepared by **Mustafa Yavuz and Tuğba Cevriye Özkaral**, it is indicated that right, responsibility, freedom, democracy and constitution were common and were included in the programs of all three countries. It was also determined that the three countries included higher-order thinking skills related to the theme.

In the article titled ***"Cognitive Structures and Misconceptions with Thematic Framework: The Case of Chemical Bonding"***, which is prepared by **Şenol Şen, Lütfiye Varoğlu and Ayhan Yılmaz**, it is determined that the students' Word Associations Test results regarding to chemical bonding, which supported with concept maps within the framework of the themes, provides convenience in determining the misconceptions because of reflects the concepts and the relationships between the concepts more clearly.

The article titled **"*"No Student Not Met Museum Education" A Practice of Volunteer Education Program in the Museum"***, which is prepared by **Alper Yetkiner, Ceren**

Karadeniz and Zekiye Çıldır Gökaslan, was focused on the evaluation process of museum education program carried out by the Museum Education Volunteers of Association for Supporting Contemporary Life (CYDD) in the school and at the Museum of Anatolian Civilizations with 4th graders in Ankara. The program, which was developed in 2014, carried out between 2014-2017 and reached to 985 students in total, was prepared with the aim of determining the quality of education given to voluntary museum educators and the levels of attaining the goals.

The article titled ***"Digital Literacy Skills and Attitudes towards E-learning"***, which is prepared by **Nazire Burçin Hamutoğlu, Merve Savaşçı and Gözde Sezen-Gültekin**, reveal that the effectiveness of the treatment on the participants' attitudes towards e-learning platforms. Furthermore, the findings of the regression tests demonstrated that tendency is one of the most significant predictors of digital literacy skills.

Thanks for your interest and valuable contributions for *Journal of Education and Future.*

Look forward to meeting in the next issue…

Prof. Dr. Erten GÖKÇE

Editor in Chief of

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Emotional and Motivational Barriers to Effective Learning of Students

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Eda Gürlen [*] **Tuğba Cihan** [**] **Nuri Doğan**[***]

Abstract

This study aims to determine and evaluate the learning barriers of high school students in Turkey. These barriers are examined from various emotional and motivational dimensions, such as self-efficacy, self-regulation, deficiency of professional/parental/sibling support and consultancy, learning environment, fear of failure, rejection, criticism and judgment and embarrassment. These dimensions in learning barriers influence all kinds of measurements to be carried on about students. Therefore, describing and revealing them may help handle the measurement outcomes gathered from students in different ways. The study employed a descriptive research methodology to collect data from all regions of Turkey. In this study, six scales were administered to the participants, who are 2175 high school students from the ninth, tenth and eleventh grades attending high schools. The results of the study suggest that students have some difficulty in planning how to study, which is a self-regulative skill. The participants' views mostly show that teacher support can make a strong learning barrier. Parental support is also another learning barrier. Furthermore, it was found out that the learning environment in classrooms did not motivate students to learn.

Keywords: learning barriers, emotional barriers, motivational barriers, effective learning, high school students.

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Öğrencilerin Etkili Öğrenmelerinde Duyuşsal ve Motivasyon Engelleri

Makale Türü	Başvuru Tarihi	Kabul Tarihi
Araştırma	08.02.2019	10.05.2019

Eda Gürlen [*] **Tuğba Cihan** [**] **Nuri Doğan**[***]

Öz

Bu çalışmanın amacı, Türkiye'deki lise öğrencilerinin karşılaştıkları öğrenme engellerini belirlemek ve değerlendirmektir. Söz konusu bu engeller, öz yeterlilik, öz düzenleme, profesyonel/ebeveyn/kardeş rehberlik desteğindeki eksiklik, öğrenme ortamı, başarısızlık, reddedilme, eleştiri ve yargılanma korkusu ve utanma gibi duyuşşal ve motivasyon boyutları açısından bu çalışmada değerlendirilmektedir. Öğrenme engellerindeki söz konusu boyutlar, öğrencilerle ilgili yürütülen tüm ölçme çalışmalarını doğrudan etkilemektedir. Bu nedenle, bahsedilen öğrenme engellerini betimlemenin ve ortaya çıkarmanın, öğrencilerden alınan ölçme sonuçlarını değerlendirmede yardımcı olabileceği düşünülmektedir. Bu çalışmada araştırma deseni olarak, Türkiye'nin tüm bölgelerinden veri toplamak amacıyla betimsel yöntem kullanılmıştır. Veri toplama aracı olarak, geliştirilmiş olan altı öğrenme bariyeri ölçeği dokuzuncu, onuncu ve onbirinci sınıfa devam etmekte olan 2175 lise öğrencisine uygulanmıştır. Çalışmanın sonuçlarına göre, öğrenciler, bir öz düzenleme becerisi olan çalışmayı planlama becerisinde zorluk çekmektedirler. Ayrıca, katılımcıların yanıtları çoğunlukla öğretmen desteğinin güçlü bir öğrenme engeli olarak karşımıza çıkmaktığını göstermektedir. Ebeveyn desteğinin ise bir başka öğrenim engelini oluşturduğu görülmektedir. Ayrıca, çalışma sonuçlarına göre, sınıflardaki öğrenme ortamının öğrencileri öğrenmeye motive etmediği ortaya çıkmıştır.

Anahtar Sözcükler: öğrenme engelleri, duyuşsal engeller, motivasyonel engeller, etkili öğrenme, lise öğrencileri.

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Introduction

The concept of barriers to learning includes both external and internal factors that affect students' capabilities to receive educational instruction. These barriers to learning might result from a wide range of problems including restricted opportunities due to poverty, diverse family conditions, high rates of mobility, unfavorable neighborhood conditions or lack of enrichment opportunities (Adelman &Taylor, 2008). Therefore, a great number of children cannot be successful in school due to dealing with a problematic family life, financial difficulties or emotional problems (Webb, Stewart, Bunting &Regan, 2012). Sometimes determining perpetual barriers in the learner or the system and addressing these by enabling mechanisms and processes could be possible, but barriers might also appear during the learning process (NCESS, 1997). Nonetheless, "it needs to be stressed that few youngsters start out with internal problems that interferewith learning. That is why it is essential to view the continuum through the lens of barriers to learning and teaching with an appropriate appreciation of the full range of external factors that contribute to the majority of learning, behavior, and emotional problems encountered at school" (Adelman & Taylor, 2008, p. 27).

Since there is a really wide range of barriers to learning as aforementioned, the present study focuses on barriers stemming from self- regulation skills; the level of self-efficacy; family conditions; studying environment; learning environment and factors related to peers, professional support as well as motivational and emotional factors, which all seem to be related to each other in one way or another. Self-regulated learning, which can be defined as an active process where students define their learning objectives, regulate their own learning and control their motivation (Zimmerman, 1986), is the key domain of learning and therefore, if there is a problem with this skill, it might become a significant barrier to learning (Osterholt & Dennis, 2011). There is a strong relationship between self-regulation strategies and motivational beliefs and academic achievement (Young & Vrongistinos, 2002). Studies conducted in recent decades indicate the significance of motivation for learning in students' adaptation to studying and capability to cope with difficulties and failure (Endler, Rey & Butz, 2001).

There is evidence (Bandura, 1997) that self-efficient students take place in school work more readily, work harder without giving up for a longer time, and have fewer adverse emotional reactions when facing difficulties than those who are doubtful about their abilities as self-efficacy affect them emotionally and reduce their stress, anxiety and depression (as cited by Zimmerman, 2000; Ames, 1992). Self-efficacy beliefs let students have a feeling of agency to motivate their own learning by using goal setting, self-monitoring, self-evaluation, and strategy use that are mong self-regulatory skills (Zimmerman, 2000). Like the strong relationship among self-regulation, self-efficacy and motivational factors, contextual effects also have significant effects on student achievement, as studies show (Willms, 1999). Schools are likely to have higher levels of student engagement provided that there is a strong disciplinary climate, good relationships between student and teacher as well as high expectations for student achievement (OECD, 2003). Parent involvement can also help students feel more motivated to work hard and be more engaged with school work (López, 2001). This can be supported with the fact that many schools which try to cope with low academic achievement are reported to receive minimal parental involvement (Fuller & Olsen, 1998). As for professional support, some evaluations about counselling services in UK secondary schools show that it is a powerful act (Adamson et al, 2006; Fox & Butler, 2007/2009; McKenzie et al, 2011) and evidence also indicated that counselling promoted students' capacities to study and learn (as cited by Webb, Stewart, Bunting &Regan, 2012).

In the Turkish context, limited research has been done regarding learning barriers in schools. Turhan, Karabatak and Polat (2014) conducted a study about the organizational learning barriers. The findings of the study indicated that teachers are inclined to limit their responsibility with their position and in the event of failure; they tend to accuse parents, families or students for the problem, are reluctant to take responsibility, expect the solution of their problems from the managers and are insensitive to problems in schools. This study has some limitations in that it handles only the organizational learning barriers instead of looking from a broader picture and with regard to the sample as it does not represent the case in Turkey and therefore cannot be reflective in representing the Turkish context in international terms. Kızıldağ, Demirtaş-Zorbaz and Zorbaz (2017) recently

conducted a study on the correlation of school engagement of high school students with absenteeism, academic achievement, peer relationships and fear of failure gathering data from 515 students in Ankara. The authors used different scales for each dimension and the results indicated that school engagement is predicted significantly by absenteeism and peer relationships. It can be said that this is mainly a correlation study and again is only based on students in Ankara, Nayır (2017) conducted a study on the relationship between class engagement and motivation levels among 500 high school students in Ankara and included 322 of them in the study. The results indicated that students mostly adopted mastery-oriented learning, which was followed by performance-avoidance oriented and performance-approach oriented learning. As mentioned earlier, this study also could not be representative as it focused only on students in Ankara and handled a few aspects of school engagement. Yıldırım (2006) conducted a study on social support and academic achievement with 962 8-11th grade students in Ankara and mentioned that there is a meaningful relationship between social support and students' academic achievement (Yıldırım ve Ergene, 2003; Yıldırım, 1998) and that social support also plays a role in students' continuing and adapting to their school life as well. In his study, Yıldırım (2006) found out that parental support is a significant indicator of academic achievement, supported by other studies (Lopez, Ehly & Vazquez, 2002; Yıldırım, 2000). Moreover, students who have problems about their school life, who have a fear about getting low mark or whose teachers are rude or not understanding have a lower academic achievement (Yıldırım, 2006).

Compared with the aforementioned studies conducted in the Turkish context, this present study has some substantial differences. Firstly, this study approached the learning barriers from a broader point of view including emotional and motivational aspects under six headings; self-efficacy, self-regulation, deficiency of professional/parental/sibling support and deficiency of consultancy, learning environment, fear of failure, rejection, criticism and judgment and embarrassment. Secondly, the participants of this study were 2175 high school students selected randomly from the seven regions of Turkey. Thirdly, two cities from each of the seven regions were chosen according to their socio-economic states, which mean one city had a low while the other had a high socio-economic development levels. Last but not least, the number of participants, the cities selected throughout all the country and the broad framework in which learning barriers were examined could make this study significant in international terms as it provided a fundamental reflection of the Turkish context in terms of learning barriers faced by high school students. Within this framework, this study aims to determine the learning barriers that high school students face in all seven regions of Turkey. In line with the purpose of the study, answers are sought to the following research question:

In what areas do high school students from different regions face learning barriers regarding a) self-efficacy; b) self-regulation; c) deficiency of professional/parental/sibling support and deficiency of consultancy; d) learning environment; e) fear of failure, rejection, criticism and judgment and embarrassment?

Method

The study employed a descriptive research methodology in order to collect data from all seven regions of Turkey to determine "what is the case?" in terms of the learning barriers of high school students. The purpose of this study is to yield valuable data about opinions, attitudes and practices (Gall & Gall 2003) of high school students by using six different scales developed by Gürlen and Cihan (2016).

Participants

The participants of the study are 2175 students attending high schools located in Turkey. Stratified random sampling was used to determine the sample of the study (Fraenkel, Wallen& Hyun 2012). The following steps were taken during the sampling process:

(i) The target (and accessible) population was identified as the ninth, tenth and eleventh-grade high school students,

(ii) The State Planning Organization in Turkey periodically conducts a study on the socio-economic development index in the country by provinces. In the SEGE-2011 study, 61 indicators were used under eight variables for 81 provinces in seven regions (Ministry of Development, 2013). The ten provinces having the highest socio-economic status according to SEGE-2011 study are

located in the Marmara, Aegean, Central Anatolia and Mediterranean Regions of Turkey. In this study, the learning barrier scales were conducted in two cities in each region and the cities were selected according to their socio-economic development levels, namely, one from the highest and one from the lowest level. In some regions, like the Marmara Region, almost all cities have a high socio-economical level. In such cases, two cities were randomly selected. If the cities had all been selected from low or high levels, the results might have been distorted since, for instance, the available opportunities would differ substantially in these cities. The distribution of the sample group with regard to the cities and regions is shown in Table 1.

Table 1

Participants with regard to Regions and Cities

Region	City	Students	Total
MA	Balıkesir	91	194
	Kocaeli	103	
BS	Zonguldak	235	413
	Artvin	178	
EA	Malatya	105	306
	Erzincan	201	
SEA	Şanlıurfa	230	384
	Adıyaman	154	
M	Antalya	122	264
	Kahramanmaraş	142	
CA	Konya	154	313
	Aksaray	159	
A	İzmir	201	301
	Kütahya	100	
Total			2175

Note: MA=Marmara. BS=Black Sea. EA=Eastern Anatolia. SEA=Southeastern Anatolia. M=Mediterranean. CA=Central Anatolia. A=Aegean.

As for demographic information of the participants, 68.9% of 2175 students are female. Mean value for the ages of students was found to be 16. In terms of the education level of their mothers, 56.8% are graduates of primary school, 21.3% are graduates of middle school, 16.5% are graduates of high school, 3.2% are graduates of university and 1.0% of their mothers are postgraduates. In addition, 35.9% of their fathers are graduates of primary school, 27.9% are graduates of middle school, 27.0% are graduates of high school, and 5.7% are graduates of university and lastly, 3.2% are postgraduates.

Data Collection Tools

The scales named self-efficacy, the self-regulation, deficiency of professional/parental/sibling support and consultancy, the learning environment scale, the fear of failure, rejection, criticism and judgment and the embarrassment, developed by Gürlen&Cihan (2016), were used in this study. These scales, which have 5-point Likert scale from Absolutely Agree (4.21 – 5.00) to Absolutely Disagree (1 – 1.80), have 70 items in total. Cronbach's alpha reliability coefficients of these scales were calculated as 0.76, 0.89, 0.92, 0.76, 0.85, and 0.93 respectively for internal consistency of each scale. For content validity, expert judgments were gathered and the items accepted to be appropriate by all experts were used in the scales.

Data Collection Process and Data Analysis

The data collection process was between fall and spring term of 2015-2016 academic year. Firstly, permission was gathered from the Ministry of National Education and the Ethical Institution at Hacettepe University. Afterwards, the provincial director of national education was called in each city where the scales would be administered and school directors in related schools were called to get their approval for application of scales. After getting approval, the scales were sent to the practice schools in closed envelopes by post. The students were given 20 minutes to answer the items. The schools sent the scales in closed envelopes back to the researchers.

Mean values of the items were calculated one by one to examine the learning barriers seen in different regions and Turkey in general.

Results

The descriptive statistics of the six scales were examined and presented in the following table for the whole participants. According to Table 2, the highest mean is in the deficiency of professional/parental/sibling support and deficiency of consultancy, while the lowest mean is in embarrassment.

Table 2

Descriptive Statistics

Scales	*1-5 Interval*	*Mean*	*SD*	*Skewness*	*Kurtosis*
Self-efficacy	4,05	32,36	4,499	-.713	1,063
Self-regulation	1,68	28,62	7,654	-,468	-,368
Deficiency of professional/parental/sibling support and consultancy	3,87	76,54	14,462	-,763	,543
Embarrassment	2,24	17,92	8,639	,695	-,373
Learning environment	4,03	36,28	5,625	-,787	,808
Fear of failure, rejection, criticism and judgment	3,58	28,62	7,654	-,468	-,368

Accordingly, the sample mean is higher for the deficiency of professional/parental/sibling support and deficiency of consultancy (*M*=76.54, *SD*=14.462) than learning environment (*M*=36.28, *SD*=5.625), self-efficacy (*M*=32.36, *SD*=4.499), fear of failure, rejection, criticism and judgment (*M*=28.62, *SD*=7.654) and self-regulation (*M*=28.62, *SD*=7.654), while the lowest mean value belongs to embarrassment (*M*=17.92, *SD*=8.639).

As the items of the self-efficacy, self-regulation, deficiency of professional/parental/sibling support and deficiency of consultancy and learning environment scales included items with positive meanings; the items with the lowest percentage were taken into consideration in indicating the learning barriers observed in these areas. In contrast, the items in the fear of failure, rejection, criticism and judgment, and embarrassment scales included items with negative meanings. Therefore, the items with the highest percentage were interpreted as they showed the learning barriers observed in these two areas. Furthermore, to determine the high and low percentages, the mean values of each sub-scale were divided in the number of items in each scale and an interval value was found between 1 and 5 for each scale.

Learning Barriers with regard to Self-Efficacy

When the mean values of the items regarding self-efficacy were examined, it was seen that the lowest values, although still high, were among items 1, 2 and 6 as can be seen in Table 3.

Table 3

Highest Mean Values in the Self- Efficacy Scale with Regard to the Regions

Items	*Mean*$_{\text{Regions}}$						
	CA	BS	MA	A	M	EA	SA
1. I can learn my school subjects easily.	3.91	3.88	3.86		3.73		
2. I can ask my teacher for help when I have a difficulty about my school subjects.	3.91			3.81			3.71
6. My teachers think that I am a responsible student.		3.89				3.87	

Accordingly, in the CA Region, students a bit suffer from learning their school subjects easily (*M*=3.91) and asking their teachers for help when they have a difficulty about their school subjects

(*M*=3.91). In the BS Region, students a bit suffer from learning their school subjects easily (*M*=3.88) and most of them do not believe they are responsible students in their teachers' eyes (*M*=3.89). Likely, in the MA Region, students somewhat suffer from learning their school subjects easily (*M*=3.86). In the A Region, it was found that students have difficulty in asking their teachers for help when they have a difficulty about their school subjects (*M*=3.81). In the M Region, students have difficulty in learning their school subjects easily (*M*=3.73). As for the EA Region, most students do not believe they are responsible students in their teachers' eyes (*M*=3.87). In the Southeastern Region, it seemed to be difficult for students to ask their teachers for help when they have a difficulty about their school subjects (*M*=3.71).

Learning Barriers with regard to Self-Regulation

When the mean values of the items regarding self-regulation were examined, in Table 4, it was seen that the lowest values were among items 11 and 18 for all regions, except for the A where only item 18 had the mean value.

Table 4

Highest Mean Values in the Self-Regulation Scale with Regard to the Regions

Items	*Mean*Regions						
	CA	BS	MA	A	M	EA	SA
11. I prepare a study schedule for myself.	3.05	3.02	3.08		3.11	2.92	3.15
18. I can focus on studying even when something attracts my attention.	3.07	3.12	3.19	2.84	3.09	3.17	3.18

Students in all regions except for the A are indecisive or do not prepare a study schedule for themselves (*M*=3.05 for the CA Region, *M*=3.02 for the BS Region, *M*=3.08 for the MA Region, *M*=3.11 for the M Region, *M*=2.92 for the EA Region, *M*=3.15 for the SEA Region). Furthermore, it was found that students in all regions find it difficult to focus on studying even when something distracts their attention (*M*=3.07 for the CA Region, *M*=3.12 for the BS Region, *M*=3.19 for the MA Region, *M*=2.84 for the A Region, *M*=3.09 for the M Region, *M*=3.17 for the EA Region, *M*=3.18 for the SEA Region).

Learning Barriers with regard to the Deficiency in Professional/Parental/Sibling Support and Consultancy

The mean values regarding the deficiency in professional/parental/sibling support and consultancy showed that the lowest values were among items 27, 39 and 40 for almost all regions, except for the M Region where the lowest mean values were on items 27 and 39, as can be seen in Table 5.

Table 5

Highest Mean Values in the Deficiency in Professional/Parental/Sibling Support and Consultancy Scale with regard to the Regions

Items	*Mean* Regions						
	CA	BS	MA	A	M	EA	SA
27. My parent helps me do my homework.	3.25	3.20	3.29	3.27	3.19	3.17	3.07
39. My teachers have a great role in my willingness to come to school.	3.46	3.37	3.34	2.69	3.64	3.61	3.49
40. My teachers are closely interested in my school achievementstudent.	3.35	3.32	3.30	2.94		3.39	3.29

Accordingly, students in all regions are indecisive or do not think that their parent helps them do their homework (*M*=3.25 for the CA Region, *M*=3.20 for the BS Region, *M*=3.29 for the MA Region, *M*=3.27 for the A Region, *M*=3.19 for the M Region, *M*=3.17 for the EA Region, *M*=3.07 for the SEA Region). Additionally, students in regions except EA and SEA do not believe their teachers have a great role in their willingness to come to school (*M*=3.46 for the CA Region, *M*=3.37 for the BS

Region, *M*=3.34 for the MA Region, *M*=2.94 for the A Region, *M*=3.64 for the M Region). In fact, the mean values for this item were still low for the EA Region (*M*=3.61) and for the SEA Region (*M*=3.49); however, there were items with lower percentages than these with regard to the deficiency of professional/parental/sibling support and consultancy in these regions. Moreover, students in all regions except for the M Region are indecisive or do not think that their teachers are closely interested in their school achievement (*M*=3.35 for the CA Region, *M*=3.32 for the BS Region, *M*=3.30 for the MA Region, *M*=2.94 for the A Region, *M*=3.39 for the EA Region, *M*=3.29 for the SEA Region).

Learning Barriers with regard to the Learning Environment

The learning barriers regarding the learning environment were all the same for the seven regions, where the lowest mean values were observed among items 50 and 52, as seen in Table 6.

Table 6

H*ighest Mean Values in the Learning Environment Scale with regard to the Regions*

Items	*Mean* Regions						
	CA	BS	MA	A	M	EA	SA
50. The learning environment in the classroom motivates me to learn.	3.63	3.51	3.38	3.12	3.64	3.49	3.38
52. While I am studying, I put away the things (e.g. telephone, television, etc.) that will distract me.	3.20	3.40	3.22	2.84	3.50	3.43	3.53

The students in all regions are indecisive or do not believe that the learning environment in the classroom motivate them to learn (*M*=3.63 for the CA Region, *M*=3.51 for the BS Region, *M*=3.38 for the MA Region, *M*=3.12 for the A Region, *M*=3.64 for the M Region, *M*=3.49 for the EA Region, *M*=3.38 for the SEA Region). What's more, it was found that most students do not put away the things (e.g. telephone, television, food, etc.) that will distract them while studying (*M*=3.20 for the CA Region, *M*=3.40 for the BS Region, *M*=3.22 for the MA Region, *M*=2.84 for the A Region, *M*=3.50 for the M Region, *M*=3.43 for the EA Region, *M*=3.53 for the SEA Region).

Learning Barriers with regard to Fear of Failure, Rejection, Criticism and Judgment

When the mean values of the items regarding fear of failure, rejection, criticism and judgmentwere examined for the seven regions, as seen in Table 7, it was seen that the highest mean values, were among items 55 and 57.

Table 7

Highest Mean Values in the Fear of Failure, Rejection, Criticism and Judgment Scale with Regard to the Regions

Items	*Mean* Regions						
	CA	BS	MA	A	M	EA	SA
55. I feel nervous before exams	4.01	3.89	4.11	3.77	4.11	3.86	4.09
57. It is important to me not to be excluded by my friends.	3.93	3.87	4.07	3.84	4.03	3.78	4.05

According to Table 7, students in all regions mention that they feel nervous before exams (*M*=4.01 for the CA Region, *M*=3.89 for the BS Region, *M*=4.11 for the MA Region, *M*=3.77 for the A Region, *M*=4.11 for the M Region, *M*=3.86 for the EA Region, *M*=4.09 for the SEA Region). Likewise, students in all regions believe that it is important for them not to be excluded by their friends (*M*=3.93 for the CA Region, *M*=3.87 for the BS Region, *M*=4.07 for the MA Region, *M*=3.84 for the A Region, *M*=4.03 for the M Region, *M*=3.78 for the EA Region, *M*=4.05 for the SEA Region).

Learning Barriers with regard to Embarrassment

When the mean values of the items regarding embarrassment were examined for the regions, as can be seen in Table 8, it was seen that the highest mean values were on item 68 for all regions and both 67 and 68 for the MA Region and EA Region.

Table 8

Highest Mean Values in the Embarrassment Scale with regard to the Regions

Items	*Mean* Regions						
	CA	BS	MA	A	M	EA	SA
67. I think I look weird when I get a promise to speak in class.			2.30			2.40	
68. I feel anxious when I am in a social environment.	2.60	2.36	2.29	2.15	2.62	2.39	2.63

However, the analysis in this scale showed that even the highest percentages were around 2.50, which might show that most of the students in Turkey do not suffer from embarrassment as a learning barrier. Nevertheless, the mean values for item 67 "I think I look weird when I get a promise to speak in class." were *M*=2.30 for the MA Region and *M*=2.40 for the EA Region. Moreover, the mean values for item 68 "I feel anxious when I am in a social environment." were *M*=2.60 for the CA Region, *M*=2.36 for the BS Region, *M*=2.29 for the MA Region, *M*=2.15 for the A Region, *M*=2.62 for the M Region, *M*=2.39 for the EA Region, *M*=2.63 for the SEA Region.

Discussion, Conclusion and Recommendations

This study aimed to reveal and examine learning barriers of high school students as such barriers can affect the validity and reliability of all kinds of measurements conducted with regard to students. Therefore, describing them may contribute to the guide the measurement results gathered from students. With regard to the learning barriers stemming from self-efficacy issues, students in four out of seven regions mentioned they could not learn their school subjects easily. Furthermore, students in seven regions stated they did not or partly prepare a study schedule for themselves and that they could hardly focus on studying when something attracted their attention, which indicated learning barriers stemming from self-regulation issues. In terms of the learning barriers based on a deficiency in professional/parental/sibling support and consultancy, students in all regions had some negative opinions about the fact that their parents helped them do their homework or whether their teachers had a great role in their willingness to come to school. Additionally, students in all regions but one mentioned their teachers were closely interested in their school achievement. As for learning barriers stemming from the learning environment, all students had some doubts whether the learning environment in the classroom motivated them to learn or whether they out away distractors while they were studying. Moreover, students in all regions mentioned they felt nervous before exams and that it was important not be excluded by their friends in a way to express learning barriers with regard to fear of failure, rejection, criticism and judgment. Lastly, in terms of embarrassment issues, students in all regions mentioned they felt anxious when they were in a social environment, which indicated a learning barrier (for all scales, see Appendix 1).

The results of the study suggest that students have some difficulty in planning how to study, which is a self-regulative skill. Pintrich and Garcia (1991) found that students setting goals, planning effectively and monitoring their goal progress are more likely to achieve higher on knowledge tests than students who fail to engage in these activities. However, this might be related with another finding of this study. The participants of this study were mostly unsure whether their teachers have a great role in their willingness to come to school and if teachers are interested in their school achievement. This indicates the existence of a learning barrier regarding teacher support. Likewise, Turhan, Karabatak and Polat (2014) also found that teachers were insensitive to problems in schools and tended to accuse students in case of failure. This finding is supported with the view of Weinstein and Mayer, who mentioned that "good teaching teaches students how to learn, how to remember, how to think, and how to motivate themselves" (1986: 315), which are closely related with self-regulative skills. From a similar point of view and in a way underlining the close relationship between self-regulated learning and teacher support, Patrick, Ryan and Kaplan (2007), in their study with fifth grade students, found that task engagement and the use of self-regulated learning strategies was more prevalent in students who received regular support from their teacher and peers. In a similar vein, relatedness, which is a sense of being close to students through a sense of warmth, affection, and acceptance of students on the teacher's side, turned out to be positive contributors to students' learning and well-being (Furrer & Skinner, 2003). Students feel they belong in school when their

teachers express involvement and warmth towards them (Martin & Dowson, 2009; Wentzel, 1997) in a way treating students with care and affection and making students feel they enjoy having them in class. Therefore, when teachers are reliable sources of emotional and instrumental support especially in difficult times, students feel connected to their teachers and safe at school (as cited by Furrer, Skinner & Pitzer, 2014), which promotes school engagement. These results show that teacher support, whose deficiency can make strong learning barriers on the side of students, is very important in both creating self-regulated learners and school engagement.

The results of this study indicated that students received little or no help from their parents with regard to their homework, which might be related to parental support on schoolwork. Research shows that parents are able to influence the academic and psychosocial development in children and adolescents (e.g., Yıldırım, 2006; Yıldırım, 2000; Abar, Carter & Winsler, 2009; Purdie, Carroll, & Roche, 2004). Accordingly, strong parental involvement, in the way perceived by the adolescent, was found to be an important influence on adolescents' self-regulatory behaviors (Purdie, Carroll, & Roche, 2004). This is supported by the study of Henderson & Berla, (1994), as it was found that schools supporting significant parent involvement have higher levels of student achievement, increased school attendance, higher graduation rates, larger enrollment in post-secondary education and students with positive attitudes about school.

According to the results of the study, similar results were obtained with regard to the self-efficacy perception of students. Most of the 2175 high school students mentioned they could not learn school courses well, had difficulty in school work and most importantly, could not ask for help from their teachers, highlighting the learning barrier regarding teacher support. These three main reasons about self-efficacy perception were identified as barriers making a negative effect on students' learning. Furthermore, it was found that the learning environment in classrooms did not motivate students to learn. This seems to be in relation with what Zimmerman (2001) mentioned about self-efficacy beliefs that such beliefs show convergent validity in affecting such key determiners of academic motivation as choice of activities, level of effort, persistence, and emotional reactions.

The results of the study suggest that students should be supported to get motivated for learning by letting them learn by doing and experiencing as well as building an effective communication between students and students, and teachers and students. As Martin and Dowson (2009) mentioned, students who have enough opportunities to communicate with each other, are given emotional support and share learning experiences with their peers, are more likely to feel that can be understood and cared for by their peers. Similarly, Yıldırım (2006) found out that peer support was an important indicator of academic success. It is important that classrooms are not crowded since the number of students and classroom layout directly affect interaction during classes. Organizing an effective learning environment can help students to develop their self-regulation skills, increase their awareness and so improve their self-confidence; in other words, this may give them a chance to develop their self-efficacy beliefs in a positive way. Zimmerman (2000) supports this by saying that self-efficacy beliefs provide students with a sense of agency to motivate their own learning by the use of self-regulatory processes such as goal setting, self-monitoring, self-evaluation, and strategy use. In a similar vein, there is evidence that the use of self-regulation strategies can lead to increases in self-efficacy beliefs and academic achievement (Schunk, 1984; Zimmerman & Martinez-Pons, 1990).

The results of the study show that students' effective learning and academic achievement are closely related to their motivation for learning through developing positive emotions towards their teachers and enjoying learning. Curriculum in general and syllabi in particular always play inevitable roles in the entire process of learning in an educational system. Therefore, the teaching/learning material (courses) may be properly designed in accordance with the social need and national demand (Khan 2011). Thus, affective learning may be held as carefully as cognitive learning in high school curricula as some problems occur in realizing cognitive learning when the affective domain is ignored. As Khan (2011) stated it seems imperative for policy makers, planners, curriculum designers, pedagogues and administrators to take learning barriers into considerations so through a proper diagnosis of the barriers, these can be minimized or removed if possible.

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Appendix I

LEARNING BARRIERS SCALE

Dear participant,

This study is being conducted to determine the factors than hinder your school achievement. You do not have to write your name and surname since the answers gathered will be used in scientific studies. The fact that you give sincere answers to the questions reflecting your real feelings is significant to the results of the study.

Thank you for your participation in the study.

PERSONAL INFORMATION

1. Age :

2. Gender :

3. Hometown :

1. ( ) Central Anatolian Region
2. ( ) Black Sea Region
3. ( ) Marmara Region
4. ( ) Aegean Region
5. ( ) Mediterranean Region
6. ( ) Eastern Anatolia Region
7. ( ) Southeastern Anatolia Region

4. School : High School – Anatolian High School – Vocational High School

5. Grade Level : 9th Grade – 10th Grade – 11th Grade – 12th Grade

6. Mother's Level of Education: Primary School – Secondary School – High School – Undergraduate – Graduate

7. Father's Level of Education: Primary School – Secondary School – High School – Undergraduate – Graduate

8. Number of Siblings :

	Self efficacy	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1	I can learn my school subjects easily.					
2	I can ask my teacher for help when I have a difficulty about my school subjects.					
3	I can ask my friends for help when I have a difficulty about my school subjects.					
4	I am good at learning.					
5	I get good grades in exams when I study.					
6	My teachers think that I am a responsible student.					
7	I am willing to learn.					
8	I trust myself about being successful at school.					

	Self regulation	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
9	I do my homework on time.					
10	I complete the tasks given by my teacher about school subjects on time.					
11	I prepare a study schedule for myself.					
12	I am a responsible student.					
13	Being successful at school is important to me.					
14	I go on studying even when I fail.					
15	I follow my progress in my school subjects.					
16	I try different study methods when I fail.					
17	I do my homework on time.					
18	I can focus on studying even when something attracts my attention.					
19	I know how to study social school subjects.					
20	I know how to study scientific school subjects.					
21	I listen to my teacher attentively in class.					
22	I aim to learn as much as possible at school.					
23	I set goals for myself to be successful at school subjects.					
24	I aim to be successful in school subjects.					
25	I ask for help when I have a difficulty about my school subjects.					
	Deficiency of professional/parental/sibling support and deficiency of consultancy	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
26	My parent helps me learn my school subjects.					
27	My parent helps me do my homework.					
28	My parent helps me value and care about school.					
29	My parent is pleased with my school achievement.					
30	My parent thinks that I am a responsible student.					
31	My parent trusts me to be successful in my school subjects.					
32	My parent encourages me to be successful in school subjects.					
33	My parent appreciates my achievement.					
34	My parent is closely interested in my school achievement.					
35	My teachers encourage me to be successful.					
36	My teachers appreciate my achievement.					
37	My teachers trust me to be successful in my school subjects.					
38	My teachers encourage me to be successful in school subjects.					
39	My teachers have a great role in my willingness to come to school.					
40	My teachers are closely interested in my school achievement.					
41	The consultancy teacher helps me if I need help in using effective study techniques.					
42	Members of my family help me with my homework.					
43	Members of my family help me study.					
44	Members of my family encourage me to be successful in school subjects.					
45	Members of my family are closely interested in my school life.					
	Learning Environment	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
46	I build a positive communication with my teachers.					
47	I build a positive communication with my friends.					
48	I build a positive communication with my parent.					
49	I have a positive communication with members of my family.					

50	The learning environment in the classroom motivates me to learn.					
51	I always study in a definite place at home.					
52	While I am studying, I put away the things (e.g. telephone, television, food, etc.) that will distract me.					
53	At home, I have the study environment that I exactly want.					
54	I want my study environment to be quiet.					
	Fear of failure, rejection, criticism and judgment	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
55	I feel nervous before exams.					
56	I feel discouraged when I get lower grades than my friends in exams.					
57	It is important to me not to be excluded by my friends.					
58	I feel discouraged when my teachers criticize me about my school subjects.					
59	I feel discouraged when my friends criticize me about my school subjects.					
60	What my friends think about me is important to me.					
61	I shy away from being teased by my friends.					
62	I shy away from being criticized by my parent about my school subjects.					
	Embarrassment	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
63	I am embarrassed to get a promise to speak in class.					
64	I have difficulty in expressing myself in front of my classmates.					
65	I have difficulty in meeting new people.					
66	I cannot find anything to say when I get a promise to speak in class.					
67	I think I look weird when I get a promise to speak in class.					
68	I feel anxious when I am in a social environment.					
69	I shy away from having eye contact with my teacher when I get a promise to speak in class.					
70	I shy away from having eye contact with my friends when I get a promise to speak in class.					

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Examining Preservice Teachers' Questioning and Feedback in Teaching Practicum Course*

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Abstract

This study examined the questioning styles of preservice teachers along with the frequency and types of feedback provided according to students' responses. This was a pre-experimental design study with a one-group pre-post-test design. The questioning ways of 13 preservice teachers who taught in two public primary schools in Ankara, Turkey was investigated. The study data were obtained by the video recording of 26 hours of classroom instruction. Moreover, chi-square analysis was conducted to determine relationships between wait time, cognitive level and type of question. According to the results, it was determined that preservice teachers, both before and after training, preferred to use redirecting questions more frequently than creating new questions. It was also observed that preservice teachers frequently asked questions which measured lower level cognitive competencies and that there was an increase for all types of response feedback following the training. However, there was no relationship found between the types of feedback provided and the cognitive levels of the questions asked. The possible reasons for these results might be over-crowded classrooms, focusing on grammar instruction more than reading and writing, and/or inexperience among the preservice teachers to deliver lessons that include high quality questioning and effective feedback.

Keywords: Questioning, primary school pre-service teachers, cognitive level, feedback.

* Some parts of the study was presented at European Conference on Educational Research (ECER) on 4-7 September 2018, in Bolzano, Italy.

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Öğretmen Adaylarının Öğretmenlik Uygulaması Dersi Kapsamında Sordukları Sorularının ve Geri Bildirimlerinin İncelenmesi*

Makale Türü	Başvuru Tarihi	Kabul Tarihi
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Ayşegül Bayraktar ** **Seher Yalçın** ***

Öz

Bu çalışmanın amacı, Ankara'daki iki devlet ilköğretim okulunda Öğretmenlik Uygulaması dersi kapsamında uygulamalarını yapan öğretmen adaylarının soru sorma stratejilerini, verdikleri geri bildirimlerin türlerini ve sıklığını incelemektir. Çalışma, deney öncesi desenlerden tek grup ön-test son-test desenindedir. Çalışmanın katılımcıları, iki devlet ilköğretim okulundaki sınıflarda Türkçe dersini öğreten 13 öğretmen adayıdır. Öğretmen adaylarının soru sorma stratejileri, verdikleri geri bildirimler ve öğrencilerin cevap üretebilmeleri için bekleme sürelerini incelemek için öğretmen adaylarından izin alınarak dersler video ile kayıt altına alınmıştır. Çalışmanın verileri 26 ders saati boyunca kaydedilen videolar aracılığıyla toplanmıştır. Bekleme süresi, bilişsel düzey ve soru türü arasındaki ilişki için ki-kare analizi yapılmıştır. Elde edilen sonuçlara göre, öğretmen adaylarının eğitim öncesi ve sonrası yeni sorular sormaktan çok yönlendirilmiş soruları kullanmayı tercih ettikleri görülmüştür. Ayrıca, öğretmen adaylarının sıklıkla alt düzey bilişsel yeterlikleri ölçen sorular sorduğu ve eğitimden sonra verdikleri tüm geri bildirim türlerinin sayısında artış olduğu görülmüştür. Ancak, geri bildirim türleri ile sorulan soruların bilişsel düzeyleri arasında bir ilişki bulunamamıştır. Bu sonuçların olası nedenlerinin kalabalık sınıflara sahip olunması, okuma ve yazmadan daha çok gramer öğretimi yapılması veya nitelikli sorular ve etkili geri bildirimler içeren dersler verme konusunda deneyimsizlik olabilir.

Anahtar Sözcükler: Soru sorma yöntemi, ilkokul öğretmen adayları, bilişsel düzey, dönüt.

* Bu çalışma, 4-7 Eylül 2018 tarihlerinde, Italya Bolzano'da, "European Conference on Educational Research (EJER)" kongresinde sözlü olarak sunulan bildirinin genişletilmiş halidir.

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Introduction

Questioning is one of the primary techniques that allows teachers and students to recognize what is already acquired, to use and develop this knowledge, and as a result, develop new insights. In other words, it gives a room for examining ideas and information. The questioning technique can be employed by teachers in order to facilitate pupils to think as well as to encourage them to participate in the learning processes (Wilen and Clegg, 1986). Teachers use the questioning strategy in order for students to learn determined topics (Kim, 2015). Educators use the questioning strategy for several reasons including; to improve students' interest and motivation, to increase critical thinking skills, to examine and summarize previous lessons, and to evaluate reached goals (Moore, 2012). Additionally, using the strategy of questioning helps students develop their analytical and critical thinking skills, increases students' communication skills, encourages them to participate in learning, and helps teachers diagnose learning difficulties (Aydın, 2017). For these reasons, the questioning strategy is one of the most common teaching strategies used by educators.

There are a variety of question types and they are defined as either narrow or broad, convergent or divergent (Moore, 2012). To explain the differences in these question types; narrow questions have one correct response while broad questions can be answered by a variety of different responses. Review of relevant research has indicated that teachers primarily ask closed-ended questions (Lee & Kinzie, 2012; McNeill & Pimentel, 2010; Oliveira, 2010; Walsh & Sattes, 2005). In their study, Wragg and Brown (2001) observed elementary school classrooms analysing a lot of questions asked by teachers, and their results showed that only a few questions were open-ended. The use of open-ended questions would have provided students the chances to engage their higher order thinking. Instead, a majority of the teachers' questions focused on managing their classrooms and checking on students' memorization skills. Similar to this, Lee and Kinzie (2012) found that teachers mostly asked closed-ended questions. In this case though, researchers also observed that teachers' questions varied based on which instruction took place as well as the grouping arrangements. For instance, during experiments in small groups, students received open-ended questions which allowed them to explain their predictions and use reasoning. In another study, it was observed that answering open-ended questions during the storybook reading period helped early childhood students improve their language skills in comparison to their peers from the control classrooms (Wasik et al., 2006).

It is important that for educators to fully take advantage of these questioning strategies they must also affectively utilise redirecting, wait time, halting time, and reinforcement. This issue is paramount in order to provide affective instruction because the kinds of questions asked by teachers and their responses to the students' answers ultimately affects the students' self-esteem and participation during the learning process (Moore, 2012). Previous research has also shown that teachers' questions which need to be answered with higher-level thinking skill stimulates students to ask higher-level questions as well; indeed, it is suggested that there is a significant relationship between the level of questions asked by teachers and students' level of success (Cotton, 2000). For instance, Kim's (2015) study determined that teachers in the treatment classrooms talked less but asked several open-ended questions. Additionally, students in the treatment classrooms provided more higher-order thinking responses than the students in the traditional classrooms. For example, students' responses in the treatment classrooms exhibited important response traits such as claiming, evidencing, challenging, supporting, and defending their reasoning.

Moreover, it is importance to pause for an adequate time following asking a question (Wilen and Clegg, 1986), and as for enhancing students' achievement and motivation, giving feedback constitutes a significant element (Çimer, Bütüner, and Yiğit, 2010; Nichol and Macfarlane-Dick, 2006). After asking questions, teachers are supposed to wait and lead students to find the answers themselves, rather than giving away the answers instantly (Küçük, 2006). What is more, all students should be supported to participate in the learning process and given enough time by the teachers to give voice to their answers.

Teachers should also pay attention to provide effective feedback regarding students' responses. Shute (2008) suggests that feedback is information corresponded with learners for the purpose of altering their thought and doings in order to enhance learning. Also according to Arts, Jaspers, and

Brinke (2016), effective feedback informs students about their present achievement as well as informs them regarding determined criteria and standards to reach in the future. In a case study, Coll, Rochera, and de Gispert (2014) found that the teacher provided three kinds of feedback including; learning contex, academic assignment and social participation. The researchers stated that feedback should not only inform students about what they accomplish but it should also inform teachers regarding how to improve students' learning.

Related research has shown that teachers' feedback can be classified and labelled in a variety of ways including; verbal or written feedback; positive or negative feedback; and general or specific feedback. In terms of providing positive and negative feedback teachers should keep in mind that students should receive comprehensive feedback but the teachers should take care to not be too harsh in their negative feedback (Fletcher, 1993). Similarly, students in Mahfoodh's (2017) study stated that seeing too many corrections during the feedback process had made caused them frustration. Instead, providing positive reinforcement and starting from students' strengths is a necessary component of increasing students' confidence (Blake, 1976; Fletcher, 1993). Teachers' most important job is to increase students' confidence and by building on students' strengths creating a promoting environment for teaching and learning to occur. Since "thoughts are merely by-products of conditioned responses" (Bandura, 1984, p. 232), providing supportive or positive feedback is extremely important because students use them as verbal persuasion when deciding upon their level of confidence. This positive feedback in turn encourages the students to be persistent in their effort and learning. In Mahfoodh's (2017) study, students perceived the teachers as experts and accepted their feedback. In other words, receiving praise from the teachers made students feel happy and satisfied, which ultimately built upon their confidence and increased the students' writing skills.

General feedback usually comes in the form of one-word reinforcement provided to students through words like; "Good, Okay, Well, Correct, Excellent, etc." Although general feedback can be affective it is also important to remember; however, that overuse of such statements can cause them to lose their effectiveness (Burden & Byrd, 2010; Moore, 2012; Ornstein & Lasley II, 2004). Specific feedback, on the other hand, informs learners which aspects of their performance were acceptable or unacceptable. As a result, students gain both the information about which aspects they understood and on which parts they still need work (Hattie & Timperley, 2007). Patthey-Chavez, Matsumura, and Valdes (2004) emphasized that the absence of quality feedback on early drafts caused a lack of improvement in students' writing. Teachers should be generous with their feedback because providing feedback can foster students learning of strategies and skills (Anderson, 2000) and students can also become motivated to practice these new strategies (Schmitzer, 1993). Thus, students should be regularly and consistently informed about their performance. In their study, Arts, Jaspers, and Brinke (2016) found that students regarded having clear and timely feedback as being effective. The study aimed to examine the questioning ways of 13 preservice teachers who taught in two public primary schools in Ankara. This study consists of these research questions:

1. How can the questions asked by preservice teachers be distributed according to;
   a) Bloom's taxonomy,
   b) Being formulated as open/closed ended,
2. Were any differences spotted for preservice teachers' questions in pre and post- training with regards to;
   a) Length of waiting time,
   b) The connection between the length of waiting time and cognitive levels of questions enquired, and
   c) The connection between the length of waiting time and variables of questions enquired for instance being formulated as open/closed ended.
3. Were any differences spotted regarding preservice teachers' feedback before and after the training with regards to;
   a) Allocation of feedback?
   b) The connection between the types of feedback and cognitive levels of questions asked, and
   c) The allocation of the types of feedback and variables of questions asked based on being open/closed ended.

Method

Research Design

In this pre-experimental design study, a one-group pre-post-test design was used. Following this type of design, the results are compared by gathering data from a randomly selected group before and after the procedure (Campbell & Stanley, 1963). In this study, preservice teachers who were randomly selected for the research group, were observed before and after the training and were also compared in terms of the research variables.

Participants

The participants in the study were 13 preservice teachers (eight females & five males) teaching Turkish language courses in two public elementary schools. The preservice teachers voluntarily participated in this study. The mean age for the preservice teachers was 22, and all of the preservice teachers were teaching for their first time. The participants had also successfully completed the requisite courses for enrolling in the preservice teachers courses (i.e., Teacher Practicum I & II). In addition, preservice teachers teaching courses other than Turkish language courses were not included in this study.

Process

The questions recorded before and after the application were analyzed according to Bloom's taxonomy. The questions asked by the pre-service teachers were coded in "knowledge, understanding, application… and so on categories depending on Bloom's Taxonomy and the keywords of each category. The preservice teachers' classroom instruction was videotaped with their consent for the purpose of investigating the preservice teachers' ways of questioning, duration of waiting time for students to formulate answers and the feedback provided by preservice teachers. After observing all preservice teachers for the first time, each preservice teacher was given training for six hours on how to benefit from Bloom's taxonomy to ask effectual questions, how to create questions which help students improve their higher order thinking skills, and how to provide effective feedback. After all of preservice teachers were observed for the first time, they then received six hours of training to introduce them to effective questioning strategies based on Bloom's revised taxonomy, ways to create questions that can aid students in improving their higher order thinking skills as well as how to provide effective feedback to students. The trainings were given at the theoretical level by the researchers in the face-to-face teaching in a classroom where the pre-service teachers were studying. During this training, examples were given while question-answer and discussion techniques were used. Following this training, the preservice teachers' instructions were again video recorded. As a result, the data for this study were collected by video recorded 26 hours of preservice teacher instructions with 13 hours of observation occurring before the questioning style training, and the remaining 13 observations that took place after the questioning training. Following completion of the video recorded observations, the instructional data were reviewed and analysed by both researchers. The duration of collected instructional data from the first observations totalled 441 minutes and 5 seconds, while the duration of the second set of observations totalled 452 minutes and 8 seconds. During both set of observations any minutes in which students were not being instructed were cut from the observation time. Furthermore, all of the questions and preservice teachers' feedback were transcribed into a Microsoft Word document as well as coded into a Microsoft Excel file where the sub-categories of the variables discussed were determined. A closed-ended form developed by the researchers was used in the coding. While preparing the form, categories were determined according to the definitions accepted in the literature. Related literature is presented in the introduction section of the article. In this context, questions in the form were coded as being new/ redirecting, open/closed-ended, related to daily life with their waiting time. Feedback given by the pre-service teachers were also coded as general, task specific, positive and negative. Bloom's taxonomy that was used in this study included remember, understand, apply, analyze, evaluate, and create steps respectively. Finally, the inter-rater reliability between the coders was calculated as .98. The distributions of the new and redirecting questions which were asked by the preservice teachers are provided in the Table 1.

Table 1
Distribution of the Questions Asked By Preservice Teachers

	New Questions	Redirecting Questions	Total
Before Training	260	343	603
After Training	302	486	788
Total	562	829	1391

As it can be seen in Table 1, a total of 1391 questions were asked by preservice teachers during their classroom instruction. Among these questions, there were 260 "new questions" out of a total of 603 questions that were queried prior to the question training. Following the training, the number of "new questions" asked by the preservice teachers increased to 302. On the other hand, it was observed that in general that the preservice teachers preferred using redirecting questions more than new questions, which was a phenomena that occurred both before and after the training.

Data Analysis

For the first of the initial sub-goals of this study, for determining the distribution of preservice teachers' questions according to Bloom's taxonomy, the researchers first examined Bloom's Taxonomy. As a result, a consensus was arrived at by the researchers as to which cognitive level each question should take place. The researchers' came up with a revised Bloom's Taxonomy which consists of six stages: remember, understand, apply, analyses, evaluate, and create (Anderson & Krathwohl, 2001). The first two categories, knowledge and comprehension, are regarded as low-level questions while the remaining four categories; application, analysis, evaluation, and creating, are labelled as high-level questions (Lee & Kinzie, 2012). Frequency and percentages were calculated to determine the distribution of preservice teachers' questions according to the cognitive levels, "being open/closed-ended".

For the second sub-goal of the study, the wait time of preservice teachers were recorded following the query of each question as well as the descriptive statistics regarding these wait times were calculated. The type of question used was examined within the context of open-ended versus close-ended questions. Particular data or information are asked in close-ended questions to be responded by one correct answer with "yes/no" clause. Therefore, the answer to the question generally given by a few words. This is the reason why close-ended questions might have a restricting effect on children's thinking skills and chance to come up with a limited answer. On the other side of the coin, open ended questions vary from one person to another and necessitate logical thinking and reasoning (Goodwin, Sharp, Cloutier, & Diamond, 1983; Hargreavers, 1984). Chi-square analysis was conducted utilizing SPSS statistical software in order to determine any relationship that may occur between waiting time, cognitive level and type of the question asked. Before conducting out the chi-square analysis related to wait time, four categories of "wait time" were created: one second, two or three seconds, four or five seconds, and finally, six seconds or more of wait time.

For the third sub-goal of the study, the number and types of feedback provided by the pre-service teachers were examined. The teachers' feedback were classified as being positive or negative feedback as well as general or specific feedback. The frequency and percentages regarding the overall distribution of feedback and the distribution of feedback for specific question types were investigated. Also, relationship among cognitive levels of the questions asked both before and after the training as well as the types of feedback provided were analysed through the chi square test.

Results

For the first sub-goal of the study, the distributions of questions queried by the preservice teachers according to Bloom's taxonomy are provided in Table 2.

Table 2
Questions Asked by Preservice Teachers Based on Bloom's Taxonomy

		Remember	Understand	Apply	Analyse	Evaluate	Create	Sum
Before training	f	207	347	35	1	7	6	603
	%	34.32	57.55	5.80	0.17	1.16	1	100
After training	f	334	374	72	3	0	5	788
	%	42.39	47.46	9.14	0.38	0	0.63	100

The results in Table 2 reveal that the total number of questions asked by preservice teachers increased following the question strategy training. The questions asked by the preservice teachers most often were "understand" level questions (57.83%). Next, "remember" level questions were asked 34% of the time. Following the training, those questions which preservice teachers asked at the highest rate were at the level of "understand" (47.46%). In addition, it is recognised that the preservice teachers used "remember" level questions at a rate of 42.39%. Finally, the observations also determined that the number of "apply" level questions had increased following the training. Within the scope of the first sub-goal of the study, the distributions of questions asked by preservice teachers as being open/closed-ended are provided in Table 3.

Table 3
Distributions of Questions Asked by Preservice Teachers As Being Open/Closed-Ended

		Open-ended	Closed-ended	Total
Before training	Frequency	518	85	603
	Percentages	86	14	100
After training	Frequency	681	107	788
	Percentages	86	14	100

As seen in Table 3, the questions asked by preservice teachers both before and after the training consisted of "open-ended" questions at a very high rate (86%). The increase in the number of questions asked by preservice teachers following the training was the same for both question types. Within the scope of the second sub-goal of the study, averages were calculated for the differences in terms of preservice teachers' wait time following the asking of a question which occurred between pre/ post-training. The descriptive statistics for the preservice teachers' wait time are provided in Table 4.

Table 4
Descriptive Statistics for Preservice Teachers' Wait Time

Wait time	Mean	Median	Mode	SD
Before training	3.25	1	1	18.01
After training	2.26	1	1	10.90

As seen in Table 4, the average wait time of preservice teachers before training was 3 minutes and 25 seconds. Surprisingly, the duration of wait time decreased following the training to 2 minutes and 26 seconds. The decrease in average wait time observed among the preservice teachers following the question strategy training is thought to have resulted from the course content being focused on grammatical issues. In addition, the second sub-goal of the study examined whether differences occurred in preservice teachers' questions before and after the training in terms of the length of wait time and the cognitive levels of the questions asked. The results revealed a significant relationship between the length of wait time and the cognitive levels of questions asked prior to the training (X^2=9.28, df=6, p=0.159; p>0.05). Similarly, there was not a significant relationship found between

the length of wait time and cognitive levels of questions asked following the training (X^2=7.44, df=6, p=0.282; p>0.05).

Lastly, the relationship between preservice teachers' wait time and the types of questions; for example, open/closed-ended both before and after the training were analysed. Importantly, the data revealed no significant relationship between the length of wait time and open/close-ended questions prior to training (X^2=1.71, df=3, p=0.635; p>0.05). Also, no significant relationship was determined between length of wait time and open/closed-ended questions following the training (X^2=1.36, df=3, p=0.714; p>0.05). For the third sub-goal of the study, the distribution of the frequency and kinds of feedback provided prior or following the training are presented in Table 5.

Table 5
Distribution of Preservice Teachers' Feedback Before and After Training

		General feedback	Task specific feedback	Positive feedback	Negative feedback	Sum
Before training	*f*	72	50	95	28	245
	%	30	20	39	11	100
After training	*f*	76	60	101	34	271
	%	28	22	37	13	100

When the feedback provided by the preservice teachers according to the students' responses were examined, it was recognized that there was an increase in the amount of feedback which followed the training, yet it should also be highlighted that the amount of feedback provided was insufficient when considering the total number of questions asked before and after the training. In addition, it is important to point out that following the training there were increases in all types of feedback. The increase in all types of feedback may be related to high number of questions following the training, but the feedback increase may also be a result of the training itself. In this study, the amount of negative feedback also increased following the training; nevertheless, it is believed by the researchers that the negative feedback acted as a form of corrective feedback.

For the third sub-goal of the study, chi-square analysis was conducted to determine possible relationships between the cognitive level of the questions asked and the type of the feedback provided. The chi-square analysis for the third sub-goal showed that there was no significant relationship between the provided feedback and the cognitive levels of questions asked prior before the training (X^2=3.47, df=4, p=0.482; p>0.05). In addition, there was also no significant relationship found between the feedback provided and the cognitive levels of questions asked following the training (X^2=3.23, df=4, p=0.520; p>0.05). The distribution of feedback according to the type of question asked within the third sub-goal of the study, are provided in Table 6.

The feedback provided by pre-service teachers' according to their students' responses were analysed under the categories of general, specific, positive and negative feedback. The study data showed that none of the preservice teachers' did not provide any negative general feedback. As a result, the types of feedback examined were presented under three categories: positive-general, positive-task specific, and negative-task specific. The results provided in Table 6 show that following the training there was an observable increase in the number of closed-ended questions as well as positive-general feedback.

Table 6
Distributions, in Terms of Question Types, of Preservice Teachers' Feedback Before and After the Training

			Open-ended	Closed-ended	Total
Positive-general	Before training	F	65	1	66
		%	98	2	100
	After training	F	61	19	80
		%	76	24	100
Positive-task specific	Before training	F	18	0	18
		%	100	0	100
	After training	F	25	4	29
		%	86	14	100
Negative-task specific	Before training	F	25	4	29
		%	86	14	100
	After training	F	26	4	30
		%	87	13	100

Discussion, Conclusion and Recommendations

The study investigated the questioning styles according to the variables and types of questions asked and the types and frequency of feedback provided by the preservice teachers' to students' questions. For investigating the questioning ways of preservice teachers, their classroom instruction was video recorded following to receiving their permission. The study data revealed that both before and after the training the preservice teachers preferred using redirecting questions more often than creating novel questions. It appears these results may have occurred because the classes were overcrowded and/or that grammar was the primary topic taught. Although this was the case, because the preservice teachers' utilized the redirecting strategy for the same questions, they were able to question a variety of students and get more students actively involved in the instruction process, which ultimately encouraged the more introverted students to participate and provide responses (Moore, 2012).

It was promising to see that the participant preservice teachers asked open-ended questions both before and after the training. In both stages of observation, prior to and following training, the ratio of preservice teachers' closed-ended questions was less than 15% of the total number of questions. The preservice teachers tended to avoid using closed-ended questions because these questions check students' memorization and recalling of learned facts rather than analyse the experience and/or ability to formulate answers (Kim, 2015). Also, by using a high number of open-ended questions the participating preservice teachers were able to provide opportunities to expand their students' thinking (Massey et al., 2008). Past research studies have specified the positive influence teachers' open-ended questions can have on students' learning, particularly in language success (Conezio & French 2002; Wasik et al., 2006). However, it was also seen in this study that even though preservice teachers asked primarily open-ended questions, their questions frequently measured at a low level of cognitive competency. This situation was similar to other studies from related research literature (Aslan, 2011; Nisa & Khan, 2012; Wilen, 1991). However, educators should acknowledge that asking higher-order level questions allows students to engage more fully in predicting, inferring, and analysing (Wasik, Bond & Hindman, 2006). The reason why there was an increase in "Remember" level questions as well as in closed-ended questions is thought to be related to the course content, which focused primarily on grammatical issues, especially after the training. Also, the finding that preservice teachers preferred open-ended questions both before and after training is consistent with past research. The observations revealed that these preservice teachers tried to involve their students in the instruction by asking open-ended questions, which is important because this type of question tends to

encourage learners to create a broader range of responses and become more involved in the learning process (Moore, 2012).

Another point from this study that is important to discuss is the undesirable situation that occurs when preservice teachers' wait time is only a few seconds long no matter if the questions asked were open/close-ended and/or whether the questions were from a high/low cognitive level. In past research, it was recommended for teachers to provide a reasonable amount of wait time when asking high-level questions and waiting for students to formulate their answers in order for appropriate time be allowed for high-level thinking to be carried out (Moore, 2012).

Increases in all types of feedback following the training were revealed in this study, and this finding is important because related research has highlighted the importance of continuously providing feedback to learners (Gibbs & Simpson, 2004; Nicol & Macfarlane-Dick, 2006). The increase in feedback which occurred following the preservice teachers' training may have been a result of an increase in the number of questions asked and/or from the recommendations received during the training. A previous study on students' preferences had shown that students want and need immediate feedback (Van der Kleij et al., 2012), so it was a promising finding that a large amount of immediate feedback had been provided by preservice teachers in this study. However, it is also critical to higlight that no relationship was found between the types of feedback and the cognitive levels of the questions asked.

It was also promising in this study to see that the participating preservice teachers had mainly provided feedback that was positive and task-specific. Providing this type of feedback is recommended (Brinko, 1993; Gibbs & Simpson, 2004; Shute, 2008; Straub, 2001) in order to better understand what needs improving. The second observation, which occurred following the training, revealed that the participating preservice teachers reduced the percentage of general feedback they provided while increasing the percentage of task-specific feedback. Even though general feedback or praise may interfere with learners' performance in some situations (Kluger & DeNisi, 1996) by providing a higher number of task-specific feedback, preservice teachers helped students to more clearly recognize their progress. As Hyland (2013) stated, through specific feedback students see their weaknesses and strengths and as a result can better develop their skills. Furthermore, providing positive feedback is related with increasing students' levels of self-efficacy, and according to Bandura's Social Cognitive Theory (1977), people gain information about their capabilities from four sources: performance and achievements, vicarious experience, verbal convincing, and emotional arousal. The findings of the study yielded that the number of negative feedback provided was also higher after the training; however, as stated earlier this feedback were given to students to correct their responses. The preservice teachers were reminded to not provide criticism in a harsh manner so that students would not see them as a threat (Brinko, 1993; Straub, 2001) as well as students would be better motivated to take risks through positive forms of feedback (Zacharias, 2007).

Study results yielded that the participating preservice teachers primarily asked lower-level questions both before and after the training. Preservice teachers should be reminded that asking higher-order questions rises the quality of instruction (Küçük, 2006), and additionally, high quality questions increase the thinking process and creative thinking skills of students (Lee & Kinzie, 2012). Also, students can imitate their teachers' behaviour and eventually they can also produce higher-order thinking questions. However, for students to gain this experience, teachers should (1) know the importance of asking qualified questions, (2) know the characteristics of qualified questions, (3) ask quality questions (i.e., pose effective questions), (4) allow students to pose questions, and (5) provide feedback and corrections regarding the quality of students' performances (Yeşil, 2010). However, simply asking effective questions is not enough to create a successful learning experience. As Aydın (2017) stated, if students' correct answers are not reinforced and teaching is not supported through other techniques, the use of effective questioning strategies alone might not reach the desired purpose and cannot fully bring forth the benefits of learning.

Based on this study's findings, it can be said that preservice teachers were not successful in integrating what they learned during the training into their teaching experiences. Thus, extending the duration of the training can be recommended. Furthermore, instructors can be a role model for

preservice teachers during their undergraduate education in terms of asking high-order thinking questions as well as providing task-specific feedback. Pre-service teachers can prepare assignments in which they examine and explain kinds of feedback and how to give effective feedback during their teaching practicum course. Pre-service teachers' questioning and giving feedback applications can be investigated while teaching diverse subjects and in other universities as well.

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Active Learning Methods and Techniques Preferred by Teacher Candidates

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Abstract

The aim of this study is to determine the active learning methods and techniques that teacher candidates prefer. The study was conducted in accordance with scanning method. The participants of the study were consisted of teacher candidates (n=266) who were received pedagogical formation education in Kastamonu University at 2017-2018 spring term. All of the participants had taken the lessons of "Teaching Principles and Methods" and "Special Teaching Methods". The survey form developed by the researchers was used as data collection tool in the study. The survey form was formed as ranking scale by consulting the field specialists' opinions. Accordingly, to state the active learning methods and techniques preferred by teacher candidates 5 Likert-type items, from always to never, were used in the scale. According to the pre-implementation results the Cronbach's alpha value of the form was calculated .86 and after the revision of the scale, final form was consisted of 25 items. Percentage, frequency and descriptive analysis were used for the analysis of the data obtained from teacher candidates' opinions. According to the findings of the study, it was concluded that question-answer, brainstorming and problem-solving were the most preferred active learning methods and techniques while gossip, court and buzz were the least preferred ones.

Keywords: Teacher candidates, active learning, teaching methods and techniques.

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Öğretmen Adaylarının Tercih Ettikleri Aktif Öğrenme Yöntem ve Teknikler

Makale Türü	Başvuru Tarihi	Kabul Tarihi
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Öz

Bu çalışmanın amacı, öğretmen adaylarının tercih ettiği aktif öğrenme yöntem/tekniklerini belirlemektir. Tarama modeline göre gerçekleştirilen çalışmanın katılımcılarını 2017-2018 akademik yılı bahar yarıyılında Kastamonu Üniversitesi'nde pedagojik formasyon eğitimi almış olan öğretmen adayları (n=266) oluşturmaktadır. Çalışmada veri toplama aracı olarak araştırmacılar tarafından geliştirilen anket formu kullanılmıştır. Anket formunda öğretmen adaylarının tercih ettikleri aktif öğrenme yöntem/tekniklerin belirlenebilmesi için 5'li likert tipi maddelere yer verilmiştir. Hazırlanan anketin ön uygulaması yapılmış, cronbach alpha değeri .86 olarak bulunmuştur. Anket üzerinde düzenlemeler yapılarak ölçeğin son hali 25 maddeden oluşacak şekilde hazırlanmıştır. Araştırma sonunda elde edilen verilerin analizinde yüzde, frekans ve betimsel analiz kullanılmıştır. Araştırmada elde edilen verilere göre öğretmen adayları tarafından en fazla tercih edilen aktif öğrenme yöntem ve tekniklerinin; soru-cevap, beyin fırtınası ve problem çözme olduğu belirlenirken dedikodu, mahkeme ve vızıltının en az tercih edilen yöntem ve teknikler olduğu tespit edilmiştir.

Anahtar Sözcükler: Öğretmen adayları, aktif öğrenme, öğretim yöntem ve teknikleri.

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Introduction

Today it has become more important for a knowing person to use what he knows and reach to new information instead of just knowing it. And the teacher has an important place in the gaining of these characteristics. Because teachership is an important job which raises qualified labor force which is required in public.

The teacher of the 21. century who is supposed to meet the requirements of today and tomorrow is not someone who just teaches students and assesses them. Today, it is expected from a teacher to organise teaching-learning processes, to be a good manager, a good observer and a qualified guide. In this context, today the teachership has become a profession which requires more qualification and proficiency.

Today, as technology progresses, the debates about the role of the teachers in education increased as well. In the past, when the teacher was the most important element of teaching, he was regarded as the distributor of knowledge and what he does and what he says were considered as teaching. If education is described only as the transfer of knowledge, it can be said that the role of teachers in education has lessened. But, today education has a meaning beyond the ordinary transfer of knowledge. (Ergun,1999, p.73). Today, although the task of the teacher has changed rapidly in the teaching activities which arise from the application of modern technology products in the field of education, the teacher keeps his place as an important element in education. In our age where the knowledge has increased incrementally and knowledge base has changed continuously, teachers shouldn't teach the transfer of knowledge, but the ways to reach the knowledge which the age requires and to use what is known. The raising of individuals according to the information society is only possible with teachers who give up from just transferring the knowledge, memorising the knowledge and reclaiming this memorised knowledge in the exams (Halat et al. 2006).

Teaching is a complex process which is formed from the interactivity of teacher, objective, subject, method and environment elements and which student is in its axis (Büyükkaragöz & Çivi, 1999). A good education depends on the usage of these elements in harmony and in an effective way. The task of the teacher is to help students structure their knowledge in an active way by using various teaching methods and techniques, technology, equipment in the learning environment. The way which was followed in order to reach the goals defined in the teaching process indicates the selected method.

Method is stated as an ordered way which is selected and followed deliberately in order to reach a goal such as solving a problem, concluding an experiment, learning or teaching a subject (Oğuzkan, 1989) or the presentation of so many techniques in a way to form integrity in order to achieve the same target (Tan, 2007). Besides these definitions, method is defined as systemised, ordered approaches at the stages of preparation, support, application and assessment of teaching experiences (Aydın, 2003), and it is also described as a way of achieving the target which certain techniques and equipments are used in it (Snowman, 1986), and as a systematic plan which is used in the introduction of learning-teaching equipment as well (Demirel & Ün, 1987).

Methods and techniques have an important place in the usage of knowledge, skill, attitude and values which were learned by individuals in their lives. In the process of learning, the more the individual is ensured to become active by thinking, searching, asking, problem-solving and working in collaboration, the more qualified and permanent the learning becomes, and the individual can use what he learned in life. Thus, the methods and techniques preferred in the learning process have an important role in the transfer of knowledge to life along with providing the permanence of knowledge.

In the teaching-learning process at schools it is aimed for students to have the educational attainment which was determined in the curriculum. And in the curriculums of today constructivist approach has come into prominence. According to the constructivist approach, teachers are expected to use methods and techniques which ensure students to become more active in teaching- learning process instead of methods and techniques which are traditional. Students are ensured to be more active in the application process of the selected methods and techniques in order to facilitate students to have the determined educational attainment and to make the students learn in an effective way. Thus, we can speak of students to take on responsibility and effective learning.

For a good learning, it is not enough to be competent in the area of the subject which will be taught, but it is also required to know the methods and techniques which will be used in the teaching of the subject. And teachers selecting the correct methods and techniques depends on knowing methods-techniques and using them properly. Thus, teachers are required to have method richness (Demirel, 2006). There is no method which can be magic wand for any lesson. It can not be said that this method is used in this lesson and that method can be used in the other one. The teacher will choose the most appropriate methods for his classroom through his personal effort and sensitiveness and he will make changes according to the signals he will take from his classroom. The important point is that the teacher uses the method which provides the most effective teaching in accordance with the characteristics of the students and the subject (Küçükahmet, 2000). One of the easiest ways of reaching the goals determined in the curriculums is using the correct teaching methods and techniques which were selected at the appropriate time.

One of the critical qualifications that should be found in a teacher is the effective use of teaching methods and techniques. As Demirel (2003) emphasizes, it should be attached importance to the usage of more than one method instead of a single method or technique in order the teaching to be effective. In this context, teachers should use different methods and techniques in teaching-learning process. Teachers using instructional methods and techniques in accordance with the target, subject and situation in the period of one course enables students to learn better by keeping their attention alive (Demirel, 2006) and this also increases their interest in the lesson, their learning enthusiasm (Saracaloğlu, 2003), their attendance to lesson and their success in the classroom (Şahin, 2004).

The teacher's ability to use teaching methods and techniques is an important element in terms of the effectiveness of teaching. The teacher should also take the characteristics, pre-learning, expectations, interests, attitudes towards the lesson and learning speed of students into account while deciding on the method and technique to be used in the teaching-learning process, and should direct students to critical and creative thinking and research. Because selected methods and techniques are one of the most critical variables of teaching-learning process. In addition, the activities of the methods and techniques determined by the teacher should be implemented in a planned manner. If the teaching-learning process does not take place as planned, the methods and techniques used in this process should be revised and replaced with new ones if necessary (Aydede, et al. 2005).

Researches on the effectiveness of teaching methods and techniques show that there is no single teaching method required for all kinds of learning. The effect of the methods and techniques varies according to the teacher, student characteristics, field of the subject and the educational attainments which are requested to be given. Therefore, teacher candidates and teachers should know the teaching methods and techniques very well and select the most appropriate method to use (Erden, 1997, p.98).

In recent years, it has become more important to teach students how to how to reach the knowledge, which way to be followed in case of a problem and how to use their knowledge rather than storing knowledge. It can be said that the ability of an individual to use his knowledge in the situations he confronted depends on the application of methods and techniques that provide effective learning and transfer of what was learned to life. In this context; the nature of the teaching-learning process depends on the method-techniques which were selected and implemented by teachers in this process. The effective use of methods and techniques that have an important role in achieving the goals/educational attainments defined in education and in the organization of the teaching-learning process requires teachers to have knowledge about this subject. It can be said that an important process in which teachers increase their experience about the methods and techniques that are expected to be applied in the teaching-learning process is their years in the faculty where they are educated and practised in this field. The teacher candidates are expected to gain as much experience as possible about the active learning methods and techniques required by the age within the period they are educated. In this context, while determining the active teaching methods and techniques preferred by teacher candidates can help them gain experience on the one hand, it can be determined which active learning methods are more preferred on the other hand.

Objective of the Study

The general objective of this study is to determine the active learning methods and techniques preferred in the activities carried out by teacher candidates. It was also aimed in the study to determine whether the preference of the methods and techniques varied according to the departments or not. In this respect, the opinions of the teacher candidates in three different departments were asked. Therefore, the answers for the following questions were sought within the scope of this study:

1. What are the active learning methods/techniques preferred by the teacher candidates?
2. What are the active learning methods/techniques preferred by the teacher candidates according to the departments they grautuated from?

Method

Research Model

In this descriptive study which aimed to determine the active learning methods and techniques preferred by teacher candidates, survey model was used due to the aim of putting the present situation forth.

Participants

The participants of the study consisted of teacher candidates who had pedagogical formation education in Kastamonu University in the spring semester of the 2017-2018 academic year (n = 266). All of the teacher candidates took the lessons of teaching principles and methods and special teaching methods. As these lessons are carried out according to the micro teaching method, teacher candidates have sufficient knowledge about active learning methods/techniques. Distribution of teacher candidates by gender is given in Table 1:

Table 1

Distribution of Teacher Candidates by Gender

Gender	f	%
Female	156	59
Male	110	41
Total	266	100

As seen in Table 1, more than half of teacher candidates participating in the study are female teacher candidates. Distribution of teacher candidates who were participated in the study according to the departments they graduated from is given in Table 2:

Table 2

Distribution of Teacher Candidates according to the Departments They Graduated from

Departments which were graduated from	f	%
Literature	90	34
Theology	78	29
Mathematics	98	37
Total	266	100

As can be seen in Table 2, it can be said that all three groups of teacher candidates who have graduated from the departments of Literature, Theology and Mathematics have similar rates. However, it can be stated that teacher candidates who participated in the study mostly consisted of people graduated from the mathematics department and at least the ones who graduated from the theology department.

Data Collection Tool and Data Analysis

In the study, the questionnaire form developed by the researchers was used as data collection tool. The questionnaire form is prepared in the form of a ranking scale which is formed by applying to the opinion of the field experts. Accordingly, in order to determine the active learning methods/techniques preferred by teacher candidates, 5 point Likert type items in the form of always, frequently, occasionally, rarely, never were given place in the scale. The preliminary application of the prepared questionnaire was performed and the Cronbach alpha value was found as .86. The final version of the scale was prepared to be consisted of 25 items by making arrangements on the questionnaire. Within the scope of the research, percentage, frequency and descriptive analysis were used in the analysis of the data obtained by applying to the opinions of teacher candidates, the obtained data was examined and presented as tables.

Findings

The data gathered from teacher candidates within the scope of the research was grouped and presented in the form of tables. The distribution of the active learning methods/techniques preferred by all teacher candidates participated in the study is given in Table 3:

Table 3

Active Learning Methods/Techniques Preferred by Teacher Candidates

Method / Technique	Always		Frequently		Occasionally		Rarely		Never		*X*
	f	%	f	%	f	%	f	%	f	%	
Question Answer	64	48	46	35	18	14	3	2	2	1	4,25
Brainstorm	38	29	48	36	30	23	11	8	6	4	3,75
Problem-solving	39	29	33	25	34	25	22	17	5	4	3,59
Concept Map	29	22	34	25	30	23	29	22	11	8	3,32
Shared Teaching	23	17	36	27	32	24	35	27	7	5	3,25
Mind Map	29	21	30	23	30	23	33	25	11	8	3,24
Case Study	25	19	22	17	39	29	37	28	10	7	3,10
Debate	18	14	33	25	42	31	20	15	20	15	3,06
Fishbone	27	20	16	12	37	28	37	28	16	12	3,02
Educational Games	25	19	23	17	28	21	32	24	25	19	2,92
Station	15	11	31	23	30	23	41	31	16	12	2,90
Talking Circle	15	11	29	22	34	26	32	24	24	17	2,84
Bread and Butter	10	7	30	23	37	28	40	30	16	12	2,84
Quick Tour	10	7	28	21	42	32	29	22	24	18	2,79
Roleplay	21	16	21	16	26	20	38	28	27	20	2,76
Snowball	10	7	17	13	43	32	57	43	6	5	2,7
Hour glass	13	10	27	20	31	23	37	28	25	19	2,7
Aquarium	16	12	18	14	33	25	47	35	19	14	2,7
Six Hats	10	7	28	22	27	20	49	37	19	14	2,6
Card Display	13	10	22	17	27	20	50	37	21	16	2,6
Sandvich	5	4	26	20	35	26	48	36	19	14	2,6
Philips 66	6	4	18	14	28	21	53	40	28	21	2,4
Buzz	12	9	17	13	21	16	43	32	40	30	2,3
Court	8	6	13	10	22	17	48	36	42	31	2,2
Gossip	3	2	8	6	24	18	52	40	46	34	2,0

When Table 3 is examined, it is seen that the most preferred three methods/techniques by teacher candidates are question-answer (x=4,25), brainstorm (x=3,75) and problem-solving (x=3,59). After these ones, it is seen that the other preferred methods/techniques by teacher candidates are concept map (x=3,32), shared teaching (x=3,25) and mind map (x=3,24). Another significant finding is that the average of opinions belonging to teacher candidates related to these items is at the level of "frequently". And it is seen that the least preferred active learning methods/techniques preferred by teacher candidates are gossip (x=2,02), court(x=2,23) and buzz (x=2,39).

It was also required within the scope of the study to determine whether the active learning methods/techniques preferred by teacher candidates vary according to the departments they graduated from or not. For this purpose, the distribution of the average of opinions related to the methods/techniques preferred by teacher candidates according to the departments they graduated from is given in Table 4:

Table 4

Active Learning Methods/Techniques Preferred by Teacher Candidates according to the Departments they Graduated from

Method/Technique	**Averages Belonging to the Departments**			**GeneralAverage**
	Literature	**Theology**	**Mathematics**	
	X	***X***	***X***	***X***
Question Answer	4,54	4,17	4,06	4,25
Brainstorm	3,72	4,02	3,58	3,59
Problem-solving	3,40	3,12	4,12	3,59
Concept Map	3,34	3,43	3,18	3,32
Shared Teaching	3,50	3,17	3,08	3,25
Mind Map	3,13	3,53	3,12	3,24
Case Study	3,25	3,00	3,08	3,10
Debate	3,43	3,46	2,44	3,06
Fishbone	2,90	3,30	2,86	3,02
Educational Games	3,06	2,97	2,78	2,92
Station	2,88	3,25	2,66	2,90
Talking Circle	3,20	3,25	2,24	2,84
Bread and Butter	2,59	3,00	2,92	2,84
Quick Tour	2,65	2,76	2,90	2,79
Roleplay	2,97	2,94	2,48	2,76
Snowball	2,68	3,00	2,64	2,75
Hour glass	2,38	2,89	2,94	2,73
Aquarium	2,86	3,02	2,40	2,72
Six Hats	2,77	2,71	2,64	2,69
Card Display	2,97	2,56	2,48	2,65
Sandvich	2,77	2,41	2,66	2,62
Philips 66	2,38	2,58	2,28	2,40
Buzz	2,50	2,51	2,18	2,39
Court	2,11	2,76	1,86	2,23
Gossip	2,11	2,17	1,82	2,02

When Table 4 is examined, it is seen that the most preferred active learning methods/techniques preferred by teacher candidates are question-answer for both literature and theology departments, and

problem-solving for mathematics department. While the question-answer technique is the second most preferred method/technique for the mathematics department, it draws attention that the second most preferred method/technique for other two departments is brainstorm for both of them again. It is also seen that all three groups specified gossip technique in common as the least preferred method/technique by teacher candidates and in all groups, the average of teacher candidate's opinions is at the level of "rarely".

Whereas the methods/techniques preferred by teacher candidates according to departments resemble to a large extent, it can be said that the most difference of opinions between the groups are in the techniques of debate and talking circle. When the preferences of the candidates from literature and theology department related to these techniques are examined, it draws attention that whereas they have a close average such as 3,43 and 3,46 then 3,20 and 3,25 respectively, maths teacher candidates have comperatively less averages (x=2,44 and x=2,24)

Discussion, Conclusion and Recommendations

Active learning is the process which the learner bear the responsibility of the learning process, the learner is given the opportunity to take decisions about the different directions of the learning process and to make self-regulation, and the learner is forced to use his cognitive abilities during learning through complicated teaching procedures (Açıkgöz, 2005). By this research, it is aimed to determine the active learning methods/techniques which teacher candidates preferred in order to transform learning processes into active learning environments. According to the findings obtained from the research, whereas it is determined that the most preferred active learning methods/techniques preferred by teacher candidates are question-answer, brainstorm and problem-solving, the least preferred methods/techniques are defined as gossip, court and buzz.

When the opinions of teacher candidates are assessed with a holistic view, it can be said that the average of the opinions for any method/technique is never at the level of "never", there is no method/technique in the table which has an average at the level of "always" except question-answer and for most of the methods/techniques presented in the table (f=17), average of the opinions are at the level of "occasionally".

It can be said based on the preferences of the participants that they preferred primarily group teaching methods/techniques which they can use comfortably in different lessons and suitable for developing various skills of students such as critical thinking, questioning, problem-solving, creative thinking, self-expression etc. As another reason for the preference of these methods/techniques, it could be thought that the practice of these methods/techniques is easier and more practicable when compared to the other methods/techniques on the questionnaire and also these methods are widespread and common than the other ones. And when the least preferred active learning methods/techniques by teacher candidates are examined, it can be said that teacher candidates preferred these methods/techniques lesser than the others because of the effect of the consideration that when these are implemented noise may come out of it in the learning environment.

In the study conducted by Toptaş (2012), it was concluded that the methods most used by the class teachers in the mathematics lesson were question-answer, problem-solving and plain expression respectively, and the buzz technique was among the least-used methods/techniques. In the study carried out by Aykaç (2011) in order to determine the methods/techniques used by the class teachers in the life science lesson, it was determined that question-answer and problem-solving methods were used by the majority of teachers in the lessons. In the study done by Çelikkaya and Kuş (2009) with social studies; it is concluded that teachers use mostly question-answer, direct instruction, dictation and brainstorming methods in the classroom. And in the study performed by Saracaloğlu et al. (2008), brainstorming, question-answer, discussion, demonstration and role-playing have been expressed as the most commonly recommended methods techniques to be used by Turkish teachers. Accordingly, it can be said that the findings obtained in this study coincide with the results of the relevant researches.

Teachers play an important role in enabling the teaching processes to be delivered to a student-centered structure that will enable active learning. Along with teachers prepare proper learning experiences which will reach the students to educational attainments, it is quite important that these

experiences provide active participation of students in lessons both cognitively and physically. Therefore, taking advantage of proper active learning methods /techniques continuously and consistently is important in terms of enabling students to become active in the learning environment as well as in terms of bringing this learning approach into behavior. Thus when the preferences of participant teacher candidates are taken into consideration along with their opinion average related to these preferences, the averages belonging to most of the methods/techniques being at the level of "occasionally" makes us think that these methods/techniques will not be used by teacher candidates at the desired level.

When the active learning methods/techniques preferred by the participants are examined according to the departments which teacher candidates graduated, it is concluded that the preferences of the teacher candidates in three different sections are much similar but the debate and talking circle techniques are less preferred by mathematics teacher candidates. When the aforementioned techniques are examined, it can be said that obtaining the original thoughts of students and enabling to see the differences between their opinions are common features of these techniques. Therefore, it can be said that consideration of the use of these techniques in the subjects of verbal lessons being more appropriate is effective in this. In addition, the possibility that the time to be spent for these techniques may be extended may cause these techniques to be less preferred by mathematics teachers.

In the study conducted by Taşkaya and Kösece (2015), it was concluded that the debate technique was one of the least used methods/techniques used by mathematics teachers. When the results of the study conducted by Yulu (2014) with mathematics teachers, it is concluded that these teachers do not use teaching with games, project-based teaching and simulation techniques which will make mathematical teaching enjoyable because of the reasons such as these methods/techniques taking a lot of time, not establishing the classroom control due to being a loud activity, and teachers not knowing suitable games for teaching. Accordingly, it can be said that the results of the related studies are similar.

When the results of the research are evaluated with a holistic approach, it can be said that preference levels of teacher candidates for a vast majority of active learning methods/techniques in the questionnaire are under the expected and desired level despite their positive perceptions about teaching method/technique.

Since the teacher candidates recognize all the methods/techniques in the questionnaire form with their practices within the framework of the micro-training method in the relevant pedagogical formation courses, it is thought that although they are aware of the advantages that active learning processes will offer to them and the students in achieving the educational outcomes, they also envisage their disadvantages. In order to apply active learning methods/techniques effectively, teachers need to spend more labor and time both in planning, preparation and implementation compared to traditional methods/techniques. In addition, the fact that classes are not equipped for the implementation of these methods/techniques, the readiness levels of the students and the educational attainments in curriculums being determinative in the method/technique selection may be listed as the aforementioned disadvantages which lead to the declination of preference levels of teacher candidates.

Saracaloğlu and Karasakaoğlu (2011) stated in their study that Turkish teachers avoid using various methods and techniques due to various impossibilities and restrictions such as lack of time in their courses, lack of appropriate level of students and classrooms being overcrowded, although these are very necessary. In a study by Temizöz and Koca (2008), although mathematics teachers liked the lesson plan prepared according to the learning approach through discovery, more than half of the respondents stated that this plan was not applicable under the conditions of our country. The participants stated the reason for this as negativities such as the implementation of this approach taking more time, the curriculum being intense, the difficulty of using materials in the lessons due to economical situation of students and students behaving uninterested against the lesson. When the opinions of teachers in both studies are examined, it is thought that they determined their preferences through a similar system of thought.

According to the findings obtained in the research; the following suggestions can be offered:

1. Teacher candidates should be given the opportunity to make more practice in the pre-service training processes to feel more comfortable while using active learning methods/techniques.

2. It can be enabled for teacher candidates to see more implementation examples by using active learning methods/techniques also in the other lessons they take in the pre-service training processes.

3. The inefficacies which are regarded as obstacles in the implementation of active learning methods/techniques in the teaching processes could be eliminated and these processes can be made eligible for the implementation of these methods/techniques.

4. The sufficient number of lesson plan examples can be given place in curriculums in order to use active learning methods/techniques effectively in teaching processes.

5. New studies with teacher candidates and teachers from different branches could be conducted with regard to scrutinizing low preference levels of teacher candidates despite their positive perceptions and their results may be compared.

6. The opinions of the students with regard to the practice of active learning methods/techniques in teaching processes can be received.

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Perceptions of Teacher Candidates Regarding Democracy*

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Gönül Onur Sezer** **Pınar Bağçeli Kahraman*****

Abstract

In this study it is aimed to investigate the perceptions of the teacher candidates regarding democracy. Within this research phenomenology pattern, which is one of the qualitative research patterns, was used. The study group of the research consists of 222 teacher candidates who attend Elementary Education, Mathematics Education, Science Education, Social Studies Education and Preschool Education, determined with criterion sampling method among junior and senior teacher candidates. The quantitative data was analysed with content analysis method. The metaphors regarding democracy were categorized "democracy as vital needs", "democracy as material", "democracy as nutritional source", "democracy as the symbol of freedom", "democracy as abstract thinking", "democracy as balance", and "democracy as negativity" considering the connection that the teacher candidates related with democracy. Teacher candidates, who participated in the research, from different departments explained democracy with metaphors regarding equality, respect, life source and freedom concepts. It is seen that the teacher candidates did not focus on especially cooperation and responsibility concepts. Also as a result of the research it is determined that more than half of the teacher candidates did not participate in a democratic activity in lessons at school all of their student- life.

Keywords: Democracy, metaphor, democracy perceptions.

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Öğretmen Adaylarının Demokrasiye İlişkin Algıları*

Makale Türü	Başvuru Tarihi	Kabul Tarihi
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Gönül Onur Sezer** **Pınar Bağçeli Kahraman*****

Öz

Bu araştırmanın amacı, öğretmen adaylarının demokrasiye ilişkin algılarının incelenmesidir. Bu araştırmada, öğretmen adaylarının demokrasiye ilişkin algılarının metaforlar yoluyla incelenmesine yönelik olarak nitel araştırma desenlerinden biri olan olgu bilim deseni kullanılmıştır. Ölçüt örnekleme yöntemi ile belirlenen örneklemi üçüncü ve dördüncü sınıfta öğrenim gören Sınıf, Matematik, Fen ve Teknoloji, Sosyal Bilgiler ve Okul Öncesi Öğretmenliği, öğretmen adaylarından 222 öğretmen adayı oluşturmaktadır. Elde edilen veriler içerik analizi yöntemiyle çözümlenmiştir. Demokrasiye yönelik metaforlar, "yaşamsal ihtiyaçlar olarak demokrasi", "araç olarak demokrasi", "besin kaynağı olarak demokrasi", "özgürlük simgesi olarak demokrasi", soyut düşünme olarak demokrasi", "denge olarak demokrasi" ve "olumsuzluk olarak demokrasi" şeklinde öğretmen adaylarının demokrasi ile kurdukları bağlantı dikkate alınarak kategorilendirilmiştir. Araştırma sonucunda araştırma kapsamına alınan farklı bölümlerde öğrenim gören öğretmen adaylarının demokrasiye ilişkin metaforlarını eşitlik, güven, yaşam kaynağı ve özgürlük kavramlarıyla açıkladıkları belirlenmiştir. Öğretmen adaylarının özellikle işbirliği ve sorumluluk kavramlarına odaklanmadıkları belirlenmiştir. Ayrıca araştırma sonucunda öğretmen adaylarının yarısından fazlasının eğitimleri süresince demokratik bir etkinliğe katılmadıkları tespit edilmiştir.

Anahtar Sözcükler: Demokrasi, metafor, demokrasi algısı.

* Bu araştırma, 2-5 Mayıs 2018 tarihlerinde Antalya'da düzenlenen 5. Uluslararası Avrasya Eğitim Araştırmaları Kongresi'nde (EJER) sözlü bildiri olarak sunulmuştur.

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Introduction

Raising qualified individuals is the most important tasks and goals of the societies to benefit from the developing and changing world.Within these objectives, it is necessary to develop policies for reaching social, economic and technological goals. The quality of the education programs developed with these policies is the most important factor for raising qualified individuals.Within the process of raising qualified individuals the content of the education needs integration with a democratic education in which the individual can develop freely (Sağlam & Ural, 2011). The education, in which the principles and rules of democracy are converted into goals and acquired by the individuals through learning experiences, is defined as democratic education. Democratic education aims to raise interrogator, independent citizens who have analytical point of view and who developed the skills of stating their ideas freely and respecting others' views (Davis, 2003). Through teaching values, which increase the quality of life, such as teacher-student relations, appreciating personality, cooperation, tolerance and mutual respect, the most important institution that will strengthen the democracy in a society is school (Özdaş, Ekinci & Bindak, 2014; Print, Ornstrom & Nielsen, 2002). In order to apply democracy in school effectively firstly it is important for teachers to consider democracy as a lifestyle. Democracy can only be achievable with democratic education practices and democratic administration. So, the management style of administrators in schools plays a crucial role (Alshurman, 2015).

Therefore, in order to make democracy a lifestyle, it must be acquired to the individuals beginning from young ages and the democratic education must be given at schools. Preschool and primary school curriculums not only contribute to the preparation of the children being a member of the democratic society but also help individuals perform democracy. Thus the children as members of a democratic society realize that their own interests correspond to the others' interests and their peace is concentric with other people's peace (Boyle-Baise, 2003) so they learn to balance between common interests and their own individual needs (Seefeldt, Castle & Falconer, 2015). In this respect the democracy education must be given beginning from the preschool by the teachers who not only know the basic principles, value and thinking ways of democracy but internalized them as a lifestyle. When the education programs are examined, democracy education is included in the courses such as life science, social studies, human rights and citizenship education (Güven, Çam & Sever, 2013). In addition, it can be indicated that democracy education is the main gain of the hidden curriculum. Yüksel (2002) stated that hidden curriculum plays a role in ideas, learning the knowledge, practices and determining qualifications of the students. Indeed, the observed program can reveal different results from the education program. Because hidden curriculum has unplanned and hidden values, affect teachers and children and also continues in school culture (McKernan, 2008).

The teacher's taking control within the classroom, dealing with the students individually and with their interactions among the students and also being role model within this process gives the students a strong message concerning the values of democracy (Seefeldt, Castle & Falconer, 2015). In addition it is very important to give these values in a school environment which has democracy culture and in which the basic qualifications of democracy are absorbed through life oriented applications in terms of settling a democracy consciousness in children (Hotaman, 2009). For this reason, the way the teachers perceive democracy in their own lives affect their being role models significantly. It is thought that the way the teachers perceive democracy within the process of their teaching education does not change when they become teachers. Within this context, it is important to understand the meaning that the teacher candidates assign to democracy and how much they encounter democratic activities all their lives. When the literature is examined it is seen that there are many researches that investigate attitudes and values of the teacher candidates regarding democracy and citizenship (Kartal, Öksüz, Öztürk & Demir, 2018; Osler, 2011). Considering the former researches there are few researches carried out with teacher candidates from preschool (Güder & Yıldırım, 2014) and social studies departments (Gömleksiz, Kan & Öner, 2012) regarding the metaphors concerning democracy. In addition to these studies the views of the teachers and teacher candidates in various branches regarding democratic perceptions were investigated through metaphors (İbret, Recepoğlu, Karasu Avcı & Recepoğlu, 2018; Nasırcı & Sadık, 2018; Sarı & Sadık, 2011). Within this study it is aimed to investigate the perceptions of the teacher candidates from the departments of Elementary Education, Science, Mathematics and Social Studies Education departments regarding democracy because it is thought that from preschool to

secondary education these lessons take a more important part in students' lives and an interdisciplinary relation is observed intensely within these subjects. It is thought that this study will emphasize the importance of democracy education in teacher training programs and emphasize the issue of democracy education and democratic activities in the programs. Osler and Starkey (2006), state that training teachers has an important role in the development of democratic citizenship. No matter the branch is, the teacher candidates, who have not considered democracy as a life-style, are not expected to create a democratic environment in their classrooms after becoming a teacher. Therefore it is important to determine the perceptions of the teacher candidates regarding democracy in order to train their students as individuals who adopted democracy as a life-style and become a role model who considered democracy as a life-style. In addition it is thought that the determination of the democracy perceptions that the teacher candidates developed within the education steps depend on what kind of experiences, is important in terms of developing democracy education. Every research to be carried out regarding developing the democracy understanding of the teacher candidates and providing the teacher candidates adopt democracy as a life-style will contribute to the development and application of the teacher training programs.

Method

Research Design

This research was patterned with phenomenological approach, which is one of the qualitative research methods. Phenomenology is used for releasing the perceptions and tendencies that we are aware of but do not possess a deep and detailed understanding (Yıldırım and Şimşek, 2008). Accordingly, the phenomenon focused on within the process of the research was determined as how the teacher candidates, who attended Education Faculty, conceptualized their ideas regarding democracy with the help of the metaphors. Metaphors are the studies that explain the perceptions and the emotions of the people regarding their experiences that they recognize but cannot explain exactly (Miles & Huberman, 1994; Patton, 1990).

Research Sample

The study group of the research consists of 222 teacher candidates determined with criterion sampling method among third and fourth grade teacher candidates who attend Elementary Education (N=42), Mathematics Education (N=45), Science Education (N=43), Social Studies Education (N=49) and Preschool Education (N=43). Criterion sampling is used to study all cases of predetermined criterion (Patton, 1990). Criterion sampling includes studying the situations that correspond the criterion determined (Yıldırım & Şimşek, 2008). Within this research the fact that the teacher candidates' received the whole teaching education lessons will affect their views on the education of democracy was determined as a criterion.

Research Instruments and Procedures

Within the research in order to determine the views of teacher candidates regarding democracy phenomenon an interview form, which consisted of open ended questions, was prepared. Three experts were consulted whether the questions within the interview form were comprehensible or not and whether the open ended questions were appropriate for the purpose. After taking the views of the experts the questionnaire form was applied to two teacher candidates who were out of the sample. As a result of the application the answers given to the questionnaire were as expected.

Within the survey questions regarding the determination of the departments of the teacher candidates, the factors that affect their views regarding democracy, their state of whether they participated in a democratic activity and if they did at which stage of the education and what kind of activities they were in, were asked. Also the question "Democracy is like ....., because ....." is asked to teacher candidates.

Data Analysis

The quantitative data was analysed with content analysis method. Within the content analysis the main purpose is to reach the relations and concepts that can explain the data obtained. In addition, content analysis is used in order to determine the existence of the concepts, themes and words and it is

also used in order to turn them into numeric data (Seggie & Bayyurt, 2015). The analysis of the data was carried out in four steps.

Encoding data.

Within the first step the metaphors that the teacher candidates stated regarding democracy were determined. Each participant were coded as Elementary Education (ELE), Mathematics Education (MAT), Science Education (SCI), Social Studies Education (SOC) and Preschool Education (PRE) according to their department. The responds given to the question "Democracy is like ....., because ....." are presented with the explanations within the metaphor and the text. After that the meaningful parts among the data were coded by conceptualizing and the concept that could be stated best was determined in that part.

Creating the categories.

Within this step the concepts obtained within the content analysis were classified with each other under a certain category. The metaphor perceptions that the teacher candidates produced were investigated in terms of the common features they had regarding the democracy phenomenon.

The regulation of the data according to codes and categories.

Within this step the data obtained were regulated according to the codes and the categories. The researchers performed the data regulation process after the detailed encoding and categorising carried out subsequently. The metaphors the teacher candidates gave regarding democracy were given in themes assembling them after encoding separately by two researchers considering the content and the meaning of the responds given.

Validity and reliability.

Within this study the validity was determined based on the criterions determined by Miles and Huberman (1994). According to this, in order to provide internal validity the perceptions of the teacher candidates regarding democracy were firstly presented with direct quotations and interpreted after that. Within the scope of the reliability study the metaphor that teacher candidates stated was analysed two different researchers separately and it was evaluated with Miles and Huberman's (1994) Reliability=Consensus/Consensus + Dissensus Formula and it was determined as .90. As a result of the analysis carried out 222 teacher candidates' metaphors were accepted since 10 data among 232 did not write a related reason. Some of the metaphors determined were stated by one teacher candidate, some of them were stated by more than one teacher candidates and those that stated by more than one teacher candidates, took place in the same category. In this context a total of 87 metaphors were determined. The metaphors determined were given in a separate table through frequency method and considering the relation between subject and resource 7 categories were obtained. Giving codes to the teacher candidates, direct quotations were taken and they were commented.

Findings

Within this part according to the departments, regarding democracy, information is given about which education step the teacher candidates encountered democratic activities, what kind of activities they performed, from whom and from what they were affected by regarding democracy and the metaphors they produced regarding the democracy perception.

When Table 1 is examined, whereas 429% (f=93) of the teacher candidates stated that they never attended a democratic activity in all of their student life; 46 % (f=102) of them stated that they participated in democratic activities in every stage of their student life. It is seen that the ratio of teacher candidates who participate any activity towards democracy is high.

Table 1

The Frequency and Percentage Table Regarding the Teaching Levels Carried Out Regarding Democracy

Teaching Level	Elementary Education		Social Studies Education		Mathematics Education		Science Education		Preschool Education		Total	
	f	%	f	%	f	%	f	%	f	%	f	%
None	9	21	22	45	19	42	25	58	18	42	93	42
Primary School	1	2	1	2	1	2	1	2	2	5	6	3
Secondary School	0	0	3	6	1	2	1	2	2	5	7	3
High school	1	2	3	6	0	0	1	2	5	12	10	5
University	0	0	1	2	1	2	2	5	0	0	4	2
All	31	74	19	39	23	51	13	30	16	37	102	46
Total	42	19	49	22	45	20	43	19	43	19	222	100

The opinions of the teacher candidates who stated that they performed democratic activities at any time during their education are given in Table 2.

Table 2

The Activities Regarding Democracy

The Activities	Elementary Education		Social Studies Education		Mathematics Education		Science Education		Preschool Education	
	f	%	f	%	f	%	f	%	f	%
President and representative elections	34	79	13	62	40	83	33	89	25	74
Determining rules	5	12	1	5	4	8	2	5.4	1	3
Issues about the teaching of the lessons	1	2	2	10	3	6	-	-	4	12
Going to the blackboard to solve questions.	-	-	-	-	1	2	-	-	-	-
Telling opinion freely	1	2	1	5	-	-	1	3	2	6
Deciding who will sit in which desk	1	2	-	-	-	-	1	3	-	-
Going to the Theatre, show	1	2	3	14	-	-	-	-	1	4
School club studies	-	-	1	4.8	-	-	-	-	1	4
Total	43	100	21	100	48	100	37	100	34	100

When Table 2 is examined it is seen that when the teacher candidates, who stated that they performed democratic activities during the lessons at school, were asked the question what their activities were, teacher candidates from Elementary Education at the rate of 79%; the teacher candidates from Social Studies at the rate of 62%; the teacher candidates from Mathematics Education at the rate of 83.3%; the teacher candidates from Science Education at the rate of 89.2%; and the teacher candidates from Preschool Education at the rate of 74% stated that, class prefect and representative elections were performed.

Table 3

The Factors That Affect the Views Regarding Democracy

Factors	Elementary Education		Social Studies Education		Mathematics Education		Science Education		Preschool Education	
	f	%	f	%	f	%	f	%	f	%
Family	41	25	33	24	44	23	39	23	39	23
Teacher	32	20	33	24	39	21	30	18	38	22
Television news programs	23	14	16	12	23	12	23	14	19	11
Friends	23	14	20	15	19	10	21	13	21	12
Newspapers	16	10	9	7	11	6	11	7	9	5
Head of School	13	8	6	4	17	9	11	7	8	5
Activities out of class	7	4	8	6	9	5	7	4	10	6
In-class activities at school	6	3	8	6	16	8	11	7	16	9
Relatives	3	2	4	29	10	5	9	5	8	5
Television series	1	1	-	-	5	2	6	4	3	2
Books	-	-	1	1	-	-	-	-	-	-
Total	165	100	138	100	193	100	168	100	171	100

When the answers given by the teacher candidates to the question regarding the factors that affect the views about democracy is examined; it was determined that 25% (f=41) of the Elementary Education teacher candidates; 24% (f=33) of the Social Studies Education teacher candidates; 23% (f=44) of the Mathematics Education teacher candidates; 23% (f=39) of the Science Education teacher candidates; and 22% (f=39) of the Preschool Education teacher candidates stated that they affected from the family.

Table 4

The Metaphors the Teacher Candidates Developed Regarding the Concept of Democracy According to Their Departments

Departments	Metaphor	f	Metaphor Number
Elementary Education	Freedom (10), Life (6), Tree (4), Bird (4), Family (2), Equality (2), Bread (2), Breath (2), Scales (1), Child (1), Mother (1), My father (1), Flag (1), Flower (1), Sea (1), Sun (1), People' Court (1), Music (1), River bed (1), Election (1) Class (1), Turkey (1), Meal (1), Impossible (1)	48	24
Social Studies Education	Human (3), Respect (3), Freedom (2), Air (2), Life (2), Water (2), Selective course (2), Tree (2), Bird (2), Child (2), Justice (1), Scales (1), Fundamental Need (1), Equality (1), Bread (1), Pain Killer (1), Plant (1), Line (1), Lighthouse (1), Youth (1), Two halves of an apple (1), Rainbow (1), Trust (1), Dream (1), Heart (1), Capitalism (1), Cabbage (1), Lemon (1), Oxygen (1), Game (1), A strong mast (1), Flowerpot (1), Socialism (1), Poem (1), Pickle (1), Meal (1), Impossible (1)	49	37
Mathematics Education	Freedom (2), Tolerance (1), Justice (3), Water (6), Tree (4), Seed (3), Scales (2), Pencil (2), Equality (2), Bird (1), Forest (1), Bread (1), Domino stone (1), Dress (1), Eye glasses (1), Sun (1), Dough (1), Jenga (1), Ladder (1), Forest (1), Game (1), Trust (1), Cake (1), Love (1), Saw (1), Meal (1), Impossible (1)	43	27
Science Education	Life (5), Freedom (3), Justice (2), Water (2), Scales (2), Music (2), Equality (2), Bread (2), Respect (2), Tree (1), Bird (1), Child (1), Be hungry (1), Sea (1), Nature (1), A Book Worth Reading (1), Communication (1), A mixed cake (1) Locked Chain (1), Blue colour (1), Hair and nail (1), Health (1), Class (1), Turkish coffee (1), Rain (1), Impossible (1)	39	26
Preschool Education	Freedom (8), Fundamental need (4), Scales (4), Fundamental right (2), Equality (2), Life (2), Justice (1), Tolerance (1), Tree (1), Bird (1), Respect (1), Child (1), Fundamental law (1), Peace (1), Become one (1), Cam (1), Living (1), Flower (1), Chocolate (1), Heart (1), Breath (1), Oxygen (1), Dangerous (1)	39	23

When Table 4 is examined it is seen that Elementary Education teacher candidates created 24 (f=48), Social Studies Education teacher candidates created 37 (f=49), Mathematics Education teacher candidates created 27 (f=43), Science Education teacher candidates 26 (f=39), and Preschool Education teacher candidates created 23 (f=39) metaphors. It was determined that most of the metaphors were created by the Social Studies teacher candidates and the least of the metaphors were created by Preschool Education teacher candidates.

Table 5

The Categories Created by the Metaphors Developed by the Teacher Candidates Regarding Democracy Concept

Categories	Metaphor	f	Metaphor Number
Democracy as Vital Needs	Oxygen (2), Fundamental human need (5), Heart (1), Sun (1), Water (10), Meal (3), Communication (1), Life (15), Health (1), Family (2), Be hungry (1), Breath (3), Air (2), Heart (2)	49	14
Democracy as Material	Pencil (2), A Book Worth Reading (1), Glass (1), Jenga (1), Eyeglasses (1), Dress (1), Ladder (1), Saw (1), Strong mast (1), Locked chain (1), Flowerpot (1)	12	11
Democracy as Nutritional Source	Dough (1), Pickle (1), Chocolate (1), Bread (6), A mixed cake (1), Turkish coffee (1), Cake (1), Cabbage (1), Lemon (1), Seed (3),	17	10
Democracy as the Symbol of Freedom	Tree (12), Human Right (2), Forest (1), Bird (9), Freedom (25), Rainbow (1), Sea (2), Nature (1), Rain (1), Child (5), Blue colour (1), Sun (2), Flag (1), Peace (1), Turkey (1), Line (1), Lighthouse (1)	67	17
Democracy as Abstract Thinking	Dream (2), Game (2), Class (2), Hair and nail (1), Music (3), Living (1), River bed (1), Youth (1), Selective course? (2), Pain killer? (1), Human (3), Plant (1), Poem (1), Become one (1), Self-confidence (1), Respect (6), Love (1), Tolerance (2), Flower (2), My father (1), Trust (2), Happiness (1),	38	22
Democracy as Balance	Justice (7), Scales (10), Equality (9), Domino stone (1), Socialism (1), Capitalism (1), People's court (1), Fundamental law (1), Election (1), Two halves of an apple (1), Mother (1)	34	11
Democracy as Negativity	Dangerous (1), Impossible (4)	5	2

As it is seen in Table 5, the metaphors regarding democracy were categorized "democracy as vital needs", "democracy as material", "democracy as nutritional source", "democracy as the symbol of freedom", "democracy as abstract thinking", "democracy as balance", and "democracy as negativity" considering the connection that the teacher candidates related with democracy.

In the category of democracy as vital needs category teacher candidates defined democracy as a need in every period of life, when it is absent there will be problems or inadequacies, the life will be restraint and it is a source of happiness. The views of the teacher candidates are like;

> *Democracy is like breathing, because when we don't breathe, our life ends. In a place where there is not democracy, people lose their personality, they become slaves. There is no difference between a dead and a person who lost his or her personality (ELE 161).*

In the category of democracy as material teacher candidates defined democracy as it has a fragile structure, for it to keep standing association, moving together and developing are important. The views of the teacher candidates are like;

> *Democracy is like Jenga game. Because balance is very important and the stronger the base is the longer it stands (MAT 145).*

In the category of democracy as a nutritional source, democracy was defined as majority, equality, happiness, realizing its importance and taste in time. The views of the teacher candidates are like;

> *Democracy is like Turkish coffee. Because most people like it but it is difficult to do and everyone cannot make it (SCI 69).*

The category of democracy as the symbol of freedom, teacher candidates define and perceive democracy as respect, tolerance, a guide and eternity.

> *Democracy is like a lighthouse. Because no matter how guiding it is, most of the time you cannot get close to it (SOC 226).*

The category of democracy as abstract thinking teacher candidates defined democracy equality, respect, differences, as including rules and as being continuous. The views of the teacher candidates are like;

> *Democracy is like flower. Because every flower is special. Their needs, smells and types are different. However, when they all come together it becomes a visual feast (PRE 5).*

The category of democracy as balance democracy was defined as equality, being just, giving opportunity to everyone to express their views. The views of the teacher candidates are like;

> *Democracy is like a mother. Because she is always equal towards her children. She does not love one of them more or less than any other (ELE 204).*

The category of democracy as negativity teacher candidates explained democracy as a concept which is difficult to access. The views of the teacher candidates are like;

> *Democracy is like danger. Because in a country in which the people are ignorant, democracy is kingdom that comes with election (PRE 1).*

Discussion, Conclusion and Recommendations

Democracy is a management, at the same time as a way of life and it is occurred multidimensional in the state structure, social life and human relations. The fact that democracy is a way of life depends on individuals adopting the principles and values of democracy, knowing what it means to live in a democratic society, and understanding their responsibilities.In this research the perception of teacher candidates regarding democracy was investigated. It was attempted to determine the factors that affect the views of teacher candidates regarding democracy, their state of participating in a democratic activity and if they did at which stage of their training and what kind of democratic activity, they participated in. As a result of the research it is determined that more than half of the teacher candidates did not participate in a democratic activity in lessons at school all of their student- life, almost half of them participated in democratic activities in every stage of their student life. Teacher candidates stated that they participated in democratic activities mostly during their high school education and at least during their university education. Similarly, Sarı and Sadık (2011) determined that teacher candidates participate in democratic activities at university stage at least and these activities were generally information transfer regarding democracy. Based on these findings it can be said that at university stage there are not activities in which teacher candidates participate actively. In their study Demoulin and Kolstad (2000) determined that the teacher candidates' democratic attitude increase as long as their class grade increases. Whereas the fundamental condition of democracy to become a lifestyle in a society is the application of democracy at schools (Mathé, 2016; Print, Ornstrom & Nielsen, 2002). In the study of Fives and Buehl (2008), it is stated that especially the experiences that the teachers acquired are important considering their vocational development and applications. Therefore it is thought that experiencing the applications by the teacher candidates regarding democracy throughout their teacher training process will contribute to them performing these applications when they start their career.

To the question what the activities were, the teacher candidates, who state that they made activities regarding democracy in lessons at school, answered that they generally elect president and representative. In some researches, it was determined that teacher candidates were mostly affected by family environment, teachers and relationships, news on media organs and group of friends (Dadvand,

2015; Thornberg & Elvstrand, 2012). Based on this result it can be said that in the lessons the activities to acquire democratic information, skill and values are not planned.

In conclusion the teacher candidates, who participated in the research, from different departments explained democracy with metaphors regarding equality, respect, life source and freedom concepts. Accordingly the teacher candidates discussed democracy as a lifestyle that must be in the continuity of life and within the frame of human rights in which humane features are included such as respect, love and tolerance. Some researches carried out with teacher candidates from different branches determined that democracy was related to themes like equality and freedom (İbret et al. 2018; Sarı & Sadık, 2011). On the other hand Güder and Yıldırım (2014) concluded that the teacher candidates from preschool education department firstly perceived democracy as a regime. In this research it is seen that teacher candidates relate democracy to concepts such as freedom, equality, being just, trust, love, tolerance, election and differences. However it is seen that the teacher candidates did not focus on especially cooperation and responsibility concepts. It is known that these two concepts are inseparable pieces from the definition of democracy (Özdaş, Ekinci & Bindak, 2014). Considering the results of this research, it can be asserted that the teacher candidates would not include the responsibility and cooperation factors of democracy concept within their in class activities at the beginning of their career. Democracy can be internalised in democratic environments and through democracy education. Fischman and Haas (2012) state that for training the world citizen going beyond the traditional democratic education, the acquisition of the democratic livings in which experiences are prioritized is more important. It is also seen that the effect of the teachers is remarkable within the acquisition of democracy perception and the democratic experiences in every education step as an indispensible part of the life. The fact that the teacher candidates' did not encounter democratic activities adequately in all education steps indicate that this education was not given at the intended level. In a period that we have entered the twenty first century it is thought that democracy education must be given at schools in a qualified way in order to make the students individuals who can think analytically, feel empathy and discuss with due regard.

Teacher candidates reported that they did not have too much activities about democracy during their education. However, when the metaphors for democracy were examined; teacher candidates relate democracy to concepts such as freedom, equality, being just, trust, love, tolerance, tolerance and differences. This finding can be interpreted that even though the teacher candidates didn't take part the concept of democracy sufficiently in their lessons, they have knowledge about the concept of democracy in the hidden curriculum. The hidden curriculum is a program of real life experiences and certain social norms, unlike what is read in the textbook or discussed in class (Sarı & Sadık, 2011).In the light of all these results it can be said that in Education Faculties activities must be included in the programs regarding the development of information, skill and understanding of the teacher candidates regarding democracy. For this purpose, it can be advised that the activities that provide participation opportunities for the teacher candidates such as student councils, elections and clubs must be performed in a way that will support the information given. Also the activities regarding democracy can be evaluated in a longitudinal way in different teaching stages of the teacher candidates. Thus as long as the teaching stage proceeds the change in the information, skill and understanding of the teacher candidates regarding democracy can be determined. In order to develop teachers candidates' different perspectives on democracy, theoretical and applied democracy education courses can be given in teacher education programs. Studies can be done to determine teachers' perceptions about democracy. Also through in-service training, teachers can be encouraged to include democracy practices in their classrooms.

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A Study on Comparative Examination of the Theme "Power, Authority and Management" in the Social Studies Curriculums of Turkey, Canada (Alberta) and England

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Abstract

This study aims to examine and compare the curricula of Social Studies courses in Turkey, Canada (Alberta) and England in terms of the theme "Power, Authority and Management". It is aimed to determine the similarities and the differences. In the study, qualitative research method was adopted. The source of the data consisted of the social studies curricula applied in Turkey, Canada (Alberta) and England. In the study, the criterion sampling of non-probability sampling methods was used. The findings of the study were obtained using a document analysis. In the analysis of data, descriptive analysis method of qualitative research techniques was used. In the light of the findings obtained in the study, it was seen that right, responsibility, freedom, democracy and constitution were common and were included in the programs of all three countries. It was also determined that the three countries included higher-order thinking skills related to the theme. Based on the research findings, documents such as the Canadian Charter of Rights and Freedoms and the La Grande Paix De Montréal Treaty that are being implemented in other countries may be included in the program in order to give students a universal perspective on laws and rules.

Keywords: Curriculum, thematic standard, social studies.

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“Güç, Otorite ve Yönetim” Temasının Türkiye, Kanada (Alberta) ve İngiltere Sosyal Bilgiler Öğretim Programlarında Karşılaştırmalı Olarak İncelenmesi

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Öz

Bu çalışma; Türkiye, Kanada (Alberta) ve İngiltere Sosyal Bilgiler dersi öğretim programlarının “Güç, Otorite ve Yönetim” teması açısından incelenmesini ve bunların karşılaştırılmasını amaçlamaktadır. Benzerlik ve farklılıkların belirlenmesi hedeflenmektedir. Çalışmada nitel araştırma yöntemi benimsenmiştir. Verilerin kaynağını Türkiye, Kanada (Alberta) ve İngiltere’de uygulanmakta olan sosyal bilgiler kapsamındaki öğretim programları oluşturmaktadır. Araştırmada, olasılığa dayalı olmayan örnekleme yöntemlerinden ölçüt örnekleme kullanılmıştır. Araştırmanın bulguları doküman analizi kullanılarak elde edilmiştir. Verilerin analizinde, bir nitel araştırma tekniği olan betimsel analiz yöntemi kullanılmıştır. Araştırmada elde edilen bulguların ışığında; hak, sorumluluk, özgürlük, demokrasi ve anayasa konularının ortak olduğu ve üç ülkenin de programında yer aldığı görülmüştür. Aynı zamanda üç ülkenin de temaya ilişkin üst düzey düşünme becerilerine yer vermiş oldukları saptanmıştır. Araştırma bulgularından hareketle; öğrencilere kanun ve kurallar konusunda evrensel bir bakış açısı kazandırmak amacıyla başka ülkelerde uygulanmakta olan Kanada Hak ve Özgürlükler Sözleşmesi; La Grande Paix De Montréal Antlaşması gibi belgelere programda yer verilebilir.

Anahtar Sözcükler: Öğretim programı, tematik standart, sosyal bilgiler**.**

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Introduction

Differentiated from other subjects due to its interdisciplinary nature and with different definitions thanks to this nature, social studies discuss humans and issues concerning humans. Its aim is to educate individuals who are aware of their responsibilities and of social problems and have the qualities required by the globalizing world. The 50 states in the USA have the right to freely determine and implement their curricula, including social studies courses. In addition, it is seen that there is an organization for the purpose of determining national strategies, learning areas and standards related to social studies education. This organization is the National Council of Social Studies (NCSS) (Keskin & Coşkun Keskin, 2011). NCSS has set training program standards for social studies in 1994, and these standards have been revised in 2010 (NCSS, 2010). According to Doğanay (2008), these standards have been one of the sources that most affected social studies programs in the world. Both in the USA and in many other countries, social studies programs have been revised and developed within the framework of these standards. It is seen that social studies standards consist of three main chapters. These are 10 thematic standards, performance expectations for each standard and learning activities to fulfill them. While thematic standards constitute the scope of social studies, they also help in the determination of objectives and the selection and editing of content in the program. The 10 thematic standards are: Culture; Time, Continuity and Change; People, Places and Environment; Individual Development and Identity; Individuals, Groups and Institutions; Power, Authority and Management; Production, Consumption and Distribution; Science, Technology and Society; Global Bonds; Citizenship Ideals and Practices.

The basis of social studies consists of social sciences. Social sciences are the collection of disciplines that produces knowledge related to humans and for the benefit of humans. Each discipline of social science produces scientific knowledge about a field by examining a dimension of humans. This produced knowledge needs to be brought to the people in various ways, and education constitutes the most important of these ways. Social studies use the scientific knowledge produced in the field of social sciences. In addition, the social studies course enables a holistic approach of students towards social events by combining disciplines related to social sciences. Some of the disciplines that could be considered in social sciences are: anthropology, economics, history, sociology, political science and geography. Political science deals with humans and the subject of management (Stanley, 2001; Doğanay, 2003; Safran, 2008; Kabapınar, 2012; Tay, 2010; Erden, N.d; Sönmez, 2010; Koçoğlu, 2015). One of the ten thematic standards determined by the NCSS, the theme of "Power, Authority and Management" is also closely related to political science.

For the development of the citizenship competencies of our students, they need to understand and comprehend different power, authority and management structures and their development processes. In addition, they need to have sufficient information and be knowledgeable about the evolving functions of these structures both in our country and in other parts of the world. It is considered important to develop the competencies of students on the theme of power, authority and management so that they can become conscious and active citizens regarding subjects such as the functions of management, the scope and limits of authority and how order is ensured in a society. Although different meanings have been imposed on power, which has had an important place in all societies from past to present, it is possible to say that it has meanings such as influencing others or guiding them. In addition, it is a fact that the concept of power is close to and intertwined with the concept of authority.

The Situation in Turkey

In Turkey, these themes are included under the name of learning areas in the "social studies" programs prepared by the Council of Education of the Ministry of National Education and put in practice in 2005. The theme of "Power, Authority and Management" has been included under the learning area title of "Power, Management and Society". According to the primary school social studies 4-5th grade curriculum, students at 4-5th grades will be able to explore the ways of full participation in society as a conscious citizen, one of the main aims of social studies course, and be aware of their duties and responsibilities with the "Power, Authority and Management" learning area (MEB, 2005a). According to the social studies 6-7th grade curriculum in primary education, this

learning area helps 6th and 7th grade students explore the ways of full participation in society, be aware of their duties and responsibilities, recognize the concept and process of participation and defend the importance of participation for a democratic life (MEB, 2005b).

A new program was published under the name of "Social Studies Course Curriculum Primary School and Middle School 4th, 5th, 6th and 7th Grades". It is seen that some changes were made in the learning areas. It is seen that the 2018 Social Studies Course Curriculum has been structured within the framework of 7 learning areas and the learning area called "Power, Management and Society" has not been directly included (MEB, 2018b), the subjects of the theme of "Power, Management and Society" were partially included within the scope of the "Active Citizenship" learning area. It is seen that similar features of the 2005 curriculum on the theme of "Power, Management and Society" are prominent in the "Active Citizenship" learning area.

As a result of the literature review, it was determined that the curriculum standards determined by the National Council of Social Sciences (NCSS) of the USA were not adequately addressed in studies. It was found in particular that there was no study on the theme of power, authority and management. In this context, it is thought that this study will contribute to the literature. This study aims to examine and compare the curricula of Social Studies courses in Turkey, Canada (Alberta) and England in terms of the theme "Power, Authority and Management". It is aimed to determine the similarities and the differences. Based on this, it is also aimed to create certain new ideas regarding the Social Studies curriculum applied in our country. In line with the determined general goal, we sought answers to the following subgoals:

What elements does the social studies curriculum of Turkey include under the theme of power, authority and management?

What elements does the social studies curriculum of Canada (Alberta) include under the theme of power, authority and management?

What elements does the England citizenship curriculum include under the theme of power, authority and management?

What are the similarities between the curricula of social studies applied in Turkey, Canada (Alberta) and England in terms of the theme of power, authority and management?

What are the differences between the curricula of social studies applied in Turkey, Canada (Alberta) and England in terms of the theme of power, authority and management?

This study is limited to the curricula of social studies applied in the secondary schools in Turkey, Canada (Alberta) and England in the 2018/2019 academic year.

Method

Qualitative research method was used in the study. In recent years, the developments in qualitative research methods have contributed greatly to the interpretation of topics researched by qualitative research methods alone or in combination with quantitative research methods (Seggie and Bayyurt, 2017).

Research Sample / Study Group

In the study, criterion sampling of sampling methods, which are used in qualitative research and not based on probability, was used. In this sampling technique, the sample is determined according to predetermined criteria (Karagöz, 2017). In this context, the curricula in the scope of social studies including elements related to the theme of power, authority and management and that were published in English were identified. The data sources of the study are given in Table 1 below.

Table 1
Data Sources of the Study

Turkey	2018 Social Studies Course Curriculum Primary and Secondary School 4th, 5th, 6th and 7th Grades
Canada (Alberta)	2005 Social Studies Curriculum K Grade-12

England	National Program Citizenship Key Stage 2 (3rd-6th grades; 7-11 ages) / 2015 Key Stage 3 (7th-9th grades; 11-14 ages) /2013

Research Instruments and Procedures

In qualitative research, there are traditionally three basic forms of gathering information. These are the interviews, observations and examination of documents and works (Merriam, 2013). Document collection may include all kinds of recorded information, written or unwritten. Photographs, budget reports, meeting records, letters, diaries, newspapers, magazines, video and audio recordings, objects and works of art, in short, all types of recorded information, can be considered as a rich database in the research (Buran, 2017). In this research, the data were obtained by "document review". The stages of document review are access to documents, checking the originality (authenticity), understanding the documents, analyzing the data and using the data (Yıldırım & Şimşek, 2011). Documents can be obtained in an electronic format by using a computer or the internet (Baş & Akturan, 2013). There may be various problems in determining the authenticity of the document. In some cases, the document may be an imitation or may its source may be suspicious (Arthur, Waring, Coe and Hedges, 2017). In these contexts, the curricula that are the documents of this research were obtained in an electronic format by using a computer and the internet and from the official web sites of the ministries of education of the countries to ensure authenticity.

After the documents were obtained, next was the stage of understanding and analyzing them. The relevant parts of the Canada (Alberta) social studies and England citizenship curricula were translated from English to Turkish by the researchers. These translations and original documents were compared and checked by the researchers and a translator. These documents were analyzed within a certain system and in comparison to each other.

Data Analysis

In the data analysis, the descriptive analysis method, which is a qualitative research technique, was used. According to Yıldırım and Şimşek (2011), the data obtained in descriptive analysis are summarized and interpreted according to predetermined themes. The data may be edited according to the themes presented by the research questions. The aim is to present the findings to the reader in an edited and interpreted manner. The data obtained for this purpose are first described systematically and in a clear manner. Then, these descriptions are explained and interpreted, the cause-effect relationships are examined, and certain conclusions are reached. In this research, the documents, meaning the data obtained through the curricula, were edited according to the themes presented by the research questions and presented to the reader in tables.

Results

This section includes headings in line with the subgoals of the research. After these headings, the obtained findings are presented in tables.

The Elements Related to the Theme Power, Authority and Management in Turkey Social Studies Curriculum: Rights and Responsibilities, Democracy, Different Regimes, Decision-Making Process in Management, the Value Given to Women

It is seen that Turkey 2018 Social Studies Course Curriculum is structured around the framework of 7 learning areas and that subjects of the theme "Power, Authority and Management" are included within the "Active Citizenship" learning area. The following tables include the elements of the theme power, authority and management in the Turkey 2018 social studies curriculum.

Table 2

The Elements Related to the Theme Power, Authority and Management in Turkey 2018 Social Studies Curriculum

General Descriptions of the Theme Power, Authority and Management in Active Citizenship Learning Area
They understand the existence of an organized state power as the most important assurance of the problems that will arise in community life. They become aware of how the rights of individuals and the social order are protected in administrations where sovereignty is based on the nation by realizing how social problems are solved and how order is ensured. They understand which democratic ways there are to influence the management by learning the ways to participate in social services and various official activities.
Skills, Gains and Descriptions to be Obtained in Different Class Levels Related to the Theme Power, Authority and Management in Active Citizenship Learning Area
5.Class
The skills to be obtained: Research and social participation **Gains and Descriptions:** Explains the basic duties of the administrative units of the place they live in. States that the individuals and organizations working in the administrative units take various decisions while performing their duties and that they use decision-making skills in this context. Explains the fundamental rights and the importance of using these rights. The right to participate and the right to freedom of opinion of the fundamental rights are emphasized. Our national flag and the National Anthem of our symbols of national sovereignty and independence are valued.
6.Class
The skills to be obtained: Critical thinking, political literacy **Gains and Descriptions:** Compares different forms of regimes in terms of the basic principles of democracy. Explains the relationship between legislative, executive and judicial powers in the Republic of Turkey. Emphasizes that each of the principle of separation of powers and the legislative, executive and judicial powers have powers and responsibilities unique to them. Analyzes the factors affecting the decision-making process of management. Addresses the topic within the context of political parties, non-governmental organizations, media and individuals (public opinion). Explain the importance of democracy in our social life. Addresses the 15th July Democracy and National Unity Day during the process of gains. Explains that their rights and responsibilities as an active citizen of the Republic of Turkey are under constitutional guarantee. Becomes aware of the value given to women in social life based on the Turkish history and up-to-date examples. Focuses on positive issues such as positive discrimination and economic, political and social representation and negative issues such as violence against women and gender discrimination.
7.Class
The skills to be obtained: Problem-solving **Gains and Descriptions:** Explains the emergence of democracy, its stages of development and the meanings it carries today. Examples of democratic values and democratic practices from our history are given. Explains the contributions of Atatürk to the development of Turkish democracy. Briefly addresses the opening of the Turkish Grand National Assembly, the proclamation of the Republic and the trials of transition to multi-party system. Associates the fundamental characteristics of the Republic of Turkey with the practices in social life. Analyzes the problems encountered in the implementation of democracy. Emphasizes the current problems related to antidemocratic practices in democratic societies. Focuses on the democratic practices in family, school and society.

When Table 2 is examined, the elements related to the theme power, authority and management in Turkey 2018 social studies curriculum are seen. Fundamental rights; development of democracy, its principles, importance, contributions of Atatürk to its development, problems in its implementation; comparison of different regimes; separation of powers; the decision-making process of management

are some of the prominent topics. It is seen that higher-order thinking processes such as problem-solving and critical thinking are given importance. However, it is seen that elements in the dimensions of analysis, synthesis and evaluation are not sufficiently included in the program, based on the gains and descriptions that rather start with the expressions explains and comprehends.

The Elements Related to the Theme Power, Authority and Management in Canada (Alberta) 2005 Social Studies Curriculum: Canadian Charter of Rights and Freedoms; Rights, Freedoms and Responsibilities; Historical Development and Types of Democracy; Constitution; La Grande Paix De Montréal Treaty; Local Governments; State Government Structure and Functions

Canada (Alberta) 2005 social studies curriculum includes six chapters that reflect the interdisciplinary structure of social studies. One of these chapters is "Power, Authority and Decision-Making". The table below includes the elements related to the theme power, authority and management in Canada (Alberta) 2005 social studies curriculum.

Table 3

The Elements Related to the Theme Power, Authority and Management in Canada (Alberta) 2005 Social Studies Curriculum

6th Grade **Democracy: Action & Participation**
The Focal Point is to enable students to make a critical review of the distribution, use and effects of power and authority. **Prominent Topics:** Governments and political structures, judiciary and laws, justice and equality, conflict and cooperation, decision-making processes, leadership and management
Students discover how democratic principles and ideals are reflected in the structures and functions of local and provincial governments. Students examine the influence of the ancient Athens and Iroquois Confederacy on the democratic processes of Canada. This topic will broaden the understanding of democracy of the students and enable them to become aware of the active role that citizens will be able to play in the democratic process.
Participation of Citizens in Decision-Making
Students will realize how individuals and governments interact and how they cause changes in local and national societies. ***Expectations from students:*** -To recognize and respect the democratic rights of all citizens in Canada -To evaluate the role of the Canadian Charter of Rights and Freedoms in the protection of individual and social rights and freedoms - To recognize the impact of historical events and laws on democratic decision-making in Canada - To value participation of citizens in a democratic society - To value the contributions of elected representatives in the democratic process ***Students are expected to investigate the following questions and problems and to understand the basic principles of democracy:*** -What is democracy (in other words, justice, equality, freedoms, and representation)? -What are the similarities and differences between direct and representative democracy? -What are the rights and responsibilities of citizens living in a representative democracy? -How does the justice system of Canada help you protect your democratic and constitutional rights? ***Students are expected to investigate the following questions and problems and to analyze how the ideals of democratic equality and justice in Canada affect legislation in time:*** -How does the Canadian Charter of Rights and Freedoms protect the individual rights and freedoms of all Canadians? -How does the Canadian Charter of Rights and Freedoms protect the common rights in Canada? (for example, Aboriginal rights, language rights of official-language minorities) - How has La Grande Paix de Montréal Treaty addressed common identity and rights? - How are La Grande Paix de Montréal Treaty and the Canadian Charter of Rights and Freedoms compared in terms of the ways they address individual and collective identity and common rights? -Why is the Canadian Charter of Rights and Freedoms fixed in the Canadian constitution? ***Students are expected to investigate the following questions and problems and to analyze the structures and functions of local governments in Alberta***:

-How are representatives elected to form a local government (for example, the electoral process)?
-What are the responsibilities of local governments (meaning statutes, taxes, services)?
-How are local governments structured differently in rural and urban settlements?
-What are the roles of school boards in local societies?
Students are expected to investigate the following questions and problems and to analyze the structures and functions of the state government of Alberta:
-How is the state government structured?
-What is the role and position of the state deputy within the state government?
-What are the responsibilities of the state government (laws, taxes, services)?
-How are government representatives selected at the state level (meaning the electoral process)?
-What are the differences between the responsibilities of a legislative assembly member and a cabinet minister?
Students are expected to investigate the following questions and problems and to analyze how individuals, groups and associations in the society are effective in the decision-making processes of local and state governments:
-How can individuals, groups and associations in a society participate in decision-making processes regarding current events or issues (meaning petitioning, attending local meetings, communicating with elected representatives)?
-In what ways do elected statesmen show their accountability to voters (for example, responding to voters, participating in local events, representing and expressing the concerns of voters in government meetings)?

Historical Models of Democracy: Ancient Athens and the Iroquois Confederacy

Students appreciate the relationship between the management model adopted in a society and the values. They evaluate the participation and roles of citizens in different democratic societies.
Students are expected to investigate the following questions and problems and to analyze the structures and functions of the democratic system in ancient Athens:
-How was the ancient Athens administration structured?
-How was the participation of citizens in the decision-making process ensured in ancient Athens?
-How did the social structure of ancient Athens affect its political structure?
Students are expected to investigate the following questions and problems and to analyze the structures and functions of the* Iroquois Confederacy*:
-How was the Iroquois Confederacy structured?
-What was the role and status of women in the Iroquois Confederacy?
-How did the 6 nations use the process of building a consensus?
-How did the Two Row Wampum Treaty focus on the topic of common identity?
-How did the social structure of the Iroquois Confederacy affect its political structure?

When Table 3 is examined, the elements related to the theme power, authority and management in Canada (Alberta) social studies curriculum are seen. It is worth noting that the country has included these topics under the heading of "power, authority and decision-making". Elements related to theme become concentrated at the 6th grade and under the chapter of democracy.

Students are expected to investigate and analyze some questions and problems. In addition, the focal point is to enable students to make a critical review on the distribution, use and effects of power and authority; therefore, it is thought that there is an effort to develop higher-order thinking skills in students. Government and political structures, judiciary and laws, justice and equality, conflict and cooperation, decision-making processes, and leadership and management are expressed as the prominent topics. Canadian Charter of Rights and Freedoms; rights, freedoms and responsibilities; democracy and its types; constitution; local governments; La Grande Paix de Montréal Treaty; structure and functions of state government; historical development of democracy and the examples of ancient Athens and the Iroquois Confederacy are among the other highlighted topics.

The Elements Related to the Theme Power, Authority and Management in the England Citizenship Curriculum: Laws and Rules; Rights, Responsibilities and Duties; Freedoms; Elections; Democracy; Parliament; Monarchy

It is seen that topics of the theme Power, Authority and Management are included in the National Curriculum of England at the levels of Key Stage 2 (3^{rd}-6^{th} grade, 7-11 ages) and Key Stage 3 (7^{th}-9^{th} grade; 11-14 ages) in the citizenship course. The following tables include the elements related to the

theme Power, Authority and Management at the levels of Key Stage 2 (3rd-6th grade, 7-11 ages) and Key Stage 3 (7th-9th grade; 11-14 ages) in the England citizenship curriculum.

Table 4

The Elements Related to the Theme Power, Authority and Management at the Levels of Key Stage 2 (3rd-6th grade, 7-11 ages) in the England Citizenship Curriculum

Knowledge, Skills and Comprehension
Preparation to Play an Active Role as a Citizen
Students are to be taught:
Why and how rules and laws are created, why different rules are needed in different situations and how they can play a role in creating and changing rules.
Understanding the consequences of anti-social and aggressive behavior on individuals and communities such as bullying and racism.
There are different responsibilities, rights and duties at home, at school and in society, and sometimes these can conflict with each other.
Solving differences by seeking alternatives, making decisions and explaining choices.
What is democracy, and what are the main institutions that support it locally and nationally?

Table 5

The Elements Related to the Theme Power, Authority and Management at the Level of Key Stage 3 (7th-9th grade; 11-14 ages) in the England Citizenship Curriculum

Content
Teaching should improve students' understanding of democracy, government and the rights and responsibilities of citizens. Students need to use and apply their knowledge and understanding while developing their skills to research and question the evidence, discuss and evaluate their point of view, present reasoned arguments and act consciously.
We need to teach students these:
The development of the political system of the democratic government in the United Kingdom, including the roles of citizens, the Parliament and the monarchy.
The functioning of the Parliament and the roles of political parties, including voting and elections
The valuable freedoms of the citizens of the United Kingdom
The justice system, including the nature of rules and laws, the role of the police and the functioning of courts

Table 4 and Table 5 include the elements related to the theme power, authority and management at the levels of key stage 2 (3rd-6th grade, 7-11 ages) and key stage 3 (7th-9th grade, 11-14 ages) in the England citizenship curriculum. While the topics of laws, rules, rights, responsibilities, duties, elections and democracy are prominent at the level of key stage 2 (3rd-6th grade, 7-11 ages), topics such as the roles of citizens, parliament, monarchy, elections, political parties, freedoms, rules, laws and the justice system are considered at the level of key stage 3 (7th-9th grade, 11-14 ages). It is also seen that the development of skills such as researching, questioning, discussing and evaluating points of view, presenting reasoned arguments and acting consciously is considered at the level of key stage 3 (7th-9th grade; 11-14 ages).

Similarities and Differences between the Social Studies Curricula Applied in Turkey, Canada (Alberta) and England In Terms of the Theme *Power, Authority and Management*

Table 6

Similarities and Differences between the Social Studies Curricula Applied in Turkey, Canada (Alberta) and England In Terms of the Theme Power, Authority and Management

	Turkey	**Canada (Alberta)**	**England**
ELEMENTS	Rights, Responsibility, Freedom	Rights, Responsibility, Freedom	Rights, Responsibility, Freedom
	Democracy	Democracy	Democracy
	Constitution	Constitution	Laws and Rules
	Including higher-order thinking skills related to the theme *(Problem-solving, critical thinking)*	Including higher-order thinking skills related to the theme *(Critical thinking)*	Including higher-order thinking skills related to the theme *(Researching, questioning, discussing and evaluating points of view, presenting reasoned arguments and acting consciously)*
	Different regimes	-	-
	The Value Given to Women	-	-
	-	Local Governments	-
	-	Canadian Charter of Rights and Freedoms	-
	-	La Grande Paix De Montréal Treaty	-
	-	-	Parliament
	-	-	Monarchy

Table 6 includes the similarities and differences between the social studies curricula applied in Turkey, Canada (Alberta) and England in terms of the theme power, authority and management. It is seen that the topics of rights, responsibilities, freedoms, democracy and constitution are common and included in the curricula of all three countries. It is also worth noting that all three countries include higher-order thinking skills related to the theme. It is also seen that different regimes and the value given to women appear as topics included in our country but are not included in the curricula of other countries. The topics of local governments, the Canadian Charter of Rights and Freedoms and La Grande Paix De Montréal Treaty appear as the different topics included in Canada (Alberta). In England, the topics of parliament and monarchy are included and constitute the difference.

Discussion, Conclusion and Recommendations

In this study, the social studies curricula of Turkey, Canada (Alberta) and England were examined and compared in terms of the theme of "Power, Authority and Management", one of the ten thematic standards set by NCSS. In the light of the findings obtained in the research; "rights and responsibilities, democracy, different regimes, decision-making process in management, value given to women" were determined as the elements related to the theme of power, authority and management in the social studies curriculum of Turkey. It is determined that higher-order thinking processes such as problem-solving and critical thinking are given importance. However, based on the gains and descriptions ending with expressions such as explains and understands, it is seen that there are expressions at the level of knowledge/remembering, comprehension/understanding in the curriculum and that elements in the dimensions of analysis, synthesis and evaluation are not sufficiently included.

This is also reflected to the education process. In the study by Yılmaz and Gazel (2017), it was observed that teachers first preferred the questions in the knowledge step of the cognitive domain of Bloom's Taxonomy. The questions in the comprehension step took the second place. In addition, it was determined that the number of questions asked in the dimensions of analysis, synthesis and evaluation were quite low. Whereas the education process also needs to develop thinking skills such as analysis, synthesis, evaluation and association.

In this study, elements related to the theme of power, authority and management in the social studies curriculum of Canada (Alberta) were determined as "The Canadian Charter of Rights and Freedoms; rights, freedoms and responsibilities; historical development and types of democracy; constitution; La Grande Paix De Montréal Treaty; local governments; structure and functions pf state government". It was seen that the elements related to this theme were concentrated at the 6th grade and under the title of democracy. Students are expected to investigate and analyze some questions and problems. In addition, efforts to develop skills such as critical thinking in students within the scope of this theme were observed. According to Özden (2014), critical thinking requires being active, and in this context, it enables us to actively use our intelligence and cognitive skills. From this point of view, students will gain their freedom of thought, feel that they are using their minds and gain the habit of looking at things from different angles.

As a result of the research, elements related to the theme of power, authority and management in the citizenship curriculum of England were determined as laws and rules; rights, responsibilities and duties; freedoms; elections; democracy; parliament; monarchy. It is seen that the development of skills such as researching, questioning, discussing and evaluating points of view, presenting reasoned arguments and acting consciously are also given importance in the curriculum. On the other hand, the topics of different regimes and the value given to women were determined as topics included in our country but not addressed in the curricula of other countries. It is seen that the rights granted to Turkish women during the Republican period have been broadened. Turkish women have gained various rights in the Republican period. For example, while girls and boys began to receive education with the Law on Unification of Education in 1924, men and women first had equal rights with the Civil Code. It happened gradually for women to gain political and social rights in the state. In addition, women were granted rights such as divorce and parental rights with the adoption of the Turkish Civil Code in 1926 (Aydın, 2015). In this context, it is thought that this topic is given a place and importance in the curriculum. In addition, the fact that different regimes are included is important for students to see similar and different aspects of these regimes and to make comparisons.

The topics of local governments, the Canadian Charter of Rights and Freedoms and La Grande Paix De Montréal Treaty were identified as the different topics included in Canada (Alberta). Canada has a federal government along with 10 states and 3 regional administrations (The World Factbook Canada, 2019). As there are states and regional administrations, in other words, due to the administrative structure of the country, local governments are considered to be given importance in the curriculum. The Canadian Charter of Rights and Freedoms includes fundamental rights for all who live in the country and is included in the constitution. Freedom of expression and freedom of religion, democratic rights, free movement and language rights are guaranteed in the charter. In addition, this charter provides protection of the public against discrimination based on gender, race, ethnic origin and physical or mental disability (Government of Canada, 2019). The addressing of the topics of parliament and monarchy in England was observed as a difference. We think that these topics are concentrated on because the United Kingdom, where Wales, Scotland and Northern Ireland and England are member countries, is a parliamentary monarchy.

Based on the findings of the study, some recommendations were made:

Suggestions towards curriculum developers:

In the 2018 social studies curriculum that is implemented in our country, the gains and descriptions in the content including the theme of power, authority and management are mostly at the level of knowledge/remembering and comprehension/understanding. It is thought that expressions at the level of analysis, synthesis and evaluation should be included.

In the social studies curriculum of Canada (Alberta), various questions and problems are included instead of gains and descriptions, and students are expected to research and analyze them. In our country, rather than the gains and descriptions, various questions and problems can be included for students to permanently learn the elements related to the theme of power, authority and management. It can be aimed that they make questioning, discussing, analyzes and evaluation on these.

Documents such as the Canadian Charter of Rights and Freedoms and La Grande Paix De Montréal Treaty that are applicable in other countries may be included to give students a universal perspective on laws and rules.

Suggestions towards researchers:

Studies on the other 9 thematic standards set by the NCSS other than the theme of power, authority and management can be carried out.

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Cognitive Structures and Misconceptions with Thematic Framework: The Case of Chemical Bonding

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Abstract

This study aims to investigate undergraduate students' cognitive structures and determinate misconceptions about chemical bonding phenomena. On the other hand, the study achieves to recommend an alternative technique for the evaluation of Word Associations Tests (WAT). The study was carried out with the participation of first year studens; 141 from engineering faculty and 73 from medical sciences faculty of a foundation university in the spring semester of 2017-2018 academic year. WAT about chemical bonds prepared by the researchers was used as a data collection tool. Content analysis were used to analyze the data. The students' responds to the key words given to them were divided into themes and cut-off technique was used according to the themes distinguished. In this context, students' cognitive structures related to chemical bonds were determined within the framework of themes. It has been determined that the students' WAT results regarding to chemical bonding, which supported with concept maps within the framework of the themes, provides convenience in determining the misconceptions because of reflects the concepts and the relationships between the concepts more clearly. In consequence, it is suggested that the new technique of evaluation recommended could be used in prospective studies.

Keywords: Chemical bonds, misconceptions, undergraduate students, word association test.

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Tematik Bir Çerçeveden Bilişsel Yapılar ve Kavram Yanılgıları: Kimyasal Bağlar Örneği

Makale Türü	Başvuru Tarihi	Kabul Tarihi
Araştırma	1.10.2018	12.07.2019

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Öz

Bu çalışmanın amacı, lisans öğrencilerinin kimyasal bağ fenomeni ile ilgili bilişsel yapılarının incelenmesi ve kavram yanılgılarının belirlenmesidir. Bunun yanında çalışma kelime ilişkilendirme testlerinin (KIT) değerlendirilmesi için alternatif bir teknik önermeyi de hedeflemektedir. Çalışma, 2017-2018 bahar döneminde bir vakıf üniversitesinin, 141 mühendislik fakültesi ve 73 sağlık bilimleri fakültesi öğrencisi ile yürütülmüştür. Veri toplama aracı olarak araştırmacılar tarafından hazırlanmış, kimyasal bağlar konusu ile ilgili kelime ilişkilendirme testi kullanılmıştır. Verilerin analizinde içerik analizi kullanılmıştır. Öğrencilerin bilişsel yapılarının ve kavram yanılgılarının ortaya çıkartılmasında, verilen anahtar kelimelere ilişkin öğrenciler tarafından verilen yanıtlar, temalar oluşturularak gruplandırılmış ve KIT değerlendirilmesi için bu tematik çerçeveye göre kesme yöntemi kullanılmıştır. Bu bağlamda öğrencilerin kimyasal bağlar konusu ile ilgili bilişsel yapıları temalar çerçevesinde belirlenmiştir. Öğrencilerin kimyasal bağlar konusu ile ilgili KIT sonuçlarının belirlenen temalar çerçevesinde kavram haritalarıyla desteklenmesi, kavramları ve kavramlar arası ilişkileri daha net bir şekilde yansıttığı için kavram yanılgılarının belirlenmesinde kolaylık sağladığı belirlenmiştir. Çalışma sonucunda, KIT için sunulan yeni değerlendirme tekniğinin diğer araştırmalarda da kullanılabileceği düşünülmektedir.

Anahtar Sözcükler: kavram yanılgısı, kelime ilişkilendirme testi, kimyasal bağlar, üniversite öğrencileri.

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Introduction

It is pointed out in studies concerning science education that students have various misconceptions due to the fact that some subjects and concepts of chemistry are abstract (Birk & Kurtz,1999; Ghalkhani & Mirzaei, 2018; Hackling & Garnett, 1985; Harrison & Treagust, 2000; Peterson & Treagust, 1989; Stavy, 1991b; Taber, 1994; 1997). Those concepts are resistant to being changed and developed in positive ways, since they have integrity in themselves and since they receive support from learners' daily life experience (Driver, 1989). As a result, if a student has misunderstanding about a concept, will also has problems in learning the concepts associated with it. Therefore, the structures in students' minds that different from the definitions made by scientists should firstly be revealed and levels of understanding should be determined to attain conceptual change. For this reason, researchers have developed various methods and instruments to uncover individuals' cognitive structures in the best way. Concept maps (Novak & Gowin, 1984), predict-observe-explain technique (POE) (White & Gunstone, 1992), interviews (Osborne & Cosgrove, 1983) and V diagrams (Novak & Gowin, 1984) may give as examples for such methods and instruments.

Several studies on misconceptions are available in the literature for science education (Thompson & Logue, 2006; Treagust, 1988). It was found that, those studies dealt with misconceptions about the matter and its' properties (Stavy, 1991a), atoms (Griffiths & Preston, 1992), the mole concept (Staver & Lumpe, 1995), chemical change (Geban & Bayır, 2000), chemical reactions (Chandrasegaran, Treagust, & Mocerino, 2007), chemical equilibrium and kinetics (Hackling & Garnett, 1985), gases (Lin, Cheng, & Lawrenz, 2000), solutions (Fensham, 1987) and, acids and bases (Hand, 1989). "Chemical Bonds" is a topic of chemistry that students have difficulty and have misconceptions (Tsaparlis, Pappa, & Byers, 2018). This is because, there are also many studies concerning the misconceptions about chemical bonds, which is the research object for the current study (Birk & Kurtz, 1999; Harrison & Treagust, 2000; Perez et al., 2017; Şen & Yılmaz; 2017; Taber, 1994; 1997; Tsaparlis, Pappa, & Byers, 2018). Besides, many studies with differing samples, data collection tools and purposes were conducted. Perez et al. (2017), for instance, analyzed high school and university students' misconceptions about chemical bonding comparatively. Taber, Tsaparlis and Nakipoğlu (2012) investigated the concepts of students have about chemical bonding in NaCl through a diagnostic test. Luxford and Bretz (2014) interviewed high school and undergraduate students attending general chemistry classes to investigate their misconceptions about covalent and ionic bonding. Şen and Yılmaz (2013) researched prospective chemistry teachers' misconceptions through concept maps and lotus flower technique. Atabek Yigit (2016) analyzed undergraduate students' cognitive structures about the topics of basic chemistry, including the concepts of chemical bond, atom and compound through the word association test.

Word association tests (WAT) are a technique used to reveal students' cognitive structures (Shavelson, 1973; Johnstone & Moynihan, 1985; Cachapuz & Maskill, 1987; Bahar, Johnstone, & Sutcliffe, 1999). Bahar and Özatlı (2003) state that WATs are useful since they are easy to prepare and since they can be implemented in a short time. The researchers also say that they can be used both as a diagnosis and as a conceptual change strategy. WAT is a technique which is used to reveal the concepts and the associations between concepts in students' minds, also can be used at the beginning and/or end of the learning-teaching process for identification purposes in determining readiness and for diagnostic purposes in monitoring conceptual change and development (Hastürk, 2017). Studies in the literature also point out that WAT is a technique usable in determining prior knowledge and in evaluating teaching as a pre-test and post-test, or in determining misconceptions (Ercan, Taşdere, & Ercan, 2010; Demircioğlu, Vural, & Demircioğlu, 2012; Derman & Eilks, 2016; Nakiboglu, 2008).

WAT, an alternative technique for evaluation, is a widely used instrument since it is easy and practical to use. Various studies using different techniques in scoring WATs are available in the literature (Stewart, 1979; Johnstone & Moynihan, 1985; Bahar et al., 1999; Nakiboğlu, 2008). Bahar et al. (1999), proposed cut-off technique to form concept maps revealing students' cognitive structures by preparing of frequency tables indicating the number of repetitions of response words to key words in WAT analysis. Review of literature shows that studies concerning the evaluation of WATs by mapping in cut-off technique are available in differing fields (Bahar et al., 1999; Gok Colak & Tugluk, 2017; Preece, 1976; Önal, 2017; Shavelson, 1974; Tokcan, 2017; Yucel & Ozkan, 2015). Yet, there are also

studies doing different WAT analyses in the literature. For example, Garskoff and Houston (1963) derived relatedness coefficient to define the relationship between two words, the higher the level of relation approaches a value of 1 and approaches a value of 0 for lower relation. Bahar et al. (1999) used cut-off technique along with Garskoff and Houston's relatedness coefficients in the analysis of WATs. On the other hand, Bingol (2017) evaluated WAT used in relation to water pollution through content analysis, distinguished categories and thus revealed students' cognitive structures related to the subject. Nakiboğlu (2008) recommended a new technique of mapping claiming that mapping by using frequencies and related coefficients had restrictions in WAT analysis.

Based on the idea that WATs are an effective technique in determining cognitive structures, misconceptions and conceptual changes, this study aims to determine cognitive structures and misconceptions, and for this purpose, study recommend an alternative technique for WAT evaluation.. The objective is to determine students' cognitive structures more easily and to determine misconceptions through the new technique. The fact that preparing frequency tables is time consuming in WATs and that concept maps reflecting students' cognitive structures are complex restricts the implementation of those tests. This study is significant in that it contributes to assessing WATs more easily and to determining misconceptions. Primarily frequency table was prepared in relation to the key words in assessing WATs, and themes were distinguished with the given statements based on this. This study is important in that students' cognitive structures and misconceptions about chemical bonds are revealed with the help of cut-off point technique and in that the technique (cut-off) is employed according to categories. Setting out from this, the research problems for the study given below:

1) What is the frequency of undergraduate first year students' responses to WAT about chemical bonds according to the themes?

2) How is the distribution of the students according to the themes; bond, electron, property and example distinguished with WAT?

3) How are the cognitive structures and misconceptions of first year students about chemical bonds, according to the themes distinguished with WAT?

Method

Research Design

The case study was used as a research method. Case studies provide rich explanatory information about a case by facilitating the in-depth investigation of the subject of research (Patton, 1990; Yıldırım & Şimşek, 2011).

Study Group

The study was carried out through the General Chemistry I compulsory course in the spring semester of 2017-2018 academic year. The participants of the study were 214 first year undergraduate students; 73 of whom from medical sciences faculty and 141 of whom from engineering faculty in a foundation university. The duration of the study was 3 lecture hours in a week and, 3 weeks totally. The participants were briefed on tree weeks (tree hours in a week) matter and measurements, structure of atoms and the periodic table, and chemical bonding topics by the lecturer, and the data collected during the briefing on chemical bonding topic. All students that were taking the compulsory course participitaded voluntary to the study, yet the students that all attend the course evaluated.

Research Instruments and Procedures

Word Association Test

The subject of the study is about "Chemical Bonding". A WAT involving the key words "ionic bond", "covalent bond", "metallic bond" and "coordinate covalent bond" was used so as to reveal students' cognitive structures and misconceptions. Considering the fact that the students had not been informed of WAT, explanations were made about the WAT, and during the application the students were asked to write down the concepts coming into their mind in relation to the key concept within 30 seconds. The WATs about different subjects were conducted before the application.

Data Analysis

Students' responses to the key concepts in the WAT analyzed through the content analysis. Content analysis is a method which is based on the logical arrangement of the collected data according to the concepts emerging from the conceptualization of the data and which aims to reach the concepts and associations capable of explaining the collected data by distinguishing themes (Yıldırım & Şimşek, 2011). The data were analyzed at two stages in this study. At first stage, the frequency was prepared from the students' responses to the key words. At second stage, the responses were divided into themes related to the subject according to the frequency table. A graphic designer draw the cognitive structures.

In accordance with the first research question, students' responses to the key words through the themes distinguished with the WAT and the frequencies were determined. In addition to that, medical sciences faculty and engineering faculty students' cognitive structures about chemical bonds were also shown in Figure 1. The participants' responses to the key words were divided into the themes of 1) bond, 2) electron, 3) property and 4) example. Thus, the participants' cognitive structures were analyzed belong to four themes.

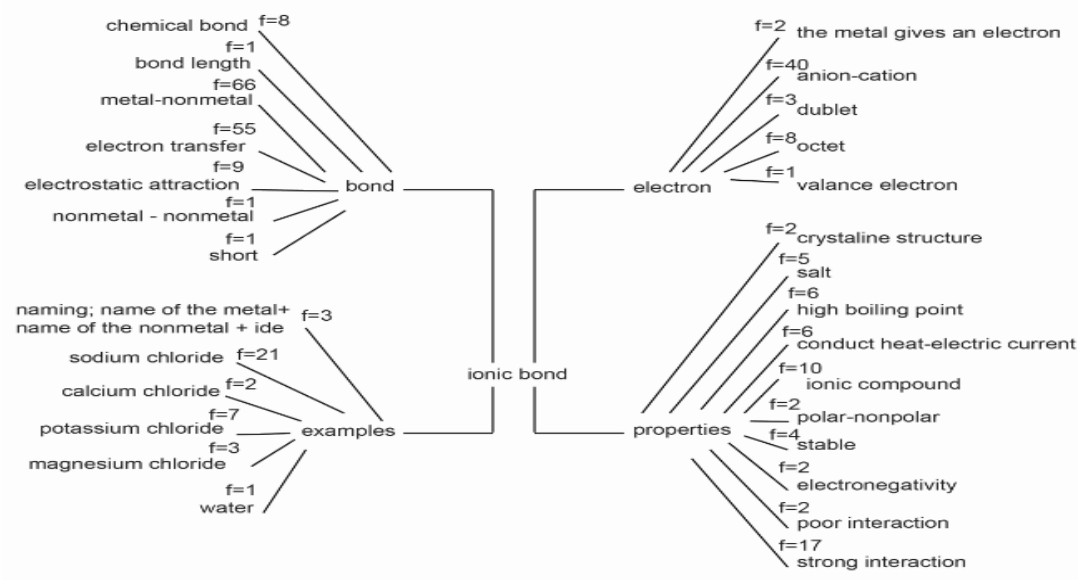
In terms of bond theme, Figure 1 shows that the majority of the students' state that ionic bonds, covalent bonds metallic bonds and coordinate covalent bonds represent the types of chemical bonding. Although most of the students said that ionic bonds were formed through electron transfer (f=55) between metals and non-metals (f=66) that covalent bonds were formed between non-metals and non-metals (f=65) and that metallic bonds were formed between metals (f=79); two students thought that coordinate covalent bonds were a type of covalent bonding and ten students thought that it occurred between two non-metals. Besides, a student had the misconception that ionic bonds occurred between two non-metals (f=1) and two students had the misconception that covalent bonds occurred between nonmetal and metal (f=2).

In terms of electron theme, the majority of the students (Figure 1) say that only ionic bonds were formed between anions and cations (f=40). Accordingly, a minority of the students can associate ionic bond and valance orbital (f=1), doublet (f=3), octet (f=8), and such bonding the metal gives electron (f=2). In a similar way, only a few of the students can state the relations between covalent bond and ion pairs of electrons (f=9) and between octet (f=8) and doublet (f=3). On relating a student's statement of dipole (f=1) for covalent bonds to the theme of property, statement of polar-apolar relation just by six students is not surprising. In a similar way, setting out from the fact that only a few students made statements about metallic bonds and coordinate covalent bonds in relation to the theme of electron, it may be said that learning for the types of bonding and electrons is inadequate.

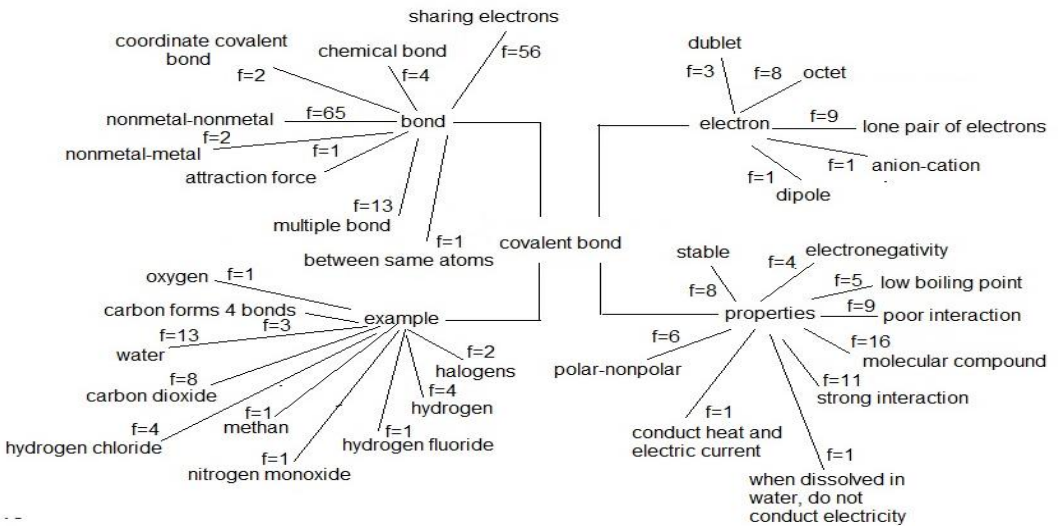
According to the students' responses to compounds forming with ionic bonds in terms of the theme of properties (see Figure 1), the fact that only few students set up associations such as salt (f=5), crystalline structure (f=2), high boiling point (f=6) and ionic compound (f=10) demonstrate that students are not at the desired level. Besides, the fact that 17 students described the interactions in this type of bond as strong (f=17) but two students described as weak (f=2) emerge as a misconception. It was found in the theme of properties for compounds formed by covalent bonds that only one student stated that it did not conduct electricity when dissolved in water (f=1) while one student stated that it conducted heat and electricity (f=1) and had a misconception. In a similar way, 11 students described the interaction as strong (f=11) whereas nine students described it as weak (f=9) - which indicated that the students had confusion in this respect. In addition to that, twenty students described the interaction in metallic bonds as strong (f=20) while one student described it as weak (f=1), and six students described the interaction in coordinate covalent bonds as weak (f=6) while seven students described it as strong (f=7). Besides, the fact that relations such as metallic bond and alloy (f=1), coordinate covalent bonds and low boiling point (f=1) and molecular compounds (f=4) were set up only by a few students indicated that students had misunderstanding in this respect.

Part of the Map

Ionic Bond



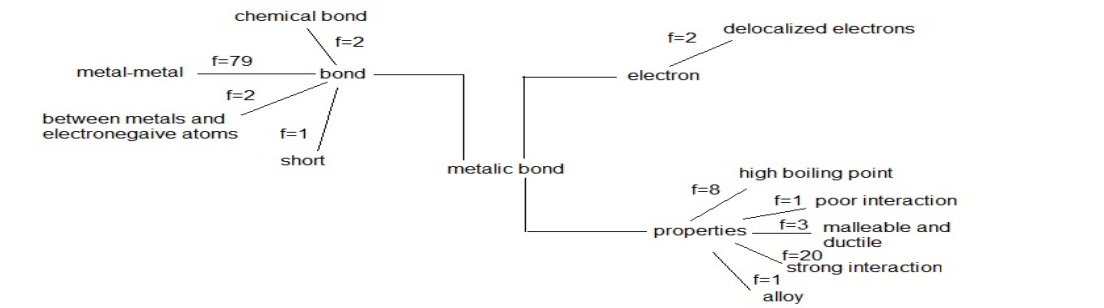
Covalent Bond



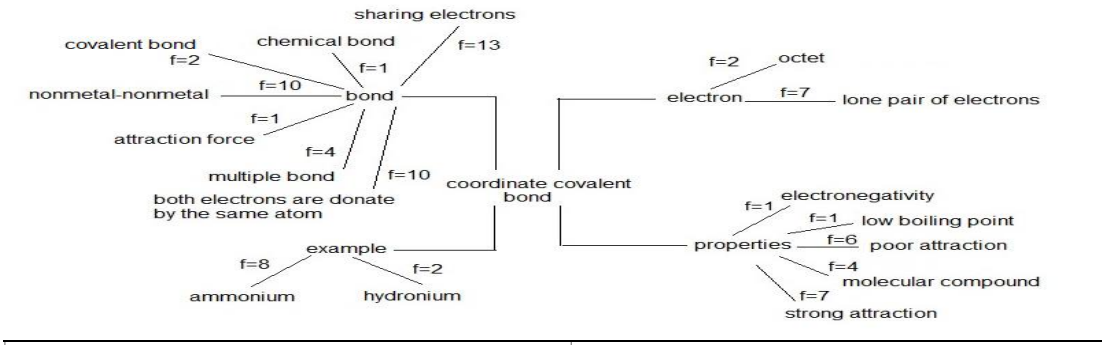
Metallic Bond

Figure 1. *Students' cognitive structures related to chemical bonding*

According to the statements collected in the theme of example (Figure 1), few students were found to be able to give examples for these types of bonding. The fact that the students gave the most number of examples for ionic bonds showed that their learning in especially other types of bonding was lower than the adequate level. While only three students could tell how to name the compound which was to occur with ionic bond (f=3), 21 students gave the example of sodium chloride (f=21) for ionic bonds. A students' expression the type of bonding in water as ionic bonding emerges as a misconception. Students' distribution according to the themes of bond, electron, property and example, which were determined according to the results of WAT, was analyzed below in accordance with the second research question.



Coordinate Covalent Bond



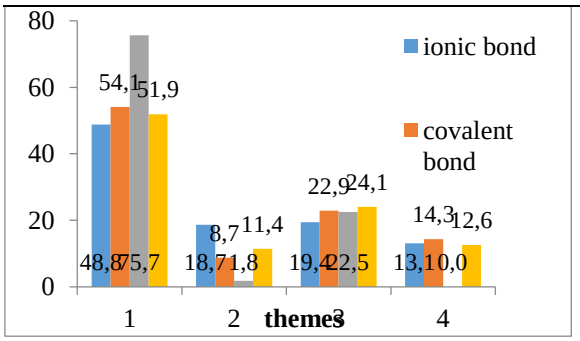


Figure 2. *Students' distribution according to their responses to the key words*

Figure 2 shows the students' responses to the keywords according to the themes. The students mostly gave the response in the theme of bond (the first theme) to all the key words. On the other hand, they gave the fewest number of responses to the keywords of "ionic bond" and "metallic bond" in the theme of example (the fourth theme), and they also gave the lowest number of responses to the keywords of "covalent bond" and "coordinate covalent bond" in the theme of electron (the second theme). In addition to that, it was also found that they gave the highest rate of responses to the keyword of "metallic bond" (75.7%) in the first theme but none of them (the lowest rate) gave responses in the fourth theme. Based on these findings, it may be said that the students gave the highest number of responses to the keywords in the theme of bond. The students were found not to have any given examples for the keyword of metallic bond.

Bahar et al. (1999) suggested cut-off technique, which predicted that students' cognitive structures became more and more complicated from high frequencies to low frequencies in WAT assessment. The emergence of complex concept networks is the most important factor making assessment difficult in using the technique. Setting out from this fact, cut-off technique was used by dividing the frequency table into themes and thus efforts were made to reflect students' cognitive structures in a simpler way. The students' cognitive structures and misconceptions were analyzed in terms of themes distinguished according to the results of WAT in line with the third research problem.

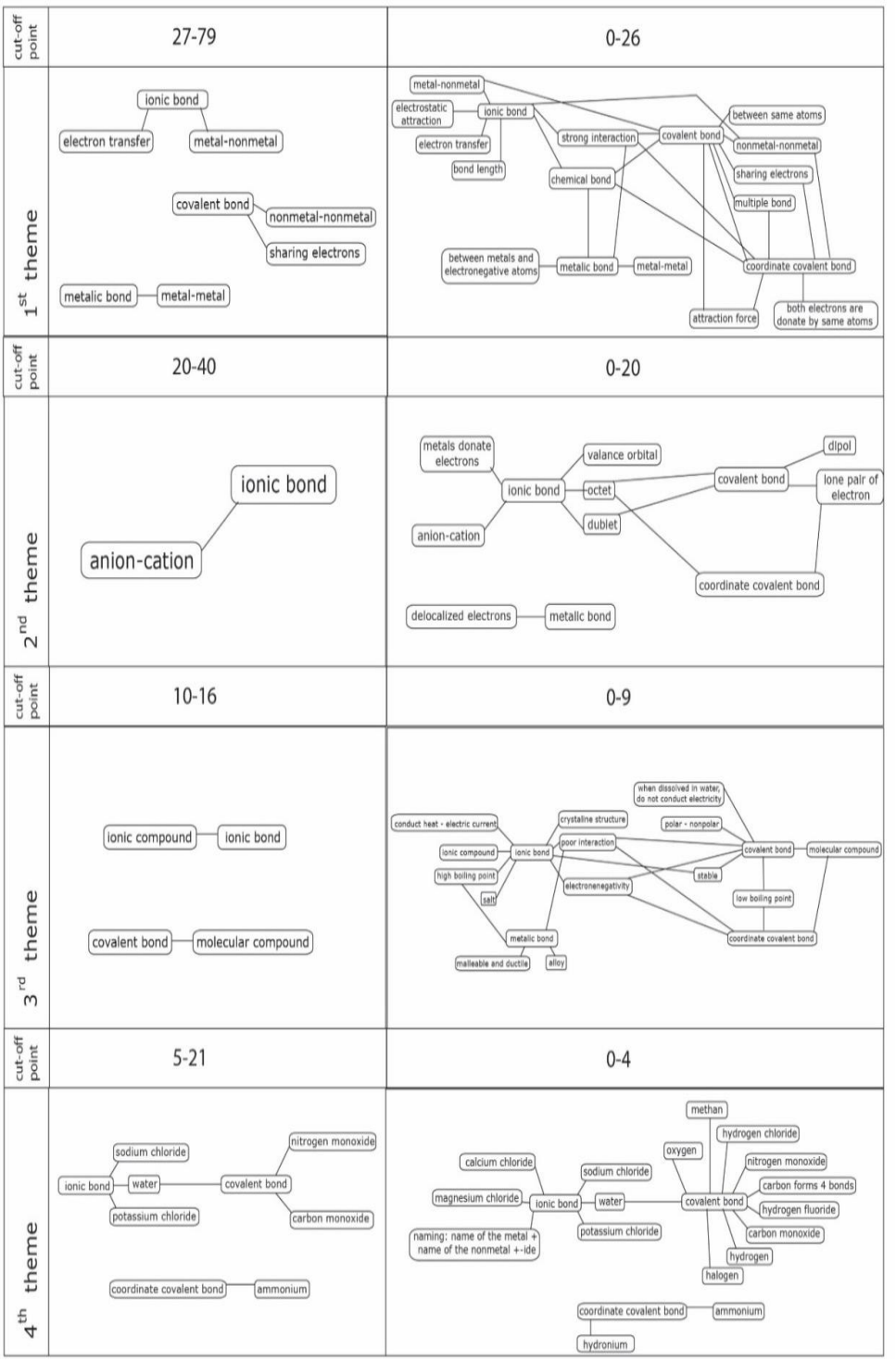


Figure 3. *Cognitive structures of the students through the themes*

Figure 3 demonstrates the cognitive structures of students determined in cut-off technique. The frequencies for the themes were divided into two levels as high and low. Accordingly, it is remarkable that misconceptions are available in students at low frequency level.

First theme: It was found in relation to the theme of bond that the students in the group of 27-29 cut-off point could only set up associations about ionic bonds, covalent bonds and metallic bonds. Also, they did not make any statements about coordinate covalent bonds. The students in the group of 0-26 cut-off point, however, could set up more detailed associations about the four types of bonds. Besides, they were also found to definite relation between covalent bond and metal-nonmetals which is misconception.

Second theme: In relation to the theme of electron, the students in the group of 20-40 cut-off point made statements about anion-cation relation but they could not set up any associations about the other key concepts. The students in the group of 0-20 cut-off point talked only about octet and lone pair of electron in relation to coordinate covalent bond; about relations between valance orbital and ionic bonds only, which indicated that they had learnt the rule of octet inadequately. Apart from that, they gave only the response of delocalized electron for the key concept of metallic bond belong to the theme of electron but they did not give any responses about the ideas that metal atoms had more electrons in their external orbitals in metallic bonding or that bonding was based on the principle sharing lone pairs of electrons by displacing them. These also show that students have inadequate knowledge about the subject.

Third theme: In the theme of property, the students in the group of 10-16 cut-off point said that ionic compounds were formed by ionic bonds and that molecular compounds were formed by covalent bonds. As to the students in the group of 0-4 cut-off point, although more developed concept maps were obtained in relation to such properties as the conductivity of compounds formed through chemical bonds, their structure, stability and boiling point; the having small number of students in this group indicated that they lack knowledge in this respect. Weak statement of interaction for all types of bonding stands as a misconception in front of us.

Fourth theme: The theme of example, involves the given examples by for the types of chemical bonds. Accordingly, it was found that the students in the group of 5-21 cut-off point gave sodium chloride and potassium chloride for ionic bonds, nitrogen monoxide and carbon monoxide for covalent bonds and ammonium for coordinate covalent bonds as basic examples. Besides, example of water for ionic bonds was detected as a misconception. The students in the group of 0-4 cut-off point diversified the examples for these three types of bonds. Additionally, they gave halogens as examples for covalent bonds and they mentioned the rule for naming ionic compounds. The students' failure to exemplify metallic bonds indicated that they had inadequate knowledge about chemical bonds. Analyzing students' cognitive structures and their misconceptions according to themes enabled us to perform more detailed analyses and thus to determine their comprehension and misconceptions more clearly.

Discussion, Conclusion and Recommendations

Techniques to evaluate students' cognitive structures has become into prominence recently. This study aimed to determine cognitive structures and misconceptions by recommending a new technique to be used in WAT evaluation. Accordingly, students' responses to WAT are divided into themes and used in forming concept maps reflecting students' cognitive structures according to the response word frequencies and according to the cut-off technique which recommended by Bahar et al. (1999). It is thought that the concept maps created in this way are simpler; therefore, they can be used in determining misconceptions by analyzing them more easily.

Summarizing students' responses to WAT test by means of concept maps is a technique which has been used (Karakuş & Karakuş, 2017). This study divided students' responses to the themes before forming concept maps by using cut-off technique. In this way, simpler concept maps were created and misconceptions were determined more easily.

Almost everything in chemistry is built upon particles which cannot be macroscopically observed and on their interactions. When compared with perceptual thinking which is a part of dailylife, chemistry is more difficult to learn due to its conceptual structure which cannot be experienced. Students have confusion about particles such as atoms, ions and molecules and about the concepts related to the interactions between them (Boo, 1998). The current study analyzed misconceptions that students had

about chemical bonding, one of the important topic of chemistry. Setting out from students' cognitive structures analyzed within the framework of themes, it was found that they had misconceptions about the key concepts and that their learning was below the desired level. It is pointed out in several studies in the literature that students have misconceptions about chemical bonds (Hanson, 2017; Nakhleh, 1992; Pabuçcu & Geban, 2006). Coll and Taylor (2001) state that students of all levels have misconceptions about the metallic, ionic and covalent types of bonding. Such findings as failure to give examples for metallic bonds and giving water as an example for ionic bonds obtained in this study were supports to show that the students had misconceptions.

On examining the concept maps of the students taking part in this study, it was found that electrostatic attraction, which was belong to theme one, was not understood by some of the students. In a similar way, Atasoy, Kadayıfçı, & Akkuş (2003) also found that students did not understand the electrostatic attraction in ionic bonds. Although the majority of the students considered ionic bonds as bonds forming between metals and metals, and covalent bonds as bonds between non-metals and non-metals, it was found that some students had misconceptions about these concepts. In a similar vein, Birk and Kurtz (1999) state that students confuse ionic bonds with covalent bonds while Taber (1997) demonstrates that students have misconceptions about ionic bonds. On examining the students' response words to theme three, it was found that the students in the group of 10-16 cut-off point explained only the molecular compound property of covalent bonds meantime a small portion of them, the students in the group of 0-9 cut-off point, mentioned properties such as polarity, electronegativity, stability, interaction and boiling point. Dhindsa and Treagust (2014) contend that the concepts of covalent bond and polar covalent bond are closely related and that polar covalent bonding can be taught with minor modifications after covalent bonds. Burrows and Mooring (2015) state that most of the students have difficulty in setting up meaningful associations between electronegativity and polar covalent bonding.

On examining the students' cognitive structures belong to theme three, it was found that they could not fully comprehend the strong and weak interactions about the types of bonding. In a similar way, Ültay (2014) suggests that students could not fully attain conceptual learning in terms of strong and weak interactions by supporting the claim with students' misconceptions. Figure 3 shows that the students give the weak interaction response word for all types of bonding for keywords. Coll and Taylor (2001) also state that the view that electrostatic attractions keeping ionic compounds together are weak is prevalent in explaining the friability of ionic salts such as NaCl.

It was found that no statements were made for metallic bond about theme four, and only 10% of the students gave examples for the other key words. On examining the concept maps, misconception that the bond in water was an ionic bond was found for 0-4 cut-off point. Köseoğlu and Tümay (2015) mention the misconception that there is ionic character in bonds in water molecule for such reasons as the O-H bond could be +1 charged in hydrogen compounds and oxygen could be -2 charged. Ültay (2014) mention students' misconception that hydrogen atom forms ionic bonds by giving one electron to chloride atom for each HCl molecule. In contrast to this, it may be said that the students in this study did not have such a misconception.

"Chemical bonding" is a subject involving abstract concepts. On examining the students' responses to the keywords revealing their cognitive structures, it can be said that they have such concepts as atoms, molecules, ions, electrons, electrostatic attraction and sharing. In a similar way, Atasoy et al. (2003) point out that students' prior knowledge is influential in their understanding the subject of chemical bonds, which is associated with the other subjects of chemistry, and especially subjects such as atoms, orbitals, compounds, periodic table and bonds. From perspective, supporting WATs with concept maps is important in seeing how students understand the relevant concepts and the associations between concepts more clearly because this will make it possible to make evaluations reflective of students' cognitive structures. Dividing students' responses into themes in WAT evaluation and thus forming concept maps makes determining misconceptions easier. Evaluating WATs by distinguishing categories in planning the learning-teaching process is a technique which can be used in further studies for differing subjects of chemistry. This current study is thought to function as a guide to researchers and educators intending to do research on concept teaching and to determine misconceptions in the field of chemistry education.

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"No Student Not Met Museum Education'' A Practice of Volunteer Education Program in the Museum*

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Abstract

The "museum education'', which has been on the agenda in Turkey since 1990, was formalized along with the developments in museum approaches of Ministry of Culture and Tourism and the efforts of Ministry of National Education, Board of Education for integrating the museums with training. This study was focused on the evaluation process of museum education program carried out by the Museum Education Volunteers of Association for Supporting Contemporary Life (CYDD) in the school and at the Museum of Anatolian Civilizations with 4th graders in Ankara. The program, which was developed in 2014, carried out between 2014-2017 and reached to 985 students in total, was prepared with the aim of determining the quality of education given to voluntary museum educators and the levels of attaining the goals. The program indicated that the participants had knowledge about museum and museum education and their basic knowledge increased along with the education. The views of participants indicated that the program achievements and content were in conformity with the expectations and needs of participants; the findings concerning learning-teaching process demonstrated that the education program was successful.

Keywords: Museum education, museum volunteer, museum education program, CIPP model, Museum of Anatolian Civilizations.

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"Müze Eğitimiyle Tanışmayan Öğrenci Kalmasın" Müzede Gönüllü Eğitim Programı Uygulaması*

Makale Türü	Başvuru Tarihi	Kabul Tarihi
Araştırma	07.10.2018	16.07.2019

Alper Yetkiner** **Ceren Karadeniz****
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Öz

Müze eğitiminin Kültür ve Turizm Bakanlığı (KTB) ve Millî Eğitim Bakanlığı (MEB)'nın çabalarıyla yaygınlaşmasıyla birlikte müze eğitiminde rol alacak kişilerin uzmanlaşmaları için hizmet içi eğitim etkinlikleri düzenlemek, müze ile okul yönetimleri arasındaki koordinasyonu sağlamak, müze eğitiminde pilot okul uygulaması başlatmak, ders kitaplarında müzelere ilgiyi artıracak görsellere, yazılı metinlere yer vermek, müzelerden doğrudan yararlanma olanağı olmayan okullardaki öğrencilerin müzeler hakkında bilgi edinmelerini sağlamak, müzeler haftasında okullarda, müzelerde etkinlikler düzenlenmek gibi hedefler belirlenmiş, uygulanmaya başlanmıştır. Bu çalışma Çağdaş Yaşamı Destekleme Derneği müze gönüllülerinin Ankara'da MEB'e bağlı bir ilkokulun 4. sınıf öğrencileriyle okulda ve Anadolu Medeniyetleri Müzesi'nde gerçekleştirdikleri müze eğitimi programının değerlendirilme sürecine odaklanmıştır. 2014 – 2017 yılları arasında sürdürülerek 985 öğrenciye ulaşan program, gönüllü müze eğitimcilerinin verdikleri eğitimin niteliğini ve hedeflere ulaşma düzeylerini saptamak için hazırlanmıştır. Programın değerlendirilmesi için katılımcıların ön test ve son testten aldıkları puanlar arasında anlamlı bir fark olup olmadığı, programın etkililiğine ilişkin görüşleri, programın kazanımlarının ve içeriğinin katılımcıların beklenti ve ihtiyaçlarına uygunluğu, öğrenme-öğretme sürecinin programa uygunluğu, program ögelerinin, öğretim stratejilerinin, kapsamının ve değerlendirmesinin birbirleri ile tutarlılığı incelenmiştir. Program, katılımcıların müze ve müze eğitimi konularında bilgi sahibi olduklarını, eğitimle birlikte bu konudaki bilgilerinin arttığını göstermektedir. Program kazanımlarının ve içeriğinin katılımcıların beklenti ve ihtiyaçlarına uygun olduğu, eğitim programının başarılı olduğu görülmüştür.

Anahtar Sözcükler: Müze eğitimi, müze gönüllüsü, müze eğitimi programı, CIPP modeli, Anadolu Medeniyetleri Müzesi.

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Introduction

As Ambrose and Paine (2006, p.18) stated, the museum adopted as an institution making a contribution to formation and development of observation, logic, creativity and imagination of 20th century has been making an effort to be an institution, which offers a different learning and recreation experience to its visitor by combining the new education methods and techniques with activities such as observation, practice and regression, etc., about bringing up creative individuals who question and think as foreseen by modern education. Golding and Modest (2013, p.20) emphasize this is derived from the functions and responsibilities of museums for showing people ''how to make the world a better place'' based on the past experiences as well as that the museums also reflect the modern world to people. This aim and goals indicate that the definition of museum has changed along with the functions and sense of museum. Harrison (2005, p.38) uttered the ways of various museums for expressing their own missions as follows: the museums aim to access the public with scientific studies, activities and publications.

The question of what the museum is also defined with the question of ''what they are not''. Marcus, Stoddard and Woodward (2012, p.7-8) emphasized that the museums are a significant nonformal learning environment in the history education, stated that these institutions provide unique learning experiences which can increase the knowledge and skills of students and they are reliable resources for accessing the information by ensuring the interaction with real objects. According to Kaschak (2014, p.108), the benefit is obtained from museum specifically within the citizenship education. The museums play key roles with their collections available in terms of construction of national identity and with their ways of presenting and interpreting these collections and their motivations for presenting them with the aim of publicity (Fladmark, 2014, p.13).

Hein (2004, p.413) stated training the museum officers within the scope of museum education is another significant issue. Providing in-service training given to them concerning to education and communication functions of museum is important since the miscellaneous information and skills such as the characteristics of individuals who visit the museum, stories of cultural products, how the products will be offered, which education programs will be applied to whom, which museum education activities will be applied in and outside the museum and communication with the public, should have been acquired. The education experts in the museums guide the visitors in the tours introducing the galleries and play an active role in the preparation of catalogues, maps, guide books and etc. The scope of duty and responsibility having a key role and it becomes a problem for museums when the sufficient employment is not provided in terms of museum where the museum educators are not common such as Turkey.

According to Orr (2006, p.195), the increasing number of volunteers in the cultural heritage sector demonstrates the wish of people having same field of interest for having leisure time experience and revealed that the volunteers in the field of cultural heritage are the ones ''who most visited'' the heritage field. Hirzy (2007, p.12) emphasized that the volunteers such as museum volunteers are willing to maintain their interests to this field. They are important driving forces for museums in every field. There are studies concerning that the museums are dependent on volunteers in the worldwide and stated that nine out of ten museums in England and Australia work in cooperation with them. 65% of labor force in Canada museums consists of volunteers based on 2011 data of Canada Museums Association. However, this driving force created their own in miscellaneous countries. American Association of Museum Volunteers and Australian Gallery Guides Organization are the others (Holmes and Edwards, 2008, p.157). According to (Syms, 2016) the volunteers are secret weapons of museum and they are ''passionate people'' named as volunteer among miscellaneous factors affecting the success of a museum. Hibbins (2017) stated that, it is important to create a volunteer policy and developing resource in conformity with the policy for developing the museum volunteers because the labor exploitation in the culture institutions give a considerable rise to concerns about putting the volunteers who will not be get paid, in the paid positions within the museums.

The museum volunteer is a person who not only visits the museums but also likes sharing his/her experiences with visitors. According to Ivens (2011), everybody who donates their times to an organization freely for providing benefit to others are volunteers no matter what they do… When the

International Council of Museums (ICOM) put the museum volunteering on the agenda as a theme of International Museums Day (Friends of Museums) for the first time on May 18, 2003, it stated that this position lessens the burden of museum experts, it enrichens the museums by diversifying its services and it makes contribution to sustainability of institutional culture (Comelli, 2002).

It cannot be said that the museum volunteering is a practice which has been put into practice systematically in Turkey while it is common in the world. The museum volunteering is generally taken into hand within the scope of internship in Turkish museums. Either the public museums or private museums are accessible by volunteers and all students specifically who want to undergo training in the fields of art, art history, museum, literature and other branches but we cannot refer them as systematic and sustainable volunteering studies.

Museum Education in Turkey

Museum education came to the forefront in Turkey along with the adoption of reconstructive approach in education programs and the nonformal environments were identified as the learning areas. In 2005-2006 academical year one of the learning areas of primary school art activities syllabus was determined as ''museum culture'' and visual arts syllabus was determined as ''museum awareness''. Within this period, some public museums and foundation museums as well as science centers aimed that visitors of various age groups could get benefit from museums effectively by means of education departments created. The Culture and Art Cooperation Protocol was signed between Ministry of Tourism and Ministry of National Education in 2016 and it is aimed to give information to Turkish students about various art branches and increase their awareness of art; to increase the interest to art and artist and reveal the skills devoted to art. Within this process, it is foreseen that the benefit will be provided from museum intensely. However, it was emphasized that the actions for enabling the museums serving as an educational establishment beyond being a place for storing and exhibiting, again in 3rd Council of National Culture which was organized in 2017; it was stated that the activities such as education, publishing, communication and introduction, etc. shall be paid attention as well as collection management in the museums (Report of 3rd Council of National Culture, 2017).

The Program covers the museum education given to ''volunteer museum educators'' created by the Association for Supporting the Contemporary Life (CYDD) and which was prepared with the aim of determining what is the quality of education given and determining the achievement levels of goals. In this study, it was aimed to give information on museum education in the primary and secondary schools with the findings obtained with various forms prepared and to carry out improvement works accordingly. As well as the preparation and implementation of trainings, it is important to determine whether the teachers have acquired the targeted behaviors or not at the end of educations. Therefore, three-days ''Museum Education Program'' given by volunteer museum educators. In this study, it was aimed to evaluate the ''Museum Education Program and Volunteer Museum Educators'' within the direction of three-step process which was organized by CYDD volunteers and conducted in the school and Anatolian Civilizations Museum with 4th graders of a primary school located in a district of Ankara. The questions which were tried to be answered to fulfill this aim are as follows:

1. Was there a significant difference between pre-test and post-test scores of participants who participated the study?
2. What were the opinions of participants with respect to the efficiency of program?
3. Were the achievements and content of program in conformity with the expectations and needs of participants?
4. Was the learning-teaching process conducted in conformity with the program?
5. Were the items, teaching strategies, scope of evaluation of program consistent with each other?

Method

Research Design

In this study, the mixed research model was used. Creswell (2003) explained the mixed model as combining the qualitative and quantitative method, approach and concepts within a study or

successive studies. The program evaluation model preferred for explaining the research was CIPP (context, input, process, product) which was developed by Stufflebeam.

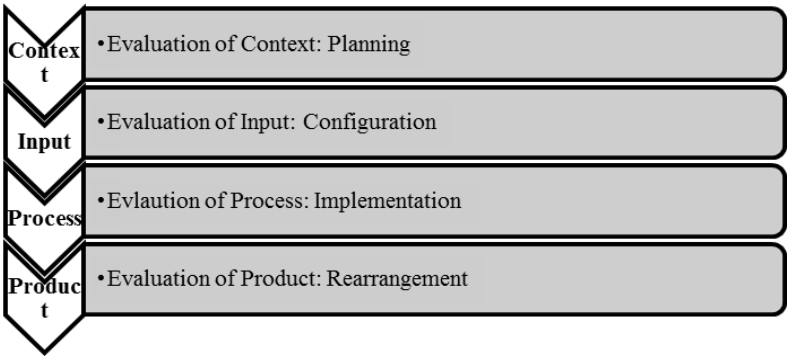

Figure 1. *Stufflebeam CIPP Model*

The CIPP Model (Context, Input, Process and Product Model) is a model which enables the use of formative and summative evaluations of programs, projects, personnel, products, institutions and systems. It is seen that the model includes a process with respect to describing, acquiring and interpreting the necessary information (Özdemir, 2009). The CIPP model consist of context, input, process and product has the quality of an extensive frame program concerning to evaluation (Stufflebeam, 2000). When the model is taken into hand, it is seen that decision-making is important in four fields with respect to implementation and rearrangement (Orstein & Hunkins, 1988; cited by Gözütok, 1999).

The evaluation of context consists of the process where the needs are detected, and targets are determined and the decisions about priorities and outcomes are made (Stufflebeam, 2000). According to model stipulating the necessity of evaluating the environment for determining the targets, the evaluation of environment is also referred as ‘’case analysis’’ (Reece & Walker, 1993; Akt. Gözütok, 1999). The evaluation of input is the stage determining some approaches, plans and feasibility of these plans with the aim of achieving the goals and fulfilling the targeted ones (Stufflebeam, 2000). The readiness levels of students for program, the competence levels of teachers with respect to implementation of program, sufficiency of resources, efficiency of teaching materials to be used and capacity of school are the data required to be determined at this stage (Gözütok, 1999). The evaluation of process is a stage in which the implementation is made. It is the part of process in which the documents are used, and miscellaneous strategies are benefitted. The decisions are made, and the results are interpreted (Stufflebeam, 2000). It is the part of process in which the pilot scheme can be made and the availability of tools, program cost and student-teacher satisfaction are taken in hand. The observation forms, questionnaires, achievement and performance tests and inventories can be used. The evaluation of product is the field where the issues such as to what extent the targets have been achieved are examined, the differences between expected and observed target are mentioned, success ratio is determined, and the employment of graduates are taken in hand. The performance tests, observation forms, questionnaires, achievement tests, job satisfaction scales can be used for seeking responses to questions. It can be possible to maintain, amend and cancel the program based on the data obtained (Gözütok, 1999).

Study Group

There were two study groups in the research. The first group consisted of six museum volunteers who were the members of CYDD and undergoing training on museum education. The second group consisted of 40 students who were 4th graders in a primary school in Etimesgut district of Ankara.

Data Collection Tools

The research data were collected with the *achievement test, museum education evaluation form, museum education expectation form, teaching observation form and student observation form*

developed by the researchers. Firstly, 13-item achievement test to be replied by 40 primary school students was prepared by researchers in order to evaluate the implementation and efficiency of museum education program conducted in a primary school located in Etimesgut district of Ankara province. It was paid attention that the questions in the achievement test should have the necessary quality to evaluate the achievements in the program developed by researchers and the test was put into its final form with the direction of necessary expert views. The museum education evaluation consisting of education, educator and physical conditions titles was developed with the aim of evaluating 6 volunteer museum educators who provided training to participant students. The museum education Expectation Form was created with the aim of evaluating the expectations of participants with respect to museum education. The teaching observation form was developed with the aim of checking whether 6 volunteer museum educators were teaching the lessons based on specific titles or not. Finally, the student observation form was created for observing the participation of students in the course. And it was created by the researchers with analyzing the other observation forms that used in other researches.

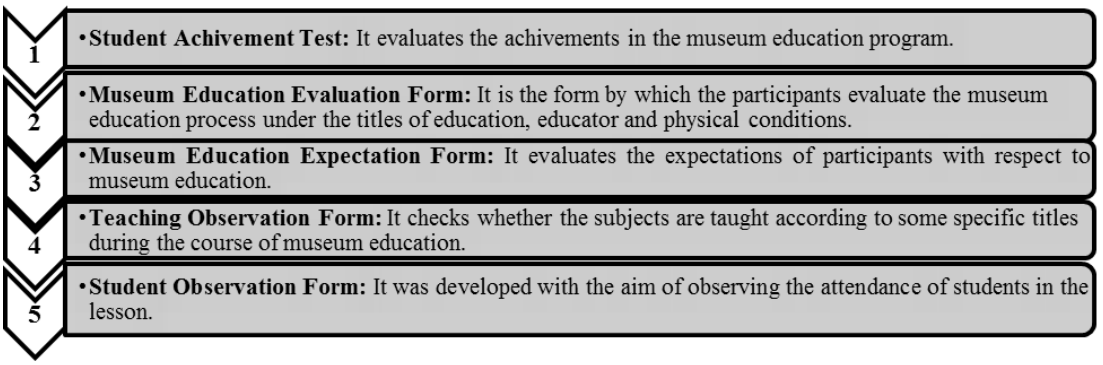

Figure 2. *Data Collection Tools*

Data Collection and Analysis

In the first phase of study, a meeting was organized with CYDD volunteers with respect to education. The program developed by researchers was introduced to volunteers and the information about practices were given. Then, the permissions were received from Ministry of National Education and Museum of Anatolian Civilizations for implementation and the practice day was mutually agreed with the school principal and head teacher. The data collection process was conducted in the school for 2nd and 3rd day and in the museum for 2nd day. The achievement test (pre-test) was applied in the first day with the aim of determining the levels of students. Then, the museum education expectation form was distributed to students and they were requested to fill them. Therefore, the expectations from museum education and educators were learned in the museum. The teaching observation forms were kept by researchers with the aim of determining the quality of education given for three days and its conformance to content. Moreover, three researchers recorded their observations devoted to students by means of observation form for three days. The achievement test was reapplied to participants as post-test in the last day of practice with the aim of determining the effect of education. The desk-based research was made by researchers with the aim of determining the consistency of program items, teaching strategies, scope and evaluation and thus, the data collection process was finalized.

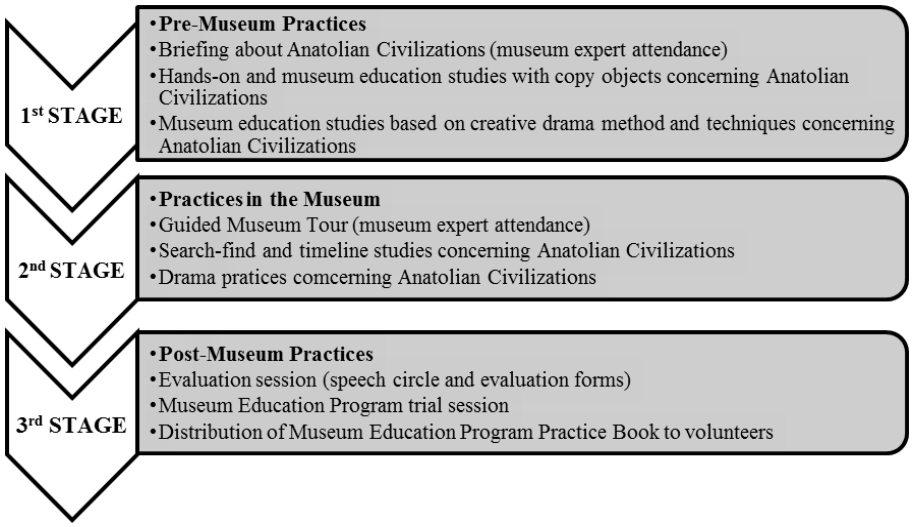

Figure 3. *Education Process of Museum Volunteers*

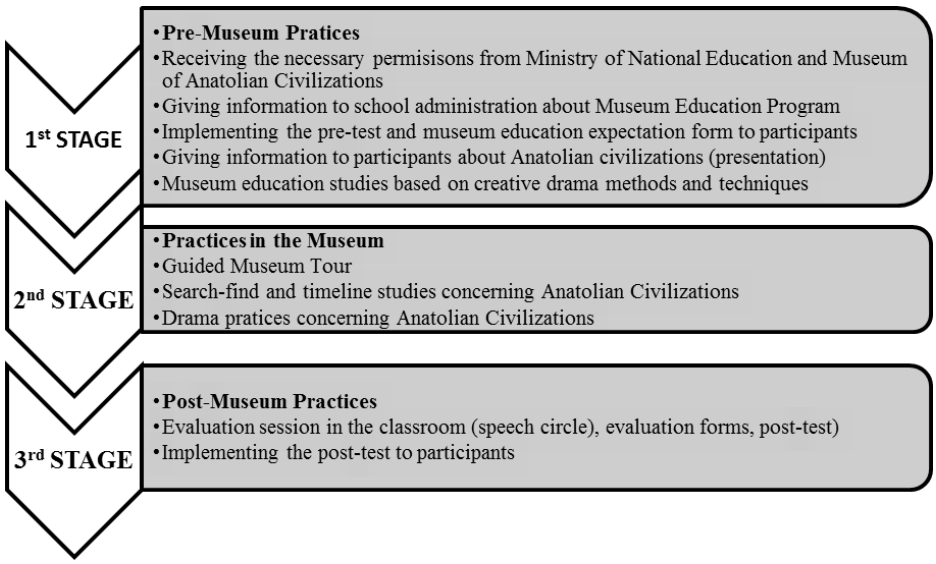

Figure 4. *Museum Education Process with Primary School Students*

Results

The findings concerning the education program evaluation of volunteer museum educators within the scope of museum education conducted by CYDD museum educators in a primary school located in Etimesgut district of Ankara province and Museum of Anatolian Civilizations with 4th graders within the direction of the aim of research, are offered and discussed under this title.

1.The findings and comments on the question of *"Was there a significant difference between the pre-test and post-test scores of research participants?''*

Table 1

T-test results of pre-test and post-test scores of museum education program achievement test

Evaluation	N	$\overline{X}$	S	Sd	t	P
Pre-test	40	5.17	1.93	39	-9.24	.000
Post-test	40	7.50	1.97			

In Table 1, the pre-test and post-test scores of participants are given. There was a statistically significant difference between the pre-test and post-test score mean of participants based on the entire test. [$t_{(39)} = -9.24$; $p < 0,05$]. The pre-test mean of participants was $\overline{X} = 5.17$ while the post-test mean was $\overline{X} = 7.50$. When the results are taken in hand, it can be said that the museum education program yielded positive results.

2.The findings and comments on the question of *"What were the opinions of participants on the efficiency of program?''*

Table 2
Findings of museum education evaluation form

		Sufficient		**Partially Sufficient**		**Insufficient**	
		f	**%**	**f**	**%**	**f**	**%**
EDUCATION	Content of the program	39	97	1	3	0	0
	Contribution to personal development of the students	39	97	1	3	0	0
	Examples	38	95	2	5	0	0
	Preferred evaluation tools	39	97	1	3	0	0
	Answers to expectation	36	90	4	10	0	0
EDUCATORS	Topic knowledge	38	95	2	5	0	0
	Interaction between teacher and the students	38	95	2	5	0	0
	Sufficient use of methods by the teacher	39	97	1	3	0	0
	Effective use of time	37	92	3	8	0	0
	Effective use of Turkish language	38	95	2	5	0	0
PHYSICAL CONDITIONS	General environmental structure of the classroom	37	92	3	8	0	0
	Time for education	36	90	4	10	0	0
	Competence of the classroom	36	90	4	10	0	0
	Number of students	37	92	3	8	0	0
	Temperature	38	95	2	5	0	0
	Lighting	39	97	1	3	0	0
	Cleaning	37	92	3	8	0	0

39 (97%) of the participants stated that the content of the programme was sufficient. Contrubition to personal development of the students, examples, evaluation tools and answers to expectations were sufficient (%90-%97). Topic knowledge, interaction between teacher and the students, the use of teaching methods by teachers, effective use of time and Turkish language were sufficient (%92-%97). 36 (90%) of them found the general environmental structure of the classroom were sufficient. 36-39 (%90-%97) of them found the time for education, competence of the classroom, number of students, temperature, lighting and cleaning were sufficient.

3. The findings and comments on the question of *"Were the achievements and content of program in conformity with the expectations and needs of participants?''*

The achievements and content of museum education program was prepared in conformity with the aim of enabling them to have knowledge about the museum and museum education. When the

results of museum education expectation form applied to participants are taken in hand, it can be said that the program was successful in general terms. The questions asked to participants are as follows:

- What do you expect from museum education?
- What type of a teaching environment do you think you will encounter in the Museum of Anatolian Civilizations?
- What do you expect museum educators to treat you within the process of education?

With respect to the responses given to the question of "What do you expect from museum education?", 10 participants stated that they wanted to have knowledge about history and civilizations while 7 participants stated that they wanted to have knowledge about family life of societies, 27 participants stated that they wanted to have knowledge about museum concepts, 10 participants stated that they wanted to have knowledge about historical artifacts, 6 participants stated that they wanted to have knowledge about cuneiform and hieroglyph scripts and 3 participants stated that they wanted to have knowledge about cultural works. Some of responses given by participants to the relevant question are as follows:

I want to learn our history. I wonder old civilizations very much (Student 1).
I want to see things such as cuneiform and hieroglyph scripts and rebus (Student 19).
I think we may see the goods belonging to our culture (Student 28).

It is seen that the expectations of participants from museum education coincided with the achievements.

With respect to the question of "What type of a teaching environment do you think you will encounter in the Museum of Anatolian Civilizations?", 18 participants expressed an opinion concerning that they would see many historical artifacts and sculptures while seven participants expressed an opinion concerning that they would see historical ruins, eight participants expressed an opinion concerning that the tourists would come to visit, six of them expressed an opinion concerning that there would be officers giving training in the museum and ten participants expressed an opinion concerning that there would be both educational and entertaining environment. Some of responses given by participants to the relevant question are as follows:

I imagine that I would see King Midas and His Donkey Ears in the museum (Student 15).
To illustrate, we may see the things which were used in the past and donated to museum now (Student 17).
I think we will come across an entertaining place where we may head towards the lesson curiously and carefully and even we may play games in the way that it will remain in our mind (Student 22).

It is seen that the expectations of students from the museum were very high and there was a dominance of opinion concerning that they would both see several types of examples and the museum environment would be both educational and entertaining. With respect to the question of "What do you expect museum educators to treat you within the process of education?", 19 participants stated that they expected educators to be affectionate while 22 of them stated that they expected educators to act respectfully, 34 participants stated that they expected educators to be thoughtful and 30 of them stated that they expected educators to treat them kindly.

4.The findings and comments on the question of *"Was the learning-teaching process conducted in conformity with the program?"*

When Table 3 is reviewed, it is seen that the content was given fully except for one topic. The topic of ''Religious Beliefs in Anatolian Civilizations'' was given partially throughout education. The educators fully benefitted from the question-answer, large group discussion, exhibition and presentation among teaching strategies. Drama and small group discussion were partially used. The educators implemented the achievement test as pre-test before the lessons and as post-test at the end of lessons.

Table 3

Findings on teaching observation form

CONTENT	COMPLETE	PARTIAL	NONE
1. Concept of Museum	✓		
2. Museum Knowledge	✓		
3. Functions of Museum	✓		
4. Museum Types	✓		
5. Concept of Museum Education	✓		
6. Concept of Culture	✓		
7. Concept of Cultural Assets	✓		
8. Knowledge about Anatolian Civilizations	✓		
9. Religious Beliefs in Anatolian Civilizations		✓	
10. Concept of Family	✓		
11. Children's Plays	✓		
TEACHING STRATEGIES			
1. Creative Drama		✓	
2. Question-Answer	✓		
3. Large Group Discussion	✓		
4. Exhibition	✓		
5. Presentation	✓		
6. Small Group Discussion		✓	
EVALUATION			
1. Achievement Test	✓		
2. Self-Evaluation Form			✓

Table 4

Findings on observations concerning participants

	OBSERVED	**NOT OBSERVED**
The students know what will be processed in the course.	✓	
The students can access the source of knowledge.	✓	
The students freely express their opinions verbally.	✓	
The students bring all the information equipment that they will benefit from in the course.	✓	
The students answer the teacher when she/he ask a question suddenly.	✓	
The students can give recent examples.	✓	
The students ask questions which indicate they have high-level thinking skills.	✓	
The students ask questions that make them good listeners.	✓	
The students are willing to do researches.	✓	
The students represent the outcomes of the research willingly.	✓	
The students are willing to communicate with their friends.	✓	
The students are willing to transfer what they know with their friends.	✓	
The students are volunteer in participating individual activities.	✓	
The students are volunteer in participating group works.	✓	

When Table 4 is reviewed, it was seen that students knew what would be processed in the course, accessed source of knowledge, brought all the information equipment that they would benefit from in the course. They freely expressed their opinions verbally, answered the teacher when she/he asked a question suddenly, gave recent examples, asked questions which indicate they have high-level thinking skills. They asked questions that make them good listeners. They were willing to do

researches and presented the outcomes of those researches willingly. They were willing to communicate with their friends, to transfer what they know with teir friends; they were volunteer in participating individual activities and were volunteer in participating group works.

5. The findings and comments on the question of "Were the items, teaching strategies, scope of evaluation of program consistent with each other?"

The program items were prepared by the researcher by taking the scope of program in consideration. In this regard, the opinions of program development and evaluation experts were received. It was seen that the program scope and items were consistent. While it cannot be said that the knowledge of volunteer educators on content and implementation of topics were not sufficient, it is seen that the teaching strategies were tried to be used at right place and time and they were consistent with the program items and scope. However, it is seen that the practices applied throughout the education were evaluated. No evaluation concerning how the volunteer museum educators used the knowledges acquired in their own trainings was made. In conclusion, the program items, teaching strategies, scope and evaluation process were consistent when some deficiencies were neglected.

Discussion, Conclusion and Recommendations

Museum Education Program was evaluated by students and volunteer museum educators who participated it. There was a statistical difference between pre-test and post-test scores of participants. It was determined that the mean showed an increase and the museum education program gave positive results. The participants found the program sufficient under the titles of education, educator and physical conditions with respect to the efficiency of program. The ratio for finding the program sufficient did not drop below 90%. When the title of conformance of program achievements and content to the expectations and needs of participants is reviewed, it is seen that the participants expected from the museum education to have knowledge about the history and civilizations, family life of old societies, museum concepts, historical artifacts, cuneiform and hieroglyph scripts. With respect to the question of what type of an environment they expect to encounter, the opinions concerning that they would come across historical artifacts and monuments, they would see historical ruins, the tourists would come to visit, and they would come across both an educational and entertaining environment with the officers giving education in the museum. They stated that they expect museum educators to treat them affectionately, thoughtfully and kindly. It drew the attention that only one topic was given partially while it was seen that the program content was given in accordance with the training process. It was seen that drama and small group discussion among the teaching strategies were given partially and the achievement test was applied as the pre and post tests for evaluation. When it was considered that the program was applied by educators following three-day preliminary training, it can be said that these educators had limited experience on basic warm-up activities in the creative drama practices.

It was observed that the participants attended to process well prepared, they gave the source of information, they expressed their opinions, replied when their opinions were asked and asked unique questions related to topic. They made research in the museum, generalized at the end of researches, showed willingness with respect to understanding the lesson and played an active role in the intraclass interaction. They shared information with their classmates and took charge in the individual and group activities. It can be said that the volunteer educators were no competent knowledge on the contents and implementation of topic, but the teaching strategies were consistent with the program items and scope. In conclusion, the program items, teaching strategies, scope and evaluation process were consistent with each other even if there were some deficiencies.

In this study, it was determined that the program was efficient on volunteer educators. The museum volunteers implemented this training on 985 students in total who were receiving education in ten schools between the years of 2014-2017 in Ankara (Table 5).

Table 5

Educations given by CYDD volunteer museum educators between the years of 2014-2017

Schools and Number of Students who Accessed Museum Education Program Between the Years of 2014-2017		
Academic Year	School	Number of Students
2013-2014	Güneşevler Primary School, Ankara	153
2014-2015	Bilge Kaan Primary School	120
2014-2015	Mehmet Özcan Torun Primary School	155
2015- 2016	Şehit Ibrahim Çoban Primary School	240
2016-2017	Tuzluçayır Primary School	150
2016-2017	Students out of Ankara province	167
	Total Number of Students	**985**

It caught the attention that the museum volunteers expressed their opinions concerning the sustainability of education process, sustainability of education staff, development of self-confidence, impact of museum education and expediency of education with the descriptive analysis applied in the self-evaluation forms. The volunteers laid emphasis on that education aimed to enable the students to learn the past and determinant characteristics of miscellaneous civilizations, to recognize the aim, significance and functions of museums and the significance of museums in terms of transfer and introduction of culture.

The volunteers expressed their concerns about sustainability of education due to some reasons such as the extension of process for receiving legal permissions. Therefore, they had the opinion that increasing their experiences on museum education by carrying out the same education in miscellaneous museum types will positively affect the sustainability.The age range of volunteers was 53-63 years. Therefore, the sustainability of educators was one of the most significant components of education required to be emphasized according to them. The several educators attended each of three-day education since the average of age was high and thus it was ensured that all volunteer educators were listened. Moreover, two volunteers undertook the mission of observer while one volunteer gave the education and thus, they fulfilled the duties of providing the education materials and fulfilling the needs of students. The volunteers gave in-service trainings to volunteer team based on their own experiences in new practices between the years of 2014-2017. The entire of volunteers put emphasis on that their self-confidences showed an increased following second practice and the practice processes were facilitated and in conclusion, they observed the impact of education on students easily.

> *I witnessed that some teachers asked us to guide them in the museum after they observed our practices. For a long period security officers and museum employees thought that we were guides and an undercover police officer who grabbed the spinning top, tried to teach how it shall be spun and I think this outline the impact of education very well…(Volunteer 3).*

> *Except for a child. That child shut his ears and rested his head against the wall when we entered the class. While we were going out the workshop where we were carrying out metallic coin and stamp studies in the next day of our museum study, we asked them what they were remembering. They told us what they saw. However, the one who first told what he saw, was the student who had not listen us and rested his head against the wall…(Volunteer 2).*

In this study, it was determined that the volunteers who were competent on the museum education methods and techniques, increased the volunteering of museum and museum education in terms of raising the awareness concerning the cultural heritage and museum. Along with the diversity and increase of the type and number of museums in Turkey, the employment problems come on the agenda; the problem of staff to deal with the ''education'' as the most visible functions of museums come on the agenda. When the museums in Turkey place importance on the accession works, which may bring the volunteers from different fields of specialization together, and gather the volunteers and educators in the museum and prepare the education programs, this will relieve the labor force problem which may arise in the use of museums in the way that the current education program will be supported within the process of informal learning.

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Digital Literacy Skills and Attitudes towards E-learning*

Article Type	Received Date	Accepted Date
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Abstract

This study aimed to investigate the attitudes towards e-learning and digital literacy skills of prospective teachers (*N* = 47) enrolled in the Department of Computer Education and Instructional Technology at a state university in Turkey. The study also investigated whether these variables vary in terms of gender and prior e-learning experience as well as the potential relationship between their attitudes and their digital literacy skills. Adopting a quasi-experimental pre-posttest design with an experimental group, this study sought to discover the effects of a five-week treatment on prospective teachers' digital literacy skills and attitudes toward e-learning. The data for the study came from two data collection tools namely, Attitudes towards E-learning Scale (Haznedar & Baran, 2012) and Digital Literacy Scale (Ng, 2012). Findings indicated the effectiveness of the treatment on the participants' attitudes towards e-learning platforms. Furthermore, the findings of the regression tests demonstrated that tendency is one of the most significant predictors of digital literacy skills.

Keywords: Digital literacy, attitudes, Edmodo, e-learning, quasi-experimental.

* One part of this study was presented as an oral presentation at the 26th International Conference on Educational Sciences-ICES, on 20-23 April 2017 in Antalya, Turkey.

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Dijital Okuryazarlık Becerileri ve E-Öğrenmeye Yönelik Tutum*

Makale Türü	Başvuru Tarihi	Kabul Tarihi
Araştırma	19.02.2019	13.05.2019

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Öz

Mevcut çalışma, Türkiye'de bir devlet üniversitesinde Bilgisayar ve Öğretim Teknolojileri Eğitimi Bölümü'nde kayıtlı öğretmen adaylarının (N = 47) e-öğrenmeye yönelik tutumları ile dijital okuryazarlık becerileri arasındaki ilişkiyi ortaya koymayı amaçlamıştır. Çalışmada ayrıca bu değişkenlerin öğretmen adaylarının cinsiyet ve önceki e-öğrenme deneyimlerine göre farklılık gösterip göstermediğinin yanı sıra e-öğrenmeye yönelik tutum ve dijital okuryazarlık becerileri arasındaki muhtemel ilişki araştırılmıştır. Araştırmada öntest sontest tek deney gruplu yarı deneysel desen kullanılmış olup, araştırmada beş haftalık deneysel bir eğitimin katılımcıların dijital okuryazarlık becerileri ve e-öğrenmeye yönelik tutumları üzerindeki olası etkileri araştırılmıştır. Veriler E-öğrenmeye Yönelik Genel Tutum Ölçeği (Haznedar & Baran, 2012) ve Dijital Okuryazarlık Ölçeği (Ng, 2012) aracılığı ile toplanmıştır. Sonuçlar, araştırmada yürütülen deneysel eğitimin katılımcıların e-öğrenme platformlarına yönelik tutumları üzerindeki etkinliğini göstermiştir. Buna ek olarak, regresyon testlerinin sonuçları, eğilimin dijital okuryazarlığın en önemli yordayıcılardan biri olduğunu göstermektedir.

Anahtar Sözcükler: Dijital okuryazarlık, tutum, Edmodo, e-öğrenme, yarı deneysel desen.

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Introduction

The incorporation of technology, particularly of information and communication technologies (ICT), has radically changed the educational settings in recent years. For example, virtual learning environments have been created, which resulted in the emergence of electronic and/or online learning (e-learning hereafter). Simply put, e-learning refers to any type of learning delivered online. It can also be defined as "a web-based communication platform that allows learners, without limitations on place and time, to access diverse learning tools, such as discussion boards, assessments, content repositories, and document sharing systems" (Mohammadyari & Singh, 2015, p. 12). E-learning systems include Web-based learning (WBL), Internet-based training (IBT), and online learning (OL) (Khan, 2000, as cited in Liaw, Huang & Chen 2007, p. 1067) and annihilate the limitations of time and place because on the contrary to conventional learning which takes place in physical classroom contexts, e-learning systems enable learners to access information wherever and whenever they want, thereby maximizing learning opportunities.

Accordingly, incorporation of e-learning into education has required developing a fundamental understanding of technology and a set of competencies necessary for using technology. E-learners are thus expected to possess digital literacy skills; that is to say, they should have "the ability to understand and use information in multiple formats from a wide range of sources" (Gilster, 1997, p. 1, as cited in Bawden, 2008, p. 4) by using information technologies and the Internet. Given these, digital literacy skills and e-learning might have a reciprocal relationship.

Moreover, learners' attitudes toward online learning environments might have an effect on their behavioral intentions regarding technology acceptance because as indicated in Davis's (1989) Technology Acceptance Model-1 (TAM), attitude has an effect on behavioral intentions. However, as Cüceloğlu (1991) puts forward, attitudinal changes take place in longer periods of time, and they are not only shaped by emotions and thoughts but also by behaviors. Thus, the acceptance and use of technology is also affected by the perceived benefits and perceived ease of use, which in turn affect attitudes. For example, Chaka and Govender (2017) indicated that the factors of the acceptance model are positively correlated with behavioral intention. As also discussed in Venkatesh and Davis's (2000) model of TAM-2 and Venkatesh and Bala's (2008) model of TAM-3, attitude is one of the strong predictors of behavioral intention. Therefore, this study focuses on attitudes toward e-learning by specifically focusing on the educational platform Edmodo.

E-learning

Today, e-learning systems are increasingly used at all levels of education and have several benefits (e.g., Concannon, Flynn & Campbell, 2005; Liaw et al., 2007; Zhang & Nunamaker, 2003) including time and location flexibility, cost and time savings, self-paced learning, collaborative learning environments, better access to the instructors, and unlimited use of learning materials (Zhang & Nunamaker, 2003). Several studies in the literature revealed these effects of e-learning (e.g., Cakiroglu, 2014; Chou & Chen, 2016; Fryer, Bovee & Nakao, 2014; Lee, 2010; Liaw et al., 2007; Ong & Lai, 2006; Ozkan & Koseler, 2009; Selim, 2007). However, e-learning satisfaction depends on well-planned interaction mechanisms since interaction is important for both instructors and students. And in order to facilitate supportive and corrective feedback, instructors must design highly interactive settings (Cakiroglu, 2014). However, as Cheng and Weng (2017) noted, in order to create highly-interactive environments by increasing teacher-student interaction in the class, "the principal is obliged to work together with teachers and parents to provide the support for digital media technology usage" (p. 10).

In another line of research, researchers have explored instructors and learners' attitudes toward e-learning (e.g., Concannon et al., 2005; Liaw et al., 2007), gender differences in relation to e-learning (e.g., Ong & Lai, 2006), and potential effects of previous experience (e.g., Concannon et al., 2005; Selim, 2007) on attitudes towards e-learning. As Selim (2007) notes, "Student prior IT experience such as having a computer at home and attitude towards e-learning is critical to e-learning success" (p. 399). Accordingly, Liaw et al. (2007) suggest that "…user attitudes toward e-learning could be studied from various perspectives, such as affective, cognitive, behavioral, and social components." (p. 1078).

Digital Literacy

Digital literacy refers to "the multiplicity of literacies associated with the use of digital technologies" (p. 1066), and it requires possessing the skills necessary for using technology in teaching-learning processes, and reaching, producing, and sharing information (Hamutoğlu, Güngören-Canan, Uyanık-Kaya, & Erdoğan-Gür, 2017; Ng, 2012).

Digital literacy has attracted widespread attention in the field (e.g., Burnet & Merchant, 2014; Martinovic & Zhang, 2012; Ng, 2012). Nevertheless, studies in the literature have mostly focused on scale development (Hamutoğlu et al., 2017; Ng, 2012; Ustundag, Gunes & Bahcivan, 2017), being digitally literate (Ustundag et al., 2017) or on emphasizing the importance of being digitally literate. In the literature, the empirical correlational experimental studies are quite limited. That is, although e-learning platforms have increasingly been integrated into our lives and despite the reality of our students who were born into digital technologies, no studies have investigated the relationship between digital literacy skills and attitudes toward e-learning.

Significance of the Study and Research Questions

Students of the new millennium typify "the first generations to grow up with" digital technology (Prensky, 2001, p. 2) and today's students are regarded as "digital natives" (Prensky, 2001, p. 2), which implies that they were born into digital technology and have spent their entire lives with it. Therefore, teaching them by using traditional methods and tools might pose problems in the learning/teaching process. Since they are digital natives and therefore digitally literate, so should their teachers be. Professional development of teachers in ICT, therefore, takes a more important stance from this perspective. Thus, teacher training programs should be closely interested in providing digital technologies and incorporating them into the curriculum at universities, especially in the departments in which prospective teachers are studying.

In light of this background, this study aims to achieve a better understanding of the effects of a five-week e-learning course on prospective teachers' digital literacy skills and their attitudes toward e-learning. To put it differently, the present study aims to find out the effects of an e-learning platform (i.e., Edmodo). Even though there are a number of studies subjecting e-learning and digital literacy skills separately, to the best of our knowledge, no studies have investigated the potential relationship between attitudes toward e-learning and digital literacy skills yet. Hence, this study is considered to fill the gap in the literature by providing empirical data with respect to this potential relationship. Furthermore, experimental studies investigating prospective teachers' attitudes toward e-learning are quite limited despite the fact that the importance of attitudes in learning and teaching processes is frequently emphasized (Gagne & Briggs, 1979). However, it is considered important that prospective teachers be digitally literate. Therefore, exploring prospective teachers' attitudes and knowing the factors that might have an effect on their digital literacy skills has crucial importance.

To this end, this study sought to find an answer to the following questions:

1) What is the effect of an e-learning platform (i.e., Edmodo) on prospective teachers'
   a. attitudes towards e-learning prior to and after the treatment?
   b. digital literacy skills prior to and after the treatment?
2) Do prospective teachers'
   a. attitudes toward e-learning vary according to gender prior to and after the treatment?
   b. digital literacy skills vary according to gender prior to and after the treatment?
3) Do prospective teachers'
   a. attitudes toward e-learning vary according to prior e-learning experience prior to and after the treatment?
   b. digital literacy skills vary according to prior e-learning experience prior to and after the treatment?
4) Is there a relationship between prospective teachers' e-learning attitudes and digital literacy skills?
5) What are the predictors of digital literacy?

Method

The study is an example of a quasi-experimental quantitative research design based on a single group pre-and post-test model (see Table 1). Thus, pre and posttests were conducted to investigate the differences in participants' digital literacy skills and their attitudes toward e-learning before and after experimenting with the use of an e-learning system. In this study, Edmodo was used as our e-learning system.

Table 1

The Pre-Experimental Single Group Pre-Test and Post-Test Design

Group	Pre-test	Process	Post-test
G	T_1	X	T_2

Participants

47 undergraduate senior students (25 female, 22 male) enrolled in the Department of Computer Education and Instructional Technology (CEIT) at the Faculty of Education at a state university in Turkey in 2016-2017 spring term participated in this study.

At the time the study was conducted, the participants were taking a compulsory course entitled "Internet-based Education", offered as a departmental elective course for senior students. The class met once a week for three hours per week. Regarding their previous e-learning experience, whereas the majority had (n = 34, 72.3%) previous e-learning experience, the remaining (n = 13, 27.7%) did not.

Data Collection Tools

The data for the study came from two data collection tools: an "Attitude towards E-learning Scale" (Haznedar & Baran, 2012), and a "Digital Literacy Scale" (Ng, 2012).

The Attitudes towards E-Learning Scale (Haznedar & Baran, 2012), which was used to measure general attitudes towards e-learning, includes a total of 20 items. The highest score which can be received from the scale is 100. Factor analysis of the Likert scale, which ranged from 1 "Strongly Disagree" to 5 "Strongly Agree", showed that the 20-item e-learning attitude scale can be used both with single factor and two factors. The single factor of the general attitude towards e-learning scale explained 45.12% of the total variance. The two factor-scale explained 52.23% of the total variance. Cronbach's Alpha coefficient is .93 for two factor scale. In this study, the scale was used with two factors called tendency towards e-learning and avoidance from e-learning. In the scale, only the 10 items in the sub-dimension avoidance were reverse.

The Digital Literacy Scale (Ng, 2012) includes 17 items and comprises four sub-dimensions: attitude (n = 7), technical (n = 6), cognitive (n = 2), and social (n = 2). The scale is a five-point Likert scale, ranging from 1 "Strongly Disagree" to 5 "Strongly Agree", and does not include any reverse items. The highest score which can be received from the digital literacy scale is 85**.** The validity and reliability study was conducted by Hamutoğlu et al. (2017) showed that the factor structure of the original scale was confirmed in the Turkish context. Moreover, Cronbach Alpha was used as an index of reliability, and regarding the overall scale as well as its sub-dimensions –attitude, technical, cognitive, social- the reliability coefficients were as follow: .93, .88, .89, .70 and .72, respectively.

Data Collection Procedure

This study was conducted as a part of a three-hour course which was offered by one of the researchers, and the study included a five-week treatment. And as an e-learning platform, Edmodo - which is a famous online educational technology tool- was used in this study since it helps its members collaborate, share information as well as providing coaching for the students through an online platform.

During the first week of the 14-week semester, the instructor oriented students for the course and administered the pre-tests. In the following week, a session about the Edmodo platform and an

orientation training which is on the course content were provided for the students. Then, the participants were grouped by their instructors on a voluntary basis; i.e., they were allowed to form their own groups. Each group included approximately four to five students, where they chose their group members on their own will. However, the groups did not change over the treatment, the students worked in the same groups during the treatment period. The weekly plan of the treatment is reported in Table 2 below:

Table 2
Weekly Plan of the Treatment

Week	Tasks
1	Orientation & Administration of pre-tests
2	Edmodo orientation & How to enroll in a course on Edmodo
3	Individual discussions on Edmodo: E-learning context
4	Group discussions on Edmodo: E-learning applications around the world
5	Group presentations on Edmodo: The importance of e-learning approaches
6	Individual discussions: The use of different technology and new media on the e-learning process
7	Group discussions on Edmodo: The importance of communication and collaboration on e-learning
8	Administration of post-tests

Basically, the course content was covered during the conventional class hours which were conducted face-to-face, and the students were assigned to discuss the given activities. Each week, a different task including different activities was assigned to the participants. For example, one of the tasks was "E-learning applications throughout the world". During the week in which this topic was covered, the instructor lectured during the class hours, and after the class, the students made online discussions either with their own group members or individually, based on the planned activities. In essence, the students exchanged information through discussion groups on Edmodo. Afterwards, they prepared reports based on their discussions on Edmodo and uploaded them on ForAllRubrics application. After the completion of activities, the instructor provided weekly feedback on ForAllRubrics application on Edmodo so that the students could see their progress weekly. The course materials were delivered via the Google Drive application, which is embedded in Edmodo. To summarize, Edmodo served as an umbrella platform including ForAllRubrics and Google Drive applications, which were used for creating electronic portfolios (e-portfolios), and delivering and storing course materials, respectively. At the end of the five-week treatment, the posttests were administered.

Data Analysis

The data were first inspected for any missing values and normality. To meet the assumptions for parametric tests, first of all, multi collinearity and singularity values between the dependent variables were checked, followed by checking the VIF and tolerance values. Secondly, Cook's distance and Leverage values were computed to meet the normality assumptions.

Afterwards, the data were analyzed using descriptive statistics, independent samples t-test, Pearson product-moment correlation, and simple regression analysis.

Findings

Means, standard deviations, Skewness and Kurtosis values in relation to the Attitude towards E-learning Scale and the Digital Literacy Scale are reported in Table 3.

Table 3
Descriptive Statistics of the Scales

	N	**Min**	**Max**	***M***	***SD***	**Skewness**	**Kurtosis**
E-learning T(pre)	*47*	56.00	74.00	*64.47*	*3.65*	.24	.11
E-learning T(post)	*47*	57.00	87.00	*67.36*	*6.03*	1.13	1.54
TEND (pre)	*47*	29.00	49.00	*37.51*	*4.95*	.65	.07
TEND (post)	*47*	28.00	50.00	*39.55*	*4.91*	.01	.87
AVOID (pre)	*47*	16.00	36.00	*26.96*	*4.69*	-.37	-.32
AVOID (post)	*47*	16.00	44.00	*27.81*	*5.66*	.53	.57
Digital Literacy T (pre)	*47*	56.00	85.00	*71.94*	*7.17*	-.05	-.58
Digital Literacy T (post)	*47*	56.00	85.00	*71.64*	*7.72*	.35	-.74
ATT (pre)	*47*	22.00	35.00	*30.19*	*3.47*	-.16	-.80
ATT (post)	*47*	23.00	35.00	*30.00*	*3.32*	.22	-.91
TECH (pre)	*47*	18.00	30.00	*25.04*	*2.59*	-.17	.20
TECH (post)	*47*	19.00	30.00	*25.11*	*3.16*	.28	-.99
COGN (pre)	*47*	5.00	10.00	*8.23*	*1.22*	-.25	.09
COGN (post)	*47*	5.00	10.00	*8.36*	*1.20*	-.28	.21
SOC-EM (pre)	*47*	6.00	10.00	*8.47*	*1.10*	-.12	-.51
SOC-EM (post)	*47*	4.00	10.00	*8.17*	*1.48*	-.56	.12

Digital Literacy T- Digital Literacy Total, ATT- Attitude, TECH- Technical, COGN-Cognitive, SOC-EM-Social-Emotional, E-Learning T- E-learning Total, TEND- Tendency, AVOID- Avoidance

As reported in Table 3, Skewness and Kurtosis values indicate that the data for scales and their sub-dimensions are distributed normally given the Skewness and Kurtosis values ranging between +2.5 and -2.5 (Mertler & Vannatta, 2005). In other words, Skewness and Kurtosis coefficients for factor scores indicate no deviation from the normal distribution. Mahalanobis Distance value is also inspected considering the independent variables in the dataset ($p < .01$) (Büyüköztürk, 2005, p. 99). Furthermore, multi collinearity and singularity values are at the moderate level (Akbulut, 2010; Büyüköztürk, 2005; Field, 2005; Pallant, 2005). Additionally, VIF values are smaller than 10 (pre =2.047; post =1.14) and tolerance values are higher than zero (pre =.489; post=.874). Finally, Cook's distance is smaller than 1 and Leverage values are smaller than 0.02, which suggest that these values meet the normality assumptions. Thus, in accordance with these results, parametric tests were used to analyze the data.

Table 3 also reports the pre and post-test scores for each scale and sub-dimension. When the pre- and post-test scores are compared, it is seen that the treatment slightly increased the participants' attitudes toward e-learning. On the other hand, it did not have an effect on their digital literacy skills.

In Table 4, the Skewness and Kurtosis values are reported, which show that the data are normality regarding gender. Table 4 also presents the results of pre-test independent sample t-tests in terms of gender which were run to explore the e-learning attitudes and digital literacy skills of the participants prior to the treatment.

Table 4

The Results of Pre-Test Independent Sample t-Test in Terms of Gender

Scale	**Gender**	***n***	***M***	***SD***	**Skewness**	**Kurtosis**	**df**	**t**	**p**
E-learning T	Female	22	63.82	3.33	-.369	.119	45	-1.150	.26
	Male	25	65.04	3.88	.489	-.276			
Digital Literacy T	Female	22	74.27	6.68	-.241	-.977	45	2.18	.03*
	Male	25	69.88	7.08	.167	.060			

*p<.05
Digital Literacy T-Digital Literacy Total, E-Learning T- E-learning Total

The results showed there were significant differences in digital literacy ($t_{(45)}$ = 2.18, p< .05) between males and females. When the arithmetic means were analyzed, it was seen that the female participants (*M* = 74.27) had higher scores than the males (*M* = 69.88) regarding their digital literacy skills. However, no significant difference was found in their attitudes toward e-learning.

Table 5 presents the Skewness and Kurtosis values according to prior e-learning experience, which show that the data are normally distributed. Table 5 also presents the results of pretest independent sample t-test in terms of prior e-learning experience, which was run to explore the e-learning attitudes and digital literacy skills of the participants prior to the treatment.

Table 5

The results of pre-test independent sample t-test in terms of prior e-learning experience variable

Scale	Prior experience	*n*	*M*	*SD*	Skewness	Kurtosis	df	t	p
E-learning T	Yes	34	64.41	3.92	.253	.088	45	-.179	.87
	No	13	64.62	2.93	.378	-.822			
Digital Literacy T	Yes	34	72.47	6.92	-.060	-.638	45	.823	.42
	No	13	70.54	7.89	.078	-.220			

*p<.05, **p<.01

Digital Literacy T-Digital Literacy Total, E-Learning T- E-learning Total

As indicated in Table 5, findings did not elicit a significant difference their attitudes toward e-learning or their digital literacy skills with respect to their prior experience.

In Table 6, the Skewness and Kurtosis values are given, showing that the data are distributed normally in terms of gender. Furthermore, Table 6 also presents the results of post-test independent sample t-test in terms of gender, which was run to explore the e-learning attitudes and digital literacy skills of the participants after the treatment.

Table 6

The results of post-test independent sample t-test in terms of gender

Scale	Gender	*n*	*M*	*SD*	Skewness	Kurtosis	df	t	p
E-learning T	Female	22	67.72	6.51	1.280	2.433	45	.386	.70
	Male	25	67.04	5.70	.969	.374			
Digital Literacy T	Female	22	71.81	6.76	.613	-.964	45	.148	.88
	Male	25	71.48	8.62	.272	-.794			

*p<.05, **p<.01

Digital Literacy T-Digital Literacy Total, E-Learning T- E-learning Total

The results showed that there was no significant difference in any dimensions in terms of gender (p> .05). In this context, it can be stated that the views on e-learning and digital literacy of the female and male participants did not differ from each other.

As indicated in Table 7, the data are distributed normally according to prior e-learning experience. Table 7 also presents the results of post-test independent sample t-test in terms of prior e-learning experience, which was run to explore the e-learning attitudes and digital literacy skills of the participants after the treatment.

Table 7

The results of post-test independent sample t-test in terms of prior e-learning experience variable

Scale	Prior experience	*n*	*M*	*SD*	Skewness	Kurtosis	df	t	p
E-learning T	Yes	34	67.09	6.24	1.286	2.189	45	-.498	.62
	No	13	68.08	5.63	.805	.176			
Digital Literacy T	Yes	34	71.38	7.23	.572	-.535	45	-.364	.72
	No	13	72.30	9.18	-.037	-1.000			

*p<.05, **p<.01
Digital Literacy T-Digital Literacy Total, E-Learning T- E-learning Total

It can be stated that the views on e-learning and digital literacy held by the participants who had prior e-learning experience and the ones who did not have such experience did not differ from each other. Table 8 presents the results of the paired sample t-test, which was run to explore the e-learning attitudes and digital literacy skills of the participants prior to and after the treatment.

Table 8

The results of paired sample t-test in terms of pre-and-post tests

Scale	Tests	*N*	*M*	*SD*	df	t	p
E-Learning T	Pre	*47*	*64.47*	*3.64*	46	-3.192	.003**
	Post	*47*	*67.36*	*6.03*			
TEND	Pre	*47*	*37.51*	*4.95*	46	-2.366	.022*
	Post	*47*	*39.55*	*4.91*			
AVOID	Pre	*47*	*26.96*	*4.69*	46	-.922	.361
	Post	*47*	*27.81*	*5.66*			
Digital Literacy T	Pre	*47*	*71.94*	*7.17*	46	.249	.804
	Post	*47*	*71.64*	*7.72*			
ATT	Pre	*47*	*30.19*	*3.47*	46	.379	.707
	Post	*47*	*30.00*	*3.32*			
TECH	Pre	*47*	*25.04*	*2.59*	46	-.130	.897
	Post	*47*	*25.11*	*3.16*			
COGN	Pre	*47*	*8.23*	*1.22*	46	-.544	.589
	Post	*47*	*8.36*	*1.20*			
SOC-EM	Pre	*47*	*8.47*	*1.10*	46	1.298	.201
	Post	*47*	*8.17*	*1.48*			
E-Learning T	Pre	47	64.47	3.64	46	-3.192	.003**
	Post	47	67.36	6.03			
Digital Literacy T	Pre	47	71.94	7.17	46	.249	.804
	Post	47	71.64	7.72			

*p<.05, **p<.01
Digital Literacy T- Digital Literacy Total, ATT- Attitude, TECH- Technical, COGN-Cognitive, SOC-EM-Social-Emotional, E-Learning T- E-learning Total, TEND- Tendency, AVOID- Avoidance

Table 8 also reports the results of the paired sample t-tests which were run to explore the e-learning attitudes and digital literacy skills of the participants prior to and after the treatment. The results showed that there was a significant difference between the pre-test and the post test results in terms of e-learning attitudes ($t(46) = -3.192$, $p < 0.01$). When the arithmetic means were analyzed, it was seen that the post-test results ($M = 67.36$) were higher than the pre- test results ($M = 64.47$). Similarly, there was a significant difference in the sub-dimension tendency (of the e-learning attitude scale) ($t (46) = -2.366$, $p < 0.05$). When the arithmetic means were analyzed, it was seen that the post-test results ($M = 39.55$) were higher than the pre-test results ($M= 37.51$). However, no significant difference was found in the other sub-dimensions of e-learning attitudes, digital literacy skills and its sub-dimensions.

Table 9 presents the results of the Pearson Correlation test to see the relationship between e-learning attitudes and digital literacy skills of the participants in the pre-test.

Table 9

Pearson Correlation Matrix on the Relationship between E-learning Attitude and Digital Literacy in terms of pre-test results

	Digital Literacy T	ATT	TECH	COGN	SOC-EM	E-learning T	TEND	AVOID
Digital Literacy T	1	.922**	.874**	.827**	.632**	-.031	.245	-.283
ATT	-	1	.674**	.682**	.511**	-.091	.188	-.269
TECH	-	-	1	.713**	.428**	.131	.319*	-.235
COGN	-	-	-	1	.451**	-.123	.228	-.336*
SOC-EM	-	-	-	-	1	-.088	.003	-.072
E-learning T	-	-	-	-	-	1	.438**	.315*
TEND	-	-	-	-	-	-	1	-.715**
AVOID	-	-	-	-	-	-	-	1

*p<.05, **p<.01

Digital Literacy T- Digital Literacy Total, ATT- Attitude, TECH- Technical, COGN-Cognitive, SOC-EM-Social-Emotional, E-Learning T- E-learning Total, TEND- Tendency, AVOID- Avoidance

The results showed that there was no relationship between e-learning attitudes and digital literacy ($r= -.031$; $p > 0.05$), and its sub-dimensions ($r = -.091$, $r = .131$, $r = -.123$, $r = -.088$; $p > .05$) before the treatment. When considered in terms of tendency sub-dimension, a positive moderate significant relationship was found only between tendency and technical sub-dimension ($r = .319$; $p < .05$) while there was not any significant difference between tendency sub-dimension and digital literacy ($r = .245$; $p > .05$), and attitude, cognitive, social-emotional sub-dimensions ($r = .188$, $r = .228$, $r = .003$; $p > .05$) before the treatment. On the other hand, a negative moderate significant relationship was found only between avoidance sub-dimension and cognitive sub-dimension ($r = -.336$; $p < .05$) while there was not any significant difference between avoidance sub-dimension and digital literacy ($r = -.283$; $p > .05$), and attitude, technical, social-emotional sub-dimensions ($r = -.269$, $r = -.235$, $r = -.072$; $p > .05$) before the treatment.

Table 10 presents the results of the Pearson Correlation test showing the relationship between e-learning attitudes and digital literacy skills of the participants in the post-test.

Results indicated no relationship between e-learning attitudes and digital literacy ($r = .241$; $p > .05$), and its sub-dimensions ($r = .262$, $r = .176$, $r = .110$, $r = .205$; $p > .05$) after the treatment. Similarly, no relationship was found between avoidance sub-dimension and digital literacy ($r = -.221$; $p > .05$), and its sub-dimensions ($r = -.239$, $r = -.239$, $r = -.165$, $r = .025$; $p > .05$) after the treatment. When considered in terms of tendency sub-dimension, some positive moderate significant relationships were found between tendency and relatively digital literacy ($r = .551$; $p < .01$), attitude ($r = .597$; $p < .01$), technical ($r = .491$; $p < .01$), cognitive ($r = .325$; $p < .05$) while there was no relationship between tendency and social-emotional ($r = .223$, $p > .05$) after the treatment.

Table 10

Pearson Correlation Matrix on the Relationship between E-learning Attitude and Digital Literacy in terms of post-test results

	Digital Literacy T	ATT	TECH	COGN	SOC-EM	E-learning T	TEND	AVOID
Digital Literacy T	1	.870**	.905**	.792**	.693**	.241	.551**	-.221
ATT	-	1	.660**	.511**	.474**	.262	.597**	-.239
TECH	-	-	1	.744**	.503**	.176	.491**	-.239
COGN	-	-	-	1	.586**	.110	.325*	-.165
SOC-EM	-	-	-	-	1	.205	.223	.025
E-learning T	-	-	-	-	-	1	.481**	.649**
TEND	-	-	-	-	-	-	1	-.355*
AVOID	-	-	-	-	-	-	-	1

*p<.05, **p<.01
Digital Literacy T- Digital Literacy Total, ATT- Attitude, TECH- Technical, COGN-Cognitive, SOC-EM-Social-Emotional, E-Learning T- E-learning Total, TEND- Tendency, AVOID-Avoidance

The relationships between tendency and digital literacy, and its sub-dimensions except social-emotional sub-dimension were analyzed by simple regression analysis technique, which are presented in Table 11.

Table 11

Linear Regression using Tendency to Predict Cognitive, Technical, and Attitude sub-dimension, and Digital Literacy

Variables	COGN (Constant)	TEND	TECH (Constant)	TEND (Total)	ATT (Constant)	TEND	Digital Literacy T (Constant)	TEND
M	8.36	39.55	25.11	39.55	30.00	39.55	71.64	39.55
SD	1.20	4.91	3.16	4.91	3.32	4.91	7.72	4.91
N	47	47	47	47	47	47	47	47
B	5.20	.080	12.62	.316	14.07	.403	37.40	.866
SE	1.38	.03	3.33	.083	3.22	.081	7.80	.196
Beta		.325		.491		.597		.551
t	3.774	2.308	3.794	3.781	4.369	4.986	4.797	4.424
p	.000	.026	.000	.000	.000	.000	.000	.000
Paired r		.325		.491		.597		.551
Partial r		.325		.491		.597		.551
	$F_{(1-46)}$ =5.325 p = .026* R=.325 R^2 =.110 n^2=0,12		$F_{(1-46)}$ =14.298 p = .000** R=.491 R^2 =.241 n^2=.32		$F_{(1-46)}$ =24.862 p = .000** R=.597 R^2 =.356 n^2=0,55		$F_{(1-46)}$ =19.568 p = .000** R=.551 R^2 =.303 n^2=0,43	

*p<.05, **p<.01
Digital Literacy T- Digital Literacy Total, ATT- Attitude, TECH- Technical, COGN-Cognitive, TEND-Tendency

When the results are examined, it is seen that tendency explains relatively digital literacy ($R = .55$, $R^2 = .30$, $F = 19.56$, $p < .01$); attitude ($R = .59$, $R^2 = .35$, $F = 24.86$, $p < .01$); technical ($R= .49$, $R^2= .24$, $F= 14.29$, $p < .01$); cognitive ($R = .32$, $R^2 = .11$, $F = 5.32$, $p < .05$) at a significant level. According to these results, tendency explains relatively 30% of the variance in digital literacy; 35% of

attitude; 24% of technical and 11% of cognitive. In this context, it can be stated that tendency is a significant predictor for digital literacy and its sub-dimensions attitude, technical and cognitive literacy.

Discussion and Conclusion and Recommendations

This study aimed to explore the effect of an e-learning platform on participants' digital literacy skills and their attitudes towards e-learning. For the purposes of the study, one of the prevalent e-learning platforms- Edmodo, was incorporated into the course syllabus in this study. The study, where a pre and post-test quasi-experimental design was adopted, was conducted with prospective teachers over a five-week treatment period, and the data were obtained by the "General Attitude Scale towards E-learning" (Haznedar & Baran, 2012) and the "Digital Literacy Scale" (Ng, 2012). The results overall demonstrated that whereas a significant change was observed in the participants' attitudes toward e-learning, it did not have a significant impact on their digital literacy skills. The results are further discussed more in-depth as follow.

As also indicated in the results, a paired samples t-test comparing the pre- and post-test results indicated that the treatment significantly affected the attitudes of participants towards e-learning platforms. Chaka and Govender (2017) addressed the perception of students toward mobile learning based on an acceptance model and found that the factors of the acceptance model were positively correlated with behavioral intention. However, it is worth to note that attitude is one of the strong predictors of behavioral intention (Venkatesh & Bala, 2008). Actually, attitude is a string and latent variable which is resistant to changes. In this context, the results of this study illustrate that the treatment was so effective that the attitude towards e-learning platforms showed a difference between pre- and post-tests analysis. Moreover, previous experience with e-learning and gender were other variables which were investigated regarding participants' attitudes toward e-learning. At the beginning of the treatment, previous experience was not correlated with attitudes towards e-learning platforms, which concurs with Concannon et al. (2005)'s study. Concannon et al. (2005) in their study found that previous experience with computers should not be the main concern; rather, students' attitude is a more important factor. In their study, even though nearly 15% of the participants did not have or had limited prior experience with computers, none of them stated difficulties while using technologies. Therefore, it is noted that participants' attitudes is a strong a predictor on the use of these technologies. On the other hand, gender, similarly, did not have a significant impact on the attitudes of participants toward e-learning in this study.

The paired samples t-tests results also indicated that the treatment did not significantly affect the participants' digital literacy skills because in the treatment, the planned activities were mainly based on peer and collaborative learning rather than on setting the students to work on improving their digital literacy skills. Therefore, the treatment did not aim to change the digital literacy skills of the participants. In addition to this, the findings could be explained considering the participants' exposes to digital technologies such as smartphone, tablet, etc. in their daily lives. That is why we should not expect statistically significant changes, especially after a treatment which only lasted for five weeks. Furthermore, the predictors of digital literacy and its sub-dimensions (attitude, cognitive, technical, and social-emotional) were investigated. Considering the correlational analyses, the results are as follow:

Before the treatment, attitudes toward e-learning did not have any relationship with any of the sub-dimensions of digital literacy - attitude, technical, cognitive, social-emotional. With respect to e-learning and its sub-dimensions, avoidance had a negative moderate significant relationship with the cognitive sub-dimension of digital literacy. It was not correlated with the other sub-dimensions-attitude, technical, social-emotional. The sub-dimension tendency had a positive moderate significant relationship with the technical sub-dimension of digital literacy. Yet, it was not correlated with the other sub-dimensions -attitude, cognitive, social-emotional.

After the treatment, the results demonstrated that attitudes toward e-learning were not correlated with any of the sub-dimensions of digital literacy, either. However, some changes were observed regarding the sub-dimensions of e-learning; i.e., regarding tendency and avoidance. Avoidance was not correlated with any of the sub-dimensions of digital literacy whereas tendency was positively

correlated with digital literacy ($r = .551$; $p < .01$), and with the following sub-dimensions: attitude ($r = .597$; $p < .01$), technical ($r = .491$; $p < .01$), and cognitive ($r = .325$; $p < .05$). The treatment did not affect the sub-dimension social-emotional.

In terms of participants' attitudes toward e-learning, there was no relationship with digital literacy or with its any sub-dimensions. Digital literacy did not correlate with attitude because we consider that the activities assigned for participants did not aim to/ did not make the participants engage in digital literacy skills. In order to develop digital literacy skills, participants should define and analyze the data which they obtain from the digital medium. In this study, we do not exactly know how the participants obtained the data within the scope of the activities presented with Edmodo, that is, whether they obtained the information from a digital medium or not. It is probable that the participants might have used published hard-copy sources, or they might have obtained information from their group members by exchanging information or through discussion; there was not a control mechanism for checking this process. Besides, we only used one e-learning platform- Edmodo. In light of these, the result that there is not a correlation between digital literacy skills and their attitudes toward e-learning can be meaningful. Future studies might be conducted over long periods of time or in a different medium with well-designed activities.

Regarding avoidance and sub-dimension of e-learning, -there was a negative moderate significant relationship between avoidance and cognitive sub-dimension before the treatment. However, the treatment helped neutralize this relationship. The participants were expected to avoid the medium since they were not cognitively competent at the beginning of the treatment. Therefore, this finding is meaningful since they are not familiar with the medium or cognitively mature enough. However, after the treatment, the avoidance of the participants disappeared at the post-test, with experience. Even though this relationship was not positively correlated, longer-term studies in which experience is maximized are considered to possibly be more effective in terms of avoidance. To summarize, the result of the treatments neutralized the negative effects on cognitive sub-dimension of digital literacy within the context of avoidance.

The main effects of the treatment can be observed on the regression results which show tendency is a significant predictor for digital literacy and its all sub-dimensions attitude, technical and cognitive literacy except for the social-emotional sub-dimension. Considering the features of tendency, it is meaningful to have a positive relationship with the total score of digital literacy because tendency might change with experience. As participants gain experience with e-learning platforms, their tendency toward e-learning increases as well. According to Cüceloğlu (1991), attitude is long-term, and it is not only shaped by emotions and thoughts, but also by behaviors. Therefore, it can be stated that temporary tendencies that are not observed for a long time are not seen as attitudes (Hamutoğlu, 2013). Considering the relationship between tendency and technical sub-dimensions, they were correlated even before the treatment, and it was maintained after the treatment as well. Considering participants' background (they were senior students enrolled in the Department of Computer Education and Instructional Technology), the results are meaningful. At the beginning of the treatment, tendency and cognitive were not correlated, yet after the treatment a positive moderate significant relationship with cognitive after the treatment, meaning that they became cognitively ready. The tendency, however, was not correlated with the sub-dimension social-emotional. When the items in the sub-dimension social-emotional are examined, it is expected that the activities assigned for a five-week treatment period do not have an effect on the tendency.

All in all, this study investigated the correlation between the digital literacy skills of prospective-teachers based on e-learning attitudes and its sub-dimensions such as tendency and avoidance through the one of the emerging instructional technology such as using Edmodo, by implementing pedagogical approaches. The results of the present study might be helpful to facilitate better learning, increase motivation, and adopt the 21st-century skills than the ones that are sought by the traditional classroom environments. However, in this digital era, not only being able to use the technologies but also their potential effects from a pedagogical perspective should be addressed more in depth. In addition to this, future studies may examine in depth based on qualitative research methods for the students' attitudes toward digital technologies. This study was, therefore, an attempt to contribute to the body of research on digital technologies from a pedagogical perspective.

Implications

This study revealed that attitude has an important place in the acceptance of technology and predicts the intention toward the use of that technology, and it provides several implications.

Unearthing the factors that might have an effect on teachers' digital literacy has an important place, and teachers should focus on the issues that might affect their attitudes. It is also considered that providing more opportunities for prospective teachers to increase their experience in e-learning platforms might help them enhance their digital literacy skills since these platforms have a significant effect on their attitudes. All in all, it can be implied that tendency through the use of these kinds of e-learning platforms help individuals improve their digital literacy skills. It is recommended for future research(er)s that how prospective teachers' opinions about e-learning platforms, and how these platforms affect their learning in-depth.

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