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Research Article

Comparing the Opinions and Practices of Preschool Teachers' about the Use of Natural Mathematics Language[1]

Zehra Saadet Fırat[2], Çağlayan Dinçer[3]

Abstract

The aim of this study was to compare the practices and opinions of preschool teachers on using natural mathematics language. The study group consisted of totally eight preschool teachers (five preschool teachers working at official independent kindergartens and three preschool teachers working at kindergartens of primary schools) in the central district of Erzurum province, Turkey. In order to conduct the study; all the teaching processes of teachers except for the mathematics activities were recorded using a camera in the classroom environment for a week and their anecdotes were recorded. At the end of observation, each teacher was interviewed and asked semi-structured questions prepared by the researchers of this study. Data obtained from the camera records were analyzed by using The Observer XT – Noldus software. Interview forms were analyzed by means of descriptive analysis method and similar responses were collected under the same themes. Teachers stated that they used natural mathematics language in their responses to interview questions but it was determined in line with the observation results that they did not use natural mathematics language. According to the observational data, it was determined that teachers frequently used giving instructions and drawing attention strategies and that the mathematical expressions teachers used mostly at times aside from the mathematics activities were related to counting-numbers, measuring, location in space and comparing skills. It was also determined that all of the teachers had a common decision that using mathematics language in the classroom environment would support the mathematical development of children.

Keywords: *Preschool teacher, natural mathematics language, mathematical education, mathematics in preschool.*

[1] This study includes a chapter written by the first author of the thesis.

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Okul Öncesi Öğretmenlerinin Doğal Matematik Dilini Kullanımlarına İlişkin Uygulamaları ile Görüşlerinin Karşılaştırılması

Öz

Bu çalışmada okul öncesi öğretmenlerinin doğal matematik dilini kullanımlarına ilişkin görüşleri ile uygulamalarının karşılaştırılması amaçlanmıştır. Erzurum ili merkezinde bulunan resmi bağımsız anaokullarından beş ve resmi ilkokul bünyesindeki anasınıflarından üç olmak üzere toplamda sekiz gönüllü okul öncesi öğretmeni çalışma grubunu oluşturmuştur. Çalışma için öğretmenlerin sınıf ortamında bir hafta boyunca matematik etkinlikleri dışındaki tüm öğretim süreçleri gözlemlenerek kameraya kaydedilmiş ve anekdot kayıtları alınmıştır. Gözlem sonunda her öğretmenle birer görüşme yapılmış ve araştırmacılar tarafından hazırlanmış yarı yapılandırılmış sorular sorulmuştur. Kamera kayıtlarından elde edilen veriler The Observer XT-Noldus programı ile analiz edilmiştir. Görüşme formları ise betimsel analiz yöntemiyle incelenmiş ve benzer yanıtlar aynı temalar altında toplanmıştır. Öğretmenlerin görüşme sorularına verdikleri yanıtlarda; doğal matematik dilini kullandıklarını ifade etmelerine karşın gözlem sonuçlarına göre kullanmadıkları belirlenmiştir. Gözlem verilerine göre öğretmenlerin matematik etkinlikleri dışındaki zamanlarda en fazla kullandıkları matematiksel ifadelerin, sayma-sayı, ölçme, mekanda konum ve karşılaştırma becerileriyle ilgili olduğu ve öğretmenlerin sıklıkla yönerge verme ve dikkat çekme stratejilerini kullandıkları belirlenmiştir. Öğretmenlerin tamamının, sınıf ortamında doğal matematik dili kullanmanın çocukların matematiksel gelişimlerini destekleyeceği konusunda ortak bir karara sahip oldukları saptanmıştır.

Anahtar Sözcükler: *Okul öncesi öğretmeni, doğal matematik dili, matematik eğitimi, okul öncesinde matematik.*

Introduction

Children in the preschool period go through a rapid cognitive, social and physical development. Supporting their development is ensured not only through a formal and planned education, but also through an informal education. Formal methods are the activities, practices, expressions, and materials that teachers prepare and plan according to the developmental levels of children in order to achieve the learning outcomes determined within the educational process (Avcı, & Dere, 2002). On the other hand, informal methods are the methods which arise as a result of the unconscious information exchange between children, which is unstructured and occur naturally and which depend on environmental and individual characteristics (Erdoğan, 2012).

Unlike the learning processes of adults, children acquire knowledge, learn and gain skills through plays, discoveries, and entertainment (Tuğrul, 2002). Every piece of information that children acquire during this period brings them different cognitive skills. Cognitive skills develop with mathematics. Children's first encounter with mathematics takes place through natural ways. From birth until the age of four, children experience a lot of mathematical stimuli in their surroundings (NCTM, 2000). Mathematics is not only a science that has formal representations and symbolic forms in children's life but it is also a wide field that represents a rich and flexible continuity from games to songs and TV programs (Moseley, 2005). The first mathematical experiences for children emerge as a process in which plays are run together with mathematics and in which curiosity and discovery feelings are dominant (Güven, Öztürk, Karataş, Arslan, & Şahin, 2012; Linder, Powers-Costello, & Stegelin, 2011).Towards the end of the early childhood period, it is seen that children know mathematical concepts and achieve basic mathematical skills (NAEYC, 2008; NCTM, 2000).

Teachers' forming robust mathematics basis for children during the preschool period can help children in later formal mathematics learnings (NCTM, 2000; Peter-Koop & Scherer, 2012; Umay, 2003). According to NCTM (National Council for Mathematics Teachers), children are required to use mathematical language in order to express mathematics and establish a mathematical communication in a correct way (Ferrini-Mundy, 2000; Yıldırım, 2012). The fact that children can express mathematics correctly and have acquired these skills is ensured through the opportunities that teachers offer them without creating an environment of anxiety and fear. The use of mathematical language by children and establishing a mathematical

communication with appropriate words and concepts helps them to think creatively, to think about the concepts they use and to communicate effectively in a classroom environment (Kranda, 2008).

The role of teachers in mathematics teaching preschool period cannot be ignored. Teachers' use of mathematical language actively for the mathematical development of children and correct modeling of these children contribute to the mathematical development of children (NCTM, 2000). It is expected that teachers will lead children in acquiring mathematical skills and, thus, children's learning will be easier. The activities that teachers prepare for children and the way they communicate differ when the practices are formal or informal. The teacher who cannot use the correct language is likely to have difficulties in the classroom environment. The language, expressions, and contents used by teachers must be appropriate and correct for the levels of children (Klibanoff, Levine, Huttenlocher, Vasilyeva, & Hedges, 2006). It is expected from teachers to use an appropriate tone, pronunciation, and emphasis in the classroom environment. The type of sentences they form, the content of the expressions and the way they address are perceived and modeled by children (Çetindağ, 2013).

Language and concept development of children affect their academic skills. Mathematical skills are associated with rich language experiences (Sarama, Lange, Clements, & Wolfe, 2012; Uyanık & Kandır, 2010). Children start to learn mathematical language by labeling objects. When children start to make sense of the concepts expressed by words, they also start to use it for the appropriate situations (as cited in Sarama et al., 2012). It is necessary that mathematical concepts and expressions should be used by teachers and children consciously, correctly and appropriately in activities in the classroom environment and children should be supported when these concepts and expressions are used by children. Mathematical language is important for children to communicate, to express their thoughts and talk with their peers or adults by choosing the conceptually correct words (Bali, 2002).

Natural mathematics language is the mathematical concepts, words, instructions, expressions, and sentences that preschool teachers use in a classroom environment (Klibanoff et al., 2006). It was agreed upon by the mathematics experts that natural mathematics language is necessary for mathematics teaching and it was included in mathematics standards determined for every each state in the United States of America (Bali, 2003; Kandır & Orçan, 2010; Taştepe, 2012).

The use of natural mathematics language has positive effects on counting, calculation and understanding symbols skills of children (Boonen, Kolkman, & Kroesbergen, 2011; Mc Goron, 2010). Thanks to the mathematical language used in the classroom environment, it can be ensured that children understand the instructions more easily and mathematics can be made entertaining by means of reducing mathematical anxiety and prejudice levels (Taşkın & Tuğrul, 2014). The natural mathematics language used by the teacher is modeled by children. In addition to this, in a correct sense, children start to use mathematical skills effectively by choosing the right words (Landsdell, 1999).

It is known that preschool teachers' use of mathematical language is an effective predictor of the academic success of children. The children in preschool period are beginning to notice and discover quantitative relationships in the world around them and, therefore, to use language, painting, modeling and other forms of representation in order to clarify the information they have acquired in mathematical subjects such as numbers, shapes, space etc. (McCray & Chen, 2012). Therefore, a preschool teacher's task extends beyond introducing mathematics to young children in a classroom environment, naming it and establishing a conceptual understanding of new mathematical operations in order to help them to test these operations. However, the point that teachers need help is to determine what mathematical inputs children need and to determine what kind of formal or informal way they will follow (Kabael & Baran, 2016).

It is necessary for the teachers to be aware of what concepts and words they use, the meanings of the expressions and the verbal messages they want to give when using mathematical language and to gain an awareness of how they will manage this. The way teachers communicate with children change depending on the whether their activities and practices are formal or informal. Teachers assign their expressions in different types of sentence structures when they are communicating with children. While some reactions contain positive messages, some may have negative implications.

Strategies frequently used in teachers' expressions are giving feedback, correcting, reminding, attracting attention and motivating (Memişoğlu, 2008; Sönmez, 2011). However, teachers also use expanding, accepting, repetition, intervening, providing instructions and asking questions when these strategies are not sufficient in the classroom environment. Although narrating strategy is not appropriate for the characteristics of children in the preschool period, teachers reflect this strategy into their classroom environments (Küçükahmet, 2014).

The necessity of determining the mathematical language used by the teacher has arisen since basic mathematical skills are based on advanced academic skills for children and at the same time the communication in the classroom environment is considered to have not progressed only in formal form. It is known that the preschool teachers receive training for supporting children's skill acquisition during their undergraduate education. However, the fact that there are differences in the opinions and practices of teachers about natural mathematics language, there is no example of non-formal mathematics learning and they plan activities for limited areas when they are transforming theoretical knowledge into practice constitutes the research question of this study.

When the studies conducted on mathematics were examined, it was seen that the perceptions, attitudes, and competencies were investigated and their opinions on this issue were received, but the natural mathematics language in the classroom environment was not mentioned and there were no studies conducted on this issue. Considering these shortcomings, such a study will contribute to this field in terms of revealing the importance of teachers' use of natural mathematics language and raising awareness on this issue. In the direction of these thoughts, it is aimed to observe the use of natural mathematics language, to take opinions about natural mathematics language and to reveal the similarities and differences between its applications and opinions.

Methodology

In this study, a qualitative research process and a case study design was used. The reason for choosing a qualitative research method was that it allowed us to observe the phenomenon and behavior in its natural environment and its own context without any other intervention (Glesne, 2013; Yıldırım & Şimşek, 2011). It is possible to obtain rich and detailed data in the qualitative research. In case studies, the situation is handled and analyzed as a whole while the answers of how and what questions are sought (Yıldırım & Şimşek, 2011).

Participants

The purposeful sampling method was used when choosing the participants of the study group. Unlike other quantitative sampling methods, this sampling method is based on the criteria at the center of this study. Purposeful samples provide participant examples that are rich in terms of knowledge and experience for the researchers (Glesne, 2013). The most important point in purposeful sampling is that the sampling process is based on volunteerism. The criterion chosen with purposeful sampling reflects the aim of the study directly. The size of the sample is shaped by the focus of the study, and the depth, width and amount of obtained data. The sample constitutes a very small part of the population. There are no concerns about the generalization of this study to the whole population. The teachers constituting the study group were sampled as a typical case study. The teachers in the study group share similar characteristics and this makes it easier to reach more realistic results about the population (Yıldırım & Şimşek, 2011).

The study group of this study consisted of volunteer preschool teachers working in nursery classes of elementary schools and formal independent kindergartens in the central district of Erzurum province, Turkey. The study group consisted of 8 preschool teachers: 5 preschool teachers working in nursery classes of elementary schools and 3 preschool teachers working in formal independent kindergartens. There was only one male teacher in the study group.

Table 1a
The Distribution of Teachers Constituting the Study Group

Teacher	School type	Study group working hours
T1	Nursery class within the elementary school	Morning
T2	Nursery class within the elementary school	Morning
T3	Independent kindergarten	Afternoon
T4	Independent kindergarten	Morning
T5	Independent kindergarten	Morning
T6	Nursery class within the elementary school	Morning
T7	Nursery class within the elementary school	Afternoon
T8	Nursery class within the elementary school	Morning

First, teachers participating voluntarily in the study were requested to fill in the Personal Information Form. According to this Personal Information Form, the characteristic of the study group was determined.

Table 1b

Personal Information of the Teachers Participating In This Study

Teacher's age	f
23 years old	1
27 years old	1
30 years old	2
32 years old	1
33 years old	1
35 years old	1
39 years old	1
Gender	
Female	7
Male	1
University	
Atatürk University	4
Selçuk University	2
100. Yıl University	1
Anadolu University (Open Education Faculty)	1
Professional Seniority	
1 year	1
5 years	1
6 years	2
9 years	1
10 years	2
14 years	1

Institution type	f
Nursery class within elementary school	5
Independent kindergarten	3
Professional time	
5 months	1
1 year	2
2 years	1
3 years	1
6 years	1
9 years	1
10 years	1
Age group	
6 years old	2
5 years old	1
4-6 years old	2
5-6 years old	3

The ages of teachers participating in this study ranged between 23-39. The average of the teachers' ages was found to be 31. When gender distributions of the teachers are examined, it is seen that there are only 1 male teacher and 7 female preschool teachers in the study group. The teachers participating in this study graduated from the following universities: 4 teachers from Atatürk University, 2 teachers from Selçuk University and the others from 100. Yıl University and Anadolu University. All of the teachers participating in this study completed their undergraduate education in Preschool Teaching Department of related universities.

When the professional seniority degrees of the teachers participating in this study, it is seen that their seniority degrees are in a wide range between 1 year and 14 years. A teacher who has been recently assigned and a teacher who has been teaching for a long time constituted the two endpoints of the study group. The average of professional seniority degrees of this study group was 8 years. It was determined that the professional times of the study group ranged between 5 months and 10 years and the average for this group was 4 years (see Table 1b).

Data Collection Instruments

A Video Record Review Form designed for video records, observation record books where research observations are recorded, Personal Information Form for obtaining information about teachers and a semi-structured Natural mathematics language Personal Opinion Determining Form for obtaining teachers' opinions on natural mathematics were used in this study.

The data collection tools were prepared by the researchers of this study by means of receiving appropriate opinions. Video Record Review Form was prepared as a form that included the activities in preschool education curriculum as well as the determined mathematical skills and strategies (MoNE, 2013). The skills determined for video record review form were submitted to expert opinion and final changes were made. Observation Record Books included the researcher's comments on the classroom environments and anecdotes apart from the camera records.

Personal Information Form is a form consisting of questions about the teachers' age, gender, educational status, graduated university, graduated department, professional seniority degree, age group they work with, institution type they work in and their working hours. Natural mathematics language opinion determining form consisted of 10 questions that were prepared by reviewing the related literature, but the number of questions was reduced to 6 after it was analyzed by 3 experts.

Data Collection

Qualitative methods such as observation, anecdotal records, and interviews were used in order to collect the data related to natural mathematics language that preschool teachers use within the classroom environment.

Pilot study

A pilot study was conducted in 2014-2015 academic year fall term before starting this study. Camera record and interview were applied to a teacher who was not included in the study group. Some arrangements were made by considering the presence of a camera in the classroom environment, children's reactions, recording videos healthily, taking anecdotal records and

teacher's concentration and, then, the study was started to be conducted on other teachers. The pilot study was not assessed within the scope of this study.

Observation

The presence of the researcher during the observation, obtaining the existing data from the primary resource and being able to assess the environment in its own context provides a data richness in remembering and interpreting the events (Yıldırım & Şimşek, 2011). In order to reveal the natural mathematics language that teachers use in the classroom environment, observations were made by the researcher in the classroom environment with a non-participatory observer role. The teachers participating in this study were informed of the basic conditions of the study, camera and voice recordings, but they were not informed of the research subject. The use of a video camera and anecdotal records during the observations make it possible for the data to support each other. Cameras were installed to the classes of teachers who accepted these conditions. The observations started to be conducted in March of 2014-2015 academic year spring term and they were finished in May. Considering the process of getting accustomed to the researcher and in order to ensure that the teachers feel comfortable during the observations in the classroom environment, each teacher was observed for a week before starting to implement the study. The records in this period specified as the adaptation process were not assessed. As the training period of institutions providing half-day training was about 4.5-5 hours, this period was determined as an observation period for each teacher. The teachers participating in this study were observed for a total of 23-25 hours. All educational processes of teachers, their activities (other than mathematical activities) and their conversations with children were also recorded. The researcher did not intervene in the classroom environment or teachers' behaviors under no circumstances. The researcher recorded the general observations and comments in the record book as anecdotal records. When the researcher completed the observations, a total of 185 hours of observations were recorded.

Interview

Interview, which is another method used within the scope of this study, presents ideas about the interests, attitudes, thoughts, and beliefs of individuals and refers to an interactive process (Yıldırım & Şimşek, 2011). The most appropriate method and the richest data support is the

interview questions prepared in a semi-structured form for collecting the opinions of teachers on natural mathematics language. The observation form consisted of two parts: structured personal information form by which teachers' personal information is received and semi-structured interview questions involving beliefs and theories related to natural mathematics language. The teachers participating in this study provided in-depth and detailed responses to the questions prepared. After the number of observations for each teacher is completed, interviews related to the natural mathematics language were made. During these interviews, the teachers were informed of the aim of the study. Before the interview forms were applied to the teachers, they were requested to confirm these forms informing that their responses could be recorded with voice recording devices. The interviews were completed with the help of a voice recording device in an appropriate class in a school environment or in an empty area arranged as a game room by getting appointments with teachers. The interviews with teachers lasted approximately 10-15 minutes. A total of 90 minutes of interview data were collected.

Data Analysis

The collected observation and anecdotal records and responses provided to interview questions were transferred to a computer environment. The Observer XT – Noldus software was used for the analysis of video observations. In this study, Noldus software was chosen because it has the ability to capture and select predetermined behaviors in videos uploaded on the software and it is a utility package program used in qualitative research and behavior analysis. On the other hand, a descriptive analysis method was used in interviews with teachers. The responses to the interview questions were brought together under common themes determined by the researchers. When conducting the analyses and obtaining the final findings, the same datasets were coded by both researchers at different times and a special attention was paid to the fact that both researchers reached a consensus for each data set.

The differences and similarities between application-oriented natural mathematics language used by teachers and interview questions they responded in the light of their existing knowledge were determined.

Findings

All teachers participating in this study, which aimed at comparing the opinions of preschool teachers' on their use of natural mathematics language and their practices, was coded from T1 to T10 in line with the observation order. The related literature on the mathematical skills used by teachers during observations was reviewed and 16 mathematical skills were determined. These 16 mathematical skills were collected under the following themes (Ginsburg, Lee, & Boyd, 2008; Klibanoff et al., 2006):

- Matching
- Comparing
- Grouping
- Ranking
- Pattern
- Counting - number
- Recognising number
- Writing number
- Operation
- Measuring
- Location in space
- Geometric shapes
- Whole - part
- Graphic
- Problem-solving
- Reasoning

In addition to this, 13 strategies that teachers used for mathematical skills were determined and these were taken into account during the coding process (as cited in Sonnenschein, Thompson, Metzger, & Baker, 2013):

- Reinforcing
- Giving feedback
- Correcting
- Reminding
- Drawing attention
- Motivating
- Narrating - Explaining
- Asking questions
- Extending
- Accepting
- Repeating
- Intervening
- Giving instructions

During the coding process, it was taken into account in which teacher strategies the expression used for each mathematical skill were included. Only the statements of the teacher were taken into account in this process. It was seen that the number of values was higher than the number of teachers when coding the expression as there was found to be more than one strategy provided by the teacher.

The Findings Related to the Observation of Teachers

The results of 8 teachers participating in this study were analyzed and the mathematical skills adopted by teachers when using natural mathematics language were presented in Table 2.

Table 2
Mathematical Skills Adopted by the Participant Teachers When Using Natural Mathematics Language

Teachers / Mathematical skills	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	TOTAL
Counting - number	84	35	66	33	145	35	42	23	463
Measuring	44	28	39	15	27	28	47	28	256
Location on space	50	19	7	4	12	12	14	3	121
Comparing	41	30	14	8	13	2	7	3	118
Geometrical shapes	27	6	4	1	16	-	3	1	58
Grouping	2	-	1	4	7	2	6	-	22
Ranking	-	-	-	-	6	-	7	3	16
Pattern	1	-	-	-	-	12	-	-	13
Recognizing numbers	2	6	1	-	-	1	2	-	12
Whole - part	4	1	2	-	-	-	-	3	10
Matching	2	-	-	5	1	-	-	-	8
Writing numbers	-	1	1	-	-	1	-	-	3
Operation	1	1	-	-	-	-	-	-	2
Graphics	2	-	-	-	-	-	-	-	2
Problem solving	-	-	-	-	-	-	-	-	-
Reasoning	-	-	-	-	-	-	-	-	-
TOTAL	261	127	135	70	227	93	128	64	

Considering the natural mathematics language expressions used by all teachers, it was seen that all teachers included counting – numbers (n:463), measuring (n:256), location in space (n:121) and comparing (n:118) skills (see Table 2). All teachers except for T6 included geometrical shapes. All teachers except for T2 and T8 observed grouping skill while only T1 and T6 observed pattern skill. Operation skill was included in the expressions of T1 and T2. It was determined that graphic skill was only included in the expressions of T1 while problem-solving and reasoning skills were not included in the expressions of the teachers.

Counting-numbering, measuring, situating and comparing skills that teachers use the most include mathematical concepts that can easily be placed in sentences and expressions in daily life. In addition to this, it should be considered that these skills have subdomains. The professional experiences of teachers and that they work with different age groups did not change this result. It can be said that the number and diversity of mathematical skills used by

the teachers who provided positive opinions on children that teachers work according to anecdote records were higher.

Some of the examples of expressions related to the mathematical skills used by teachers during the practices are provided below:

Examples of counting numbers skill: *"How many family members are there in B's family?"* (T1), *"Guys, we have two puppets"* (T4) and *"We have two new toys. Did you see them?"* (T5)

Examples on measuring skills of the teachers: *"We did that yesterday."* (T2), *"You have 5 minutes to get ready."* (T3) and *"I think B got more molds"* (T7)

Examples of mathematical skills related to location in space: *"Raise your right hand first, and then raise your left hand"* (T1), "Jump forward and backward!" (T4) ve *"Everybody, drop your water bottles to the right" (*T6).

Examples on comparing skill: *"You need to find a faster vehicle for yourself, this one is slow"* (T2), *"There are two types of peppers: some are green and some are red."* (T3) and *"Girls, pull the rope harder!"* (T5).

Examples of mathematical skills related to geometrical shapes: *"Let's form a circle again!"* (T5), *"Please circle that color, too"* (T7) and *"The geometrical shape you are stepping on is a square, please look carefully!"* (T8).

Examples of grouping skill: *"I will send you to the washroom to wash your hands by fives, but please be quiet."* (T1), and *"You are not playing house, I have already told the playhouse group."* (T6).

Examples of ranking skills: *"B. and Z. finished first, please applaud them."* (T5) and *"We have three options; 1. Playdough, 2. Bingo and 3. Hopscotch"* (T7).

Examples of mathematical skills related to patterns: *"The one who has a rectangle, please come here. Then, the one who has a circle, then a triangle and a rectangle, again."* (T1) and *"Let me*

look at the beads you strung: there are three yellow and three green beads. You can continue like this." (T6).

Examples of recognizing numbers skill: *"The next one will be attached on 9, which one is 9?"* (T3), *"1-2-3. Give me the next number, is it 4?"* (T6) and *"A. Do you know which number is this?"* (T7).

Examples of mathematical skills related to the whole – part: *"Whose half paper is this?"* (T2), *"It will be better if you paint the half of the house with a different color."* (T3) and *"You ate easily because you divided it into small pieces."* (T8).

Examples of writing numbers skill: *"We have already learned 9, how do we write it? Of course, beginning from the lower part."* (T3) and *"Now, you are going to write 5 and 6."* (T6).

Examples of matching skill: *"I said: everyone will get one of these ropes in my hand and will try to tie it to one of the legs of a table."* (T1), *"Now, partners, hold your hands."* (T4) and *"Everyone is going to have a CD and a circle"* (T5).

An example of operation skill was *"Yes, you are caught up B., another lamb was caught. One had already been caught. Let's add."* (T1) and an example of mathematical skill related to graphic was *"The largest shape in a slice of cake belongs to the largest slice."* (T1).

Strategies that eight teachers participating in this study adopted when using natural mathematics language were presented in Table 3.

Table 3
Strategies Adopted By Participant Teachers When Using Natural Mathematics Language

Teachers / Strategies	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	TOTAL
Giving instructions	52	15	10	21	45	17	17	6	183
Drawing attention	50	22	19	5	38	7	28	1	182
Giving feedback	25	30	31	7	26	17	18	13	167
Asking questions	24	12	21	5	33	20	14	5	134
Reminding	19	12	12	6	24	10	19	12	114
Narrating – explaining	21	1	19	7	17	4	10	5	84
Extending	29	1	6	7	12	5	4	12	76
Repeating	13	8	3	4	18	9	2	3	60
Reinforcing	10	4	3	1	5	-	9	2	34
Correcting	7	3	9	1	6	3	1	1	31
Accepting	4	-	1	5	1	1	6	1	19
Motivating	3	4	1	1	1	-	-	1	11
Intervening	3	-	-		-	-	-	-	3

It was determined that teachers mostly used giving instructions (n: 183), drawing attention (n:182) and giving feedback strategies (n: 167). All teachers used nine of the determined strategies. It was determined that T1 used all strategies. Accepting and intervening strategies were not used by T2, reinforcing, motivating and intervening strategies were not used by T6, and motivating and intervening strategies were not used by T7. The example of the intervention strategy is only seen by T1.

Some of the examples of expressions related to the mathematical skills used by teachers during the practices are provided below:

An example on giving instructions strategy was "*Please take this to the back of the desk*" (T5) and an example on drawing attention strategy was "I*t is a very old cloth, it does not belong to your age*" (T8).

An example on giving feedbacks strategy was *"Eight of you wanted to play hopscotch, two of you wanted to play bingo and eight of you wanted to play with the dough"* (T7) and an example on asking questions skill was *"Who can bring me two gillyflowers tomorrow?"* (T2).

An example of reminding strategy *"The one who collected the most would take the lead of the row, do you remember?"* (T4) and an example on narrating – explaining strategy was "*These play doughs are standing in the middle of pencils*" (T3).

An example of extending strategy was *"1, 2, 3. They caught 3."* (T1), an example of repeating strategy was *"How do we call the police? 1-5-5, 1-5-5."* (T2) and an example on reinforcing strategy was *"I liked the ones who played in the house play center more than those who played in puppet center."*

An example on correcting strategy was *"Remember, instead of 4-5 chocolates, we are getting only one chocolate" (T8)* and an example on accepting strategy was *"Mm, yes, both of yours are the same, maybe they are the same brand!"* (T4).

An example of intervening strategy was "*M, can you please eat faster? You are eating slowly*" (T1) and an example of motivating strategy was "*Yes Z, you did it, you are the best*" (T4).

The Findings Related to the Interviews with Teachers

Semi-structured interviews were examined in order to determine the opinions of teachers on natural mathematics language use. 6 semi-structured questions related to natural mathematics language were addressed to the teachers. The opinions of teachers on these questions were obtained. The following questions were addressed to the teachers during the interviews: whether they have heard the concept of natural mathematics language or not, the connection between mathematical language and daily colloquial language, the effect of mathematical language in learning mathematics, whether they use natural mathematics language, the mathematical concepts they use in classroom environment and whether the children remember these concepts or not.

The findings related to the interviews with teachers were evaluated together with the responses of all teachers for each question. Thus, common and different responses to the questions were revealed.

The first question directed to the participant teachers during the interview process is about *whether they have already heard the concept of natural mathematics language and what they*

think about this concept. As well as the teachers who responded to this question as it was described in the literature, there were teachers who guessed it by looking at the meaning of the concept. Six of teachers stated that they had not heard this concept before. Two of the teachers made comments on the meaning evoked by this concept instead of responding whether they heard or not. *"I heard it, but I don't know too much about its content. I think it is mathematics that is taught by transferring it to children's' daily lives." (T8).* Considering the observational data of T8, who explained the natural mathematics language in his/her response, it is seen that he/she is the teacher who uses natural mathematics language the least (n: 64) (see Table 2). It is thought that this teacher's opinions on natural mathematics language are not reflected in classroom environment. Only one out of six teachers didn't make any comments on this concept after stating that he/she didn't hear it. *"No, I didn't hear anything about this concept." (T5).* Considering the observational data of T5, who provided this response, it is seen that he/she is the teacher who ranked second (n: 227) among other teachers in terms of using natural mathematics language in the classroom environment. This situation can be interpreted as this teacher does not know the corresponding term for his/her practices in literature. In addition to this, T1 (n: 261), T5 (n: 227) and T3 (n: 135) stated that they did not hear the concept of natural mathematics language but it was determined that they were the ones who used natural mathematics language most frequently in the classroom environment (see Table 2). The fact that teachers using natural mathematics language in classroom environments do not have a clear opinion on this concept while the use of natural mathematics language is not observed in the practices of teachers explaining this concept constitutes an evidence for the contradiction and difference among the opinions and practices of teachers.

When the responses given by the teachers to the question asked about *the connection between mathematical language and daily colloquial language, it is seen that all teachers participating in this study suggested that there is a relationship between mathematics and daily life.* Considering this question, T4 stated that "*We teach children the directions when we tell them to go right or left and we teach the beginning or end when we tell them to wait at the beginning or end of something*". It is seen from this response that a connection is established between the mathematical concepts and daily life. T6 stated that

> *"This is because daily life means mathematics. We use mathematics for everything in our daily life. This is similar to saying the name of geometrical shape we use*

> *when drawing a sun. Which ones among the shapes they drew are related to geometrical shapes? I think mathematics language is connected to daily language".*

The opinions of T6 is the most determinant expression that reflects the opinions of teachers on this subject. The response given by T4 emphasizes that the mathematical expressions in teachers' instructions are part of everyday life. In addition to this, the response given by T6 emphasize that mathematical language is included in children's activities without mathematics content.

When teachers were asked for their opinions on the *effect of natural mathematics language in teaching mathematics, their responses were positive.* Regarding this specific question, T4 stated that

> *"Yes, the use of natural mathematics language has an effect on teaching mathematics. For example, as I said previously, we use the concepts of beginning and end. When conducting reassessment works and distributing books, we tell children to take the third one from the beginning and the second from the end. Therefore, the children learn the meaning of beginning and end."*

The response given by T4 addresses the effect of mathematical language. *"It absolutely has an effect. This is because we are trying to teach mathematics by means of games during the preschool period. Therefore, the easiest way to teach mathematics is to provide natural expressions like 'three of our friends did not come" (T7).* This reply also clarifies this situation. The responses given by T4 and T7 suggest that the presence of natural mathematics language in the classroom environment has a positive effect on children's mathematics learning.

Another question directed to the teachers participating in this study was about *whether they use natural mathematics language themselves or not.* Regarding this question, two teachers (T1 and T2) stated that they did not use natural mathematics language and two teachers (T7 and T8) stated that they definitely used natural mathematics language. Natural mathematics language usage frequency of T1 (n: 261), who stated that he/she did not use natural mathematics language, was the highest while the usage frequency of T8 (n: 64), who clearly stated that he/she used natural mathematics language, was the lowest (see Table 2). T4 and T6 initially thought that they used natural mathematics language but they realized that they did not use it during the interviews. Considering the observational results, it was determined that the responses given on the use of natural mathematics language did not match up with the practices.

When the responses given by teachers to the interview questions are examined, it is seen that they use natural mathematics language, but they say that they do not use it because they do not know it as a concept.

> *"I did not think I used the natural mathematics language so far. After seeing these questions and thinking for a while, I realized that I used this language and I knew it. We use natural mathematics language when lining up, in rule-based games and other drama activities. We frequently use natural mathematics language in drama activities, you know, when giving way or telling children 'You will go first" or 'You will wait for your turn'. Moreover, we use mathematics in other writing – reading activities. I think we also use it in Turkish language activities."* (T4).

This response given by T6 indicates that this teacher is using natural mathematics in the classroom environment. Teacher's thinking about what is happening in the classroom environment is seen as a reminder effect of the questions asked during the interviews. It is observed that teachers need to receive feedback on their practices in the classroom environment, the corresponding terms in literature should be explained to them and they should be informed.

Another question directed at the teachers was about *what concepts they used regarding the natural mathematics language.* It was seen that all teachers used mathematical skills related to counting numbers, measuring, location in space and comparing. In this regard, T1 stated that

> "*We are conducting activities about opposite concepts, numbers, problem-solving, creating graphics and comparing. I'm trying to let them count numbers rhythmically. I explain the numbers first. For example, when we say work in groups, they do not know what working in groups means. First, I show them how to group. This is also valid for comparing. They need to compare two things. How are they going to compare these two things? First, we explain them how to make a comparison and, then, we let them compare on their own."*

It was determined that this teacher used 12 out of 16 mathematical skills and his/her opinions and practices showed consistency. T3 expressed how he/she explained "plus" and "minus" signs that are used for addition and subtraction. T3 showed his/her students "plus" and "minus" signs, talked about their meanings and about in which situations they are used. However, the expression examples of T3 related to mathematical operations skills were not observed during observations (see Table 2). In addition to this, T6 stated that

> *"We are using geometrical concepts; square, triangle, rectangle, and ellipse. We use corner and edge concepts when we are playing games and telling our children to go to the edge or corner of the carpet. When drawing geometrical shapes, we tell them to draw corners and edges. When we are explaining circle, we tell them it is a geometrical shape that does not have an edge or corner."*

In his/her response, T6 explained the mathematical concepts that he/she frequently emphasized during play activities. It was determined that T6 showed an example about geometrical shapes in classroom environment during observations. When the responses given by the participant teachers and observational findings are examined together, it was seen that the mathematical concepts teachers mentioned in their opinions were not reflected in the natural mathematics language in the classroom environment. The expressions teachers use during practice differ from their opinions. It is anticipated that teachers are not aware of this difference.

Another issue that was referred to the opinions of teachers *was whether children remembered special mathematical words or concepts used in the classroom environment or not.* Regarding this specific question, all teachers participating in this study except for T2 stated that the children remembered the special words and concepts used in the classroom environment. T1 stated that "*They do not forget easily. They generally remember. I observe them, for example, when we use those words or concepts again. I observe them whether they can answer and remember or not.*" In his/her reply, T1 emphasized children's remembering skills. It was seen that T1 had many examples (n: 19) on remembering skills (see Table 3). However, T2 stated that "*No, I do not think so. I observe this through feedback. When I ask them, they do not remember those words or concepts. I think it should be supported in their home as well. I think I do not observe it in children.*" In his/her reply, T2 emphasized that children did not provide feedback on the natural mathematics language in the classroom environment. According to the opinions of teachers, reminders were often used in the classroom environment. However, in line with the observational data, it was seen that the usage frequency of reminding strategy ranked fifth among other strategies (see Table 3). The use of natural mathematics language by teachers in the classroom environment makes it easier for children to remember related words or concepts. Hearing a concept or expression again in another environment or context also affects children's remembering skills.

Discussion and Conclusion

The practices of preschool teachers related to natural mathematics language were observed and their opinions were received. It was determined that there were similarities as well as differences. The opinions of teachers expressed during interviews were not reflected in the natural mathematics language they used in the classroom environment. In addition to this, contrary to this, teachers showed examples of natural mathematics language expressions in their practices although they stated that they did not use it in the classroom environment.

When the observational results of teachers were examined, it was determined that the usage frequency of natural mathematics language was higher in counting numbers, measuring, location in space and comparing skills. In a study conducted by Taşkın (2013), it was determined that teachers used too many expressions in counting number field, but they used quite limited expressions in measuring field. However, measuring skill ranked the second in this study in terms of frequency. The fact that the concepts of length, area, volume, weight, temperature and time are included as the sub-dimensions in measuring skill and the usage area of these concepts is wider in the classroom environment can be shown as a reason for this situation. In a study conducted by Diaz (2008) with teachers, in which most of the teachers described mathematics as counting numbers, it was concluded that only 3 out of 12 teachers did not use mathematical concepts other than counting. In studies conducted by Bequette (2009), Mc Goron (2010), and Tarım and Bulut (2005), it was revealed that teachers described mathematics as counting-numbers concepts and that counting-numbers skill was the most frequently used mathematical skill. It was emphasized in this study that counting skill was the first-rank mathematical skill and a similar result was observed in a study conducted by Parpucu and Erdoğan (2017).

When the observational results of teachers were examined, it was determined that all teachers except for one showed examples on geometrical shapes. Only one of the teachers provided a strategy example on graphics concept. None of the teachers provided examples on problem-solving and reasoning skills. In studies conducted by Rudd, Lambert, Satterwhite, and Zaier (2008), it was revealed that teachers included spatial concepts more frequently but they used high-level skills less. It is known that all mathematical skills in mathematics teaching during the early childhood period support a different area of children's development. Teaching

problem-solving and reasoning skills at an early age and providing frequent examples in order to develop these skills constitutes the basis for children to learn life skills. Practicing in the classroom environment, demonstrating them in plays and providing more experience are important steps in acquiring high-level mathematical skills. However, it was determined that teachers were unable to reflect enough practices and expressions related to the natural mathematics language used in the classroom environment.

When the strategies used by teachers were examined, it was determined that the first 5 strategies were giving instructions, drawing attention, giving feedback, asking questions and reminding. Each strategy type was exemplified by at least one teacher. Intervening strategy was used by only one teacher. When the study conducted by Taşkın (2013), it was emphasized that teachers most frequently asked and they chose this strategy to communicate with children. In a study conducted by Brown (2003), it was determined that teachers used giving instructions strategy when teaching mathematics. These findings are in parallel with the findings of this study. It is thought that this strategy, giving instructions strategy, is frequently used when teachers tell children what to do in the classroom environment, direct them towards the activity, practice and task they will perform and give instructions on how to perform these activities. It is thought that reinforcing, motivating and expanding skills needed by preschool children should be used by teachers. When the observational data of teachers are examined, it is seen that they included mathematical expression during or at the beginning of an activity. Teachers' talking about the activities performed at the end of the process will require them to include more expanding and motivating strategies. However, as teachers avoid these situations, there are no examples of strategies in line with children's needs.

Considering the responses provided by teachers to the interview questions, it was determined that 6 teachers stated that they did not hear the concept of natural mathematics language before. Although these teachers stated that they did not hear this concept, they made comments with regard to the lexical meaning of the concept. Only one teacher did not try to guess its meaning. It was determined that teachers did not know natural mathematics language conceptually but they used it in the classroom environment. The questions asked made it possible for them to rethink and review their practices in the classroom environment.

The opinions expressed by teachers during the interviews show differences in the practice results in the classroom environment. It was seen that teachers addressing the importance of

mathematics language during interviews were unable to reflect this in practice. However, contrary to this, there were more examples of natural mathematics in the observational results of teachers who stated that they did not use any natural mathematics language during the interviews. A similar result was also determined in the studies conducted by Kabael and Baran (2016). It was concluded that the teachers could not reflect their opinions into practice. This conclusion shares similarities with the results that there are differences between the opinions and observational data of teachers (Aydın, 2009; Ernest, 1991; Güven, Karataş, Öztürk, Arslan, & Gürsoy, 2013). Considering the differences between the opinions and practices of teachers, it is thought that they are lacking related information in the literature. On the other hand, this situation may also be a sign that teachers are not implementing the information they have acquired during their undergraduate education.

It was determined that there were5 teachers using natural mathematics language. In studies conducted by Kabael and Baran (2016) with teacher candidates. It was emphasized that using mathematics language was important and teachers should be models in this regard. In this study, the opinions of teachers suggested that natural mathematics language should be used in the classroom environment. Thus, it is thought that children will adopt mathematics language.

The fact that teachers mentioned that there was a connection between the language used in daily life and mathematical language and the idea that mathematics should be included in daily conversations are supported by the studies conducted by Hur (2010), Kesicioğlu and Alisinanoğlu (2013). In a study conducted by Umay (2003), it was determined that candidate preschool teachers did not regard mathematics as a lesson and it was included in daily life. The responses provided by the teachers in this study also suggested that mathematics should be included in daily conversations. The interaction between mathematics teaching and natural mathematics language is ensured through concrete expressions of teachers, in a natural environment or through experience-containing words. The idea that mathematical language should be used in mathematical teaching is supported by the studies conducted by Taşkın (2013), Sonnenschein and others (2013). Considering mathematics teaching, children need to hear natural mathematics language and they need to see that the teacher uses it. The frequency and quality of the teachers' conversations on mathematics in the classroom environment increase children's mathematical knowledge (Klibanoff et al., 2006). In a study conducted by Frank (2013), it was stated that the mathematical conversations of teachers contributed to the

analysis and reasoning skills of children. These studies emphasize the importance of natural mathematics language and mathematical conversation. It is important that preschool teachers reflect this in all informal processes not just in the context of mathematical activities in the classroom environment.

When teachers were referring to the mathematical skills, concepts, and expressions during interviews, they mentioned counting numbers, geometrical shapes and operations. According to the observation results, frequently used mathematical skills, concepts or expressions were the words related to counting numbers, measuring and location in space. The fact that teachers mentioned about counting numbers skills during the interviews and that the observational findings were in parallel with this may result from the thought that these skills (the basic skills of mathematics) form the basis for other skills if they are learned by children and reinforced. In studies conducted by Tarım and Bulut (2005), Diaz (2008), Rudd et al., (2008), and Mc Goron (2010), it was revealed that the first concepts spring to mind considering mathematics were numbers and counting. Bequette (2009) conducted a study and mentioned about the frequency of counting and operation skills. However, in this study, operation skill was used by two teachers and ranked thirteenth among 16 mathematical skills. Teachers' frequent emphasis on the areas that can be remembered easily among other mathematical skills increases the likelihood of ignoring their mathematical skills.

Recommendations

In this study, the opinions and practices of preschool teachers related to the use of natural mathematics language were examined, interpreted and discussed by providing examples from the literature. In line with the conclusions of this study, some recommendations were made.

A study may be planned in order to determine children's mathematics learning in the classes of teachers using natural mathematics language and the influence of mathematical conversation on the mathematics skills of children may be investigated.

It can be recommended that programs can be organized in which mathematical development can be supported with language in order for the preschool teachers to be able to include words,

concepts, and expressions related to the natural mathematics language in their conversations more consciously.

Workshops can be performed in small groups in order for the teachers to adopt natural mathematics language completely.

Training and courses can be organized in order for the teachers to be more conscious about mathematics teaching and explore other practices around the world.

It can be requested from the preschool teachers that they keep picture books and stories in their classroom environment and benefit from these books more frequently. In addition to this, it can be expected from preschool teachers that they include tongue twisters, songs and plays more.

References

Avcı, N., & Dere, H. (2002, Eylül). *Okul öncesi çocuğu ve matematik.* V. Ulusal Fen Bilimleri ve Matematik Kongresi'nde sunulan bildiri. ODTÜ, Ankara.

Aydın, S. (2009). *Okul Öncesi Eğitimcilerinin Matematik Öğretimiyle Ilgili Düşünceleri Ve Uygulamalarının Değerlendirilmesi* (Yayımlanmamış Yüksek Lisans Tezi). Karadeniz Teknik Üniversitesi, Trabzon.

Bali, G. (2002) Matematik öğretiminde dil ölçeği. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, *23*, 57-61.

Bali, G. (2003). Matematik öğretmen adaylarının matematik öğretiminde dile ilişkin görüşleri. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, *25*, 19-25.

Bequette, S.L. (2009). *Kindergarten Students' Exploratory Math Talk With In A Collaboratıve Dıscourse Community.* (Doctor's Thesis). Available from ProQuest Dissertations and Theses database. (UMI No. 3356423).

Boonen, A.J.H., Kolkman, M.E., & Kroesbergen, E. H. (2011). The relation between teachers' math talk and the acquisition of number sense within kindergarten classrooms. *Journal of School Psychology*, *49*, 281–299.

Brown, E. T. (2003). The influence of teachers' efficacy and beliefs regarding mathematics instruction in the early childhood classroom. *Journal of Early Childhood Teacher Education*, *26*(3), 239-257.

Çetindağ, Z. (2013). Okul öncesi eğitimde iletişim. In G. Uyanık Balat and H. Bilgin (Ed.). *Okul Öncesi Eğitimde Sınıf Yönetimi* (pp. 203-220). Ankara: Eğiten Kitap.

Diaz, R.M. (2008). *The Role of Language in Early Childhood Mathematics* (Doctoral Dissertation). Available From Proquest Dissertations and Theses Database. (UMI No: 3319002).

Erdoğan, S. (2012). Okul öncesi dönemde matematik programı. In B. Akman (Ed.). *Okul Öncesi Matematik Eğitimi* (pp. 172-186). Ankara: Pegem Akademi.

Ernest, P. (1991). *Mathematics, education and philosophy: An international perspective.* London, Washington DC: The Falmer Press.

Ferrini-Mundy, J. (2000). Principles and standards for school mathematics: A guide for mathematicians. *Notices of the American Mathematical Society*, *47*(8). 868-876.

Frank, J. (2013). *The Effects of Using Math Talks to Improve Instruction in a Kindergarten Classroom.* (Master's Thesis, St. Catherine University).

Ginsburg, H.P., Lee, J.S., & Boyd, J.S. (2008). Mathematics education for young children: What it is and how to promote it. *Society for Research in Child Development*, *22*(1). 3-27.

Glesne, C. (2013). *Nitel araştırmaya giriş*. In A. Ersoy and P. Yalçınoğlu (Trans.). Ankara: Anı Yayıncılık.

Güven, B., Karataş, İ., Öztürk, Y., Arslan, S., & Gürsoy, K. (2013). A study of scale development on determination of pre-service and in-service teachers' beliefs about pre-school mathematics education. *İlkogretim Online*, *12*(4). 969-980.

Güven, B., Öztürk, Y., Karataş, İ., Arslan, S., & Şahin, F. (2012, Haziran). *Okul öncesi öğretmenlerinin matematik öğrenme ve öğretmeye yönelik inançlarının sınıf ortamına yansımaları.* X. Ulusal Fen ve Matematik Eğitimi Kongresinde Sunulan Bildiri, Niğde Üniversitesi, Niğde.

Hur, J.H. (2010). *Math Talk Between Preschoolers and their Mothers during a Home Cooking Activity.* (Master's Thesis), Purdue University.

Kabael, T.U., & Baran, A.A. (2016). Matematik öğretmenlerinin matematik dili becerilerinin gelişimine yönelik farkındalıklarının incelenmesi. *İlköğretim Online*, *15*(3), 868-881.

Kesicioğlu, O.S., & Alisinanoğlu, F. (2013). Okul öncesi dönem çocukların okul dışı (informal) matematik öğrenme süreçlerine ilişkin aile görüşleri. *The Journal of Academic Social Science Studies*, *6*(7), 671-685.

Klibanoff, R.S., Levine, S.C., Huttenlocher, J., Vasilyeva, M., & Hedges, L.V. (2006). Preschool children's mathematical knowledge: The effect of teacher math talk. *Developmental Psychology*, *42*(1), 59-69.

Kranda, J. (2008). *Precise mathematical language: Exploring the relationship between student vocabulary understanding and student achievement*. Master's Thesis.

Küçükahmet, L. (2014). *Öğretim ilke ve yöntemleri* (26. Basım). Ankara: Nobel Akademik Yayıncılık.

Linder, S.M., Powers-Costello, B., & Stegelin, D.A. (2011). Mathematics in early childhood: research-based rationale and practical strategies. *Early Childhood Education Journal, 39*(1), 29-37.

McCray, J.S., & Chen, J.Q. (2012). Pedagogical content knowledge for preschool mathematics: Construct Validity of a new teacher interview. *Journal of Research in Childhood Education, 26*(3), 291-307.

Mc Goron, F.X. (2010). *Efficacy of Preschool Teacher Math Talk.* (Doctoral Dissertation), University of Cincinnati.

MEB, (2013). *Okul öncesi eğitim programı*. Retrieved 20 October, 2014, from http://Tegm.Meb.Gov.Tr/Dosya/Okuloncesi/Ooproram.

Memişoğlu, S.P. (2008). Sınıf ortamında öğrenme-öğretme sürecinin yönetimi. In M. Çelikten (Ed.), *Yapılandırmacı Yaklaşıma Göre Sınıf Yönetimi* (pp. 3- 24). Ankara: Anı Yayıncılık.

Moseley, B. (2005). Pre-Service Early childhood educators' perceptions of math-mediated language. *Early Education and Development, 16*(3), 385-398.

National Association for the Education of Young Children (NAEYC) (2008). *Early childhood mathematics: Promoting good beginnings.* Washington, DC: NAEYC.

National Council of Teachers of Mathematics (NCTM) (2000). *Principles and standards for school mathematics,* 70-140.

Parpucu, N., & Erdoğan, S. (2017). Okul öncesi öğretmenlerinin sınıf uygulamalarında matematik dilini kullanma sıklıkları ile pedagojik matematik içerik bilgileri arasındaki ilişki. *Erken Çocukluk Çalışmaları Dergisi*, *1*(1), 19-32.

Peter-Koop, A., & Scherer, P. (2012). Early childhood mathematics teaching and learning. *Journal für Mathematik-Didaktik*, *33*(2), 175-179.

Rudd, L.C., Lambert, M.C., Satterwhite, M., & Zaier, A. (2008). Mathematical language in early childhood settings: What really counts? *Early Childhood Education Journal, 36*(1), 75-80.

Sarama, J., Lange, A.A., Clements, D.H., & Wolfe, C.B. (2012). The impacts of an early mathematics curriculum on oral language and literacy. *Early Childhood Research Quarterly*, *27*(3), 489-502.

Sonnenschein, S., Thompson, J.A., Metzger, S.R., & Baker, L. (2013). The relation between preschool teachers' language and gains in low income English language learners' and English speakers' vocabulary, early literacy and math skills. NHSA dialog: A research-to-practice. *Journal for the Early Childhood Field, 16*, 64-87.

Sönmez, V. (2011). *Eğitim felsefesi* (11. Baskı). Ankara: Anı Yayıncılık.

Tarım, K. & Bulut, S. (2005). *Okul öncesi öğretmenlerin matematik ve matematik öğretimine ilişkin algı ve tutumları*, In Hüseyin Kıran (Ed.), XIV. Ulusal Eğitim Bilimleri Kongresi (pp.28-30). Pamukkale Üniversitesi.

Taşkın, N. (2013). *Okul Öncesi Dönemde Matematik ile Dil Arasındaki Ilişki Üzerine Bir Inceleme*. (Yayınlanmamış Doktora Tezi), Hacettepe Üniversitesi, Ankara.

Taşkın, N. & Tuğrul, B. (2014). Okul öncesindeki çocukların dil ile matematik becerileri arasındaki ilişkinin farklı değişkenlere göre incelenmesi. *YYÜ Eğitim Fakültesi Dergisi*, *XI*(1), 129-148.

Taştepe, T. (2012). *Erken Çocukluk Dönemi Fen ve Matematik Eğitimi Içerik Standartları Değerlendirme Araçlarının Geliştirilmesi*. (Yayımlanmamış Yüksek Lisans Tezi), Gazi Üniversitesi, Ankara.

Tuğrul, B. (2002). Erken çocukluk döneminde öğrenmeyi ve öğretimi kolaylaştıran özellikler. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, *22*(22), 142-147.

Umay, A. (2003). Okul öncesi öğretmen adaylarının matematik öğretmeye ne kadar hazır olduklarına ilişkin bazı ipuçları. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, *25*(25), 194-203.

Uyanık, Ö. & Kandır, A. (2010). Okul öncesi dönemde erken akademik beceriler. *Kuramsal Eğitim Bilim*, *3*(2), 118-134.

Yıldırım, A., ve Şimşek, H. (2011). *Sosyal bilimlerde nitel araştırma yöntemleri* (8. Tıpkı Basım). Ankara: Seçkin Yayıncılık.

Yıldırım, B. (2012). Matematik ilkeleri ve standartları. In B. Akman (Ed.). *Okul Öncesi Matematik Eğitimi* (pp. 12-24). Ankara: Pegem Akademi.

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Research Article

Volunteering: Evaluation of Community Service Learning Program

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Abstract

In this study, the *Community Service Practices* (*CSP*) course, offered for pre-service teachers, was evaluated utilizing the Context, Input, Process and Product (CIPP) Model. The purposes of this study are twofold. First, the effectiveness of the program in relation to satisfying pre-service teachers' needs and expectations is discussed. Second, the pre-service teachers' attainment of the course objectives and the consistency between objectives, content and activities are examined. The data was gathered from 17 junior pre-service teachers via needs assessment and summative evaluation questionnaires, formative evaluation self-reporting progress papers, in-class and out-of-class observation and two instructors by means of interviews. The results are presented under the four components of the CIPP model, as follows. In relation to *context evaluation*, students' needs and expectations were congruent with the goals and objectives of the course. In *input evaluation,* course activities and plans were examined. Within *process evaluation,* activities and procedures appear to have been implemented as originally planned, with some limitations such as problems in integration of practice and theory, lack of course materials, problematic NGO permissions and attitudes of NGOs towards students. Lastly, within *product evaluation,* a decision was made on the continuation of the course. In conclusion, although the course satisfied students' needs and successfully achieved its objectives, the analysis posits that it would be worthwhile to improve the aforementioned points in order to strengthen the course.

Keywords**:** Curriculum evaluation, community service practices, teacher education, multicultural education, CIPP Model, case study.

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Gönüllülük: Topluma Hizmet Uygulamaları Dersinin Değerlendirilmesi

Öz

Bu çalışmada, öğretmen adaylarına sunulan Toplum Hizmeti Uygulamaları (THU) dersi, Bağlam, Girdi, Süreç ve Ürün Modeli kullanılarak değerlendirilmiştir. Bu çalışmanın amaçları iki yönlüdür. Birincisi, programın öğretmen adaylarının ihtiyaçlarını ve beklentilerini karşılamaya yönelik etkinliği tartışılmıştır. İkincisi, öğretmen adaylarının ders amaçlarına ulaşması ve hedefler, içerik ve faaliyetler arasındaki tutarlılık incelenmiştir. Veriler, 17 üçüncü sınıf düzeyinde öğretmen adayından ihtiyaç analizi ve düzey belirleyici değerlendirme anketleri, biçimlendirici değerlendirme, öz-bildirim raporları, sınıf içi ve sınıf dışı gözlem ve iki öğretim üyesinden de görüşme yoluyla toplanmıştır. Sonuçlar, aşağıdaki gibi Bağlam, Girdi, Süreç ve Ürün modelinin dört bileşeni altında sunulmaktadır. Bağlam değerlendirmesi ile ilgili olarak, öğrencilerin ihtiyaç ve beklentileri, dersin amaç ve hedefleri ile uyumludur. Girdi değerlendirmesinde ders etkinlikleri ve planları incelenmiştir. Süreç değerlendirmesinde, faaliyetlerin ve prosedürlerin planlandığı gibi uygulanmakta olduğu ancak uygulama ve kuramın entegrasyonu, ders materyallerinin eksikliği, sorunlu STK izinleri ve STK'ların öğrencilere karşı tutumları gibi bazı sınırlılıkların olduğu ortaya çıkmıştır. Son olarak, ürün değerlendirmesinde, dersin devamı konusunda bir karar verilmiştir. Sonuç olarak, ders öğrencilerin gereksinimlerini karşılamış ve hedeflerine başarılı bir şekilde ulaşmış olsa da, analiz, dersi güçlendirmek için yukarıda bahsedilen noktaların iyileştirilmesinin yararlı olacağına işaret etmektedir.

Anahtar Sözcükler: Program Değerlendirme, topluma hizmet uygulamaları, öğretmen eğitimi, çok kültürlü eğitim, CIPP Modeli, durum çalışması.

Intoduction

In many aspects of our lives we need to look back from time to time and assess our successes and failures in order to apply the lessons of our experience to our future lives. In the field of curriculum, specialists take similar steps to assess outcomes and improve results. Scriven (1980) suggests in his studies the need to assess the worth or merit of activities, projects or programs in different phases: (1) determining standards, (2) collecting information, and (3) applying standards (Fitzpatrick, Sanders, & Worthen, 2010). Evaluation and assessment scholars propose different approaches for evaluating programs, projects, activities, etc. Gredler (1996) suggests two approaches for program evaluation, Pluralist and Utilitarian, each of which serves different purposes. In addition, for each approach there is a set of evaluation models (Ornstein & Hunkins, 2016). Fitzpatrick, Sanders and Worthen (2010) propose a grouping of evaluation models such as: Objective, Management, Consumer, Expertise, Participant, etc. Using a model includes set of plans and makes abstract instances more concrete, understandable and clear (Gustafson & Branch, 1997).

For Fitzpatrick, Worthen and Sanders (2004), program evaluation models offer different evaluation processes based on scientific basis, values, experiences, world views and philosophies. Furthermore, an evaluation model helps to set up the criteria based on the purpose of the evaluation, characteristics of the evaluand, and the characteristics of the program in question (Hansen, 2005). An evaluation model helps to set up the criteria based on the purpose of the evaluation, characteristics of the evaluand, and the characteristics of the program in question (Hansen, 2005). In the current study, Stufflebeam's CIPP Model was used, with its four components. The reason for this choice was that the model itself encompasses comprehensiveness, flexibility and systematization. Although some limitations existed in terms of time and complexity, the researcher dealt with these issues by means of a structured plan.

Stufflebeam et al. (1971) defined evaluation as "the process of delineating, obtaining, and providing useful information for judging decision alternatives" (p.36). The emphasis of the evaluation is not on proving the validity of the program or other evaluand, but on improving it (Gredler, 1996; Stufflebeam, 2003; Ornstein & Hunkins, 2016; Fitzpatrick, Sanders, & Worthen, 2010). The CIPP Model requires engagement of multiple perspectives, use of a wide range of qualitative and quantitative methods, and triangulation procedures to assess and

interpret a multiplicity of information (Stufflebeam, 2003). Stufflebeam, & Zhang (2017) summarize program evaluation studies utilizing the CIPP model. These studies range across health, education, business, communication, engineering, law, military, religion, music, and other subjects.

In education contexts, as for the evaluation of a course, the purpose becomes to gather data leading to its improvement and to inform the related stakeholders of the outcomes. The letters in the acronym CIPP stand for 'context', 'input', 'process', and 'product' evaluation. Generally speaking, these four parts address respectively the questions, "What needs to be done? How should it be done?, Is it being done?, Did it succeed?" (Stufflebeam, 2003).

Figure 1 illustrates the elements of the model.

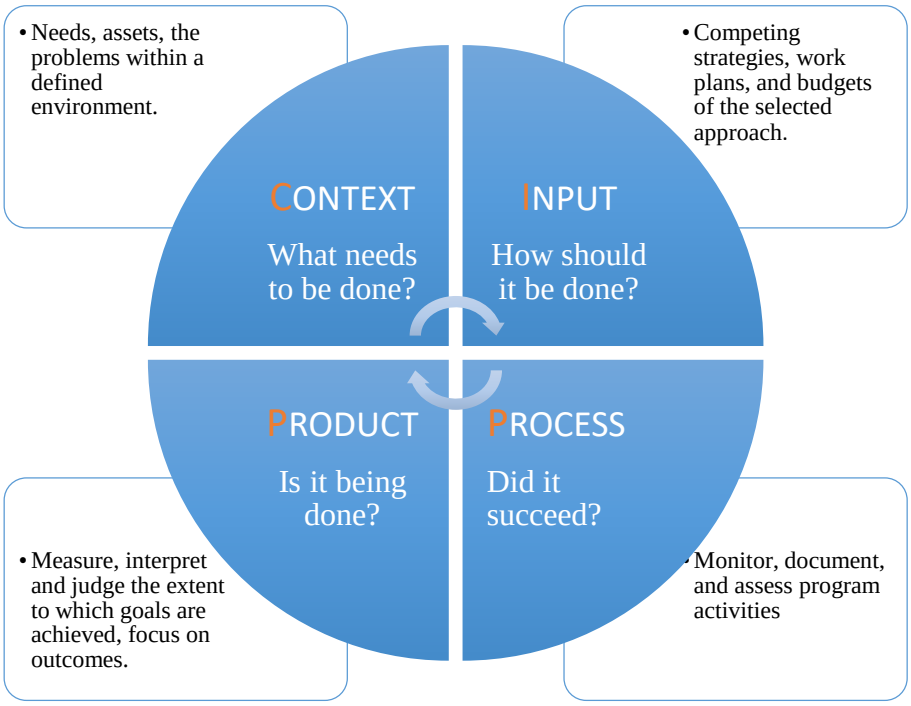

Figure 1. Elements of the CIPP evaluation model.
Note. The figure is drawn in compliance with Stufflebeam's (2001) CIPP Model elements.

Context of the Study

One goal of teacher education programs has been the development of teachers who can prepare the students in their classrooms to become effective citizens in a democratic society (Darling-

Hammond, 1994; Soder, 1996). In order to achieve this goal, experiential education forms like community service can make a difference in teacher education, with the aim of assisting people in need. The word "assistance" is explained by Anderson (1999) as: "the assistance can be direct (preparing meals in a shelter for the homeless or picking up trash in a park) or indirect (organizing a food drive or doing clerical work for a social service agency)" (p.562).

Community service is defined as a medium between diversity, social justice issues, different community groups and it provides volunteers personal feelings of worth and fulfilment (Konza, Kiggins, & Brown, 2007). It has many interfaces with issues like multiculturalism (Barton, 2000; Boyle-Baise, 1998; Boyle-Baise & Sleeter, 2000; O'Grady, 2014; Cho & DeCastro-Ambrosetti; 2005; Densmore, 2000; LeSourd, 1997; Wade, 2000); civic engagement (Butin, 2010; Einfeld & Collins, 2008; Wade, 1995; Zaff et al., 2003); social justice (Baldwin, Buchanan, & Rudisill, 2007; Einfeld & Collins, 2008; Maybach, 1996); citizenship (Rhoads, 1998) and personal fulfilment (Konza, Kiggins, & Brown, 2007; Warbuton & Oppenheimer, 2000). For Furco and Billig (2001), community service, service-learning, and service-based internship programs are rooted in educational and cognitive theories of constructivism, pragmatism, progressivism, and experiential education (Bruner, 1960; Dewey, 1938; Freire, 1970; Gardner, 1984; Kohlberg, 1984; Kolb, 1984; Piaget, 1954; Vygotsky, 1978). As has been seen, community service learning has both pedagogical and philosophical aspects.

Community service has a long history, based on theories of Plato and Aristotle. According to those philosophers, people feel happy when they have a role in society (Lee, 2009). In this sense, community service as a moral activity has a social aspect; that is, being socially responsible. Even though John Dewey did not directly name 'Community Service' in his studies, his notion of experiential learning is recognised as the basis of this movement. Perhaps the following quote can summarize Dewey's (1916) view to leaning and experience: "An ounce of experience is better than a ton of theory simply because it is only in experience that any theory has vital and verifiable significance". (p.144)

Although it has many application sites in education from the beginning of 1900s, the history of community services in higher education context in the US dates back to 1990 with National and Community Act. Turkey followed the trend behind. Community service course can be thought as a contemporary integration into teacher education programs in Turkey as the first mandatory courses were offered in 2006 in higher education contexts.

In relation to the pedagogical aspects of community services, Anderson (1999) explains that within community services, students assist people who needs help, organizations, or the community. A Community Services Practices course has significant positive effects for them in several dimensions: academic performance, values, self-efficacy, choice of a service career, and plans to participate in service after college (Astin et al., 2000).

When it comes to the positive effects of voluntarism, Wilson (2000) discusses how volunteer work has benefits for "life satisfaction, self esteem, health and for educational and occupational achievement, functional ability and mortality" (p.215). Furthermore, Schultz (1996) notes that service-learning had positive effects on "self knowledge, spiritual growth, and finding reward in helping others" (p.55). With a different perspective, Konza, Kiggins, and Brown (2007) categorize the effects of service learning in educational settings as (a) academic gains, (b) social and emotional gains, and (c) citizenship and community responsibility. For Astin et al. (2000), service participation shows significant positive effects on all 11 outcome measures: academic performance (GPA, writing skills, critical thinking skills), values (commitment to activism and to promoting racial understanding), self-efficacy, leadership (leadership activities, self-rated leadership ability, interpersonal skills), choice of a service career, and plans to participate in service after college.

Mostly affected from Dewey's philosophy, US is the one of the pioneering countries allocating community services in education context in 1990s. Following the US, Canada introduced the course as a component of higher education programs (Chambers, 2009). In Turkey, before 2006, CSP course was offered as an elective course by some universities in Turkey. In 2006, the Council of Higher Education updated teacher education programs, and from the academic year 2006–2007 CSP was included in the program and started to be implemented as a compulsory course. In 2011, the Council of Higher Education defined standards for the instruction of the course. The course content was described as follows (Council of Higher Education, 2011):

> *Identifying the importance of community service practices in the determination of the current problems of society and preparing projects to find solutions, participating in scientific activities such as panels, conferences, congresses and symposiums as spectators and speakers, and volunteering on social responsibility projects, acquisition of basic knowledge and skills to apply community services studies in schools.*

In the METU Faculty of Education, the course was put into practice in 2008. It was planned by four instructors from the faculty (from the departments of CEIT, ELE, and FLE). The course was intended to give pre-service teachers an opportunity to become involved in organizations serving the community in order to carry out tasks designed to contribute to a better society. According to the course objectives, at the end of the semester, students should be able to identify social issues related to education, and carry out voluntary tasks for organizations serving the community. In order to reach the objectives of the course, students would analyse several different organizations of this kind and the impacts they aimed to have on society. They would participate in weekly voluntary community service in organizations serving the community. The course had no specific textbooks or readings. Students would periodically present reports about their community service work and its perceived impact on society (an expectation paper [15%], a mid-semester progress paper [15%], and an end of semester reflection paper [15%]). In their reports, students were also expected to reflect on the impact of community service on ideas about teaching and society, and to undertake voluntary work in the field (50%). Additionally, attendance in class and participation in discussions were required (5%).

When the national literature on CSP was examined for the current research, it was observed that most of the studies were related to teacher candidates, intended to determine their attitudes and perceptions towards the course (Elma et. al, 2010; Erkan et al., 2012; Gökçe, 2011; Kaya, 2013; Kocadere & Seferoğlu, 2013; Sevim, 2011; Tilki, 2011; Tuncel, Kop & Katılmış, 2011; Yılmaz & Arslan, 2016).

In the studies conducted for the purpose of course evaluation, the general opinions of the teacher candidates about the course (Elma et al., 2010; Kesten, 2012; Kocadere & Seferoğlu, 2013; Tanrıseven & Yanpar-Yelken, 2010; Sönmez, 2010); the aim and content of the course (Çetin & Sönmez, 2009; Özdemir & Tokcan, 2010); methods of teaching (Uğurlu & Kıral, 2013); and acquisitions (Sönmez, 2010; Uğurlu & Kıral, 2013) were assessed.

In his study, Kesten (2012) assessed CSP course in terms of pre-service teachers' views. His sample consisted of five pre-service teachers and instructors who were students of the College of Education in Ondokuz Mayıs University in Turkey. The study was of a qualitative nature and a criterion sampling strategy was used as the data collection method. Results indicated that CSP course was linking students and society and also contributed to teacher professional

development in terms of human relations and leadership. Problems that existed with the implementation of the CSP course were considered to have originated from the university (transportation, bureaucracy, and financial support issues), the employing institutions (bureaucratic operations, negative attitude of people working there), and assessment (lack of specific criteria in course assessment). In their study, Kocadere and Seferoğlu (2013) evaluate a CSP course by means of students' perceptions. The data was gathered from 44 students over 14 weeks, via journals and reports. The results indicated that the course increased students' awareness and understanding of community services. The students felt proud and responsible in relation to what they did during the course. For students, voluntary work makes the world a better place, and therefore it should be instilled into people at an early age. Uğurlu and Kıral (2013) worked with 74 teacher candidates in their study to gather perspectives on a CSP course. In this qualitative study, data were collected through observation, document analysis, and interviews. The results were presented under six themes: perceptions on course activities, personal growth, professional development, societal effects, problems experienced during the course, and suggestions. Overall, students were satisfied with the teaching and learning activities of the course. Students explained that their self-confidence and communication skills were enhanced by the course. The course was a medium through which they could feel happy and proud to choose teaching as a profession. Students believed that they could make a changes in society, with a sense of responsibility instilled by the course. Difficulties identified were mainly connected with bureaucratic hindrances, problems arranging meetings with instructors, and budget and time issues.

A growing body of research indicates that carefully planned and implemented service-learning projects can contribute to both students' and pre-service teachers' learning and growth (Conrad & Hedin, 1991; Root, 1997) and importance of participation in voluntary work in undergraduate studies (Eyler, Giles & Braxton, 1997; Eyler & Giles, 1999). All the examined studies above indicated that CSP makes a significant contribution, not only to teacher education but also to students of all ages by providing experience-practice-based communicative learning environments. Previous research on CSP was unable to identify a CSP course evaluation study using a CIPP model which would provide a comprehensive view on the course in a Turkish context. In addition, the study in this article reflects both instructors' and students' views on the course, which also differentiates it from the others discussed here.

The purpose of the current study is to evaluate the implemented CSP program based on students' and instructors' views on objectives and attainments, the degree to which students' needs were satisfied, and the degree of consistency between objectives, content and course activities according to CIPP model. By means of this study, an important course in teacher education program with an aim to instilling citizenship, responsibility and volunteering in pre-service teachers will be evaluated comprehensively with the participation of two important stakeholders: pre-service teachers and instructors.

Method

Design

A case study design was used in this study. A case study "investigates a contemporary phenomenon within its real-life context, where the boundaries between phenomenon and context are not clearly evident, and in which multiple sources of evidence are used" (Yin, 1984, p. 23). In the current study, multiple sources of evidence were used in a corroboratory mode: Interviews with instructors, document analysis, mid-progress reports from students, pre-post surveys with students, and in-class and out-of-class observation.

Participants

The data was collected in 2012-2013 Fall Semester in one of the biggest public universities in Ankara, Turkey. The subjects of this study were in their fifth semester of Elementary Mathematics Teaching—a four-year program. A total of 17 junior students (5 M; 12 F) who were required to enroll in the CSP Course participated in the study.

In this study, the criterion sampling was used as purposeful sampling strategy. "Criterion sampling involves selecting cases that meet some predetermined criterion of importance" (Patton, 2002, p. 238). There were two criteria to choose this group. First, the number of potential student participants in this class were crowded than the other classes. Second, the schedule of the course was matching with the researcher's schedule which gave availability to observations and data collection.

Demographics, which include students' GPA, age and gender, are presented in the Table 1.

Table 1.
Demographic Information of the Student Participants

		M	*n*	*%*
Gender				
	Male		5	29
	Female		12	71
Age				
	20-21		12	71
	22-23		3	18
	24-		2	11
CGPA				
	2 and below		1	6
	2.01 - 2,5		12	71
	2,51 - 3,00		4	22
Overall CGPA		2,18		
Total			17	

Most students participated all class sessions during the term. Additionally, in order to provide variation in sampling and to collect comprehensive data, instructors' ideas were sought. Instructor I (Female) was 24 years old. She had BS and MS degrees in mathematics education. It was her first instruction experience in the course. Instructor II (Female) was 33 years old, graduated from the same university with a BS and MS degree in Mathematics Education and a Ph.D. in Curriculum Teaching and Educational Policy in the US. She instructed twice in CSP course.

Data Collection Instruments

The data collection instruments were developed by the researcher based on the nature of the CSP course. Expert opinion was gained for each instrument through the clarity, appropriateness, and for their further suggestions by one faculty and one Ph.D. graduate from the Department of Curriculum and Instruction. The instruments were revised and modified based on the experts' feedback. Final data collection instruments were applied through elements of the CIPP model.

Context evaluation instruments

Needs assessment (NA) questionnaires and expectation papers were gathered (hardcopy) from the students. The questionnaire consisted of three parts: the first was background information about the participants (3 items); the second was intended to determine the students' general

opinions and expectations on the course (6 items); and the last part had questions concerning the students' needs (23 items). Eight of the questions were open ended while the rest—15 items—used a six-point Likert-type scale (1: Strongly Disagree; 2: Disagree; 3: Partially Disagree; 4: Partially Agree; 5: Agree; 6: Strongly Agree) and four-point Likert-type scale (1: Unimportant; 2: Somewhat important; 3: Important; 4: Very important). It had four open ended questions which sought students' insights about the course, the NGOs, being a volunteer for the NGOs, and what they expected to learn in the course.

Input evaluation instruments

The syllabus was analysed in terms of what it covered.

Process evaluation instruments

Observations and formative evaluation self-reporting progress papers (hardcopy) were utilized. Observations were carried out both In-class and out-of-class contexts. The purpose of in-class observation was to gather data about instruction methods and techniques, interaction between students and the instructor, and materials in use (if any). The duration was 40-minute. The other two observations were conducted in out-of-class environments, in two different NGOs: Science Center and LÖSEV's stand. The purpose of these observations was to obtain information about the behaviours of volunteers and students who visited the centre and their interactions with each other. The observation focused on volunteers' behaviours, daily work routines, and effects on visitor behaviour, in order to assemble a good overall picture. In total, four hours of observation was conducted. A semi-structured observation form was used to gather data during the observations.

In the progress papers there were four open ended questions and students reported about what they did for their community service, their progress, the projects involved, and their duties within the NGOs.

Product evaluation instruments

The data for product evaluation was gathered via summative evaluation questionnaire (hardcopy) and interviews with instructors. The questionnaire was given to students at the end

of the term and comprised of 25 items in three parts: Students' background information (4 items); 13 items rated on a six-point Likert scale (1: Strongly Disagree; 2: Disagree; 3: Partially Disagree; 4: Partially Agree; 5: Agree; 6: Strongly Agree) investigating students' total satisfaction with the course; and eight open-ended questions about students' general attitude towards the course (for example, the things they liked most about the course; the things that they did not like about the course). In addition, two instructors were interviewed about the course overall.

Data Collection Procedures

At the beginning of the 2012-2013 Fall Semester, participants completed questionnaires and wrote expectation papers. Self-reported progress papers were gathered at the halfway mark of the semester. At the end of the semester, interviews were conducted with the instructors. Interviews lasted approximately 20 minutes and were audio-recorded with the permission of the participants. Questionnaires were also collected from students at the end of the semester. Observations (seven in class; two within NGOs) were conducted and recorded by the researcher.

Trustworthiness is an important expectation to meet in qualitative research studies. Guba (1981) and Marshall and Rossman (2011) have four components to establish trustworthiness. They are: (a) credibility; (b) transferability; (c); dependability; and (d) confirmability. Trustworthiness depends on ensuring these four criteria are met. To begin with, for credibility, triangulation in data collection instruments (observation, expectation paper, interview, survey, etc.) and participants (pre-service teachers, instructors) was implemented in parallel with what Patton (1990) said. By means of prolonged engagement, researcher spent enough time in research site and conducted persistent observation. These attempts strengthened the credibility of the research as discussed by Lincoln and Guba (1985). Purposeful sampling and thick description were used in order to ensure transferability as also discussed by Bitsch (2005) and Patton (1990). By means of transferability, the results of the research could be transferred to the different contexts or individuals. Dependability of the study was improved by triangulation and code-recode procedure by the researcher throughout data analysis procedure. For confirmability, expert opinion was consulted for every single data collection instrument.

Data Analysis

Data from the instructor interviews transcribed verbatim by the researcher. This provided researcher to spent more time with the data and to get familiar with it. All transcribed interview data, observation records, expectation papers, formative evaluation self-reporting papers were subjected to content analysis. Furthermore, course syllabus was analyzed in the context of document analysis. To this end, the analysis initiated with reading the data. Codes and themes were generated based on the research questions. During this process, some anticipated themes were given such as a place "importance of volunteering", "in-class session routines" besides emergent themes for example "theory driven course", "student follow-up mechanism" etc.

For NA questionnaires and summative evaluation questionnaires, descriptive statistics were applied to describe some features of the participants (means, standard deviations, etc.). In the qualitative part of the study, interviews were conducted with instructors and course syllabus were analyzed in the context of document analysis.

Results

In this section, results are presented under the sub-headings Context, Input, Process, and Product Evaluations.

Context Evaluations "assess needs, problems, assets, and opportunities to help decision makers define goals and priorities and help the broader group of users judge goals, priorities, and outcomes" (Stufflebeam & Shinkfield, 2007, p.326). The questions asked under the heading of context evaluation was: *"What are the general program goals and specific objectives?", "What needs and expectations were identified in relation to the course?", "What are the unmet needs?"*

For this section, the data were gathered via a needs assessment (NA) questionnaire and expectation papers. At the beginning of the course, the instructor distributed the course syllabus to students, including information about the course content, objectives, grading, activities, requirements and assignments. In the NA questionnaire, students were asked about the main aims of the course. Most of the students mentioned voluntariness. In addition, five students said

that increasing responsibility and understanding social problems while helping society, as well as communicating with people, should be among the main objectives of the course. These aims identified by the students related well to the aims as stated in the syllabus. Analysis of the NA questionnaire indicated (based on a 6-point Likert scale) that objectives, content, requirements and assessment procedures in the course syllabus were clear and understandable (M=5.12, SD=.60). The course content was relevant to students' needs (M=4.71, SD=.69); the workload for the assignments was fair to students (M=4.73, SD=.96); and there was consistency between the assignments and the course content (M=5.35, SD=.50). Students also agreed that assessment throughout the course was efficient (M=4.71, SD=.91) and considered that the information provided about assignments and requirements was adequate (M=5.53, SD=.80). The course required 28 hours of work in an NGO and 5 in-class sessions. All students aside from S3 and S4 found the course hours appropriate. S3 and S4 stated that the hours were too long, taking into account that they also had other work and exams. The results related to the NA questionnaire are summarized in Table 2.

When students were asked about skills to be gained through the course (rated on a 4-point Likert scale), they mostly agreed that the course increased social responsibility (M=3.65, SD=.50). Students associated voluntariness with the nature of the course (M=3.30, SD=.85), which they found difficult to reconcile with it involving required duties.

Expectation paper analysis revealed that by participating this course, students expected to develop themselves in three dimensions: personal, professional, and as community members. More specifically, students expected to learn to develop their communication skills within civic society (S4, S5, S13, S14, S15), especially with children (S1, S9, S11), to better understand the philosophy of community services (S4), and to develop their awareness of social responsibility (S1, S3, S4, S5, S6, S11, S13, S16). S4 mentioned the importance of communication skills:

> *"...If we aim to become a well-qualified teacher, which requires good communication skills, this course will help us to improve our communication skills".*

For S14 the course had facilitated more than communication skills: *"...the course seems to me like an activator and a kind of disciplinary system that prepares us to be a volunteer".*

S11 implied the social responsibility aspect:

> *"...the course will be helpful for teachers because teaching is a profession which harbours social responsibility and teachers have a responsibility to accomplish a social leadership function".*

By means of the course, students would also better comprehend the role of NGOs (S3, S5), get to know the NGOs better (S3), and have the opportunity to work in them (all students except S1 and S7). Students also noted that the course would be beneficial to their personal growth (S5, S6, S8, S11, S13, S14, S15, S16). Finding solutions to current educational problems in society was another expectation the participants highlighted (S2, S13, S15, S16). In this context, S4 mentioned "*...I expect that I will be more confident at solving problems that we face within our daily lives, social lives. I will feel more responsible for society*".

Data analysis regarding the first question revealed that students' needs and expectations were congruent with the goals of the course. The quotation below is from the course syllabus:

> *The course is intended to give pre-service teachers an opportunity to be involved in organizations serving the community in order to carry out tasks that increase responsibility for a better society. It is aimed that the pre-service teachers will gain knowledge and skills for understanding existing social problems, especially in relation to education, and develop a sense of possible solutions through conducting voluntary work. At the end of the semester, students should be able to identify social issues in education and carry out voluntary tasks for organizations serving the community.*
>
> *It is expected that at the end of the course pre-service teachers will consider voluntary tasks a way of understanding society and education from a more realistic perspective. The course aims to increase pre-service teachers' awareness of social issues and to develop certain ideas related to voluntary work that will be helpful in dealing with such issues.*

Table 2.
Means and standard deviations for items from NA questionnaire

	M	*SD*
	6-point Likert Scale	
Syllabus containing clear information about objectives of the course.	5.12	.60
Content relevancy to students' needs.	4.71	.69
Fair workload for assignments.	4.73	.96
Consistency between assignments and course content.	5.35	.50
Efficiency in assessing students' development in basic skills towards objectives.	4.71	.91
Being informed about requirements.	5.53	.80
	4-point Likert Scale	
Understanding the meaning of serving the community.	3.41	.51
Increasing social responsibility.	3.65	.50
Understanding existing social problems, especially in education.	3.53	.62
The course was based on voluntariness.	3.30	.85
Dealing with existing problems in society.	3.53	.51

In terms of assessment and evaluation procedures used during the class, students mainly agreed that self-evaluation was important for their activities (M=3.65; SD=.48). Next, evaluation by the NGOs (M=3.38; SD=.62), and by instructors (M=2.93; SD=.66) were important respectively for the students. Three students suggested that evaluation by their peers and by the people whom they helped might also be worthwhile.

S2 suggested that the course could be useful for enabling students to see other perspectives on life, and that it should be offered in other departments as well. In conclusion, students' general attitude towards the Community Service Course was positive and optimistic.

Input Evaluations assess alternative approaches, competing action plans, staffing plans, and budgets for their feasibility and potential cost-effectiveness in terms of meeting targeted needs and achieving goals (Stufflebeam, 2003). Thus, the related questions were: *"What kind of activities have been selected to achieve course objectives?" and "*What resources are available?".

At the beginning of the term, the instructor handed out a syllabus containing four sections: objectives, content, requirements and assessment. According to the document analysis, the requirements of the course (below) seemed feasible and related to the goals of the course.

a. Analysis of several different organizations serving the community and the impact they aim to have on society.
b. Weekly voluntary community service in organizations serving the community.

c. Periodic reports of work completed in community service and the perceived impact on society.
d. Self-reflection on the impact of community service on ideas about teaching and society.

Process Evaluations assess the implementation of plans to help staff implement plans for activities and later help the broad group of users to judge program performance and interpret outcomes (Stufflebeam, 2003). Here, the main question was: *"To what extent are the activities and procedures being implemented as originally planned?"*.

Process evaluations in this study are based on observations and formative evaluation self-reported progress papers. The data collected from Mid-Semester Progress Papers were categorized into three areas: students' progress through their voluntary work (concerning the duties or projects they were involved in); their feelings about the voluntary work; and the problems / weak and strong points of their work.

After the first course session, students started to negotiate with NGOs. Based on the data from formative evaluation self-reported progress papers, most of the students had difficulty in finding NGOs and they disliked the organizations' attitudes towards them. S5 and S13 complained about the NGOs' manner towards them as CSP course participants and volunteers. Among the students, nine worked with LÖSEV (Foundation for Children with Leukemia), six with the Science and Technology Museum, one with İLKYAR, (Foundation to Support Primary Schools) and another with ANAÇEV (Anadolu Contemporary Education Foundation). Two students chose to work with both LÖSEV and İLKYAR.

Students who worked for İLKYAR prepared some packages (including pencils, notebooks, science magazines, clothes and socks) to be sent to YIBOs (Regional Boarding Schools) and organized the journals in İLKYAR's storage. For their next project, they packed journals into cargo pockets and added letters.

Students who worked for LÖSEV first did some correction work on official papers, journals, cards, etc. Later, they took on a role in the "Opening Ceremony of LÖSEV Village". Some of them helped by serving tea to families whose children suffered from leukaemia. The other LÖSEV volunteers worked in the Ispanak Store, which is stocked with handmade rag dolls and

other items made by mothers of the sick children. Students also packed calendars to be sold on New Year's Day. Next, they opened a stand at the METU Library, with other volunteers, to sell some products for the benefit of LÖSEV.

At first, the Science and Society Centre volunteers were to have presented experiments to visiting schoolchildren. But appointments were cancelled by schools because of swine flu. Therefore, the students were given a different duty. Their task was to prepare some information related to the exhibits, which included the historical development of the objects, the principles of their operation and the objects' reflections in daily life. The information was to be clear and suitable for the visiting schoolchildren's level. They used everyday examples, drawings, photographs and other visual tools to draw visitors' attention.

The ANAÇEV volunteer taught maths weekly to students at primary school level, helping them with topics that they had problems with.

The students participating in this study preferred voluntary jobs where they could meet new people and communicate or interact with them. Paperwork or desk jobs seemed to demotivate most of the students (n=15). Students thought that the procedures such as activities, assessments, and requirements were appropriate to the course (64.3%). The students judged that the course instructors had effective communication skills in dealings with them (M=4.93; SD=1.07) and noted that they were willing to allocate time even outside of course hours (M=4.57; SD=1.02) (this data came from the product evaluation part of the questionnaire, rated on a 6-point Likert scale).

Students also mentioned strengths and weaknesses of their volunteer work and the course. One wrote, "…*I think it is worth saying that I slept at night by thinking that I didn't have a useless and ordinary day*". Another student refers to the importance of the course "...*I think this course is so beneficial for all branches of the education faculty. It made us think about voluntariness and encouraged us to be volunteers*". One of his peers supported this idea: "…*In my school life in METU, this is the first course we have taken which provides direct communication with real students and supports the needs of the community*.' On the other hand, two students criticized the nature of the course: "… *we want to work voluntarily but we had to work 28 hours. This is more like compulsory work than volunteer work. … the course could be an elective course*".

In addition to the self-reported progress papers, in-class and out-of-class observations were carried out. The purpose of in-class observation was to gather data about instruction methods and techniques, interaction between students and the instructor, and materials in use (if any). It was a 40-minute class. There were 15 students in the classroom. The instructor asked every student about their experiences in NGOs and made some suggestions about their voluntary work. The students also brought up problems that they faced during the process and the group tried to find possible solutions, using a brainstorming technique. The instructor guided the discussions during the class. No specific course material was in use for the course.

At the end of the course, the instructor asked students about how they felt as pre-service teachers and how they connected the things that they learnt in this course with their future careers. Students generally seemed to have a positive attitude towards being a teacher and stated that they had experienced things through their voluntary tasks that would be beneficial in their personal and professional lives.

The other two observations were conducted in out-of-class environments, in two different NGOs: Science Center and LÖSEV's stand. The purpose of these observations was to obtain information about the behaviours of volunteers and students who visited the centre and their interactions with each other. The observation focused on volunteers' behaviours, daily work routines, and effects on visitor behaviour, in order to assemble a good overall picture. In total, four hours of observation was conducted.

To sum up, students liked the flexible course sessions, conducting voluntary work, freedom in choosing NGOs, and the feeling of happiness that evolved during the course. On the other hand, they complained about the lengthy work hours (28 hours), the negative attitudes of NGOs toward student volunteers, and obligatory voluntary work for the sake of the requirements of CSC. Students confirmed that activities and procedures in the course seemed to have been implemented as originally planned, with a few reservations such as strict and obligatory voluntary work hours, and students' anxiety about grades. In-class and voluntary-work observations, as well as mid-semester progress papers, indicated that the instructor took students' needs and expectations into consideration and that students were satisfied with the course and their voluntary work.

Product Evaluations identify and assess outcomes—intended and unintended, short term and long term—both to help staff keep an enterprise focused on achieving important outcomes, and to help, ultimately, the broader group of users to gauge the effort's success in meeting the targeted needs (Stufflebeam, 2003). The two questions regarding product evaluation were: *(1) Has the course successfully achieved its objectives? (2) What decisions should be made based on results derived from the study?*.

Data from the summative evaluation (SE) questionnaire showed that students established a relationship between the subjects and skills that they learnt in the course and the teaching profession (64.3%). The course seemed to meet students' expectations, with a rating of 57.1%. At the beginning of the term, students' attitudes towards the course were positive, at 57.1%; by the end of the term the approval rating had noticeably increased to 85.7%.

Results from Likert-type items in the second part of the SE questionnaire (related to the course content, requirements, instructor, evaluation and teaching profession) were analysed through SPSS 23. Accordingly, students reported that they learned the basics of community service in the course (*M*=5.07, *SD*=.62), with the help of voluntary work (*M*=5.21, *SD*=.43), and they considered that voluntary work was a necessary part of achieving the aims of the course (*M*=5.07, *SD*=1.21). Students also believed that they would benefit from the things that they learned in the course once they entered the teaching profession (*M*=4.64, *SD*=1.00). They agreed with the balance between theory and practice (*M*=4.50, *SD*=1.22) and found consistency between the assignments and course content (*M*=5.00, *SD*=1.04). When it came to the instructor, students found her comments and suggestions about the tasks were helpful in completing the requirements (*M*=4.79, *SD*=.12). In regard to the requirements and assessment, students thought that their development was efficiently assessed throughout the course (*M*=4.71, *SD*=.61) and that the time allocated for requirements was sufficient (*M*=4.71, *SD*=1.00). The results from the questionnaires are summarized in Table 4.

Students described the voluntary work as "enjoyable", "exciting", "helpful", or "boring". Four of the students stated that the course was not satisfactory. Criticisms included that the voluntary duties that they fulfilled were not related to the teaching profession, or were not related to children directly, as they had expected. Moreover, the students complained about the monotonous and boring work they were asked to do. Nevertheless, nine students said that they would take the course again if it had been an elective. When students were asked whether if

they were the instructor of the course, would they make any changes, most approved of the current procedures (64.3%). The rest said that they would not be strict about the voluntary work hours (28 hours), and they would make arrangements with certain NGOs, increasing the connection with children. One of the students suggested collecting weekly reports on the voluntary work. The things that students liked most about the course were the flexible hours (there were in-class meetings every week), conducting voluntary work, flexibility in choosing the NGOs they worked for, and personal gains such as happiness, the feeling of usefulness, and being helpful. In general, students complained about the strict working hours (28 hours), the attitudes of NGOs, and obligatory voluntary work as part of a compulsory course.

For S13, the course was mainly based on practical activities, and he found difficulty in putting logically what it means to work voluntarily. In his words:

> *"What I would like to see in this course is a little bit of theory. Theory to understand what we are doing during the course, during all this term, along with this stuff."*

The course was also criticized for being a credit course. In the interviews, I2 stated that: *"...Instead of being a credit course it should had been a pass-fail course"*

In addition, instructors complained about the attitude of the NGOs and the students' grade anxiety. They also emphasized the importance of the course for the teaching program, but regarding assessment through the course, I1 admitted:

> *"I am not sure about the course assessment. It is tough. What is or what should be the criteria here?"*

Another point to highlight is that, on the question of "the things that they liked about the course", S11, S13 and S15 responded with key terms like "respect for others" and "helping diverse people in society". This part will be specifically handled with its relation to multicultural education in discussion part. The results from the questionnaire are illustrated in Table 3.

Table 3.
Means and standard deviations for 6-point Likert scale items from SE questionnaire

	M	*SD*
Benefiting in the future from the things that they learned in the course.	4.64	1.00
Learning basic things about community services.	5.07	.62
Consistency between assignments and course content.	5.00	1.04
Efficiency of assessment through the students' development.	4.71	.61
Instructor's helpful comments and suggestions in completing the tasks.	4.79	1.12
Completion of all responsibilities in relation to the course by the end of the term.	5.07	.83
Sufficiency of time devoted to the requirements.	4.71	1.00
Balance between theory and practice.	4.50	1.22
Necessity of voluntary work in reaching the aims of the course.	5.07	1.21
Learning through voluntary work.	5.21	.43

n=15

In conclusion, based on the data from various data sources and and comprehensive analysis, the course seems to met the needs of the students and successfully achieved its objectives. The question "Did it succeed?", or the product evaluation, posits that it would be worthwhile to improve some aspects (integration of service and theory, lack of course materials, problematic NGO permissions and NGOs' attitudes towards students) in order to strengthen the course. However, one should keep in mind that the results of the study are limited to only one classroom, thus the results may not generalize to all pre-service teacher classes.

Discussion

According to the pre-service teachers, the community service practices course was useful for teacher candidates, which is in line with the literature (Astin et al., 2000; Ayvacı & Akyıldız, 2009; Elma et. al, 2010; Erkan, Uludağ, & Burçak, 2012; Kaya, 2013; Sönmez, 2010; Wade, 1995). Students in the study agreed that the course enhanced "learning through voluntary work". As succinctly articulated in Furco's study (1996), service learning happens with a mutual balance between service and learning and/or providers and recipients. However, the phrase "voluntary work" seemed problematic for most of the students, as the course was compulsory rather than an elective. In other words, students disagreed with the logic of mandatory voluntarism. In parallel with the students, course instructors criticized the fact that they were required to grade a course which is based on voluntariness in nature. In the literature, studies exist that mention negative effects of mandatory volunteerism on students' future motivation towards voluntary work (Bandow, 1999; Gökçe, 2011; Stukas, Snyder, & Clary, 1999). These negative effects are considered to be dealt with by instilling social conscience in

students, developing strong collaborations between NGOs and universities, providing students with choices to serve, and limiting external control on students. With this in mind, it is interesting to note that instructors in the study highlighted that they tried to offer students a number of NGOs from which they could select. In doing so, they aimed to involve students in the process.

Course objectives and requirements were found to be in harmony with the course philosophy. The results also indicated that the objectives of the course and nature of being a volunteer would be better understood if the course was supported by theory. This finding is compatible with the literature (Konza, Kiggins, & Brown, 2007), with a boost to community services' impact through the application of theoretical knowledge. However, this finding was in contrast to Schultz' study (1996), problems in the integration of service and theory were among the findings. In other words, the connection between theory and practice was not apparent to students. Tucker et al. (1998) believes that the course is a platform for enhancing pre-service teachers' understanding of classroom theories. For Astin et al. (2000), course materials help to develop cognitive skills in community services courses. In light of the literature, the teaching and learning environment might be enriched by some readings to enhance the theoretical side of the course.

Developing communication skills was another strong point in the results, reflecting similar results in the studies conducted by Konza, Kiggins, and Brown (2007) and Tucker et al. (1998). However, teacher candidates in the study complained about working with adults in the NGOs and explained that they would have preferred to interact with children directly. This result might be a sign of teacher candidates' misconceptions about the nature of the course, as it was designed as an opportunity to care for others, including children but adults as well.

Another result was students' problems in finding suitable NGOs and the NGOs' negative attitudes towards CSP course participants; this is in parallel with Kaya's findings (2013). Therefore, students and NGOs might be carefully monitored by instructors during the semester. Furthermore, students should be motivated to give feedback about their experiences.

Most of the students considered the course would be beneficial to both their professional and their personal lives. These findings are also supported by existing literature (Erkan, Uludağ & Burçak, 2012; Uğurlu & Kıral, 2011). In addition, students explained they found it satisfying

to work voluntarily, and so it seemed that the service work increased their inner happiness. The community service work was also effective in the moral development of college students, and it is important "to help the students become better, more moral people" (Boss, 1994, p.185). As Atatürk said, "teachers are people to whom we trust the new generation". If we wish to enhance pre-service teachers' problem solving, critical thinking and communication skills (Konza, Kiggins & Brown, 2007), to instil values such as the appreciation of other people, and "a more mature understanding of kindness" (Wuthnow, 1995, p.226), this course seems to make a difference in terms of preparing students— not only teachers, but from all departments—for their future lives.

For students, service participation represented a kind of bridge between their student and professional lives. What is more, the results highlighted the interplay of community service and multicultural education, as is also emphasized by the existing literature (Baldwin et al., 2007; Boyle & Baise, 1998; O'Grady, 2014). Community service courses seemed to cultivate in the long run pre-service teachers' understanding of diversity, respect for other people, and empathic understanding. This is also important for ameliorating teacher education programs towards a more "culturally sustaining pedagogy" and "socio-cultural responsive teaching environment" (Vandeyar, 2017; p.389).

Last but not least, the results indicated that the course might be made a selective course, to be offered to all departments in the university. This suggestion is also in parallel with the outcomes of an older study by Sönmez (2010).

In conclusion, CIPP model application with case study design posited that the community services course should continue, but with some improvements in building effective communication with NGOs and in strategies and methods of teaching (integrating theory into practice, using course materials like books and articles, monitoring the process), and evaluation (using alternative tools for course assessment, being a pass-fail course). As a course assessment tool, students can use reflective diaries which they give a part to their experiences and feelings. This kind of diary could be also used as a data collection tool for further studies to catch the attitude change of pre-service teachers, if any. Besides reflective tools, instructors may collect portfolios or use other authentic assessment techniques for course assessment. Furthermore, future studies might be conducted through national level with a quantitative method to portray CSP course's effectiveness, or attitude towards volunteering.

References

Anderson, J. (1999). *Service-learning and teacher education*. ERIC Digest.

Astin, A.W., Vogelgesang, L.J., Ikeda, E.K., & Yee, J.A. (2000). How Service Learning Affects Students. *Higher Education*. 144.

Baldwin, S.C., Buchanan, A.M., & Rudisill, M.E. (2007). What teacher candidates learned about diversity, social justice, and themselves from service-learning experiences. *Journal of Teacher Education, 58*(4), 315-327.

Bandow, D. (1999). Voluntarism should be voluntary. Retrieved January 22, 2017 from https://fee.org/articles/voluntarism-should-be-voluntary/

Barton, A.C. (2000). Crafting multicultural science education with preservice teachers through service-learning. *Journal of Curriculum Studies, 32*(6), 797-820.

Bitsch, V. (2005). Qualitative research: A grounded theory example and evaluation criteria. *Journal of Agribusiness, 23*(1), 75-91.

Boyle-Baise, M. (1998). Community service learning for multicultural education: An exploratory study with pre-service teachers. Equity & Excellence in Education, 31 (2), 52-60.

Boyle-Baise, M., & Langford, J. (2004). There are children here: Service learning for social justice. *Equity & Excellence in Education, 37*(1), 55-66.

Boyle-Baise, M., & Sleeter, C.E. (2000). Community service learning for multicultural education. Educational Foundations, *14*(2), 33-50.

Bruner, J. S. (1960). *The Process of education.* Cambridge, Mass.: Harvard University Press.

Butin, D. (2010). *Service-learning in theory and practice: The future of community engagement in higher education*. Springer.

Chambers, T. (2009). A continuum of approaches to service-learning within Canadian post-secondary education. *Canadian Journal of Higher Education*, *39*(2),77–100.

Cho, G., & DeCastro-Ambrosetti, D. (2005). Is ignorance bliss? Pre-service teachers' attitudes toward multicultural education. *The High School Journal, 89*(2), 24-28.

Conrad, D., & Hedin, D. (1991). School-based community service: What we know from research and theory. *Phi Delta Kappan, 72*(10), 743-749.

Council of Higher Education (2011). The THU directive, approved by the Turkish National Committee for Education, and approved by the Council of Higher Education on 17.02.2011 and sent to all Faculties of Education.

Creswell, J.W. (2013). *Research design: Qualitative, quantitative, and mixed methods approaches*. NY: Sage Publications.

Çetin, T., & Sönmez, Ö.F. (2009). Sosyal bilgiler öğretmen adaylarinin topluma hizmet uygulamalari dersinin amaç ve içeriğine yönelik görüşlerinin değerlendirilmesi. *Gazi Üniversitesi Gazi Eğitim Fakültesi Dergisi*, *29*(3).

Darling-Hammond, L. (1994). Reframing the school reform agenda: Developing capacity for school transformation. In L. Hammond, A. Lieberman, D. Wood, & B Falk (Eds.), *Transforming school reform: Policies and practices for democratic schools*. New York: National Center for Restructuring Education, Schools and Teaching.

Densmore, K. (2000). Service learning and multicultural education: Suspect or transformative? In C. R. O'Grady (Ed.), *Integrating service learning and multicultural education in colleges and universities* (pp. 45-58). Mahwah, NJ: Lawrence Erlbaum Associates.

Dewey, J. (1916). *Democracy and education: An introduction to the philosophy of education.* New York: Macmillan.

Dewey, J. (1938). *Experience and education*. New York: Collier Books.

Einfeld, A. & Collins, D. (2008). The relationships between service-learning, social justice, multicultural competence, and civic engagement. *Journal of College Student Development*, *49*(2), 95-109.

Elma, C., Kesten, A., Kıroğlu, K., Uzun, E. M., Dicle, A. N., & Palavan, Ö. (2010). Öğretmen adaylarının topluma hizmet uygulamaları dersine ilişkin algıları. *Kuram ve Uygulamada Eğitim Yönetimi [Educational administration: Theory and practice], 16*(2), 231-252.

Erkan, S., Uludağ, G., & Burçak, F. (2012). İlköğretim bölümü öğretmen adaylarının topluma hizmet uygulamaları dersine ilişkin algılarının incelenmesi, *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, *1*, (184-194).

Eyler, J. & Giles Jr., D.E. (1999). *Where's the learning in service-learning?* SF: Jossey-Bass.

Eyler, J., Giles Jr., D.E., & Braxton, J. (1997). The impact of service-learning on college students. *Michigan Journal of Community Service Learning, 4*, 5-15.

Fitzpatrick, J.L., Sanders, J.R., & Worthen, B.R. (2010). *Program evaluation: Alternative approaches and practical guidelines* (4th ed.). Boston: Pearson.

Freire, P. (1970). Pedagogy of the Oppressed, trans. *Myra Bergman Ramos. New York: Continuum.*

Furco, A. (1996). Service-learning: A balanced approach to experiential education In Taylor, B. and Corporation for National Service (Eds.), *Expanding Boundaries: Serving and Learning* (pp. 2-6). Washington, DC: Corporation for National Service.

Furco, A. (2002). Is Service-Learning Really Better than Community Service? In A. Furco, & S. H. Billig (Eds.), Service-Learning: The Essence of Pedagogy (pp. 23-50). Greenwich, CT: Information Age Publishing.

Gardner, A.V.D.L. (1984). *Artificial intelligence approach to legal reasoning*. CA.

Gökçe, N. (2011). Sosyal bilgiler öğretmen adaylarının topluma hizmet uygulamalarına ilişkin değerlendirmeleri. *Uluslararası İnsan Bilimleri Dergisi*, *8*(2), 176-194.

Gredler, M. E. (1996). *Program evaluation.* New Jersey: Pearson Education.

Guba, E.G. (1981). Criteria for assessing the trustworthiness of naturalistic inquiries. *Educational Communication and Technology Journal*, *29*, 75–91.

Gustafson, K.L., & Branch, R.M. (1997). Revisioning models of instructional development. *Educational Technology Research and Development, 45*(3), 73-89.

Hansen, H.F. (2005). Choosing evaluation models: A discussion on evaluation design. *Evaluation*, *11*(4), 447-462.

Higher Education Council (HEC) (2006). Eğitim Fakültelerinde Uygulanacak Yeni Programlar Hakkında Açıklama – Programlar ve Ders İçerikleri. Retriewed July 25, 2018, from http://www.yok.gov.tr/egitim/ogretmen/yeni_programlar_ve_icerik.htm.

Jick, T.D. (1979). Mixing qualitative and quantitative methods: Triangulation in action. *Administrative Science Quarterly 24*(4), *Qualitative Methodology*, 602-611.

Kaya, B. (2013). Social Studies Teacher Candidates' Views on the Community Service Practices Course. *Social and Behavioral Sciences, 10*, 2419-2425.

Kesten, A. (2012). Öğretmen adaylarının ve öğretim elemanlarının bakış açısıyla topluma hizmet uygulamaları dersinin değerlendirilmesi. *Kuram ve Uygulamada Eğitim Bilimleri*, *12*(3), 2125-2148.

Kocadere, S.A. & Seferoğlu, S.S. (2013). Topluma hizmet uygulamaları dersinin işlenişi: Uygulama örnekleri ve sürece ilişkin öğrenci görüşlerinin değerlendirilmesi. *Pamukkale Üniversitesi Eğitim Fakültesi Dergisi*, *34*, 75-89.

Kohlberg, L. (1984). The psychology of moral development: Essays on moral development. *San Francisco: Harper & Row*.

Kolb, D.A. (1984). Experiential Learning: Experience as the Source of Learning and Development. Englewood Cliffs, NJ: Prentice Hall.

Konza, D., Kiggins, J.M. & Brown, G. (2007). Community service: Including a social justice component in a teacher education program, ATEA 2007: Quality in Teacher Education: Considering Different Perspectives and Agendas, Wollongong.

Lee, S.P. (2009) Service learning in an ethics course. In Craig A. Rimmerman (Ed.), *Service-learning and the liberal arts: How and why it works*, 7-21. NY: Lexington Books.

LeSourd, S.J. (1997). Community service in a multicultural nation. *Theory into Practice*, *36*(3), 157-163.

Lincoln, Y.S., & Guba, E. G. (1985). *Naturalistic inquiry*. Beverly Hills, CA: Sage.

Maybach, C.W. (1996). Investigating urban community needs: Service learning from a social justice perspective. *Education and Urban Society*, *28*(2), 224-236.

O'Grady, C.R. (Ed.). (2014). *Integrating service learning and multicultural education in colleges and universities*. NY: Routledge.

Ornstein, A.C., & Hunkins, F.P. (2016). *Curriculum: Foundations, principles and issues* (7th edition). New Jersey: Prentice Hall.

Özdemir, S.M., & Tokcan, H. (2010). Topluma hizmet uygulamaları dersinin öğretmen adaylarının görüşlerine göre değerlendirilmesi. *Selçuk Üniversitesi Ahmet Keleşoğlu Eğitim Fakültesi Dergisi*, *30*, 41-61.

Patton, M. (1990). *Qualitative evaluation and research methods*. Beverly Hills, CA: Sage.

Patton, M.Q. (2002). *Qualitative research and evaluation methods* (3rd ed.). Thousand Oaks, CA: Sage.

Piaget, J. (1954). *The construction of reality in the child*. New York: Basic Books.

Rhoads, R.A. (1998). In the service of citizenship: A study of student involvement in community service. *The Journal of Higher Education*, *69*(3), 277-297.

Root, S.C. (1997). School-based service: A review of research for teacher educators. In J. Erickson & J. Anderson (Eds.), *Learning with the community: Concepts and models for service-learning in teacher education*, 42-72. Washington, DC: American Association for Higher Education.

Schultz, A.J. (1996). *Evaluation report to the school of public health community-based public health committee*. Ann Arbor, MI.

Scriven, M. (1980). *Evaluation thesaurus* (2nd ed.). California: Edgepress.

Sevim, O. (2011). Türkçe öğretmeni adaylarının topluma hizmet uygulamaları dersine yönelik düşünceleri: Atatürk Üniversitesi örneği. *Ekev Akademi Dergisi*, *15*(48), 293-302.

Soder, R. (1996). Teaching the teachers of the people. In R. Soder, (Ed.), *Democracy education and the schools*. San Francisco, CA: Jossey-Bass.

Sönmez, Ö. F. (2010). Sosyal bilgiler öğretmen adaylarının topluma hizmet uygulamaları dersine yönelik görüşlerinin kazanım boyutunda değerlendirilmesi. *Karadeniz Sosyal Bilimler Dergisi*, *2*(2), 53-72.

Stufflebeam, D. (2003). *The CIPP Model for Evaluation: An update, a review of the model's development, a checklist to guide implementation*. Paper read at Oregon Program Evaluators Network Conference, at Portland, OR. Retriewed July 25, 2018, from http://www.wmich.edu/evalctr/pubs/CIPP-ModelOregon10-03.pdf

Stufflebeam, D.L., Foley, W.J., Gephart, W.J., Guba, E.G, Hammond, R.L., Merriman, H.O., & Provus, M.M. (1971). *Educational evaluation and decision making*. Itasca, Ill.: F.E. Peacock.

Stufflebeam, D.L., & Shinkfield, A.J. (2007). CIPP model for evaluation: An improvement / accountability approach. *Evaluation Theory, Models, and Applications*, 325-365.

Stufflebeam, D.L., & Zhang, G. (2017). *The CIPP evaluation model: How to evaluate for improvement and accountability*. NY: Guilford Publications.

Stukas, A.A., Snyder, M., & Clary, E.G. (1999). *Psychological Science*, *10*(1), 59-64.

Tanrıseven, I., Üredi, L., & Yanpar-Yelken, T. (2010). Öğretmen adaylarının topluma hizmet uygulamaları dersine ilişkin kazanımları, karşılaştıkları güçlükler ve çözüm önerileri. In *Oral presentation in I. National Educational Curriculum and Teaching Congress, Balıkesir*.

Tilki, F. (2011). *Beden eğitimi ve spor eğitimi alan öğrencilerin topluma hizmet uygulamaları dersini algılama düzeyleri (Sakarya ili örneği)*. (Yayımlanmamış Yüksek Lisans Tezi). Sakarya Üniversitesi, Eğitim Bilimleri Enstitüsü.

Tucker, M.L., McCarthy, A.M., Hoxmeier, J.A., & Lenk, M.M. (1998). Community service learning increases communication skills across the business curriculum. *Business Communication Quarterly*, *61*(2), 88-99.

Tuncel, G., Kop, Y., & Katılmış, A. (2011). Sosyal bilgiler dersi öğretmen adaylarının "Topluma Hizmet Uygulamaları" dersine yönelik görüşleri. In Z. Kaya & U. Demiray (Eds.), *2nd International Conference on New Trends in Education and Their Implications* (pp. 435-447). Ankara: Siyasal Kitapevi.

Uğurlu, Z. & Kıral, E.(2012). Öğretmen adaylarının topluma hizmet uygulamaları dersinin işleyiş süreci ve kazanımlarına ilişkin görüşleri. *Karabük Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, *1*(2), 59-93.

Wade, R. (1995). Developing active citizens: Community service learning in social studies teacher education. *The Social Studies*, *86*(3), 122–128.

Wade, R. C. (2000). Service-learning for multicultural teaching competency: Insights from the literature for teacher educators. *Equity & Excellence in Education*, *33*(3), 21-29.

Warburton, J., & Oppenheimer, M. (2000). *Volunteers and volunteering*. Sydney: Federation Press.

Wilson, J. (2000). Volunteering. *Annual review of sociology*, *26*(1), 215-240.

Wuthnow, R. (1995). *Learning to care: Elementary kindness in an age of indifference*. Oxford University Press.

Vandeyar, S. (2017). The teacher as an agent of meaningful educational change. *Educational Sciences: Theory & Practice*, *17*, 373–393.

Vygotsky, L. (1978). *Mind in Society*. London: Harvard University Press.

Yılmaz, M , Arslan, Ş . (2016). Öğretmen adaylarının topluma hizmet uygulamaları dersine yönelik algıları. *Bartın Üniversitesi Eğitim Fakültesi Dergisi, 5*(2), 598-607.

Yin, R.K. (1994). Discovering the future of the case study method in evaluation research. *Evaluation Practice, 15*(3), 283-290.

Zaff, J.F., Malanchuk, O., Michelsen, E., & Eccles, J. (2003). Identity development and feelings of fulfillment: Mediators of future civic engagement. Circle Working Paper 04. Retrieved February 20, 2006, from www.civicyouth.org/PopUps/ WorkingPapers/WP04Zaff.pdf

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Research Article

Analysis of Middle School Students' Views on Scientific Inquiry in the Context of Science Achievement[1]

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Abstract

One of the aims of science teaching is to ensure that students enjoy scientific work and develop scientific thinking and associated inquiry skills. Scientific inquiry represents a process that scientists routinely use in their work, and it is a way for students to acquire scientific knowledge and develop scientific skills. Providing students with ample knowledge and necessary skills related to daily life, scientific inquiry is an important part of science education. This study aimed to elicit the views of a group of middle school students concerning scientific inquiry. Twenty-eight students (10 girls, 18 boys) attending the eighth grade participated in this case study. The data were collected through the Views of Scientific Inquiry (VOSI) and the students' scores in the Examination for the Transition from Primary to Secondary Education (TEOGS) held in Turkey. The relationship between TEOGS scores and student views classified by VOSI was examined. The results revealed that students that are successful in academic terms may have insufficient views of some components of scientific inquiry.

Keywords: *Science teaching, science education, scientific inquiry, middle school students, student views*

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Ortaokul Öğrencilerinin Bilimsel Araştırmaya Yönelik Görüşlerinin Fen Başarısı Bağlamında İncelenmesi

Öz

Öğrencilerin bilimsel çalışmalardan zevk almalarını sağlamak, bilimsel düşünebilme ve bilimsel araştırma becerilerini geliştirmek fen öğretiminin amaçlarındandır. Bilimsel araştırma, bilim insanlarının çalışmalarında rutin olarak kullandığı bir süreci temsil eder ve öğrencilerin bilimsel bilgileri öğrenmelerini, bilimsel becerileri kazanmalarını sağlayan bir yöntemdir. Öğrencilere günlük yaşamla ilgili pek çok bilgi ve beceriyi kazandıran bilimsel araştırma, fen eğitiminin önemli bir parçasıdır. Bu araştırmanın amacı bir grup ortaokul öğrencisinin bilimsel araştırmaya yönelik görüşlerini tespit etmektir. Durum çalışması olarak yürütülen bu araştırmaya, 8. sınıfta öğrenim gören 28 öğrenci (10 kız, 18 erkek) katılmıştır. Veriler Bilimsel Sorgulama Hakkındaki Görüş Anketi (VOSI) ve Temel Eğitimden Ortaöğretime Geçiş Sınavı (TEOGS) puanları aracılığı ile toplanmıştır. VOSI ile sınıflandırılan öğrenci görüşlerinin TEOGS puanları ile ilişkisi incelenmiştir. Sonuç olarak akademik anlamda başarılı öğrencilerin de bilimsel araştırmanın bazı bileşenleri konusunda yetersiz görüşlere sahip olabileceği bulgusuna ulaşılmıştır.

Anahtar Sözcükler: *Fen eğitimi-öğretimi, bilimsel araştırma, ortaokul öğrencileri, öğrenci görüşleri*

Introduction

In the past, science was considered as a piece of information that had to be directly transferred to students. However, as a result of the developments in science and technology, the application dimension of science has gained value, and thus inquiry-based learning with the underlying philosophy of progressivism (pragmatism) has emerged (Barrow, 2006). According to progressivism, the ultimate goal of education is individual development within the experience acquired. This philosophy adopts an individual or student-centered approach to education and advocates guiding students to solve problems based on their interests and needs rather than waiting for a distant future, thus opposing the idea that school means preparing for life (Cevizci, 2011).

The history of science education in Turkey reveals progress from the classical approach to constructivism. In particular, after 2005, inquiry-based learning came into prominence in the science curricula [Ministry of National Education-Turkish Education Board (MoNE-TEB), 2005, 2013, 2018). Inquiry refers to an active process in science education, involving scientific thinking, research and structuring of knowledge. It also guides the setting of goals and choice of teaching methods and learning techniques (Dojman, 2003). Inquiry encompasses a process that includes questioning, exploring, and rigorously testing discoveries to understand the natural world (de Jong, 2006). Scientific inquiry, which is part of inquiry-based learning, is defined as the method for acquiring skills, knowledge and teaching (Bybee, 2002). In other words, scientific inquiry is a scientific method or activities that represent the characteristics of the scientific process (Yang, Park, Shin, & Lim, 2017).

A review of the literature shows that the measurement instruments proposed to be used in the area of scientific inquiry (Lederman, Lederman, Bartos, Bartels, Meyer, & Schwartz, 2014) and studies conducted on scientific inquiry (Anggraeni, Adisendjaj, & Amprasto, 2017; Galano, Alessandro, Luigi, & Italo, 2016; Leblebicioğlu, Çapkınoğlu, Metin, & Schwartz, 2017; Şenler, 2015; Yang, Park, Shin, & Lim, 2017) are limited in number. In many studies the Views of Scientific Inquiry (VOSI-N) questionnaire developed by Lederman et al. (2014) was used usually as the data collection tool to elicit views concerning scientific inquiry. This questionnaire aims to reveal the participants' views on the following eight components of scientific inquiry (Lederman et al., 2014, p. 68):

1. scientific investigations all begin with a question and do not necessarily test a hypothesis,
2. there is no a single set or sequence of steps followed in all investigations,
3. inquiry produces are guided by the question asked,
4. all scientists performing the same procedures may not get the same results,
5. inquiry procedures can influence the results,
6. research conclusions must be consistent with the data collected,
7. scientific data are not the same as scientific evidence,
8. explanations are developed from combination of collected data and what is already known.

Based on the participants' responses to the items in this questionnaire, their views were classified under the categories of "unclear / N/A", "naïve", "mixed" and "informed". According to their aim, studies that used VOSI as a data collection tool can be divided into two groups: (1) determining a group's views of scientific inquiry and (2) identifying changes in a group's views of scientific inquiry through certain activities. An example of the first group was a study conducted with 32 high school students at the 11th grade, a group of participants were found to be knowledgeable about research methods and questions whereas some students were not able to establish a relationship between the nature of scientific inquiry and the questions. There were also participants that did not understand the relationship between evidence and data, reason for choosing a method, or the relationship between result and data collection (Anggraeni, Adisendjaja, & Amprasto, 2017). Within the scope of another research, 25 science teachers participated in a month-long program lasting about 30 hours and covering the nature of science and scientific inquiry subjects. It was found that before the program, most of the participant science teachers did not have a good understanding of scientific inquiry, but there was improvement, albeit small, in their views of scientific inquiry after the program (Adisendjaja, Rustaman, Redjeki, & Satori, 2017). In another study that aimed to elicit the scientific inquiry views of high school students in Turkey, the participants had favorable views on the dimensions of "all scientific research starts with a question and does not always test a hypothesis", "there is not a single scientific method that can be followed in all studies", "scientific data and scientific evidence are not the same", and "deductions are made based on the collected data and prior knowledge"; however, their views on "scientists who follow the same procedure may not achieve the same results" and "the inquiry procedure affects the results" were not sufficient. The researchers concluded that the participants had more

developed views on the items providing alternative options and suggested that this might be due to their familiarity with tests (Leblebicioğlu et al., 2017).

Galano, Alessandro, Luigi and Italo (2016) reported that short-term inquiry-based learning practices were not sufficient to teach the components of scientific inquiry. Şenler (2015) compared the scientific inquiry views of middle school students in the education system in Turkey and the United States of America. The author concluded that the American students had more advanced views of scientific inquiry in terms of "all scientific research starts with a question", "scientists use experimental data sets to answer questions", and "data and preliminary knowledge are used to answer questions". On the other hand, the Turkish students provided better explanations for the dimension of "there is no single scientific method". The researcher attributed the American students' more advanced views to the inclusion of scientific inquiry in American education programs for a longer time compared with the students in Turkey. In a survey conducted with middle school students in Korea, the participants' views on scientific inquiry were found to be complex and naive. The authors argued that this resulted from the participants' inability to fully understand the concepts of experiment, science, data and evidence. In addition, they suggested that explicit and reflective teaching can develop individuals' views of scientific inquiry (Yang, Park, Shin, & Lim, 2017). The results of recent research also showed that explicit, inquiry-based learning improved the participants' views concerning scientific inquiry (Testa, Zappia, & Galano, 2017).

In the 2015 International Student Assessment Program (PISA, 2015), three competencies were defined for scientific literacy: (1) explaining phenomena scientifically, (2) designing and evaluating scientific inquiry methods, and (3) interpreting data and findings scientifically (PISA, 2015). In order to be successful in PISA tests, the students must have a good understanding of the nature of scientific inquiry. The aim of science teaching is more than to teach students scientific facts and concepts; it is to help students enjoy and understand scientific work, and develop scientific thinking and inquiry skills (Bezir Akçay, 2016). Scientific inquiry is an important part of science education, providing students with the necessary knowledge and skills required in daily life. The current study aimed to examine the relationship between the academic achievements of students in the science course and their views on scientific inquiry.

Methodology

This research was conducted as a case study, which is a qualitative approach, in which the researcher puts together a variety of facts about a limited current situation in real life to describe that situation (Creswell, 2013). This study aimed to offer an insight into the academic achievements of the participant students attending a science course and their views concerning scientific inquiry. For this reason, it had an explanatory / descriptive case study design. In descriptive case studies, examples of a situation are examined to provide a descriptive definition of the situation (Davey, 1991).

Participants

Twenty-eight students (10 girls, 18 boys aged 15) attending the eighth grade of a middle school in the Central Anatolia Region of Turkey participated in this research. A purposeful sampling method was used in the selection of the participants. In this method, the units of observation can be people, phenomena, or objects from a specific situation (Patton, 2002). In this study, the situation that was explored was the students' science achievement. Table 1 presents the TEOGS scores, gender and coding of the participants.

Table 1
Participants' TEOGS Scores, Gender and Coding

TEOGS scores	Girl	Boy	Coding
100	4	4	A_1, A_2, A_3, A_4, A_5, A_6, A_7, A_8
95	4	1	B_1, B_2, B_3, B_4, B_5
90	4	-	C_1, C_2, C_3, C_4
85	3	-	D_1, D_2, D_3
75	2	1	E_1, E_2, E_3
70	1	-	F_1
65	1	-	G_1
60	2	-	H_1, H_2
55	1	-	I_1

As shown in Table 1, the participants' TEOGS scores were as follows: 100 points for eight participants (four girls, four boys), 95 points for five (four girls, one boy), 90 points for four girls, 85 points for three girls, 75 points for three participants (two girls, one boy), 70 points for one girl, 65 points for one girl, 60 points for two girls, and 55 points for one girl. According to their TEOGS scores, the students were coded as A for 100 points, B for 95 points, C for 90 points, D for 85 points, E for 75 points, F for 70 points, G for 65 points, H for 60 points, and I for 55 points.

Data Collection Tools

In this study, the data was collected during the first semester of the 2016-2017 academic year through interviews and documents. VOSI was administered to determine the participants' views on scientific inquiry and the participants' TEOGS scores were used as documents. The data collection tools used in this research are explained in detail in the following subsections.

VOSI

In this study, the VOSI questionnaire developed by Schwartz, Lederman and Lederman (2008) was used to determine the participants' views on scientific inquiry. This questionnaire consists of five open-ended questions addressing the following six components of scientific inquiry: (1) questions guide inquiry, (2) scientific inquiry has more than one method, (3) scientific inquiry has more than one purpose, (4) scientific knowledge is justified, (5) data and evidence are not the same, and (6) science is the practice of a scientific community. Based on the participants' responses to the five items in VOSI, their views are classified as "unclear / N/A", "naive", "mixed", and "informed".

Thirty-minute structured interviews were undertaken with each of the 28 eighth-grade students that participated in the research. The interviews were conducted by the researcher in the school library with permission from the school administration and audio-recorded.

TEOGS scores

TEOGS is a central examination that was implemented by MoNE in Turkey in both school terms of the academic years 2013-2014, 2014-2015 and 2016-2017. The eighth-grade students' scores in this test determined which middle school they would attend. This test contained questions related to the subject areas of Turkish, mathematics, science, English, social studies, and religious culture. The students were presented with 20 questions with four options from each branch. The scores obtained from the correct answers were multiplied by 5 to calculate the branch score. In this study, the participants' TEOGS science scores belonging to the first term of the 2016-2017 academic year were used.

Data Analysis

The data was examined by content analysis, and in this paper, the findings are presented with excerpts from the participants' interviews. The main goal in content analysis is to establish associations that can explain the collected data. In this process, the codes used are classified under certain categories (Yıldırım & Şimşek, 2006).

During the data analysis process, the conversations were recorded with a voice recorder. Since VOSI was used as the data collection tool, the participants' responses were classified under the categories proposed by the researchers that developed this questionnaire (Schwartz et al., 2008). Thus, the students' views related to the six components of scientific inquiry were classified and tabulated under the categories of "unclear / N/A", "naive", "mixed", and "informed". In this process, the two researchers first worked individually, and then the inter-coder agreement was calculated.

Validity, Reliability and Ethical Issues

In this study, more than one data collection tool was used in order to ensure construct validity. After transcribing the audio-recorded interviews, the participants were re-interviewed to determine whether their responses were consistent and they received participant confirmation (Patton, 2002). The reliability of the categories obtained from content analysis was calculated using the following formula: "reliability = number of agreements / number of agreements + disagreements" (Miles, & Huberman, 1994, p. 64). The inter-coder agreement was calculated as 86%. The participants comprised students that volunteered to take part in the study and their real names were not used.

Findings

Table 2 presents the participants' views of scientific inquiry classified under the categories of "unclear / N/A", "naive", "mixed", and "informed".

Table 2

The Participants' Views of Scientific Inquiry

VOSI dimension	Unclear / N/A	Naive	Mixed	Informed

(1) Questions guide inquiry.	A_3, D_2, E_1	A_1, A_2, A_4, A_5, A_6, A_7, A_8, B_1, B_2, B_3, B_4, B_5, C_1, C_2, C_3, C_4, E_3, D_1, D_3, F_1, G_1, H_1, H_2, I_1		E_2
(2) Scientific inquiry has more than one method.	A_2, A_3, A_5, A_6, A_8, B_2, B_3, C_2, D_1, E_3, G_1, H_1, H_2, I_1	A_1, A_7, D_3, F_1	C_4, E_1	A_4, B_1, B_4, B_5, C_1, C_3, D_2, E_2
(3) Scientific inquiry has more than one purpose.	D_2	A_2, A_3, A_6, D_1	A_5, C_3, D_3, E_1, F_1	A_1, A_4, A_7, A_8, B_1, B_2, B_3, B_4, B_5, C_1, C_2, C_4, E_2, E_3, G_1, H_1, H_2, I_1
(4) Scientific knowledge is justified.	A_1, A_5, A_8, D_1	A_4, A_6, A_7, B_3, C_4, D_2, G_1, H_1, H_2, I_1	A_2, B_1, B_2, B_4, B_5, D_3, E_1, E_3, F_1	A_3, C_1, C_2, C_3, E_2
(5) Data and evidence are not the same.	A_1, A_7, A_8, B_1, B_3, B_5, C_3, C_4, D_2, E_1, E_3, H_1, H_2, I_1	A_2, A_4, A_5, A_6, C_2, D_1, F_1, G_1	A_3, B_4	B_2, C_1, D_3, E_2
(6) Science is the practice of a scientific community.	A_3, D_2	A_6, A_8, B_1, B_3, B_4, C_1, C_2, C_3, C_4, D_1, G_1, H_2, I_1	A_1, A_5, B_2, E_3, H_1	A_2, A_4, A_7, B_5, E_1, E_2, F_1

The students' views on the six dimensions of scientific inquiry were at different levels (Table 2). It was determined that some of the students with the highest score at A level in the TEOGS science domain had unclear / N/A or naive views of scientific inquiry. Furthermore, most of the students had naive views concerning the dimension of "questions guide inquiry". Only one student that scored 75 in TEOGS was considered to hold informed views. Instead of focusing on the necessity of formulating a research question to conduct inquiry, the students gave responses, such as scientists conducted experiments, worked regularly, made observations, conducted research and administered questionnaires, read books, and followed their curiosity. These views of the students were classified under the "naïve" and "mixed" categories. Only one student scoring 75 in TEOGS science stated, "Scientists concentrate on one question and make an effort [to find an answer]".

Similarly, concerning the dimension of "scientific inquiry has more than one method", it was found that the views of the majority of successful students were in the "unclear / N/A and "naive" categories. A student who was evaluated as "informed" in this dimension explained that "Scientists who ask the same question and use the same method may not reach the same conclusions because one might make a procedural error or their interpretation might differ". A student with naive views on this issue elaborated his/her view as, "Scientists who ask the same

question and use the same method reach the same conclusions because all the questions have a single answer". Another student scoring full marks in TEOGS stated that "If different scientists ask the same question and use different methods, they would not reach the same conclusion. This is because data is important. It can change the result if it is collected by different methods". This response was considered to be "naive".

It appears that most of the participants had "informed" views concerning the dimension of "scientific inquiry has more one purpose". However, it was observed that three students that scored 100 in TEOGS science held "naive" views in this dimension. A student who was evaluated as "informed" in this dimension of scientific inquiry mentioned that scientists may engage in various actions, such as carrying out excavations, measurements, activities, experiments, research and evaluation, drawing conclusions, and sharing the findings.

There were only a limited number of students with "informed" views in the scientific inquiry dimension of "scientific knowledge is justified". Some students did not consider knowledge obtained only by observation as scientific. For example, one student that scored 100 in TEOGS but held "naive" views in this dimension elaborated his view as follows: "I do not consider it a scientific explanation when a scientist reports that there is a relationship between birds' beaks and the varieties of food they eat because this may differ according to different species".

In relation to the scientific inquiry dimension of "Data and evidence are not the same", it was similarly seen that some participants that were evaluated as being successful in science based on their TEOGS scores held naive views, providing the response "I do not know" to the following questions: "What does data mean in science?, "What does data analysis involve?", and "Are data and evidence the same or different?". An informed student says, however, explained his/her view as "Data is gathering information and data analysis is organizing the gathered information in a regular way. Evidence is statements made based on the data collected". Another student who obtained a full score in TEOGS stated, "Data and evidence are not the same thing. Data is scientific, evidence is a clue". This view was categorized as "naive".

A student with "informed" views regarding "Science is the practice of a scientific community." commented that "Scientists conduct research to meet the needs of the society they are in; they make inventions that no one else has achieved.". One student responded "I do not know" and

was classified under the “unclear / N/A”. Another student who had a full score in TEOGS conveyed his/her views as, “Scientists first learn about the subject they want to investigate, and after thinking through it, they decide what to do. The subject under inquiry is affected by the environment in which scientists live, the climate and geographical features, the problems they encounter, and their own interests”, which was categorized as an “informed” view.

Discussion and Conclusion

This study, which aimed to examine middle school students’ views of scientific inquiry in the context of their academic achievements in the science course, revealed that even students that could be considered as successful in the academic sense may have inadequate views concerning some components of scientific inquiry. Many participants had naive views in the dimensions of “questions guide inquiry”, “scientific knowledge is justified”, and “science is the practice of a scientific community”; unclear views in “scientific inquiry has more than one method” and “data and evidence are not the same”; and informed views in “scientific inquiry has more than one purpose”. This result is in agreement with the literature in terms of demonstrating that science teachers and students’ views of scientific inquiry are not at a desirable level (Adisendjaja, Rustaman, Redjeki, & Satori, 2017; Anggraeni, Adisendjaja, & Amprasto, 2017; Galano, Alessandro, Luigi, & Italo, 2016; Leblebicioğlu, Çapkınoğlu, Metin, & Schwartz, 2017; Yang, Park, Shin, & Lim, 2017; Şenler, 2015).

In this research, most of the participants were found to have naive views in the dimension of “questions guide inquiry”, which is not consistent with the results of the study undertaken by Karışan, Şenler and Bilican (2017) with science teacher candidates. The authors suggested that science teacher candidates had informed views concerning this dimension due to their experience related to science. Adisendjaja, Rustaman, Redjeki and Satori (2017) considered the inability to understand the role of scientific inquiry as a misconception. Similar to our results, in their study with high school students, Anggraeni, Adisendjaja and Amprasto (2017) also reported that students did not clearly understand the role of questions in scientific inquiry. In order to carry out scientific inquiry, there is a need for questions that will guide the inquiry (Lederman et al., 2014).

Our participants had unclear views in the dimension of "Scientific inquiry has more than one method". Testa, Zappia and Galano (2017) reached the conclusion that high school students' misconceptions related to this dimension originated from textbooks, but this can be resolved through explicit, inquiry-based learning. Similarly, in a recent study, it was reported that textbooks are not designed to improve students' ability to conduct research (Aldahmash, Mansour, Alshamrani, & Almohi, 2016). In this respect, it is useful to examine textbooks. If science textbooks are not designed to improve students' views and skills in scientific inquiry, the teacher should provide additional guidance for students concerning the topic.

The results of the current research revealed that many participants failed to understand that data comprises sources collected to seek an answer to a research question and evidence is the interpreted form of data. Similarly, a study conducted with middle school students in Korea reported that students did not fully understand the concepts of "experiment", "data" and "evidence" (Yang et al., 2017). In light of this finding, it can be inferred that in order to improve students' views of scientific inquiry, it is necessary to ensure that they clearly and fully understand all related concepts.

Suggestions

There are studies in the literature that link naive views of scientific research with the tests adopted in the education system (Leblebicioğlu et al., 2017). For this reason, activities performed at preschool, primary school, high school and university levels and questions that are solved in class can be designed in a way to improve students' views on scientific inquiry. In this sense, the educational environment should provide students with more opportunities to conduct inquiries. There is evidence in the literature that the short-term implementation of research-inquiry activities does not develop students' scientific inquiry views (Galano et al., 2016). Therefore, such activities should be undertaken over a long period by integrating them into science classes. Textbooks can also be revised to improve students' views on scientific inquiry. Rather than test questions that limit the thinking skills of students, it is essential to engage in solving open-ended questions that require students to be involved in the thinking and interpreting processes.

Future research can investigate the effect of scientific inquiry experiences, epistemological beliefs and various thinking skills on the scientific inquiry views of students at different grade levels.

References

Adisendjaja, Y.H., Rustaman, N.Y., Redjeki, S., & Satori, D. (2017). Science teachers' understanding of scientific inquiry in teacher professional development. *Journal of Physics: Conference Series, 812*, 1-5.

Aldahmash, A.H., Mansour, N.S., Alshamrani, S.M., & Almohi, S. (2016). An analysis of activities in Saudi Arabian middle school science textbooks and workbooks for the inclusion of essential features of inquiry. *Research in Science Education*, *46*, 879-900.

Anggraeni, N., Adisendjaj, Y.H., & Amprasto, A. (2017). Profile of high school students' understanding of scientific inquiry. *Journal of Physics: Conference Series, 895*, 1-5.

Barrow, L.H. (2006). A brief history of inquiry: From Dewey to standards. *Journal of Science Teacher Education, 17*, 265-278.

Bybee, R.W. (2002). Learning science and the science of learning: science educators' essay collection. National Science Teachers Association.

Cevizci, A. (2011). *Eğitim felsefesi.* İstanbul: Say.

Creswell, J.W. (2013). *Qualitative inquiry & research design choosing among five approaches.* Sage Publications.

Davey, L. (1991). The application of case study evaluations. Practical Assessment, Research & Evaluation, *2*(9). 1-2.

de Jong, T. (2006). Computer simulations-technological advances in inquiry learning. *Science, 312*, 532-533.

Dojman, H. N. (2003). *An analysis of elementary teachers' perceptions of teaching science as inquiry.* Doctoral Dissertation, The Faculty of the College of Education University of Houston, Texas.

Galano, S., Alessandro, Z., Luigi, S., & Italo, T. (2016). Secondary students' views about scientific inquiry. Retrieved January, 25, 2018 from http://www1.unipa.it/girep2014/accepted-papers proceedings/62_Galano.pdf

Jarrett, D. (1997*). Inquiry strategies for science and mathematics learning it's just good teaching*. Oregon: Northwest Regional Educational Laboratory.

Johnston, J.S. (2009). *Deweyan inquiry: From education theory to practice.* Albany: State University of New York Press.

Karışan, D., Bilican, K., & Şenler, B. (2017). Bilimsel sorgulama hakkında görüş anketi: Türkçeye uyarlama, geçerlik ve güvenirlik çalışması. *İnönü Üniversitesi Eğitim Fakültesi Dergisi, 18*(1), 326-343.

Leblebicioğlu, G., Çapkınoğlu, E., Metin, D., & Schwartz, R. (2017). *Views of nature of scientific inquiry of the students in a science high school in Turkey: a vasi application*. Paper presented at ESERA, 2017.

Lederman, J.S., Lederman, N.G., Bartos, S.A., Bartels, S.L., Meyer, A.A., & Schwartz, R. S. (2014). Meaningful assessment of learners' understandings about scientific inquiry the views about scientific inquiry (VASI) questionnaire. *Journal of Research in Science Teaching, 51(*1), 65-83.

Lee, H.S., & Songer, N.B. (2003). Making authentic science accessible to students. *International Journal of Science Education, 25*(1), 1-26.

Lustick, D. (2009). The failure of inquiry: preparing science teachers with an authentic investigation. *Journal of Science Teacher Education, 20*, 583-604.

Martin-Hansen, L. (2002). Defining inquiry. *The Science Teacher, 69*(2), 34-37.

MEB-TTKB. (2006). *İlköğretim kurumları (ilkokullar ve ortaokullar) fen bilimleri dersi (3, 4, 5, 6, 7 ve 8. sınıflar) öğretim programı*. Ankara: MEB.

MEB-TTKB. (2013). *İlköğretim kurumları (ilkokullar ve ortaokullar) fen bilimleri dersi (3, 4, 5, 6, 7 ve 8. sınıflar)öğretim programı*. Ankara: MEB.

MEB-TTKB. (2018). *İlköğretim kurumları (ilkokullar ve ortaokullar) fen bilimleri dersi (3, 4, 5, 6, 7 ve 8. sınıflar) öğretim programı.* Ankara: MEB.

Miles, M.B., & Huberman, A.M. (1994). *Qualitative data analysis.* Thousand Oaks, CA: Sage.

MoNE. (2015). *International student assesment programme PISA national pre report.* MoNe Ölçme, Değerlendirme ve Sınav Hizmetleri Genel Müdürlüğü, Ankara.

Patton. M. Q. (2002). *Qualitative research and evaluation methods* (3rd ed.). Thousand Oaks, CA: Sage Publications.

Sadeh, I., & Zion, M. (2012). Which type of inquiry project do high school biology students prefer: Open or guided? *Research Science Education, 42*, 831-848.

Schwartz, R.S., Lederman, N.G., & Barbara A.C. (2004). Developing views of nature of science in an authentic context: An explicit approach to bridging the gap between nature of science and scientific inquiry. *Science Teacher Education*, *88*(4), 610-645.

Schwartz, R.S., Lederman, N.G., & Lederman, J.S. (2008). *An instrument to assess views of scientific inquiry: The VOSI questionnaire*. International Conference of the National Association for Research in Science Teaching (NARST), Baltimore, MD.

Şenler, B. (2015). Middle school students' views of scientific inquiry: an international comparative study. *Science Education International, 26(*2), 166-179.

Yang, I.H., Park, S.W., Shin, J.Y., & Lim, S.M. (2017). Exploring Korean middle school students' view about scientific inquiry. *Eurasia Journal of Mathematics Science and Technology Education, 13*(7), 3935-3958.

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Research Article

Use of Educational Movies in Classroom Management Courses: A Metaphorical Study

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Abstract

The purpose of this present study is to determine the metaphorical perceptions of science preservice teachers on teaching classroom management courses through the educational movies. The method of research is qualitative. Phenomenological design was conducted. The study group of the research consists of 75 science preservice teacher taking the classroom management course during the fall semester of 2017 - 2018 academic year. The data were obtained through the metaphors of the preservice teachers teaching the classroom management courses through the movies declared by the Ministry of National Education in September 2017 seminar period. The preservice teachers were asked to fill in the sentence "Educational movies are like … for classroom management courses because…". Data were analyzed through the inductive content analysis. Accordingly, 57 metaphors were grouped under 8 categories. These categories are place for learning and knowledge acquisition, guiding for situations not yet encountered, complementary for classroom management course, tool for presenting life experience, supportive for education, reflection of theoretical knowledge, preparation tool for the profession, a tool for being model. As a result, it can be mentioned that teaching classroom management courses through educational movies is positively reflected on the preservice teachers. It is thought that the study may contribute to the literature in the context of questioning the philosophical and theoretical foundations of the educational movies for classroom management and create a reference point for consecutive studies.

Keywords: *Classroom management, educational movies, teacher candidates, learning environments.*

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Sınıf Yönetimi Derslerinde Eğitim Konulu Filmlerin Kullanılması: Metaforik Bir Çalışma

Öz

Bu araştırmanın amacı, fen bilgisi öğretmen adaylarının sınıf yönetimi derslerinin eğitim konulu filmler ile işlenmesine dair metaforik algılarını belirlemektir. Araştırmanın yöntemi niteldir. Fenomenolojik desen kullanılmıştır. Araştırmanın çalışma grubunu 2017 – 2018 eğitim öğretim yılı güz döneminde sınıf yönetimi dersini almış 75 Fen Bilgisi öğretmen adayı oluşturmaktadır. Veriler sınıf yönetimi derslerini Millî Eğitim Bakanlığı'nın 2017 Eylül seminer döneminde öğretmenlerin izlemesi üzere ilan edilmiş filmler üzerinden işleyen öğretmen adaylarından metaforlar yolu ile elde edilmiştir. Adaylardan "Eğitim konulu filmler sınıf yönetimi dersleri için … gibidir; çünkü …" cümlesini tamamlamaları istenmiştir. Veriler tümevarımcı içerik analizi ile analiz edilmiştir. Buna göre elde edilen 57 metafor 8 kategoride toplanmıştır. Bu kategoriler; öğrenme ve bilgi edinme yeri, henüz karşılaşılmayan durumlar için yol gösterici, sınıf yönetimi dersi için tamamlayıcı, yaşam tecrübesi sunma aracı, eğitim öğretimi destekleyici, teorik bilginin yansıması, mesleğe hazırlık aracı, model olma aracı şeklindedir. Sonuç olarak; sınıf yönetimi derslerinin eğitim konulu filmler yolu ile işlenmesi öğretmen adaylarına olumlu yönde yansıdığı söylenebilir. Çalışmanın sınıf yönetimi için eğitim konulu filmlerin felsefi ve teorik temellerinin sorgulanması bağlamında alan yazına katkı sağlayabileceği ve ardıl çalışmalar için bir referans noktası oluşturabileceği düşünülmektedir.

Anahtar Sözcükler: *Sınıf yönetimi, eğitim konulu filmler, öğretmen adayları, öğrenme ortamları.*

Introduction

Audiovisual resources have an undeniable effect on the experiences of teenagers that constitute the cognitive domain (Fisch et al, 1997). Movies are audiovisual sources of information that can directly affect the perception and understanding (Arroio, 2010). Our desires, beliefs, and perceptions can be affected by the movies (Kavan & Burne, 2009). In this regard, as a media element, the movies are powerful instructional environments (English & Steffy, 1997). Cultural works that are structured by forming our understanding of organizational and social life can be seen as recreational activities in which the reality is reflected (Huczynski & Buchanan, 2004). A subject or a message aimed be expressed through the movies can be effectively conveyed in an audiovisual way (Demirtaş, 2011). Nowadays, the rapid growth of the cinema sector has increased the importance of the use of cinema as a tool in the transfer of knowledge and in education. Very complex and comprehensive issues can be delivered to the masses through cinema. Movies serve as a tool for the transmission of all kinds of scientific and behavioral information (Birkök, 2008). Movies can be used as a tool in education, or education can be processed in scenarios within the scope of a purpose (Yurdigül, 2014). There are educational Turkish or foreign movies in whose scenarios teacher, student, school, classroom, and education are processed. Hababam Sınıfı (E. Eğilmez, 1975), Vurun Kahpeye (Ö. L. Akad, 1949), and Dead Poets Society (P. Weir, 1989) are some examples for this kind of movies.

Educational movies are the movies in which educators, educational settings, or educational stakeholders are involved. They have an informative quality by examining the problems related to education (Oruç & Sarıbudak, 2015). Educational movies affect the attitudes of preservice teachers towards the profession (Kaşyaka, Ünlü, Akar, & Özturan-Sağırlı, 2011; Kontaş, 2016). Through movies, preservice teachers can explore the school environment, the classroom setting, and the communication networks in the school by analyzing (Tofur 2018b). They can develop and understand real-life experiences related to the lives of the students in the light of different concepts and theories (Fennell, 2013). Indeed, movies offer real-life experiences to their followers (Kavan & Burne, 2009).

In his study, Nevil (2012) evaluated the views of teachers about the use of movies in social studies courses. The results obtained are that the movies can be used effectively in social studies courses on the condition that the teachers are well prepared and that the necessary steps are

taken to ensure the participation of the students in the class. Teachers also agree that students enjoy watching movies. The reason for this is that students do not have to study while watching movies, that movies change the routine monotony in the classroom and that they attract attention of the students.

When the literature is examined, it is understood that there are studies on the educational movies (Altan, 2016; Girgin, 2017; Tofur 2017; Tofur, 2018a; Tofur, 2018b; Tofur, 2018c; Silman, 2017). These studies suggest that educational movies can be used in the education of preservice teachers. However, there are no studies on the possible results of the use of educational movies in the courses. In this study conducted in this context, the educational movies are tried to be evaluated by the data collected from the students taking their classroom management courses through the educational movies. What is explored in this study is important in terms of determining how the educational movies are interpreted for classroom management courses. In addition, it is important for the preservice teachers to use the educational movies as a teaching and learning tool in the classroom management, in other courses, or in the courses they will lecture in their future teaching period. It is thought that the study may contribute to the literature in the context of questioning the philosophical and theoretical foundations of the educational movies for classroom management and create a reference point for consecutive studies. It can be said that the findings obtained from the research can serve as a theoretical ground for scale development studies which can be generated for the use of the educational movies in the classroom management courses. When the literature is examined, whereas the metaphor analyzes have been performed for the interpretation of many concepts, there has been no metaphor study on the educational movies. In this study, how preservice teachers interpret their classroom management courses taken through the educational movies is tried to be determined through metaphors.

Purpose of the Research

The purpose of this study is to determine the metaphorical perceptions of science preservice teachers on teaching classroom management courses through the educational movies. By presenting what the educational movies mean in the context of the classroom management course, the reader was enabled to carry out a general evaluation of the use of these movies as an instructional tool in classroom management courses. This study is important in terms of

presenting the educational movies to the field staff and practitioners as a new instructional tool which can be used in classroom management courses.

In September 2017, the Ministry of National Education (MONE) published an article with a sample list related to the educational movies for teachers to watch during the seminars (MEB, 2017). In this article, with the emphasis on personal development and contribution to professional development, the teachers were asked to evaluate the movies with a critical point of view. In this study, the data were obtained from the preservice teachers who took the classroom management courses through these movies. The results of the study show how preservice teachers interpreted the movies announced by the Ministry of Education for classroom management courses.

The questions to be searched for within the scope of the purpose of the research:

1. What are the metaphors that teacher candidates mention about “the educational movies for classroom management courses”?
2. Under what categories can the metaphors obtained from the participants be grouped according to their common characteristics?

Method

In the study, the metaphors of pre-service teachers on the educational movies were examined. For this purpose, the phenomenological design of qualitative research methods was used. In the phenomenological method, the experiences of a person related to a phenomenon or concept are combined around a common meaning (Creswell, 2013). Phenomenology is a qualitative research method in which the researcher attempts to explain how one or more participants experience a phenomenon (event, situation, concept, etc.) (Christensen, Johnson & Turner, 2015). In this study, phenomenological design was preferred since classroom management was aimed to be examined by the data obtained from the preservice teachers who took their course through the educational movies.

Study Group

The study group of this research consists of 75 science preservice teachers (43 female, 32 male) studying in Manisa Celal Bayar University, Faculty of Education in 2017-2018 Academic Year Fall Semester. Criterion sampling was conducted in the selection of the study group. In this sampling selection, the researcher chooses the sample according to pre-determined criteria (Neuman, 2010). In this study, the main criterion is that classroom management courses are taught through the educational movies. The reason why the participants were selected from the final year science teachers was that this group used the educational movies as an instructional tool in Classroom Management courses. The movies that were watched were the movies chosen from the sample movie list announced in September 2017 by MONE for the teachers to watch during their seminars. There are 30 movies in the list. In the process of selection, watching and interpretation of movies: (i) The scenarios of each movie included in the list were examined in a classroom setting. (ii) 13 movies, which are thought to be exemplary for the classroom management course in their scenarios including teachers, students, and classroom environments were chosen selected (Table 1). (iii) The related choices were made with the instructors of the course and the students. (iv) The interest and wishes of the students were taken into consideration in which movies to watch. (v) The students were divided into groups, and each group was given a movie to perform its examination and to determine the related scenes. (vi) The relevant scenes of all the chosen movies were watched with the help of smart board or projection with all the students in the classroom environment, and they were interpreted in terms of classroom management.

Table 1
Educational movies examined within the scope of classroom management course

	Movies		
1.	3 Idiot (R. Hirani, 2009)	8.	Freedom Writers (R. LaGravenese, 2007)
2.	The first grader (J. Chadwick, 2010)	9.	Mr. Holland's Opus (S. Herek, 1995)
3.	Monsieur Lazhar (P. Falardeau, 2011)	10.	Half Nelson (R. Fleck, 2006)
4.	Hababam Sınıfı Sınıfta Kaldı (E. Eğilmez, 1976)	11.	Taare Zameen Par (A. Khan, & A. Gupte, 2007)
5.	İki Dil Bir Bavul (Ö. Doğan, & O. Eskiköy, 2009)	12.	The Class / Entre Les Murs (L. Cantet, 2008)
6.	Black (S. L. Bhansali, 2005)	13.	Les Choristes (Barratier, 2004)
7.	Dead Poets Society (P. Weir, 1989)		

Data Collection

Data were qualitatively collected through the metaphors. The reason for collecting the data through the metaphors is to reveal the interpretation of the study group on the use of educational movies in classroom management courses. For this purpose, (i) the study group was asked to fill in the sentence "Educational movies are like … for classroom management courses because…". (ii) 15 minutes were given to preservice teachers to complete the sentence. (iii) An explanation of what the metaphor means was provided before implementation. (iv) It has been explained that the metaphors can be defined through living or non-living concepts, events, and phenomenon.

Data Analysis

A four-stage inductive content analysis was applied to analyze the data. Inductive analysis is necessary in case of the absence of a theory related to the phenomenon examined (Strauss & Corbin, 1990). Inductive analysis is encoding analysis based content analysis. In this way, the underlying codes and the relationships between these codes can be revealed. Data can be analyzed in four ways in qualitative research (Yıldırım & Şimşek, 2008): (i) *Data coding*: This is the first stage of content analysis. At this stage, the codes were generated based on the data. Each metaphor specified by the participants was taken as a code. Initially, the metaphors were entered into Excel file in computer environment. Metaphors were ordered in alphabetical order. The codes were converted into data and checked again and again. 4 participants who did not describe any metaphors or were unclear were not included in the study. As a result, 57 codes were obtained from 71 preservice teachers. (ii) *Creation of themes*: Participants, researchers, and literature can be utilized to create themes. In this study, the themes were formed in accordance with the researcher and the literature. The codes were grouped according to similarities and differences of each other, and the themes were obtained. While creating the themes, it has been paid attention to create a meaningful integrity. (iii) *Arrangement of codes and themes*: The compatibility of the themes with the codes was revised again and again, and 8 themes were obtained. Two experts in the field of Educational Sciences were consulted during the controls. (iv) *Interpretation of the findings*: It is important for the researcher to obtain first-hand experience in the interpretation of the findings. In this study, the researcher is the instructor of the related course of the preservice teachers taking the classroom management course. In this sense, the findings were interpreted through the opinions supported by the first hand data obtained in the study.

Validity and Reliability of Research

Validity is the accuracy of research. *Internal validity* means that there are no errors in the design of the research process (Neuman, 2010). Internal validity in qualitative research is related to the credibility of the research (Yıldırım & Şimşek, 2008). In order to increase the credibility in the study, long-term interaction, variation, expert examination, participant confirmation methods were applied. The researcher tried to reduce the effect of subjective perceptions by long-term interaction with data sources. That the researcher is the lecturer of classroom management course of the individuals from whom the data were collected facilitated long-term interaction with the participants. The researcher observed the participants during the course of their classroom management courses in which the educational movies were used for about 6 weeks. During the observations, it was noted that whether the scenes of the educational movies were interpreted in accordance with the classroom management content or not. This situation allowed the researcher to make an objective evaluation in the interpretation of the research and its results. In the research, the data obtained from the form desired to be filled from the participants were supported by the observations made during the courses learned, and the results obtained were confirmed. In the study, an evaluation meeting was held with an expert in the field of Educational Administration. The data and results of the research were shared with the participants, and their opinions about the accuracy were obtained. The *external validity* of the study is related to the generalization of the results from a certain environment and a small group to the large environments and people (Neuman, 2010). As qualitative researches cannot be directly generalized to similar environments, the transmissibility concept is adopted. The external validity of qualitative research is related to the transmissibility of the obtained results to similar environments (Yıldırım & Şimşek, 2008). For this purpose, detailed descriptive method was applied in the research. The environment in which the data was obtained was explained, and the reader was given an opportunity to animate his / her own study in his / her mind. In addition, while the data obtained from the participants were presented, descriptions were made through direct quotations, and the opportunity to obtain their own comments and results was provided to the readers.

Internal reliability in qualitative research is the consistency of the research (Yıldırım & Şimşek, 2008). For this purpose, the method of consistency analysis is considered. The path of the researcher throughout the research, the data collection, and the analysis of the data are presented

to the reader in detail. *External reliability* in qualitative research is the confirmation of research. It is expected that the researcher will be able to confirm the results obtained continuously and provide a logical explanation to the reader (Yıldırım & Şimşek, 2008). For this purpose, a confirmation examination was carried out. The compliance of the conclusions, comments, and recommendations reached with the raw data was evaluated with the help of an Educational Administration expert.

Findings

In this study, 57 metaphors were obtained from 71 participants about the educational movies for classroom management courses. The metaphors were grouped under 8 categories. Categories, metaphors, and frequencies are presented in Table 2.

Table 2
Metaphors and categories obtained related to the educational movies in classroom management courses

	Categories	Metaphors (n=57)	Frequency (f)
1.	Place for learning and knowledge acquisition	mother (n=1), map (n=1), mirror (n=1), example (n=1), way (n=1), alternative (n=1), source (n=1), sweetener (n=1), book (n=1), the moral (n=1), tool (n=1), informative (n=1), star (n=1), bridge (n=1), plane tree (n=1), foundation of the house (n=1), light (n=1), preliminary preparation (n=1), irreplaceable (n=1), missing jigsaw piece (n=1), reflection of the course (n=1), breath (n=1),	22
2.	Guiding for situations not yet encountered	mother (n=1), compass (n=1), map (n=4), traffic police (n=1), guide (n=1), polar star (n=1), user guide (n=1), guide map (n=1), navigation (n=1), signboard (n=1), lantern (n=1), sun (n=2), example (n=1) experience (n=1), whole (n=1), rehearsal (n=1), informative (n=1)	21
3.	Complementary for classroom management course	suitable (n=1), map (n=1), example (n=1), sweetener (n=1), course equipment (n=1), appetizer (n=1), skeleton system (n=1), sun (n=1), supplementary source (n=1), bone (n=1), love (n=1), house columns (n=1), backbone (n=1), seed of the fruit (n=1), puzzle (n=1), family (n=1), reflection of course (n=1)	17
4.	Tool for presenting life experience	epitomist (n=1), way (n=1), guide (n=2), mirror (n=1), precedent (n=1), map (n=1), example (n=1), mirror (n=1), essential (n=1)	10

	Categories	Metaphors (n=57)	Frequency (f)
5.	Supportive for education	reinforcer (n=1), course equipment (n=1), important (n=1), star (n=1), bridge (n=1), tree (n=1), essential (n=1), house columns (n=1), supplementary source (n=1), sweetener (n=1)	10
6.	Reflection of theoretical knowledge	suitable (n=1), example (n=1), map (n=1), book (n=1), reflection of course (n=1), mirror (n=1)	6
7.	Preparation tool for the profession	preliminary preparation (n=1), fore step (n=1), tree root (n=1), fragment (n=1), tool (n=1)	5
8.	A tool for being model	a model (n=1), amusement park (n=1)	2
	Total		91

The metaphors most frequently repeated by the participants are the metaphors of mirror, map, and example with 4 of them. Metaphors are grouped under categories according to the metaphor explanations of the participants. The same metaphor can be specified under more than one category according to its explanations. By taking place in 4 different categories, the map metaphor is the code belonging to the most categories.

Educational Movies as Place for Learning and Knowledge Acquisition

The metaphors gathered under this category were grouped in accordance with that the educational movies are seen as the place of learning and knowledge acquisition in terms of classroom management course by the preservice teachers. 22 metaphors were obtained from 22 participants. The metaphors obtained are arrayed as mother (n=1), map (n=1), mirror (n=1), example (n=1), way (n=1), alternative (n=1), source (n=1), sweetener (n=1), book (n=1), the moral (n=1), tool (n=1), informative (n=1), star (n=1), bridge (n=1), plane tree (n=1), foundation of the house (n=1), light (n=1), preliminary preparation (n=1), irreplaceable (n=1), missing jigsaw piece (n=1), reflection of the course (n=1), breath (n=1). Only one metaphor was produced from each metaphor. The participants interpreted the educational movies with regard to learning and knowledge for the metaphors grouped under this title. The explanations of some of the metaphors grouped are as follows: **The moral**: "…*It takes lessons for us*." [K46]. **Book**: "…*There are a lot of information and cases we need to catch. Watching movies is the same as reading books.*" [K4]. **Missing jigsaw piece**: "…*It shows what is missing in education or classroom management.*" [K5]. **Reflection of course**: "…*We can see everything we can*

encounter during our education." [K21]. **Breath**: "…*It shows the precautions we will take against the problems we may face in everyday life*." [K27].

Educational Movies as Guiding for Situations not yet Encountered

The metaphors gathered under this category were generated in the context of guiding for situation not yet countered for the preservice teachers. 17 metaphors were obtained from 21 participants. The metaphors obtained under this category are arrayed as the metaphors of mother (n=1), compass (n=1), map (n=4), traffic police (n=1), guide (n=1), polar star (n=1), user guide (n=1), guide map (n=1), navigation (n=1), signboard (n=1), lantern (n=1), sun (n=2), example (n=1) experience (n=1), whole (n=1), rehearsal (n=1), informative (n=1). Participants perceived the movies for the classroom management courses as a guide on how to act as a teacher and how to behave in relation to the problems they would face in the profession. The explanations of some of the metaphors grouped are as follows: **Compass**: "…*shows us the direction. He tells us how to be a teacher or not.*" [K24]. **User guide**: "…*shows how to apply the techniques we learned.*" [K69]. **Map**: "…*When we do not sometimes know what to do, we can get help from the movies.*" [K43]. **Map**: "…*shows alternative multiple routes for many different situations.*" [K62]. **Experience**: "…*As we watch the movies, by taking the sections from there, we make inferences about that I can do so, or that I would not be right because of the reactions by the students.*" [K40]. **Mother**: "…*shows us our mistakes and what we need to do*." [K6]. **Rehearsal**: "…*addresses problems and guides you on how to deal with these problems*." [K20].

Educational Movies as Complementary for Classroom Management Course

The metaphors gathered under this category explained the educational movies as complementary for the education in classroom management courses. 17 metaphors were obtained from 17 participants. Only one metaphor was produced from each metaphor. Only one metaphor was produced from each metaphor. The metaphors obtained are arrayed as suitable (n=1), map (n=1), example (n=1), sweetener (n=1), course equipment (n=1), appetizer (n=1), skeleton system (n=1), sun (n=1), supplementary source (n=1), bone (n=1), love (n=1), house columns (n=1), backbone (n=1), seed of the fruit (n=1), puzzle (n=1), family (n=1), reflection of course (n=1). Metaphors gathered under this title interpreted the educational movies as complementary factor for classroom management courses and as an element facilitating learning and teaching in classroom management. The explanations of some of the metaphors

grouped are as follows: **Sweetener**: "…*Classroom management courses can be taught, even if not movies. However, there is difficulty in both learning and teaching, and the course is monotonous and boring. Movies give it taste. It is learned as well as a delicious meal, and the percentage of remembering increases*." [K12]. **Appetizer**: "…*is complementary to the education courses we have studied*." [K67]. **Bone**: "…*Keeps the structure standing and ensures permanence, durability, and efficiency*." [K25]. **Love**: "…*is like two lovers, one without the other is missing*." [K17]. **House columns**: "…*is necessary to ensure the permanence of the subjects described in the classroom management course and to correctly perceive the information. Educational movies are the building blocks of classroom management*." [K13]. **Family**: "…*They will be stronger when they all come together. They will be weaker when they breaks. They support each other like family*." [K70].

Educational Movies as Tool for Presenting Life Experience

The metaphors gathered under this category explained the educational movies as tools presenting life experience related to the teaching profession. 9 metaphors were produced from 10 participants. The metaphors obtained are the metaphors of epitomist (n=1), way (n=1), guide (n=2), mirror (n=1), precedent (n=1), map (n=1), example (n=1), mirror (n=1), essential (n=1). Only one metaphor was produced from each metaphor apart from guide metaphor for which 2 metaphors were generated. The metaphors collected under this title have described the educational movies as providing examples of the situations that preservice teachers might encounter in their professional lives and providing experience without experience. It is also emphasized that they are guiding because of providing life experience. The explanations for the metaphors under this category are as follows: **Way**: "…*These movies are an experience for preservice teachers. We watch the events in these movies, and see how we should act in such events*." [K16]. **Guide**: "…*reflects the situations we will encounter in real life.*" [K1]. **Guide**: "…*is guiding and provides experience without experience.*" [K72]. **Mirror**: "…*was a reflection of the probable issues and the student-teacher, teacher-teacher, teacher-parents situations*." [K41]. **Mirror**: "…*reflected on us how to behave in a classroom setting*." [K49]. **Precedent**: "…*When we became teachers, we saw what we would do in case of a situation*." [K35]. **Essential**: "…*creates a concrete scheme for teachers*." [K39]. **Epitomist**: "…*reflects the experiences experienced before. It shows us what to do in the face of them*." [K73]. **Map**:

"…*is a guide. The map is experience. No matter how much you know, experience always leads*." [K33].

Educational Movies as Supportive for Education

The metaphors gathered under this category explained the educational movies as supportive for education in classroom management courses. 10 metaphors were obtained from 10 participants. Only one metaphor was produced from each metaphor. These metaphors are reinforcer (n=1), course equipment (n=1), important (n=1), star (n=1), bridge (n=1), tree (n=1), essential (n=1), house columns (n=1), supplementary source (n=1), sweetener (n=1). The metaphors grouped under this title described the educational movies as a factor that embodied the events, increased the memorability, and made the lesson more fun and a means to provide learning. The explanations of some of the metaphors grouped are as follows: **Bridge**: "…*acts as a bridge like teachers and provides permanent learning*." [K19]. **Star**: "…*Such movies allow us to learn the lesson more fun and deeply. It enables us to examine events and situations well*." [K28]. **Important**: "…*is important because it embodies the events in the classroom management course and increases the permanence in the mind*." [K11]. **Reinforcer**: "…*Both students and teachers will be more eager and enthusiastic in the course*." [K29]. **Supplementary source**: "…*are also important in terms of meeting the needs and interests of the students in classroom management courses*." [K31].

Educational Movies as Reflection of Theoretical Knowledge

The metaphors gathered under this category explained the educational movies as a reflection of the theoretical knowledge presented in classroom management courses. 6 metaphors were obtained from 6 participants. Only one metaphor was produced from each metaphor. These metaphors are listed as suitable (n=1), example (n=1), map (n=1), book (n=1), reflection of course (n=1), mirror (n=1). The metaphors gathered under this title described the movies on education as the revival of theoretical knowledge, the reflection of the course, and the development of theoretical knowledge. The explanations of some of these metaphors are as follows: **Suitable**: "…*While we are looking for the theoretical subjects studied in the course in the movie, we are more internalizing the subjects*." [K32]. **Example**: "…*These movies are the revival of the theoretical knowledge shown in the course. In these movies, the effect of the subjects studied in the course on students, teachers, and etc. can be observed. It also improves*

the ability of empathy." [K14]. **Map**: "…*may give us more practical and real-life information, such as the revival of the subjects that we can theoretically find in literature*." [K51]. **Reflection of course**: "…*Since we did not start teaching profession in real-life, we had the chance to see what we learned theoretically*." [K50]. **Mirror**: "…*In this way, in the movie, we saw what we had learnt in the course, and we thought what we would do, so it was reflective like a mirror*." [K15].

Educational Movies as Preparation Tool for the Profession

The metaphors collected under this category explained the educational movies as pre-service preparation tools for preservice teachers. 5 metaphors were obtained from 5 participants. These metaphors are listed as preliminary preparation (n=1), fore step (n=1), tree root (n=1), fragment (n=1), tool (n=1). Only one metaphor was produced from each metaphor. The metaphors collected under this title characterize the educational movies as a preliminary information and preparation tool for the professional foundation of preservice teachers. The explanations of the metaphors are as follows: **Preliminary preparation**: "…*allows us to see the situation that the movements will reveal in the student*." [K53]. **Fore step**: "…*The next steps are more predictable*." [K58]. **Tree root**: "…*These movies will provide us with a foundation for the attitudes and behaviors that we will do when we become teachers.*" [K56]. **Fragment**: "…*enables to estimate the good or bad situations that preservice teachers are expected to live in the future and to acquire some knowledge for these situations*." [K2]. **Tool**: "…*serves as a tool providing the preliminary information and preparation before experiencing the event*." [K18].

Educational Movies as a Tool for Being Model

The metaphors collected in this category are explained as a tool for being model of the role of teacher in the movies for the preservice teachers. 2 metaphors were obtained from 2 participants. Only one metaphor was produced from each metaphor. Metaphor explanations are as follows: **Amusement park**: "…*In the places like the amusement park, people choose the toy they want to ride the most. In the movies we watch, we ourselves choose the people we take as examples according to their characteristics we like*." [K66]. **A model**: "…*We try to adapt what we see in the movies to our own lives*." [K34].

Discussion, Conclusion, and Recommendations

In this study, which was conducted so as to determine the metaphorical perceptions of preservice teachers on the educational movies for the classroom management courses, 57 metaphors mentioned by the preservice teachers were examined under 8 categorical topics. According to this, the educational movies in the classroom management courses are respectively characterized as place for learning and knowledge acquisition, guiding for situations not yet encountered, complementary for classroom management course, tool for presenting life experience, supportive for education, reflection of theoretical knowledge, preparation tool for the profession, a tool for being model.

In the category with the most metaphors, the educational movies are stated as place for learning and knowledge acquisition. Under this title, the participants evaluated the educational movies as related to information and learning or described them as an audio-visual book. Movies are tools that provide information to the audience in each image. Movies are powerful instructional environments (English & Steffy, 1997). A well-chosen movie on the subject will help students develop their analytical skills (Champoux, 2007). In this sense, it can be said that the right movies to be chosen in the classroom management courses will create a learning environment for the preservice teachers to reinforce their classroom management knowledge.

The second category with the most metaphors is the category of guiding for situations not yet encountered. The most produced metaphor under this category is the metaphor of map. Participants described the educational movies as a guide related to how they should be a teacher and how they should react in case of a problem. In addition, in his study, Yurdigül (2014) stated that the problems encountered in education and what the community expects from education can be transferred to the watchers through the educational movies. In their study, Oruç and Sarıbudak (2015) emphasized that the educational movies have an idea about the problems and solutions that exist in education. These findings support the guiding metaphor for the situations that have not yet been encountered in the study. In this sense, it can be said that the educational movies are guiding for the teachers in their professions.

In the third category with the highest number of metaphors, it is stated that the educational movies are complementary to the classroom management courses. Under this category, the educational theme is defined as a factor that facilitates teaching and learning in classroom management. Classroom Management courses can be taught even if there are no educational movies. However, teaching course through the educational movies will facilitate learning of the students by supporting the content of the subject. Stability, robustness and efficiency will be provided. It can be said that preservice teachers can have a better command of the classroom management course content through the educational movies.

The categories of tool for presenting life experience and supportive for education share the fourth category where the most metaphors are gathered. The educational movies under the title of tool for presenting life experience were described as tools providing examples of the situations that preservice teachers may encounter in their professional lives. It was also emphasized that the movies play a guiding role by providing life experience to their watchers. The educational movies offer short compressed imitation of life experiences for the watchers as a good communication and interaction environment (Tofur, 2018a). It allows interaction with characters, situations and dilemmas in the movie (Tan, 2006). The preservice teachers can analyze and explore school environment, classroom environment, communication networks in schools (teacher-teacher, teacher-student, student-student, teacher-parent) through the educational movies (Tofur, 2018b). This will strengthen the reflective thinking skills of preservice teachers by enabling them to actively and continuously study the educational issues. The educational movies offer exemplary life experiences for the preservice teachers.

In the category of supportive for education, the educational movies are considered as factors that embody events, increase memorability, make the lesson more enjoyable and provide learning. As a matter of fact, we recall 10% of what we read, 20% of what we hear, 30% of what we see, 50% of what we see and hear, 70% of what we say and present, and 90% of what we do. We acquire %3 through sense of smell, %3 through sense of taste, %6 through sense of touch, %13 through sense of hearing, and %75 through sense of sight (Hesapçıoğlu, 2008; Wıater, 1999). In this sense, it can be said that the use of educational movies that support our sense of sight and hearing at the same time has an important role in obtaining information and remembering what is learned. Interpretations and discussions that can be made after watching

the educational movies also contribute to the recall of those learned due to the contribution of what is said.

Another category is the educational movies as reflection of theoretical knowledge. The metaphors collected under this category characterize the educational movies as the revival of theoretical knowledge, the reflection of the course, and the development of theoretical knowledge. The educational movies provide the presentation of the subjects covered in the classroom management course not only through printed materials or through verbal expression, but also as audiovisual. The educational movies provide preservice teachers with concrete images of theoretical knowledge. The concrete images that are presented provide convenience in understanding the theoretical knowledge in terms of addressing different sensory organs while providing the persistence of knowledge in terms of being the reflection of theoretical knowledge.

In the category of educational movies as preparation tool for the profession, the educational movies are considered as a preliminary information and preparation tool for the professional foundation of preservice teachers. The failure of the perceptions of the preservice teachers on the profession and the situations encountered during the practice and the failure to produce solutions to the problems encountered in this sense cause preservice teachers to encounter some kind of reality shock. MacDonald (1999) stated in his study that preservice teachers do not see themselves as sufficient when it comes to real professional practices and that they are unprepared for the problems they may encounter. In this respect, it can be said that the movies including school and teacher can be useful in order to transfer theoretical knowledge to practice and to see a similarity in the preparation of preservice teachers for professional practice (Kaşkaya, 2013). In its article published in 2017, the Ministry of National Education asked the teachers to watch the movies that were announced with their emphasis on personal development and professional development. All these findings support the view of preservice teachers about the education movies as a preparation tool for the profession.

In the last category, the educational movies are shown as a tool for being model. The attention of the society to the movies mostly results in the desire to be like the people in the movie in terms of food & beverage or clothes of the players in the movies (Yurdigül, 2014). Through the teacher models presented in the educational movies, the preservice teachers can see different types of teacher models that may exist. Thus, they have the opportunity to question their own

teaching. In their study, Akıncı-Yüksel (2015) reached the conclusion that the movies including the representations of school, student, and teacher were not fictional movies and that they held a mirror to society and culture. Wegner (1977) emphasized that the best teacher, the best scientist, or the best poet can be brought to the classes through the movies. All of these results support the role of the educational movies as a tool for being model for classroom management courses. In this respect, it can be said that preservice teachers can have ideas about how to be a teacher or not by means of the educational movies they watch. They will be able to question themselves about which teacher model they will be in case of the situations they may encounter. At present, thousands of movies are available for use in the classroom. In many countries, the movies prepared for such subjects as drug use, sexuality, suicide are utilized in the classrooms (Kaya, 2006). This present study supports that the educational movies can be used as a teaching and learning tool in classroom management courses.

As a result, teaching the classroom management courses through the educational movies is reflected positively to the preservice teachers. The educational movies (i) are a place for learning and acquiring knowledge in the classroom management classes for preservice teachers, (ii) provide guidance to preservice teachers for the situations they have not encountered yet, (iii) are a factor that complements the classroom management courses, (iv) develop teacher-reflective thinking skills and provide them with exemplary life experiences, (v) are instructional tools which have an important share in taking information and remembering what is being learned since they can address our hearing and seeing sensations at the same time (vi) present theoretical images and provide theoretical information reflections that facilitate the clarity of knowledge, (vii) are a tool for pre-service preparation and post-service professional development for the teachers, and (viii) offer preservice teachers the opportunity to question their own teaching by presenting different teacher models.

This study including some evaluations on the use of educational movies as a teaching and learning tool in classroom management courses is limited by the fact that the study group only includes science preservice teachers. In this respect, it may be advisable for researchers to repeat the study with the preservice teachers in different fields and to discuss possible results. It can be suggested that instructors using the educational movies as instructional tools in different courses in the faculties of education may repeat the study in relation to their own courses. An elective course on educational movies can be lectured in the faculties of education by taking

into consideration the contribution for the preservice teachers to their professional and personal development. In the study, it is thought that the categories in which the metaphors are grouped can serve as a theoretical ground in scale development studies that can be used for the use of educational movies in classroom management courses.

References

Akıncı-Yüksel, N. A. (2015). Kültürel bir film olarak Türkiye'de sinema filmlerinde okul, öğretmen ve öğrenci temsilleri. *Global Media Journal TR Edition, 6*(11), 1-17.

Altan, M. Z. (2016). *Öğretmenliğe dair, filmler ve öğretmenler.* Ankara: Pegem Akademi.

Arroio, A. (2010). Context based learning: a role for cinema in science education. *Science Education International, 21*(3), 131-143.

Birkök, M. C. (2008). Bir toplumsallaştırma aracı olarak eğitimde alternatif medya kullanımı: sinema filmleri. *Uluslararası İnsani Bilimler Dergisi*, *5*(2), 1-12.

Champoux, J. E. (1999). Film as a teaching resource. *Journal of Management Inquiry, 8*(2), 206-217.

Christensen, L.B., Johnson, R.B., & Turner, L.A. (2015). Nitel ve karma yöntem araştırmaları In M. Sever (Trans.), A. Aypay, (Trans. Ed.), *Araştırma yöntemleri desen ve analiz* (pp. 400-433). Ankara: Anı.

Creswell, J.W. (2013). *Nitel araştırma yöntemleri beş yaklaşıma göre nitel araştırma ve araştırma deseni.* Ankara: Siyasal Kitapevi.

Demirtaş, M. (2011). Halkla ilişkiler filmleri ve halkla ilişkiler filmlerinde öncüler: ABD ve Almanya örneği. *İstanbul Aydın Üniversitesi Sosyal Bilimler Dergisi, 3*(9), 34-52.

English, F.W., & Steffy, B.E. (1997). Using film to leadership in educational administration. *Educational Administration Quarterly, 33*(1), 107-115.

Fennell, H.A. (2013). Reel stories of teaching: film and teacher education. *Action in Teacher Education (Association of Teacher Educators), 35*(5-6), 445-461. doi: 10.1080/01626620.2013.846762.

Fisch, S.M., Yotive, W., McCann, S.K., Scott, M., & Chen, L. (1997). Science in Saturday morning: children's perceptions of science in educational and non-educational cartoons. *Journal Educational Media, 23*, 157-167.

Girgin, M. (2017). *Eğitim filmleri.* Ankara: Vize.

Hesapçıoğlu, M. (2008). Ders araçları.In *Öğretim ilke ve yöntemleri* (pp. 405-490). Ankara: Nobel.

Huczynski, A., & Buchanan, D. (2004). Theory from fiction: A narrative process perspective on the pedagogic use of feature films. *Journal of Management Education, 28,* 702-726.

Kaşyaka, A. (2013). *Okul ve Öğretmen Içerikli Sinema Filmlerinin Öğretmen Adaylarının Pedagojik Inançları ve Eleştirel Yansıtma Becerileri Üzerine Etkisi. (*Yayımlanmamış Doktora Tezi), Gazi Üniversitesi Eğitim Bilimleri Enstitüsü, Ankara.

Kaşyaka, A., Ünlü, İ., Akar, M. S., & Özturan-Sağırlı M. (2011). Okul ve öğretmen içerikli sinema filmlerinin öğretmen adaylarının mesleki tutumlarına ve özyeterlik algılarına etkisi. *Kuram ve Uygulamada Eğitim Bilimleri, 11*(4), 1765-1783.

Kavan, H., & Burne, J. (2009). Using film to teach communication concepts at university. *The International Journal of Learning, 16*(10), 429-440.

Kaya, Z. (2006). *Öğretim teknolojileri ve materyal geliştirme.* Ankara: Pegem Akademi.

Kontaş, H. (2016). The effect of an education-theme movie on academic motivation of teacher candidates and their attitude towards teaching profession. *Journal of Education and training studies, 4*(6), 93-103

MacDonald, D. (1999). Teacher attrition: a rewiev of literatüre. *Teaching and Teacher Education, 15*(8), 835-848.

Millî Eğitim Bakanlığı [MEB] (2017). *Öğretmenlerin 2017 Eylül Dönemi Mesleki Gelişim Çalışmaları.* Retrieved May 7, 2018, from https://oygm.meb.gov.tr/meb_iys_dosyalar/2017_08/28191925_EK_Mesleki_YalYYmalar_ProgramY_EylYl_2017.pdf

Neuman, W. L. (2010). *Toplumsal araştırma yöntemleri nitel ve nicel yaklaşımlar* (4. Baskı) (S. Özge, Çev). İstanbul: Yayın odası.

Nevil, S. A. (2012). Teachers' Perspectives on Use of Movies in the Social Studies Classroom. (Unpublished Master's Thesis). Ohio University, USA.

Oruç, Ş., & Sarıbudak, D. (2015). Okul yöneticilerinin ve öğretmenlerin eğitim içerikli filmlerin eğitim ortamlarına etkisine ilişkin görüşleri. *International Journal of Field Education, 1*(1), 19-41.

Silman, F. (2017). *Eğitim konulu filmler.* Ankara: Pegem Akademi.

Strauss, A., & Corbin, J. M. (1990). *Basic of qualitative research: Grounded theory procedures and techniques.* Sage Publications, Inc.

Tan, C. (2006). Philosophical reflections from the silver screen; using films o promote reflection in pre-service teachers. *Reflective Practice, 7*(4), 483-497.

Tofur, S. (2017). 'Hababam Sınıfı' filmi ilk serisinin Katz'ın yönetsel üç beceri yaklaşımına göre incelenmesi. *The Journal of Academic Social Science Studies, 56,* 53-66. doi:10.9761/JASSS7048

Tofur, S. (2018a). Case of a Classroom Management Model in Cinematographic Narration: The Movie 'Stand and Deliver. *International Online Journal of Educational Sciences, 10*(2), 146-161. doi:10.15345/iojes.2018.02.010

Tofur, S. (2018b). Sinematografik anlatıda okuldaki iletişim ağları: Ron Clark'ın hikayesi filmi örneği. *Eğitim Kuram ve Uygulama Araştırmaları Dergisi, 4*(1), 54-67.

Tofur, S. (2018c). Sinematografik anlatıda Hersey-Blanchard durumsal liderlik modeli: Koro filmi. *Kuramsal Eğitimbilim Dergisi, 11*(4), 822-837. doi:10.30831/akukeg.399319

Wegner, H. (1977). *Teaching with film.* Indiana: Phi Delta Kappa Educational Foundation Bloomington.

Wiater, W. (1999). *Von schüler her unterrichten. Eine neue didaktik für eine veränderte schule.* Auer: Donaunurörth.

Yurdigül, A. (2014). Eğitim olgusunun sinematografik anlatıdaki yeri üzerine bir yaklaşım denemesi ('Bal' filmi örneği). *Ekev Akademi Dergisi, 18*(60), 487-502.

Yıldırım, A., & Şimşek, H. (2008). *Sosyal bilimlerde nitel araştırma yöntemleri* (6. Baskı). Ankara: Seçkin.

Filmography

Akad, Ö. L. (Director), (1949). Vurun kahpeye [Motion picture]. Turkey: Erman film.

Barratier, C. (Director), (2004). Les choristes [Motion picture]. France: Vega film.

Bhansali, S. L. (Director), (2005). Black [Motion picture]. India: Applause Bhansali Productions.

Cantet, L. (Director), (2008). The class/Entre les murs [Motion picture]. France: Haut et Court.

Chadwick, J. (Director), (2010). The first grader [Motion picture]. England: Sixth Sense Productions.

Doğan, Ö., & Eskiköy, O. (Directors), (2008). İki dil bir bavul [Motion picture]. Turkey/Netherlands: Tiglon.

Eğilmez, E. (Director), (1975). Hababam sınıfı [Motion picture]. Turkey: Arzu Film.

Eğilmez, E. (Director), (1976). Hababam sınıfı sınıfta kaldı [Motion picture]. Turkey: Arzu film.

Falardeau, P. (Director), (2011). Monsieur Lazhar [Motion picture]. Canada: Micro_scope.

Fleck, R. (Director), (2006). Half Nelson. [Motion picture]. United States: Think film.

Herek, S. (Director), (1995). Mr. Holland's Opus [Motion picture]. United States: Hollywood Pictures.

Hirani, R. (Director), (2009). 3 Idiots [Motion picture]. India: Vinod Chopra Productions.

Khan, A., & Gupte, A. (Directors), (2007). Taare zameen par [Motion picture]. India: Aamir Khan Productions.

LaGravense, R. (Director), (2007). Freedom writers [Motion picture]. United States: Paramount Picture.

Weir, P. (Director), (1989). Dead poets society [Motion picture]. United States: Touchstones Pictures.

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Research Article

The Effect of Group Supervision on the Psychological Counseling Self-Efficacy Levels of Psychological Counseling Candidates

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Abstract

Psychological counseling skills are the most important part of the psychological counseling profession. Psychological counseling candidates have the opportunity of performing these professional skills previously learned theoretically within the practice course of psychological counseling with another person during their undergraduate education and they receive supervision support for these practices. This study presents mixed-pattern research examining the effect of group supervision on the psychological counseling self-efficacy of psychological counselor candidates. Quantitative data were obtained from Counselor Activity Self-Efficacy Scale and qualitative data was obtained from the evaluation reports of the psychological counselor candidates. The quantitative findings show that group supervision is effective on all the subscales (exploration, insight, action, conflicts in relationships and client problems) of psychological counseling self-efficacy. The qualitative results backing up these findings prove that the responses of the participants can be divided into four categories of emotions, professional development, boosters, and difficulties. As a result, the findings of this research showed that the group supervision carried out in the individual psychological counseling course positively affected the psychological counseling self-efficacy perceptions of the psychological counselor candidates. Based on these findings, it has been suggested to take into consideration the improvement of the self-efficacy levels of psychological counselor candidates as well as the acquision of professional skills in counselor education.

Keywords**:** *Group supervision, psychological counseling self-efficacy, psychological counseling candidates, psychological counseling skills*

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Grup Süpervizyonunun Psikolojik Danışman Adaylarının Psikolojik Danışma Özyeterlik Düzeylerine Etkisi

Öz

Psikolojik danışma becerileri, rehberlik ve psikolojik danışmanlık mesleğinin en önemli öğesidir. Psikolojik danışman adayları lisans eğitimlerinde, bireyle psikolojik danışma uygulaması dersi kapsamında önceden teorik olarak öğrendikleri bu mesleki becerileri uygulama fırsatı bulurlar ve bu uygulamalara yönelik süpervizyon desteği alırlar. Bu çalışma, grup süpervizyonunun psikolojik danışman adaylarının psikolojik danışma özyeterliğine etkisinin incelendiği karma desen bir araştırmadır. Nicel veriler, Psikolojik Danışma Özyeterlik Ölçeği; nitel veriler ise Psikolojik danışman adaylarının değerlendirme raporlarından elde edilmiştir. Nicel bulgular, grup süpervizyonunun psikolojik danışma özyeterliğinin tüm alt boyutlarında (keşif, içgörü, eylem, ilişkide çatışmalar, danışan problemleri) etkili olduğunu göstermiştir. Bu bulguyu destekleyen nitel bulgular ise katılımcıların yanıtlarının duygular, mesleki gelişim, destekleyiciler ve güçlükler olmak üzere dört temada ayrıştığını ortaya koymuştur. Sonuç olarak bu araştırmadan elde edilen bulgular, bireyle psikolojik danışma uygulaması dersi kapsamında yürütülen grup süpervizyonunun adayların psikolojik danışma özyeterlik algılarını olumlu yönde etkilediğini göstermiştir. Buna bağlı olarak psikolojik danışman eğitiminde mesleki becerilerin kazandırılmasının yanı sıra adayların psikolojik danışma özyeterliğini de artırmanın dikkate alınması önerilmiştir.

Anahtar Kelimeler: *Grup süpervizyonu, psikolojik danışma özyeterliği, psikolojik danışman adayları, psikolojik danışma becerileri*

Introduction

The guidance and psychological counseling profession helps people to show more productive, fertile, and problem-solving behaviors and coping skills via psychological counseling with a person or a group by using therapeutic conditions and skills (Gladding, 2000; Hackney & Cormier, 2008; Haynes, Corey & Moulton, 2013; Ikiz, 2010 Ikiz & Totan, 2014). The effect of psychological counseling services depends on the professional skills effectively performed by counselors (Aladağ, Yaka, & Koç, 2014; Gladding, 2000; Uslu & Arı, 2005; Whiston & Coker, 2000; Zakaria, 2013). To achieve this, it is necessary for counselor candidates to gain these professional skills before starting the profession. At this point, it is relevant to ask to what degree psychological counselor education programs help counselor candidates gain these skills.

The most basic and significant part of this field is psychological counseling skills training, which is the first step of psychological counselor education (Aladağ, 2014; Aladağ, Yaka, & Koç, 2014). These skills function as a guide to effectively continue the counseling process and cope with the difficulties that may be encountered in this process, and they consist of both verbal and non-verbal skills (Meydan, 2014; Pamukçu & Demir, 2013; Whiston & Coker, 2000). Together with this, it is interesting that not all candidates become effective at the same level during any psychological counseling session even though they are enrolled in similar counseling training courses (Pamukçu & Demir, 2013). This situation shows that different variables may also effectthe candidates' performances. One of these variables is their belief in how effective their management is during the counseling session and to what extent they may help their client, and it was also determined that these beliefs are effective on their performances (Cormier & Nurious, 2003; Pamukçu & Demir, 2013; Urbani et al., 2002). At this point, the concept of psychological counseling self-efficacy, which is described as the belief in one's ability to effectively counsel clients in the near future, becomes relevant (Larson & Daniels, 1998). Therefore, it should be aimed to increase candidates' psychological counseling self-efficacy as well as the professional skills gained from psychological counselor training.

The practice of psychological counseling with a person is an applied undergraduate course in which candidates have an opportunity to apply and develop the skills that they have previously theoretically learnt. Supervision assistance, which is the most important part of a therapeutic

relationship and a basic step in psychological counselor training, is at the forefront to make the professional skills used in the course more effective (Büyükgöze-Kavas, 2011; DePue, Lambie, Liu & Gonzalez, 2016; Hill, Stahl, & Roffman 2007; Meydan & Koçyiğit Ozyiğit, 2016). Supervision practices are significant in terms of making growth and development possible by supervising (Wheeler & Richards, 2007; Zeren & Yılmaz, 2011). When supervision is effectively applied and a suitable supervision model is chosen, this has a positive effect on the candidates' self-efficacy perceptions and makes a contribution to the development of professional skills (Al-Darmaki, 2004; Denizli, 2010; DePue, Lambie, Liu & Gonzalez, 2016; Meydan, 2010; Meydan, 2015).

Supervision as a concept means that an experienced professional member helps a more inexperienced member in terms of functionality (Horrocks & Smaby, 2006). The basic aim is to increase the candidates' counseling skills and to protect clients (Association for Counseling Education and Supervision [ACES], 2011), because the supervision process is intended to help a psychological counselor establish a more effective therapeutic relationship with clients by increasing the readiness of the counselor (Page & Wosket, 1994; Mearns & Thorne, 1999). Accordingly, it contributes to the delivery of ethical and effective therapy services (Wheeler & Richards, 2007).

In the United States, standards for psychological counselor training and supervision have been identified by institutions such as the Council for Accreditation of Counseling and Related Educational Programs (CACREP, 2009). These standards include making the candidates gain information and skills and performing these skills. During this process, it is expected that the counselor candidates conduct psychological counseling for at least 100 hours under supervision, 40 hours being completed with real clients (Meydan, 2014). On average, students are required to complete 90 minutes of group supervision in addition to individual and/or triadic supervision for an hour each week. According to this, the supervisory teaching staff should have 5 students for individual supervision and 10 students for group supervision.

In Turkey, supervision in psychological counseling education has begun to be considered as a complementary and critical element of this education and it has found a place in the national literature (Siviş-Çetinkaya & Karaırmak, 2012; Koçyiğit-Özyiğit & İşleyen, 2016). However, there is insufficient information about the content and nature of existing applications (Atik, Arıcı, & Ergene, 2014; Siviş-Çetinkaya & Karaırmak, 2012). On the other hand, although in

the international literature different supervising models are found, it is necessary to develop supervision models and standards special for psychological counseling education in Turkey (Aladağ, Yaka, & Koç, 2014; Atik, Arıcı, & Ergene, 2014; Özyürek, 2009).

Özyürek (2009) examined school psychological counseling supervision given within the scope of the undergraduate programs in Turkey with a national screening survey. According to the research findings, students perform nearly 42 hours and teaching staff deal with at least 10-15 students. Thus, it is difficult for a supervisor to give individual supervision to counselor candidates. This situation necessitates the effective usage of group supervision in psychological counseling undergraduate education in Turkey. Group supervision means the regular togetherness of a supervisor and supervised people to ensure professional development (Bernard & Goodyear, 2014). This process provides an ideal environment in order to debate different ideas and give feedback (Borders et al., 2012). The most important advantage of group supervision is the ability to reach more than one candidate at the same time and to follow their counseling processes with each other, and also students can take advantage of the opportunity to use these processes (Atik, Arıcı, & Ergene, 2014; Yılmaz & Voltan-Acar, 2015). Research by Ray and Altekruse (2000) showed that group supervision is as effective as individual supervision for candidates to increase their psychological counseling skills with another person. Moreover, a group supervision environment composed of peers contributes to a decrease in the possible anxiety experienced when working with a supervisor and increases self-efficacy perception, trust level, and learning opportunities (Christensen & Kline, 2001; Starling & Baker, 2000). Thus, the practice of group supervision is thought to increase students' counseling, managing sessions, and problem-solving skills.

The aim of this research is to examine the effect of group supervision studies during the course of individual psychological counseling practice in the fall term of 2017-2018 on the psychological counseling self-efficacy levels of psychological counselor candidates. It is expected that the research findings will contribute to the literature about supervision in psychological counseling education in Turkey.

Method

Design

This research is a mixed-pattern study due to the usage of both qualitative and quantitative analyses. In the analysis of quantitative data, the pre-test/post-test model without a control group is the quasi-experimental research design. In this pattern, the effect of experimental processing is tested in the study on only one group. The participants' measures of dependent variables are collected by using the same participants and scales with a pre-test before the practice and a post-test after the practice (Büyüköztürk, Kılıç-Çakmak, Akgün, Karadeniz, & Demirel, 2018). The research design is shown in Table 1.

Table 1
Symbolic Representation of the Research Design

Group	Pre-test	Process	Post-test
G	O_1	X	O_2
	Counselor Activity Self-Efficacy Scales (Dependent Variable)	10-Week Group Supervision Study (Intervention)	Counselor Activity Self-Efficacy Scales (Dependent Variable)

Study Group

The research data were collected from a sample that consisted of 29 fourth-year students (17 females, 12 males) studying in a undergraduate program at a state university and taking an individual psychological counseling course in the fall educational season of 2017-18.

Data Collection Instruments

Counselor Activity Self-Efficacy Scale (CASES)

This scale was developed by Lent, Hill, and Hoffman (2003) in order to detect the self-efficacy level of psychological counselor candidates. The validity and reliability study of the Turkish version of this scale was performed by Pamukçu and Demir (2013). Factor analysis findings showed that it had a three-factor model, similar to the original form of the scale. The 41-item scale has as its first factor Helping Skills Self-Efficacy, which includes 15 items and three subscales of exploration stage skills, insight stage skills, and action stage skills. The second factor has 10 items and it is Session Management Self-Efficacy. The third factor has 16 items and it is Counseling Challenges Self-Efficacy. It has two subscales of conflicts in relationships and client problems. The scale is a 10-point scale ranging from 'no confidence' (0) to 'complete confidence' (9); the highest score is 369 and the lowest score is 0. High scores show a high

level of participants' self-efficacy. The internal consistency coefficient of CASES was 0.98. The internal consistency coefficients of subscales were 0.92 for Helping Skills Self-Efficacy, 0.95 for Session Management Self-Efficacy, and 0.95 for Counseling Challenges Self-Efficacy.

Evaluation reports of psychological counselor candidates

At the end of the individual psychological counseling course, counselor candidates were asked to evaluate themselves and the process by writing a report.

Data Analysis

The T-test for related samples was used to detect whether the pre-test and post-test scores of the participants differed significantly or not. Before this analysis, it was shown that the difference scores of two related measurement sets demonstrated the normal distribution. Thus, the related analysis could be conducted (Büyüköztürk, 2017). The qualitative data were obtained from content analysis of the reports written by 29 students at the end of the course. Content analysis is a systematic technique in which some words of a text are summarized by smaller subcategories with codes based on certain rules (Büyüköztürk, 2017).

Procedure

Ten sessions that lasted 90 minutes a day once a week were held with the participant groups receiving supervision support. The group members, in sessions, shared information about their own psychological counseling processes as a psychological counselor with the other group members and the supervisor by methods such as psychodrama, group interaction, sharing dialogues, and listening to audio recordings of clients provided that the identifying information of the clients was kept confidential (permission was received from the clients for use of these recordings). The supervisor and the group members gave feedback about what was shared.

Findings

Quantitative Findings

T-test results for related samples are given in Table 2 to determine whether the pre-test and post-test scores of the participants significantly differed.

Table 2
T-Test Results for Related Samples Regarding Counseling Self-Efficacy Levels

Measurement (CASES)							
	Helping Skills Self-Efficacy						
	Test	N	X	S	sd	t	p
Exploration	Pre-test	29	30.69	4.45	28	-4.79	0.000
	Post-test	29	35.38	5.13			
Insight	Pre-test	29	29.76	6.02	28	-6.41	0.000
	Post-test	29	39.51	6.62			
Action	Pre-test	29	23.00	4.51	28	-2.52	0.018
	Post-test	29	25.41	4.59			
	Session Management Self-Efficacy						
	Pre-test	29	58.28	9.72	28	-3.54	0.001
	Post-test	29	66.72	9.92	28		
	Counseling Challenges Self-Efficacy						
Conflicts	Pre-test	29	23.62	8.79	28	-4.84	0.000
in Relationships	Post-test	29	33.24	7.45	28		
Client Problems	Pre-test	29	49.58	15.74	28	-4.02	0.000
	Post-test	29	60.62	13.03	28		
	Counseling Self-Efficacy Total Score						
	Pre-test	29	220.96	34.59	28	-4.99	0.000
	Post-test	29	260.89	36.20	28		

Table 2 shows that the psychological counseling self-efficacy total scores significantly increased after supervision [$t(28) = -4.99$, $p < 0.01$]. The results of the scale and all subscales indicate that there is a significant difference among them after the application for exploration [$t(19) = -4.79$, $p < 0.01$], insight [$t(19) = -6.41$, $p < 0.01$], action [$t(19) = -2.52$, $p < 0.05$], session management self-efficacy [$t(19) = -3.54$, $p < 0.01$], conflicts in relationships [$t(19) = -4.84$, $p < 0.01$], and client problems [$t(19) = -4.02$, $p < 0.01$].

Qualitative Findings

In the scope of the individual psychological counseling practice course, the views of the participants who received 10 weeks of group supervision were divided into four categories including ‘emotions’ (positive/negative), ‘professional development’ (‘occupational approach’, ‘the use of basic psychological counseling skills’, ‘effectively managing the psychological counseling process’), ‘boosters’, and ‘challenges’. These categories are presented in Table 3.

Table 3
Evaluation of Supervision Process

Categories and Subcategories		Frequency
1. Emotions		
1.1	*Positive Emotions*	
1.1.1	Decrease in nervousness over time	9
1.1.2	Increase in self-confidence	11
1.1.3	Feeling good due to client's positive change	8
1.2	*Negative Emotions*	
1.2.1	Extreme excitement before counseling and 1st and 2nd sessions	17
1.2.2	Fear of criticism	4
1.2.3	Disgrace	3
2. Professional Development		
2.1	*Occupational Approach*	
2.1.1	Increase in loyalty to the profession	3
2.1.2	To believe more in the effectiveness of counseling	2
2.2	*The Use of Basic Psychological Counseling Skills*	
2.2.1	Increased use of reflection of emotions and meaning	5
2.2.2	To allow silence	2
2.2.3	To use clarification skills	3
2.2.4	Increase in empathy skills	1
2.2.5	Increase in self-disclosure skills	1
2.2.6	Confrontation usage	1
2.3	*Effective Management Ability of Counseling Process*	
2.3.1	Ability to use the time appropriately	2
2.3.2	Increase in using different techniques and practices (role-playing, empty chair, cognitive-behavioral therapy techniques, written techniques)	5
3. Boosters		
3.1	The positive effect of having psychological counseling practice a year before	6
3.2	The positive effect of regularly having feedback in the group	10
4. Challenges		
4.1	The lack of a counseling room	1
4.2	The difficulty of writing transcriptions	4
4.3	Stagnation in some sessions	5
4.4	Crowded supervision group	2

Emotions

The emotions of the psychological counseling candidates participating in group supervision were divided into two categories as positive and negative emotions. The category of positive emotions was determined to have subcategories of decrease in nervousness over time (n = 9), increase in self-confidence (n = 11), and feeling good due to a client's positive change (n = 8). The candidates expressed their own positive emotions in the following ways:

> *"Day by day I began to trust myself more. By the end, I knew what I needed to do and when" (GL 9).*

> *"The fact that someone you did not know disclosed themselves, trusted in you, told their problems to you, and at the end they said they felt relaxed … it gave me very good feelings" (GL 21).*

> *"Things such as counseling, clients, sessions, and voice records turned from fear or anxiety into pleasure for me" (GL 5).*

The candidates' negative emotions were divided into three categories of extreme anxiety and excitement before counseling and in the first and second sessions (n=17), fear of criticism (n=4), and disgrace (n=3). Sample expressions of the negative feelings of the candidates are given below:

> *"At the beginning of this process I was very nervous. I felt very anxious about the uncertainty of how the process continued" (GL 12).*

> *"It seemed that my lecturer would be mad at me and my friends would make fun of me" (GL 21).*

> *" I was ashamed especially when I listened to my voice records" (GL 8).*

Professional Development

Professional development was determined to be categorized into three themes as occupational approach, use of basic psychological counseling skills, and effective management ability in the counseling process. The occupational approach theme was categorized into two subcategories as increase in loyalty to the profession (n=3) and more belief in the effectiveness of counseling (n=2). Some views of the candidates are given below:

> *"Thanks to this course, I loved my job. Everything was very unclear [before] when a subject was explained. But I understood my job better and liked it more via these practices"* (GL 6).

> "*There is no need to lie: at the beginning I was asking whether this was necessary … I thought it would be ineffective. But later, I understood the reality. When you use the skills it really works"* (GL 2).

The theme of the use of basic psychological counseling skills was categorized into six subcategories as increased use of reflection of emotions and meaning (n=5), allowing silence (n=2), using clarification skills (n=3), increase in empathy skills (n=1), increase in self-disclosure skills (n=1), and confrontation usage (n=1). Some sample expressions are given below:

"At the beginning my mirroring was lacking and ineffective; in the last sessions I used mirroring more and at the right time" (GL 6).

"I could not keep silent in counseling; namely, I needed to ask a question immediately after some silence. In the last sessions I allowed this and occasionally had ten, twenty, thirty seconds of silence" (GL 12).

Effective management ability in the counseling process was categorized into two subcategories as ability to use the time appropriately (n=3) and increase in the use of different techniques and practices (role-playing, empty chair, cognitive-behavioral therapy techniques, written techniques) (n=2). Some sample expressions of the candidates are given below:

"In the first sessions the client was telling me something and I could not stop their speaking or the session ended early, but thanks to supervision I became relaxed and then in the last sessions my counseling events lasted 50 minutes" (GL 23).

"We used the technique 'Empty Chair' in the class, but then I could not understand it. I used it in a counseling session and it became very effective. My client really felt very good and relaxed" (GL 9).

Boosters

This category has two subcategories: the positive effect of having psychological counseling practice a year before (n=6) and the positive effect of regularly receiving feedback in the group (n=10). The some views of the participants are below:

"Last year I really struggled when I was counseling, even at times I was rebelling, but now I have gained advantages from doing it. Each session was an experience" (GL 21).

"Especially in group supervision, our talks about our own clients and our friends' feedback for us, the process, and our interventions really helped us to make the process better" (GL 8).

Challenges

Challenges were categorized into four subcategories as the lack of a counseling room (n=1), the difficulty of writing transcriptions (n=4), stagnation in some sessions (n=5), and crowded supervision group (n=2). Sample expressions of the candidates are given below:

"There is no counseling room due to our university's conditions. During the process, one of the biggest problems for me was to find a suitable environment for my counseling sessions. Generally, we used the group rooms in the university library, but this was not always possible" (GL 22).

"Only because our supervision group was very crowded, I thought that I talked slightly less and it was difficult to get supervision about my client and counseling sessions" (GL 11).

Discussion

The effect of group supervision in the individual psychological counseling practice during the 2017-18 fall term at a state university on the counseling self-efficacy perception of university students was examined in this research.

According to the quantitative data, there was a significant increase in self-efficacy total scores and all subscale scores of the participants who received group supervision during this term. These research findings are consistent with the results of other studies. Some research in the literature indicated that supervision practices positively increase the efficacy level of counselors and that group supervision positively influences counseling skills (Wahesh, Kemer, Willis, & Schmidt, 2017). Thus, group supervision offers an opportunity for candidates to see similar processes and share the difficulties that they experience. This environment helps their self-efficacy increase and it contributes to the building of an effective learning environment (Christensen & Kline, 2001; Starling & Baker, 2000). In particular, the fact that the group met together regularly provided a chance for all the group members to follow their own and others' counseling processes from the beginning to the end, and also they could observe their development regarding the effective use of psychological counseling skills.

The qualitative findings showed that the responses of the participants were divided into four categories of emotions, professional development, boosters, and challenges. The participants reported that the nervousness they felt especially in the first sessions decreased with time, their self-efficacy level increased, and they felt better when their clients experienced positive changes. They further said that there was an increase in their own professional commitment and experience levels, they more believed more in the effectiveness of counseling sessions, their

counseling skills and techniques developed, and they could use their time better. Moreover, they thought that having psychological counseling practice a year before positively contributed to these sessions and regularly joining the supervision group helped them to improve. Conversely, there were challenges that the participants faced, such as the lack of a counseling room, the difficulty of writing transcriptions, and stagnation in some sessions. These qualitative findings are consistent with other researchers' findings. Christensen and Kline (2000; 2001) indicated that feedback in supervision sessions increased the level of psychological counseling skills and the self-efficacy of the counselors. Some researchers have pointed out that there is a positive effect of participating in a supervision group on professional development (Linton & Hedstorm, 2006), with an increase in both self-efficacy levels (Christensen & Kline, 2000; Starling & Baker, 2000) and knowledge and skills (Linton & Hedstorm, 2006).

Conclusion and Recommendations

This research examined the effectiveness of group supervision on the self-efficacy perceptions of counselor candidates and its findings have shown that group supervision in an individual psychological counseling course positively affects the psychological counseling perceptions of the candidates. These findings may be further supported with similar research at different universities. It is also necessary to increase the number of studies about the development of different supervision models suitable for psychological counseling education in Turkey. These models may be constructed in order to improve both self-efficacy and psychological counseling skills.

References

Aladağ M., Yaka, B., & Koç, İ. (2014). Psikolojik danışma becerileri eğitimine ilişkin nitel bir değerlendirme: Psikolojik danışman adaylarının görüşleri. *Kuram ve Uygulamada Eğitim Bilimleri, 14*(3), 859-886.

Aladağ, M. (2014). Psikolojik danışman eğitiminin farklı düzeylerinde bireyle psikolojik danışma uygulaması süpervizyonunda kritik olaylar. *Ege Eğitim Dergisi, 15*(2), 428-475.

Al-Darmaki, F.R. (2004). Counselor training, anxiety, and counseling self-efficacy: Implications for training psychology students from the United Arab Emirates University. *Social Behavior and Personality: An international journal, 32*(5), 429-439.

Association for Counseling Education and Supervision (ACES), (2011). *Best practices in clinical supervision*. Retrieved May 30, 2018 from https://www.acesonline.net/sites/default/files/ACES-Best-Practices-in-clinical-supervision-document-FINAL.pdf.

Atik, Z.E., Arıcı, F., & Ergene, T. (2014). Süpervizyon modelleri ve modellere İlişkin. *Türk Psikolojik Danışma ve Rehberlik Dergisi*, *5*(42), 305-312.

Bernard, J.M., & Goodyear, R.K. (2014). *Fundamentals of clinical supervision* (5th ed.). Upper Saddle River, NJ: Merrill.

Büyükgöze-Kavas, A. (2011). Bireysel ve grupla psikolojik danışma uygulamalarına yönelik bir değerlendirme. *Türk Eğitim Bilimleri Dergisi, 9*(2). 411-432.

Büyüköztürk, Ş. (2017). *Sosyal bilimler için veri analizi el kitabı*. Ankara: Pegem Akademi Yayıncılık

Büyüköztürk, Ş., Kılıç-Çakmak, E.K., Akgün, Ö.E., Karadeniz, Ş., & Demirel, F., (2018). *Bilimsel araştırma yöntemleri*. Ankara: Pegem Akademi Yayıncılık.

Cormier, S., & Nurious, P.S. (2003). *Interviewing and change strategies for helpers: Fundamental skills and cognitive behavioral interventions*. Pacific Grove: Thomson Brooks/Cole.

CACREP Psikolojik Danışmanlık ve İlgili Programların Akreditasyonu Konseyi (The Council for Accreditation of Counseling and Related Programs [CACREP]) Standartları (2009). Retrieved May 12, 2018, from http://67.199.126.156/doc/2009%20Standards.pdf.

Christensen, T.M., & Kline, W.B. (2000). A qualitative investigation of the process of group supervision with group counselors. *Journal for Specialists in Group Work, 25*(4), 376-393. doi.org/10.1080/01933920008411681

Christensen, T.M., & Kline, W.B. (2001). The qualitative exploration of process-sensitive peer group supervision. *The Journal for Specialists in Group Work, 26*(1), 81-99. doi:10.1080/01933920108413779

Denizli, S. (2010). *Danışanların algıladıkları terapötik çalışma uyumu ve oturum etkisi düzeylerinin bazı değişkenlere göre yordanması: Ege Üniversitesi örneği.* (Yayımlanmamış Doktora Tezi) Ege Üniversitesi, İzmir, Türkiye.

DePue, M.K., Lambie, G.W., Liu,R., & Gonzalez, J. (2016). Investigating supervisory relationships and therapeutic alliances using structural equation modeling. *Counselor Education and Supervision, 55*(4), 263-277. doi:10.1002/ceas.12053

Gladding, S.T. (2000*). Counseling; A comprehensive profession*. New Jersey: Prentice Hall.

Hackney, H., & Cormier, S. (2008). *Psikolojik danışma ilke ve teknikleri: psikolojik yardım süreci el kitabı* (T. Ergene, S. Aydemir Sevim Çev.). Ankara: Mentis Yayıncılık.

Haynes, R., Corey, G., & Moulton, P. (2013). Clinical supervision in the helping professions: A practical guide. Reflective Practice: Formation and Supervision in Ministry.

Hill, C.E., Stahl, J., & Roffman, M. (2007). Training novice psychotherapists: Helping skills and beyond. *Psychotherapy: Theory, Research, Practice, Training*, 44(4), 364–370. doi: 10.1037/0033-3204.44.4.364

Horrocks, S., & Smaby, M.H. (2006). The supervisory relationship: Its impact on trainee personal and skills development. *Compelling perspectives on counselling: VISTAS*, 173-176.

İkiz, F.E. (2010). Psikolojik danişmanlarin tükenmişlik düzeylerinin incelenmesi. *Ahi Evran Üniversitesi Kırşehir Eğitim Fakültesi Dergisi*, *11*(2), 25-43.

İkiz, F.E., & Totan, T. (2014). Etkili psikolojik danışman niteliklerinin değerlendirilmesine ilişkin ölçek geliştirme çalışması. *Türk Psikolojik Danışma ve Rehberlik Dergisi*, *5*(42). 269-279.

Larson, L.M., & Daniels, J.A. (1998). Review of the counseling self-efficacy literature. *The Counseling Psychologist*, *26*(2), 179-218.

Lent, R.W., Hill, C.E., & Hoffman, M.A. (2003). Development and validation of the Counselor Activity Self-efficacy Scales. *Journal of Counseling Psychology*, 50, 97-108.

Linton, J.M., & Hedstrom, S.M. (2006). An exploratory qualitative investigation of group processes in group supervision: Perceptions of masters-level practicum students. *The Journal for Specialists in Group Work*, *31*(1), 51-72.

Mearns, D & Thorne, B. (1999). *Person centred counselling in action*, (2nd ed.) Sage, London.

Meydan, B. (2010). *Psikolojik danışman adaylarının içerik yansıtma ve duygu yansıtma becerilerine ilişkin yeterlik düzeylerinin incelenmesi.* (Yayımlanmamış Yüksek Lisans Tezi). Ege Üniversitesi, İzmir, Türkiye.

Meydan, B. (2014). Psikolojik danışma uygulamalarına yönelik bir süpervizyon modeli: Mikro beceri süpervizyon modeli. *Ege Eğitim Dergisi*, 15(2), 358-374.

Meydan, B. (2015). Bireyle psikolojik danışma uygulamasında mikro beceri süpervizyon modeli'nin etkililiğinin incelenmesi. *Türk Psikolojik Danışma ve Rehberlik Dergisi, 5*(43).

Meydan, B., & Koçyiğit-Özyiğit, M. (2016). Süpervizyon ilişkisi: Psikolojik danışma süpervizyonunda kritik bir öğe. *Ege Eğitim Dergisi*, *17*(1), 225-257.

Pamukçu, B., & Demir, A. (2013). Psikolojik danışma öz-yeterlik ölçeği Türkçe formu'nun geçerlik ve güvenirlik çalışması. *Türk Psikolojik Danışma ve Rehberlik Dergisi*, *4*(40), 212-221.

Urbani, S., Smith, M.R., Maddux, C.D., Smaby, M.H., Torres-Rivera, E., & Crews, J. (2002). Skills-based training and counseling self-Efficacy. *Counselor Education and Supervision, 42*(2), 92-106. doi:10.1002/j.1556-6978.2002.tb01802.x

Uslu, M., & Arı, R. (2005). Psikolojik danışmanların danışma becerisi düzeylerinin incelenmesi. *Selçuk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, *14*, 509-519.

Özyürek, R. (2009). Okullarda psikolojik danışma ve rehberlik uygulamaları ve öğrencilere sağlanan süpervizyon olanakları: Ulusal bir tarama çalışması. *Türk Psikolojik Danışma ve Rehberlik Dergisi, 4*(32).

Page, S., & Wosket, V (1994). *Supervising the counsellor: A cyclical model,* Routledge Taylor and Francis Group, London.

Ray, D., & Altekruse, M. (2000). Effectiveness of group supervision versus combined group and individual supervision. *Counselor Education and Supervision*, *40*(1), 19-30.

Siviş Çetinkaya, R., & Karaırmak, Ö. (2012). Psikolojik danışman eğitiminde süpervizyon. *Türk Psikolojik Danışma ve Rehberlik Dergisi*, *4*(37), 107-121.

Starling, P., & Baker, S. (2000). Structured peer group practicum supervision: Supervisees' perceptions of supervision theory. *Counselor Education & Supervision, 39,* 162-176 doi: 10.1002/j.1556-6978.2000.tb01229.x

Wahesh, E., Kemer, G., Willis, B.T., & Schmidt, C.D. (2017). An analysis of peer feedback exchanged in group supervision. *Counselor Education and Supervision, 56*(4), 274-288. doi: 10.1002/ceas.12085

Wheeler, S., & Richards, K. (2007). The impact of clinical supervision on counsellors and therapists, their practice and their clients. A systematic review of the literature. *Counselling and Psychotherapy Research*, *7*(1), 54-65. doi: 10.1080/14733140601185274

Whiston, S.C., & Coker, J.K. (2000). Reconstructing clinical training: Implications from research. Counselor Education and Supervision, *39*(4), 228-253. doi: 10.1002/j.1556-6978.2000.tb01235.x

Yılmaz, O., & Voltan-Acar, N. (2015). Psikolojik danışman eğitiminde süpervizyonun önemi ve grupla psikolojik danışmadaki rolü. *Abant İzzet Baysal Üniversitesi Eğitim Fakültesi Dergisi, 15*(1)), 342-356

Zakaria, N.S. (2013). Counseling Ethics Education Experience: An Interpretive Case Study of the First Year Master's Level Counseling Students (Yayınlanmamış Doktora Tezi). University of Wyoming, Wyoming.

Zeren, Ş. & Yılmaz, S. (2011, Ekim). *Bireyle psikolojik danışma uygulaması dersini alan öğrencilerin süpervizyona bakış açıları: Yeditepe Üniversitesi Örneği.* XI. Ulusal Psikolojik Danışma ve Rehberlik Kongresi'nde sunulan sözel bildiri, Ege Üniversitesi, Selçuk, İzmir.