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Examination the Metacognitive Reading Strategies of Secondary School Sixth Grade Students

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Abstract

The aim of this study is to investigate the use of metacognitive reading strategies of the sixth grade middle school students. The method of this research is survey design. Multistage cluster sampling was used to determine the sample. The sample of the study consisted of 388 students attending five public schools randomly selected. The sample of the students consisted of 200 girls; 188 are boys. The metacognitive reading questionnaire was used to determine the metacognitive reading strategies used by the students. The metacognitive reading strategies scale was applied by the researcher in the classroom environment. The survey was conducted by the researcher. The data obtained as a result of these applications were uploaded to the computer, the percentage, frequency, t test results were reached by using SPSS 20. According to the results of the study, sixth grade students frequently use pre-reading, pre- and post-metacognitive reading strategies, and less frequently recall strategies. Students pay attention to the parts that are important in the text and evaluate the text and comprehension status after reading.

Keywords: Sixth grade, metacognition, reading, strategy.

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INTRODUCTION

In the introduction part of the study, metacognition concept is explained. Then, metacognitive reading was emphasized. The stages of metacognitive reading are indicated. The importance of metacognitive reading is emphasized.

Metacognition

Metacognition, as well as having knowledge of the individual's characteristics, the nature of the cognitive processes to be completed, and the structure of the strategies chosen as a solution to these tasks, is defined as an ability that has a controlling role in monitoring and regulating the individual's cognitive process (Flavell, 1999, p. 22). Metacognition is any knowledge or cognitive process that refers to, monitors, or controls any aspect of cognition (Moses & Baird, 1999, p. 533). Metacognition is thinking about thinking or the monitoring and regulation of thinking (Papaleontiou-Louca, 2014, p. 523). Metacognition, is "thinking about thinking" or "cognitions about cognitions" (Bruning, Schraw & Norby 2014, p. 79; Gilbert, 2005, p. 15; Hall, Bowman & Myers, 1999, p. 99; Karakelle & Saraç, 2010, p. 46; Tracey & Morrow, 2017, p. 78). Schraw & Sperling Dennison (1994, p. 460) described the metacognition as thinking, understanding, and controlling one's own learning. Metacognition means that one is aware of his/her own thinking processes and can control these processes (Özsoy, 2008, p. 719). Metacognition recognizes what a person is learning by recognizing himself/herself and organizes education and training activities accordingly (Özbay & Bahar, 2012, p. 159). Kuhn & Dean (2004, p. 270) stated that one is aware of his/her thoughts and manages them. Metacognition is defined as the person's knowledge of his own cognitive system, his thinking about his own thought, his awareness of mental activities, his control, his evaluation and his follow-up (Bonds, Bonds & Peach, 1992, p. 56).

Any process or product occurring in the brain is simultaneously related to both cognition and metacognition. Metacognition is to follow and control cognition. Cognition is directly related to individual learning goals and allows for changing or transforming learning material. Therefore, it is extremely difficult to determine whether a product occurring in the mind is related to a cognitive process or a metacognitive process (Başaran, 2013, p. 227). Metacognition includes two interrelated knowledge: 1. knowing what skills, tactics, resources a person needs in a task. 2. knowing when and how to use these skills, tactics, and resources to make the task a successful outcome (Schunk, 2009, p. 186; Mokhtari, Reichard, 2002, p. 249; Bang & Zhao, 2007, p. 41). Metacognition includes skills that enable learning to occur on its own. Metacognition is actually a way of learning to learn (Çakıroğlu, 2007, p. 8). The ability of individuals to perform at different levels stems from their experiences and perceptions of metacognition. The experience gained plays an important role in the development of intelligence and basic skills. Metacognition, on the other hand, plays a leading role in the strategic and effective utilization of the individual's cognitive abilities. Being aware of the variables such as the experiential factor and the effect of metacognition, emphasizes how the intelligence can be enriched in the educational process (Cornoldi, 2010, p. 262; Durkan & Özen, 2018, p. 524). As the metacognition occurs in the form of an inner conversation that the person does on his own, most students may not recognize the importance of this if the process is not explained and taught clearly (Bransford, Brown & Cocking, 1999, p. 18). Metacognition is particularly important in learning and teaching as it directly affects many factors such as gaining, understanding, remembering, critical thinking and problem solving (Hartman, 1998, p. 1).

Metacognitive reading

Metacognitive strategies are strategies used by the person before, during, and after reading to make the reader aware of his or her own reading process. Metacognitive awareness about reading facilitates students to monitor and control their reading processes, thus allowing them to organize reading processes. In other words, the student to follow the process of reading, reading for the purpose of self-evaluation in terms of this direction to determine the lack of editing of the reading process, if

necessary re-reading, can be considered an indicator of his or her upper cognitive awareness (Çöğmen & Saracaloğlu, 2010, p. 92; Öztürk, 2012, p. 293; Dilci & Babacan, 2011, p. 51; Chechen & Alver, 2011, p. 43). Reading is a skill acquired and developed by the individual. The reader is aware of the strategies to be used to achieve the reading purpose and has knowledge about how to use it at that stage. The reader is included in the metacognitive framework with this awareness, the understanding of the structure of the strategies and the conscious control of the process (Stewart & Tei, 1983, p. 37). During the reading action, readers consciously use mental processes to make sense of the meaning of the texts. These tactics, which are called reading strategies, make important contributions to the realization of reading comprehension. The use of various reading strategies, methods and techniques during reading facilitates understanding of the content of the text; paying attention to the structural features of the text, increasing the rate of understanding and understanding the active participation in the reading process, also prepares the ground for the development of skills such as criticizing, evaluating and remembering the text (Akyol, 2014, p. 33). At each stage of the reading process, readers who benefit from metacognitive skills observe what they understand from the text, supervise the reading process and evaluate the effectiveness of the strategies they use (Wilson & Bai, 2010, p. 270). The increase in reading comprehension achievement is ensured by supporting, monitoring and controlling the cognitive process with metacognitive strategies. In short, metacognitive reading, planning strategies, reading, editing, monitoring, whether or not the necessary processes for reading have been developed regularly, changing and renewing the application steps when there is no need, correcting by noticing the wrong or incomplete, and keeping the mind constantly awake during these actions. Metacognitive reading is that the individual can manage his own learning at the reading point and be able to master his learning (Sulak & Behriz, 2018, p. 395). Metacognitive reading strategies are allowing students to monitor and read their own reading process, allowing them to organize reading processes (Özen & Durkan, 2016, p. 571). Metacognitive strategies are applications that allow the individual to regulate or direct the reading process (Phakiti, 2003, p. 651). Reading function, pre-reading, reading order and post-reading stages of the process, including the individual's cognitive skills to be aware of himself and the process to control and finally be able to evaluate by taking feedback can be evaluated as metacognitive activities in the individual (Cakıroğlu & Ataman, 2008, p. 4). These metacognitive skills; it is possible to list the preliminary information as reading, making inferences, reading between texts, reading comprehension strategies and meaning tracking. The use of metacognitive skills during reading plays a major role in reading comprehension (Kuruyer & Özsoy, 2016, p. 773). A reading comprehension process supported by metacognitive skills is considered as a system that conveys the perception of the textual equipment of the individual to the metacognitive level (Hacker, 2004, p. 761). Considering that reading is also a purpose (comprehension), it is spontaneous that it is only possible to reach the aim of reading by strategic reading (Başaran, 2013, p. 227). If readers do not develop and use their metacognitive skills, they do not have the opportunity to plan their learning, to observe their progress, to revise what they have acquired, and to focus on new knowledge to be learned (O'Malley & Chamot, 1990, p. 8). In this sense, the instructors provide their students with the ability to use metacognitive strategies to understand what they are reading, to improve their reading skills, to be able to transfer what they have learned outside the classroom and to become lifelong learners (Barbe-Clevett, Hanley & Sullivan, 2002, p. 13).

Metacognitive reading strategies are grouped under three main headings as planning, monitoring and evaluation (Baker & Brown, 1984, p. 354). The estimation is the stage in which the individual thinks the objectives, duration, content and results of the reading process, and makes various estimations and inferences. At this stage, the purpose and the necessity of reading is known, it is thought that the reading content will be more or less. It is explored how to read and what to do for a successful reading activity. Intellectual resources to make the reading effective, and how to reach these resources is reasoned about how to reach (Özbay & Bahar, 2012, p. 168). The pre-reading strategies, which are intended to be gained as a priority for primary school students, are to create a goal and to review the text (Baydık, 2011, p. 304). Having a metacognitive reading plan can be considered as an ability to develop and implement decisions that will shape the reading process that can be used throughout a person's life. At the estimation stage of metacognitive reading, the individual designs the reading process after predicting the reading process and skills. At this stage, what the student does is similar to the planning of the teacher's lessons. The target group and competences, needs, learning

subject and objectives are known. The next step is to determine which methods and techniques will be used, which tools will be used, and to plan the teaching process by estimating the number of feedbacks that can come from the target group. The individual in the reading process, like this, knows the purpose, object and duration of reading. The remaining methods and techniques of reading, when and how to use learning technologies will be designed (Özbay & Bahar, 2012, p. 169). With planning strategies, the reader can decide what to learn before starting to text (Edizer, Dilidüzgün, Başoğul, Karagöz & Yücelşen, 2018, p. 483). In the planning stage, strategies such as setting goals, reviewing and reading speed are included (Karatay, 2009, p. 60). Cognitive and metacognitive strategies to be used to make sense of the text are determined according to the schematic and content diagram of the text based on the text type. Two criteria are used in the classification of text types: structural and functional (İşeri, 2017, p. 148). The planning phase is a study draft in the intellectual sense, it is a mental preparation (Cemiloglu & Ogur, 2016, p. 134).

In the second stage of metacognitive reading, the student monitors the validity of their estimates and reads according to the reading plan, and asks them questions to see how much they understand when they read it and to see their communication with the text. In this process where the realization rate of understanding is noticed by paying attention to the structure of the text, good readers control the understanding process at the time of reading and intensify their attention at important points in order to realize the understanding, connects their predictions to the results appropriate to the text, and tries to analyze the complex expressions (Özbay & Bahar, 2012, p 169). With monitoring strategies, it can control the comprehension action and lead to the formation of structures (Edizer, Dilidüzgün, Başoğul, Karagöz & Yücelşen, 2018, p. 483). During the monitoring phase, there are strategies such as highlighting important information, using dictionary, taking notes (Karatay, 2009, p. 60). It is designed to review the reading strategies that can be applied in the text, to determine the appropriate strategies, to try to understand the structure of the text, to search for ways of making inferences, to be stored in memory that may be necessary in the subsequent arrangements, to use resources such as dictionary, spelling guide, encyclopedia and general network (internet) in case of need. (Cemiloglu & Ogur, 2016, p. 135). The following strategies are taught for students to use during reading (Baydık, 2001, p. 304): To understand what they read. The use of the prior knowledge and its relation to the subject. Predicting the text about the execution. Clarifying text. Set the read speed. Marking, highlighting or underlining important places in the text. Taking notes. Animation in your mind. Using text structure information.

The third and last stage of an metacognitive reading is about the reading and reading activity, in which the individual evaluates the reading activity, in which he determines the approaches, methods and techniques that will be adopted in the future readings, where the missing and superior points in reading are discussed, it is the stage where the results appear (Özbay & Bahar, 2012, p. 170). They can compare and analyze what they get from the text through evaluation strategies. Thus, both mental activities become active and meaning structures can be formed in a healthy way and language skills can develop (Edizer, Dilidüzgün, Başoğul, Karagöz & Yücelşen, 2018, p. 483). In the evaluation stage, strategies such as summarizing, checking validity in daily life and research are included (Karatay, 2009, p. 60). To able to understand the implications of reading text, to understand whether the homework is appropriate for homework, to understand the main sense or plot, to look at the results of the cognitive strategies applied at the time of reading, to compare the situations reached with previous information, to correct the mistakes, to share the results with other people, to the teacher reaching a general judgment on the success of cognitive strategies related to receiving and eventually reading texts (Cemiloğlu & Ogur, 2016, p. 136).

It is seen that various studies have been conducted for metacognitive reading in primary education. Research done by Bozkurt & Memiş (2013) as a result of, a significant difference between the variables with regard to gender of students, and their metacognitive awareness of reading comprehension and reading motivation grades. When the reading levels are concerned, the level of independent reader has been assessed as having the highest medium in relation with the metacognitive awareness of reading comprehension and reading motivation. It determined that there is an average relationship between the reading levels and the metacognitive awareness of reading comprehension. In

addition, a low level of relationship between reading motivation and its sub-dimensions has been assessed. According to the findings obtained from the research conducted by Kana (2014), significant relationships were found between age, gender, book reading, lesson achievement and family reading level with the use of metacognitive strategy. As a result of research conducted by Baydık (2011), it was found that the most of students with reading difficulties had difficulties in finding main idea, building cause-effect relationship, recalling general information and details in text and making inference. It was determined that the strategies least used by the students with reading difficulties were asking questions them self before reading, imagining the text in their mind, using previous knowledge, underlying the important knowledge, asking questions them self after reading. It was seen that the least reading comprehension instruction practices the teachers made were activating previous knowledge and peer mediated instruction.

The aim of this study is to investigate the use of metacognitive reading strategies of the sixth grade middle school students. The results of the research are important in terms of specifying the use of metacognitive reading strategies of the sixth grade students in the middle school. It is thought that the results of the research will be useful for the researchers working in the field of reading instruction.

METHOD

Research Design

The method of this research is survey design. In survey research, the investigator selects a sample of respondents from a target population and administers a questionnaire or conducts interviews to collect information on variables of interest. Surveys are used to learn about people's attitudes, beliefs, values, demographics, behavior, opinions, habits, desires, ideas, and other types of information (McMillan & Schumacher, 2014, p, 253).

Sample

Survey researchers typically select and study a sample from a population and generalize results from the sample to the population (Creswell, 2012, p. 381). Multistage cluster sampling was used to determine the sample. In multistage cluster sampling, the researcher chooses a sample in two or more stages because either the researchers cannot easily identify the population or the population is extremely large. If this is the case, it can be difficult to obtain a complete list of the members of the population (Creswell, 2012, p. 145). The study population consists of sixth grade students attending secondary schools in the city center of Yozgat in the 2018-2019 academic year. The sample of the study consisted of 388 students attending five public schools randomly selected. The sample of the students consisted of 200 girls; 188 are boys.

Data collection tool

The metacognitive reading questionnaire developed by Başaran (2013) was used to determine the metacognitive reading strategies used by the sixth grade students. This form consists of four parts: Before reading in the first chapter; in the second part during reading; the third chapter is followed by reading metacognitive reading strategies. The validity of the scale was obtained through expert opinion.

Data Collection

The applications were made by the classroom teachers and the researcher in classroom environment. The metacognitive reading strategies scale was applied by the researcher in the classroom environment. Before this practice, teachers were given information about metacognitive reading strategies, so that the expressions in the questionnaire to be distributed are explained to the

students. The survey was conducted by the researcher. During the application, when necessary, necessary explanations were made to the students.

Data Analysis

Most surveys describe the incidence, frequency, and distribution of the characteristics of an identified population (McMillan & Schumacher, 2014, p, 254). The data obtained as a result of applications were uploaded to the computer, the percentage, frequency were reached by using SPSS 20.

RESULTS

The metacognitive reading strategies before reading used by the sixth grade students of the secondary school are presented in Table 1.

Table 1. Pre-Reading Metacognitive Reading Strategies

Pre-reading	Never		Sometimes		Always	
	f	%	f	%	f	%
1. I determine my reading purpose (study, entertainment, memorization, etc.).	20	5,2	128	33,0	240	61,9
2. I read the ambient light, sound, heat, seat etc. check their status and try to make them suitable for me.	37	9,3	120	30,9	232	59,8
3. Quickly review the text to understand the type and subject of the text.	55	14,4	148	38,1	185	47,4
4. I prepare questions in my mind about the subject.	23	9,3	216	55,7	128	33,0
5. The type, length, subject, etc. of the text. I decide how to read by looking at its features.	36	9,3	140	36,1	212	54,6
6. I guess the contents of the text by looking at the title.	51	13,4	140	36,1	188	48,5
7. I think what the information in the text will be useful to me.	52	13,4	184	47,4	148	38,1
8. Estimate the content based on text images.	52	13,4	160	41,2	165	42,4
9. Before I read the text, I plan on what to do mentally during and after reading.	59	15,5	164	42,3	163	42,2

When Table 1 is examined, it is seen that students frequently use pre-reading metacognitive reading strategies. According to the table, the students in to control the physical condition of the environment they will read and make them suitable for reading and determine the purpose of reading in strategies. It can be said that they use fast browsing before reading the text and think about what the information in the text strategies.

The metacognitive reading strategies during reading used by the sixth grade students of the secondary school are presented in Table 2.

Table 2. Metacognitive Reading Strategies Used During Reading

During Reading	Never		Sometimes		Always	
	f	%	f	%	f	%
1. I envisage what is told in the text.	44	11,3	124	32,0	216	55,7
2. Make notes about the text.	81	20,6	188	48,5	119	30,9
3. I underline important information to better understand.	28	7,2	152	39,2	192	49,5
4. I try to find the answers to the questions that appear in my mind about the subject in the text.	36	9,3	164	42,3	180	46,4
5. If I get distracted while reading, and I think of other thoughts, I go back to the head of the text that I don't understand and read again.	36	9,3	84	21,6	268	69,1
6. I read the parts I do not understand in the text more slowly and carefully.	21	5,2	84	21,6	279	72,2
7. I read slowly, if necessary, fast when necessary.	40	10,3	128	33,0	212	54,6
8. Read the places that are difficult to understand.	28	7,2	80	20,6	280	72,2
9. I connect the information I've already learned with the information I already have.	28	7,2	232	59,8	124	32,0
10. I try to understand the main idea of the text.	39	10,3	132	34,0	205	52,6
11. Occasionally, I check how much I understand the text.	65	16,5	184	47,4	135	35,1
12. I break the complex sentences into text.	100	25,8	152	39,2	128	33,0
13. I read these sentences as if they were telling someone to understand complex sentences.	40	10,3	188	48,5	148	38,1
14. I repeat in my mind the part I read from time to time.	40	10,3	192	49,5	152	39,2
15. I read some of the places I've read before to link between what is described in the text.	43	11,3	148	38,1	192	49,5
16. I think how I can use the information I learned.	40	10,3	196	50,5	148	38,1
17. I try to find and understand ideas that cannot be expressed clearly in the text.	40	10,3	144	37,1	196	50,5
18. I think that what I read does not give me new information.	28	7,2	120	30,9	228	58,8
19. I think that the text will be understood in different ways.	56	14,4	180	46,4	144	37,1
20. If necessary, I refer to other relevant sources (dictionary, encyclopedia, etc.).	68	17,5	148	38,1	168	43,3
21. I understand the meaning of the words I do not know the internet or dictionary.	32	8,2	80	20,6	276	71,1
22. I guess the meaning of the word I do not know by looking at the sentence in which it is found.	40	10,3	192	49,5	156	40,2
23. I will not understand.	36	9,3	104	26,8	244	62,9
24. I pay attention to places underlined, oblique or dark.	27	7,2	92	23,7	264	68,0

Table 2 shows how often students use metacognitive reading strategies during reading. According to the table, students revitalize what is described in the text, “distractions while reading, etc. for other reasons, rewriting the text “, “reading the slower and more difficult parts of the text”, “re-reading the parts that are difficult to understand, not passing through without understanding and underlining, oblique or dark places”, they use more. Students are taking notes, in highlighting important information, deconstructing complex sentences reading like telling complex sentences, guessing the meaning of the unknown they use less. These findings show that the students comprehend the relationship between reading speed and comprehension; it can be interpreted that they do not distinguish significant and insignificant information when they note the important parts of the text.

The metacognitive reading strategies after reading used by the sixth grade students of the secondary school are presented in Table 3.

Table 3. Metacognitive Reading Strategies of Students after Reading

After Reading	Never		Sometimes		Always	
	f	%	f	%	f	%
1. I repeat the important information in the text and try to understand the whole text.	32	8,2	172	44,3	184	47,4
2. If necessary, read the text again.	52	13,4	108	27,8	224	57,7
3. I evaluate my reading performance.	36	9,3	160	41,2	183	47,4
4. Evaluate whether the content of the text is consistent with its title.	44	11,3	144	37,1	200	51,5
5. Summarize what I have read to remember the text.	48	12,4	160	41,2	180	46,4
6. Review the text.	33	8,2	112	28,9	239	61,9

When Table 3 is examined, it is seen that the majority of students use metacognitive reading strategies after reading. These findings can be interpreted as the students generally evaluate the text after reading and control the understanding.

The metacognitive reading strategies for remembering used by the sixth grade students of the secondary school are presented in Table 4.

Table 4. Metacognitive Reading Strategies Used by Students for Remembering

Remembering	Never		Sometimes		Always	
	f	%	f	%	f	%
1. I underline important information.	35	9,3	108	27,8	235	60,8
2. After reading the text, I read the parts that I underlined.	56	14,4	136	35,1	180	46,4
3. Summarize the text.	41	10,3	176	45,4	164	42,3
4. Take notes about the text.	84	21,6	140	36,1	148	38,1
5. I take note of the important parts of the text.	52	13,4	156	40,2	160	41,2
6. I will animate what I read.	32	8,2	124	32,0	221	56,7
7. Read the text again.	52	13,4	160	41,2	164	42,3
8. I think about how I can apply what I learned in real life.	43	11,3	192	49,5	135	35,1
9. Hero, stage, event etc. text elements, real-life similar to the memory of the memory.	44	11,3	152	39,2	184	47,4

When Table 4 is examined, it is seen that the students use the recall strategies in medium level in general. Underline important information. Imagine what have read, the basic reading strategies are the most used. The least used metacognitive reading strategies “I take notes about the text”. And end “I think how I can apply what I learned in real life”.

CONCLUSION, DISCUSSION AND SUGGESTIONS

According to the results of the study, sixth grade students frequently use pre-reading, during reading and post-reading metacognitive reading strategies, and less frequently recall strategies. Students pay attention to the parts that are important in the text and evaluate the text and comprehension status after reading.

It is observed that students frequently use metacognitive reading strategies before reading. Students' read the physical conditions of the environment to read and make available for reading and determining the purpose of reading strategies more. It can be said that they use fast browsing before

reading the text and think about what the information in the text will do strategies. In the pre-reading stage, it is explored how to read and what to do for a successful reading activity. Intellectual resources to make the reading effective, and how to reach these resources is reasoned about how to reach (Özbay & Bahar, 2012, p. 168). The pre-reading strategies, which are intended to be gained as a priority for primary school students, are to create a goal and to review the text (Baydık, 2011, p. 304). At the estimation stage of metacognitive reading, the individual designs the reading process after estimating the reading process and skills (Özbay & Bahar, 2012, p. 169). With planning strategies, the reader can decide what to learn before starting to text (Edizer, Dilidüzgün, Başoğul, Karagöz & Yücelşen, 2018, p. 483). In the planning stage, strategies such as setting goals, reviewing and reading speed are included (Karatay, 2009, p. 60). The planning phase is a study draft in the intellectual sense, it is a mental preparation (Cemiloglu & Ogur, 2016, p. 134).

Students often use metacognitive reading strategies during reading. students, visualization of what is described in the text, distractions when reading, etc. for other reasons, rewriting the text, reading the slower and more difficult parts of the text, re-reading the parts that are difficult to understand, not passing through without understanding, underlining, oblique or dark places, they use more. Students are taking notes, in highlighting important information, stopping and understanding deconstructing complex sentences, reading like telling complex sentences and guessing the meaning of the unknown they use less. In this process where the realization rate of understanding is noticed by paying attention to the structure of the text, good readers control the understanding process at the time of reading and intensify their attention at important points in order to realize the understanding, connects their predictions to the results appropriate to the text, and tries to analyze the complex expressions (Özbay & Bahar, 2012, p 168). With monitoring strategies, it can control the comprehension action and lead to the formation of structures (Edizer, Dilidüzgün, Başoğul, Karagöz & Yücelşen, 2018, p. 483). During the monitoring phase, there are strategies such as highlighting important information, using dictionary, taking notes (Karatay, 2009, p. 60). It is designed to review the reading strategies that can be applied in the text, to determine the appropriate strategies, to try to understand the structure of the text, to search for ways of making inferences, to be stored in memory that may be necessary in the subsequent arrangements, to use resources such as dictionary, spelling guide, encyclopedia and general network (internet) in case of need. (Cemiloglu & Ogur, 2016, p. 135). As a result of the research, it is seen that the sixth grade students use the mentioned metacognitive reading strategies.

It is observed that most of the students use metacognitive reading strategies after reading. These findings can be interpreted as the students generally evaluate the text after reading and control the understanding. It is observed that students generally use recall strategies at medium level. Underline important information. Imagine what have read, reading strategies are the most used. The least used metacognitive reading strategies take notes about the text, think how can apply what learned in real life. The third and last stage of an metacognitive reading is about the reading and reading activity, in which the individual evaluates the reading activity, in which he determines the approaches, methods and techniques that will be adopted in the future readings, where the missing and superior points in reading are discussed, it is the stage where the results appear (Özbay & Bahar, 2012, p. 170). They can compare and analyze what they get from the text through evaluation strategies. Thus, both mental activities become active and meaning structures can be formed in a healthy way and language skills can develop (Edizer, Dilidüzgün, Başoğul, Karagöz & Yücelşen, 2018, p. 483). In the evaluation stage, strategies such as summarizing, checking validity in daily life and research are included (Karatay, 2009, p. 60). To able to understand the implications of reading text, to understand whether the homework is appropriate for homework, to understand the main sense or plot, to look at the results of the cognitive strategies applied at the time of reading, to compare the situations reached with previous information, to correct the mistakes, to share the results with other people, to the teacher reaching a general judgment on the success of cognitive strategies related to receiving and eventually reading texts (Cemiloğlu & Ogur, 2016, p. 136). As a result of the study, it was determined that the sixth grade students of secondary school frequently use the mentioned metacognitive reading strategies.

It should not be deduced that the teaching of metacognitive reading strategies in elementary schools is unnecessary or that teachers can do this in a limited manner. Because the use of metacognitive reading strategies of 6th grade students depends mainly on the class teacher. As a result of the research, it is observed that the branch variable which is continued is very effective on students' rates of using metacognitive reading strategies. The main aim is to provide the students with the necessary cognitive skills in order to become a good reader in the future and to make students aware of this issue.

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The Effect of Engineering Design-Based Science Teaching on The Perceptions of Classroom Teacher Candidates Towards STEM Disciplines

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Abstract

The aim of this study is to reveal the effect of the engineering design-based teaching process in primary school science course of classroom teacher canditates perceptions about the disciplines of STEM (Science, Technology, Engineering and Mathematic). The study, pre-posttest single-group experimental design was used. The study group consisted of 28 classroom teacher candidates studying of university in Ankara. The data collected by the "STEM Semantic Difference Scale" were used for normal and dependent groups t-test. Eventually, it was found that the engineering design-based teaching process had a positive and significant increase in the perceptions of the prospective teachers about science, engineering and career disciplines ($p < 0,05$). Although there was a positive increase in the perception of mathematics and technology discipline, this increase was not statistically significant ($p > 0.05$). It was also observed that positive and meaningful changes ($p < 0.05$) were observed in the perceptions of general STEM disciplines.

Keywords: STEM education, engineering design-based teaching process, classroom teacher canditates, experimental study, STEM discipline perceptions.

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INTRODUCTION

After World War II, especially in the 1980s, it is seen that the economic process was based on liberalization basic all over the world. This liberalization has not been limited to the economic field only, but also spread over the social entire; an openness and liberalization-based global structure have occurred in technological, socio-cultural and political spheres. In today's world where the world transforms into a global marketplace and where the frontiers between the countries are removed in many areas, especially in economy, societies that produce information and transform the produced information into products within the framework of technological and sustainable development principles can become strong countries with high levels of welfare. Developed countries are technology producing countries, and developing countries are the countries that purchase technology. The countries that transfer technology and give importance to R&D activities by paying millions of dollars every year fall into the "developed countries" category and have a voice in the global competition. Briefly, land and raw materials owned by countries in the 19th and 20th centuries were very important, whereas, in the 21st century, producing, R&D and innovation has become significant.

The best example of this is the Asian countries, which gained strength in global competition by means of R&D and innovation after the 1950s. A technology race started between United States of America (USA) and Russia in 1957, when Russia launched the Sputnik satellite vehicle into space. Japan in the 1980s and China in the 2000s has begun to progress rapidly in terms of economy and technology and overtook the USA in this race. In the USA, despite the investments and initiatives in those years, the desired results could not be achieved and the employers could not reach the quality workforce, so the business world intervened in this course.

It is emphasized that there is a need for innovations in science, engineering, technology, and mathematics education so that the US does not lag behind the rapid developments in Asian countries and to advance in the field of science and technology. In particular, the concern of the US's weakening of the power in global competition and the loss of power has led the country to pioneer the reform movements in education (Altunel, 2018). In order to gain the knowledge and skills that are required by the American business world in the school environment, it is necessary to gain knowledge based on research and curiosity in the classroom environment (Eryaman, 2007; Akgündüz, Aydeniz, Çakmakçı, Çavaş, Çorlu and Özdemir, 2015; Çepni and Ormancı, 2018). As the world develops each day, it gets more complicated and needs individuals who are searching, questioning, using the scientific method to solve the problems they face, associating the knowledge they have learned with their daily life and looking at the world through the eyes of scientists. This can be achieved only through STEM (Science, Technology, Engineering, Mathematics) training. In 1990, the National Science Foundation (NSF) started using the SME & T concept for the first time in its report on education. Then Dr. Smaley who spoke in the same program has called this STEM (Sanders, 2009; Karataş, 2018) and since then STEM (Science, Technology, Engineering, Mathematics) concept has been widely used in education processes. Although the disciplines were dealt with one by one at first, the inadequacy of the outputs led to the emergence of the integrated STEM concept. Integrated STEM is based on the principle of integrating all of them rather than considering each discipline separately, i.e. combining four disciplines of science, technology, engineering and mathematics on the real-world problem (Karataş, 2008, Moore, Glancy, Tank, Kersten, Smith, Stohlman, 2014; Blackley and Howell, 2015).

Although the National Science Education Standards and the Common Core State Standards are major educational reforms in the United States, science education which had been based on research/questioning for many years has been enriched with an engineering design approach with the Next Generation Science Standards reform in 2010. In 2009, Barack Obama emphasized the STEM as one of the goals of education in order to continue through USA's aim of becoming the world's leader in economic and technological development. In order to achieve this goal, 3 billion dollars of funds have been provided annually. Additionally, STEM Centers, Science Centers, and museums have a very important role in STEM areas. The purpose of all this is to enable the US to continue its goal of becoming the world leader in the economic and technological development. It was observed that these studies about STEM in the USA increased the self-efficacy of teachers about this field and they were

willing to apply STEM in their courses. In addition, it was observed that they emphasized the necessity of integrated STEM education (Radloff, J., & Guzey, S. 2017; Havice, Havice, Waugaman, & Walker, 2018). However, even if the teachers received STEM training, they had difficulty in mastering the concepts related to this field and experienced problems in conceptualizing them (Breiner, Harkness, Johnson, & Koehler, 2012; Kloser, Wilsey, Twohy, Immonen, & Navotas, 2018). For an effective STEM education approach, there is a need for a large number of financially supported researches. As seen in the US example, education policies of states and governments are changing according to the interests of the country. In this economic system which is guided by scientific and technological developments, it is necessary to have a creative workforce which is equipped with the knowledge and skills of the STEM (Science, Technology, Mathematics, and Engineering) areas. Additionally, the way to solve increasing energy, environment, health and safety problems of the countries and to find solutions to these problems in this axis also depends on labor which has knowledge and skills of the STEM areas. In the 21st century, there is a requirement for a program to integrate science education with engineering and scientific fields in order to be technically advanced and become a production society (National Research Council [NRC], 2012; Akgündüz et al. 2015; Kaptan, Kuşakçı, 2002; Karahan, Bilici, Ünal, 2015). Our country should not be leg behind the economic race in the world. Besides, it should be a front runner and be able to maintain it. This, therefore, depends on investing innovative and rationalist moves in the field of STEM education and updating the STEM curriculum and STEM teacher education according to the needs of today. To increase the innovation capacity of our country with qualified STEM workforce, there is a need to develop skills of young people, in particular female students, in the field of STEM, from the first years of their education, and a professional orientation is needed (Çorlu, 2014). When we look at the Turkish Report on STEM education, it was observed that 100 students who were the most successful in the university exams between 2000 and 2014 dropped their selection rate of professions in STEM fields from 85.63% to 38.23%. Just like Enderun schools in the Ottoman period, there are science high schools, science arts centers, STEM laboratory in universities and children's universities nowadays. It is very important that gifted students in these educational institutions have an innovative, innovative perspective. In addition, during the compulsory education period from pre-school to university, curricula need to be prepared in the 21st century in order to educate individuals with problem-solving skills in knowledge-based life (Akgündüz, Aydeniz, Çakmakçı, Çavaş, Çorlu, Öner, & Özdemir,2015). Due to all these requirements, in 2018, the curriculum of the Science Education program was updated by the Ministry of National Education and science and engineering practices about STEM education were added to the curriculum. The aim of the program is to educate individuals who have knowledge, skills, positive attitude, moral and national values about sciences, approaches of science about engineering, technology, society and environment, and psychomotor skills. Moreover, according to the renewed curriculum, students will design scientific and innovative products in the science courses and introduce them to the innovative science festivals which will be organized at the end of each year. In this process, teachers will guide the students to integrate science, technology, engineering, and mathematics, and try to bring them to a high level of thinking, product development, invention, and innovation. The realization of all this will be possible by integrating engineering design-based science education into the program or curriculum.

To be able to apply STEM training, it is crucial to know the engineering design cycle by teachers. Design-based science education which has been introduced by Wendell, Connolly, Wright, Jarvin, Rogers, Barnett, Marulcu (2010) is consisting of following steps (Ercan, 2014):

1.Determination of problem or requirement

2.Developing possible solutions

3.Determination of the most suitable solution

4.Prototype construction and testing

5. Communication.

In the international researches, it is emphasized that STEM education practices should be in the K-12 education system. It is stated that, especially in primary education, engineering design based applications should be included (Rogers, Postmore, 2004; Wendell, Rogers, 2013; Kolodner, Ryan, Crismond, Fasse, Gray, Holbrook, Camp, 2003; Adams, 2014; Brown, Taylor, Ponambalum, 2016). When the 2018 science education program or curriculum is examined, it can be seen that science and engineering applications are not sufficient to achieve adequate acquirement in the sub-learning field and there are not enough engineering examples in the textbooks. One of the major problems in STEM education is that teachers do not have appropriate pedagogy for STEM education. In this training, teachers need pedagogical knowledge out of their specialized areas (Çorlu, Capraro and Capraro, 2014). The role of teachers in implementing STEM education approach in teaching environments is quite large. Therefore, it is very important to determine the STEM awareness of the teachers, to take the opinions of teachers about STEM and to identify the deficiencies and to train the STEM teachers according to those deficiencies.

When we look at engineering design based researches in our country, it is seen that these are mostly done with undergraduate students or secondary school students (Brown, et al. 2016; Bozkurt Altan, Yamak, Buluş Kırıkkaya, 2016). There is not enough research on the implementation of the engineering design process in the primary school education level. There is no a study in the literature, searching the effect of STEM education on the engineering and technological perceptions of classroom teacher candidates. However, particularly, it is necessary to evaluate primary school years in which basic learning of individuals occurs and their basic skills are shaped. In order to apply STEM training in the courses, teachers must be competent in STEM education. When the studies in the field are examined, it is seen that the studies that reveal the attitudes and perceptions of the classroom teachers or teacher candidates towards the STEM disciplines are lacking.

In this context, the aim of this study is to investigate the effect of engineering design-based science teaching on classroom teachers' perceptions about the areas of STEM disciplines (science, technology, engineering, mathematics, and career).

METHOD

Research Model

This study was carried out in accordance with the single group pretest-posttest design from weak experimental design. In this design, the independent variable is applied to a group and its effect on the dependent variable is investigated (Table 1). Data are obtained by performing certain measurements before and after the independent variable applied to the group (Karasar, 2015).

Table 1 Pre-Test – Post-Test Weak Experimental Pattern with Single Group

Group	Pre-test	Process	Pro-test
Experimental group Classroom Teacher Candidates	Semantic Differential Scale of STEM	Science Education of Engineering Design Process	STEM Semantic Differential Scale

Study Group

In this research, the study group was determined with an easily accessible method. The study group was composed of 28 teacher candidates, 26 of which were female and 2 were male, from a public university in Ankara Province in the spring term of the 2017-2018 academic year. Before starting the applications, the Ethics Committee Permit was obtained from the relevant university and the application permission was received from the faculty where the study will be conducted. Additionally, before the application, approval of the teacher candidates in the study group were taken and thus volunteers participated in the study.

Data Collection Tool

In this study, STEM Semantic Differential Scale which has been developed by Tyler-Wood, Knezek, and Christensen (2010) and adapted to Turkish by Kızılay (2011) was used.

The scale of Tyler-Wood, et al. (2010) which is consisting of 25 items, applied to 164 middle-school teachers and calculated Cronbach's alpha internal consistency coefficient in the light of the obtained data. The scale consists of five sub-factors: science, technology, engineering, mathematics, and career. Each of these sub-factors contains five articles. The reliability of the sub-factors of the scale was determined between 0,84 and 0,93 by Tyler-Wood, et al. (2010). According to the factor analysis, the factor loadings of the articles vary between -0,545 and 0,914. Adaptation study of the scale to Turkish has been carried out by Kızılay (2011). 132 science and primary school mathematics teacher candidates studying at Erciyes University Faculty of Education voluntarily participated in the research process. According to the analysis of acquired data, the KMO value of the STEM Semantic Differential Scale was 0.77; the result of Bartlett's test was significant ($p < 0.05$). The Cronbach alpha reliability coefficient of the whole scale was $\alpha = 0,82$ and the sub-factors were respectively, science $\alpha = 0,91$; technology $\alpha = 0.84$; engineering $\alpha = 0.86$; mathematics $\alpha = 0,92$ and, career $\alpha = 0,87$.

In this study, the reliability coefficient of the scale was applied to 57 teacher candidates, other than the teacher candidates already finished the application, who were studying in the second grade of Division of Classroom Instruction Education and the Cronbach alpha internal consistency coefficient was determined as 0.93.

Application Process

The study was carried out in the Science and Technology Laboratory Practices-II class with classroom teacher candidates who were studying in the second grade of Department of Classroom Education within the spring semester of the 2017-2018 academic year. The courses were taught according to a 5E learning model. 5E Learning Cycle Model is one of the most used models of the constructivist approach. It was developed in 1997 by Rodger Bybee et al. (2006). This learning model which is implemented in five stages, consists of these following: "Enter/Engage", "Exploration", "Explain", "Elaborate" and "Evaluate". What to do at each step of the 5 E model is given below:

1. Enter: The student's foreknowledge/preliminary information is assessed, curiosity in the class is aroused and students' attention is gotten.

2. Exploration: Students are encouraged to make researches and observations about the new topic based on the preliminary information of the students. Students test their predictions and hypotheses. And students produce new predictions and hypotheses. They conduct different experiments and discuss with their friends. They record their observations and ideas.

3. Explanation: By encouraging students, the teacher asks them to describe concepts in their own words and shed light on students by explaining the actual, relevant information about the subject.

4. Elaboration: The teacher asks the students to integrate their concepts, explanations, and definitions into what they have previously acquired. The teacher encourages students to broaden the concepts they have learned or the skills they gain or apply them to new situations. Reminds students of different (alternative) descriptions. Thus, the students synthesize their preliminary information and discover the teacher's explanations and implement new knowledge in a different situation. Given information is associated with daily life. In this way, students' conceptual understanding skills develop. Through new experiences and deeper understanding, their comprehension is broadened.

5. Evaluation: Students' knowledge and skills are evaluated.

The application process in this study is as follows. Before the study, the problem situations related to the learning areas and achievements included in the 2018 Science curriculum were prepared. Expert opinion was taken to determine the suitability of the problems for STEM training. Before starting to practice, "STEM Semantic Differential Scale test was applied as a pre-test to 28 teacher candidates. In the first week of the study, teacher candidates were informed about STEM education and engineering design cycle by the researcher. Teacher candidates in the study group were divided into 6 heterogeneous groups according to their mean score in the preliminary tests and an innovation study was conducted with groups in order to make them understand the engineering design process better. In this study, students were asked to revise, develop and revise a toolkit in their classrooms by considering technological and scientific developments in the following 10 years. During the innovation study, students in the groups presented their ideas individually and then presented their ideas to their group friends. Then in order to determine the most appropriate opinion about innovation, the group discussed the matter. Each group was asked to draw a detailed prototype of the design for their decision about their innovation. Thus, students had the chance to experience the problem of defining, data gathering, decision making, planning and implementation phases in an engineering design cycle.

After the sample application, the main application was started. 5 E model was used while the lectures were covered by the researcher. During the elaboration stage, problem statuses in which teacher candidates could use the engineering design process were given to them and they were asked to design the products to solve the problems. Why the elaboration stage is chosen? The reason behind this choice is encouraging the student to adapt the knowledge in his/her daily life. It should be remembered that this knowledge is obtained in the elaboration stage of this course. For this reason, students were faced with new problem statuses during the application process. Engineering design-based applications lasted 14 weeks, 2.5 hours per week. At the end of the study, test "STEM Semantic Differential Scale" was used as a final test for teacher candidates.

Data Analysis

Quantitative analysis was used to analyze the data collected in the study. In order to be able to analyze with a parametric test, conditions such as the normal distribution of data and homogeneity of the main mass variances are required. Therefore, the normality test for the perception points towards STEM disciplinary areas of classroom teacher candidates was conducted. Before and after the class of Science and Technology Laboratory Practices –II based on engineering design, in comparison of the mean scores of classroom teacher candidates for STEM disciplines (science, technology, engineering, mathematics and career), as the data met the assumptions of parametric tests, dependent groups t-test was used. SPSS 22 package program was used in data analysis.

RESULTS

The findings of this research, in which the effects of engineering design-based science teaching on the perceptions of teacher candidates in STEM disciplines (science, technology, engineering, mathematics, and career) are examined, are presented below as tables.

In order to analyze with a parametric test, conditions such as a normal distribution of data and homogeneity of the main mass variances are required. In this study, the normality test was conducted in order to see whether the perception scores of classroom teacher candidates in STEM disciplinary areas are normal. According to Ozturk (2002), when pre-test and post-test score distributions are being examined, if the group size is smaller than 50, Shapiro-Wilk test is performed and if the sigma value is less than 0,005, H0 hypotheses are accepted in the pre-test and post-test groups. This result shows that the data is normally distributed in the 95% confidence interval (Pallant, 2016). Because there is a normal data distribution in this study, a t-test was used by the groups that are dependent on parametric tests.

There were teacher candidates who are taken the courses according to engineering design-based learning. In order to determine whether there is a significant difference between the average STEM science discipline perception scores of these teacher candidates, a t-test was conducted for the dependent groups and results are given in Table 2.

Table 2 Science Discipline, Dependent Sample T-Test Results

Science Discipline	N	$\bar{X}$	sd	T	P
Pre-test	28	4.61	1.16	-3.456	0,002 *
Post-test	28	5.33	1.40		

p<0.005* The effect size Cohen's d was found to be 0.56. This value is of medium size according to Cohen (1988).

As seen in Table 2, the difference between the average scores of the classroom teacher candidates in the science disciplines with EDBT was found statistically significant in favor of the post-test, t (-3,456), p<0.05. It can be said that, among the average scores of classroom teacher candidates' perceptions of science discipline, the difference of 0,73 in favor of the post-test was arisen from EDBT.

To understand whether there is a significant difference between the average scores of the classroom teacher candidates, who take their lessons within the scope of EDBT, in STEM mathematics discipline before and after the process, the dependent groups t-test was performed and the results are given in Table.3.

Table 3 Mathematics Discipline, Dependent Sample T-Test Results

Science Discipline	N	$\bar{X}$	sd	T	p
Pre-test	28	4.77	1.25	-.797	.443*
Post-test	28	5.00	1.39		

p> 0.005

As seen in Table 3, although the post-test average score of the classroom teacher candidates, who take their lessons within the scope of EDBT, for mathematics discipline, which is among the STEM disciplines, was higher than the pre-test average score, the difference between the pre-test and post-test average scores was not statistically significant, t (-796), p> 0.05. Although the difference between the pre-test and post-test average scores is not significant, it can be said that the increase of 0,23 was arisen from EDBT practices.

To understand whether there is a significant difference between the average scores of the classroom teacher candidates, who take their lessons within the scope of EDBT, in STEM engineering discipline before and after the process, the dependent groups t-test was performed and the results are given in Table.4.

Table 4 Engineering Discipline, Dependent Sample T-Test Results

Science Discipline	N	$\bar{X}$	sd	T	p
Pre-test	28	4.48	1.28	-3.599	0.001*
Post-test	28	5.36	1.12		

*p< 0.001 The effect size Cohen's d was found to be 0.73. This value is of medium size according to Cohen (1988).

As seen in Table 4, the difference between the average scores of the classroom teacher candidates, who take their lessons within the scope of EDBT, in the engineering discipline, which is among the STEM disciplines, was found statistically significant in favor of the post-test, (-3,081),

p<0,05. It can be said that, among the pre and post-EDBT perception average scores of classroom teacher candidates for engineering discipline, it can be said that the difference of 0,88 was arisen from EDBT.

To understand whether there is a significant difference between the average scores of the classroom teacher candidates, who take their lessons within the scope of EDBT, in STEM technology discipline before and after the process, the dependent groups t-test was performed and the results are given in Table.5.

Table 5 Technology Discipline, Dependent Sample T-Test Results

Science Discipline	N	$\bar{X}$	sd	T	p
Pre-test	28	5.20	1.23	-2.175	0.039
Post-test	28	5.76	1.15		

p> 0.005

As seen in Table 5, the difference between the perception pre-test and post-test average scores of the classroom teacher candidates, who take their lessons within the scope of EDBT, for technology discipline, which is among the STEM disciplines, was not statistically significant, t(-2,175), p>0,05. Among the perception average scores of classroom teacher candidates for technology discipline before and after EDBT, although the difference of 0.56 in favor of the post-test is not statistically significant, it can be said that this difference was arisen from the positive effect of EDBT.

To understand whether there is a significant difference between the perception average scores of the classroom teacher candidates, who take their lessons within the scope of EDBT, in STEM career discipline before and after the process, the dependent groups t-test was performed and the results are given in Table.6.

Table 6 Career Discipline, Dependent Sample T-Test Results

Science Discipline	N	$\bar{X}$	sd	T	p
Pre-test	28	4.67	1.08	-3.598	0.001*
Post-test	28	5.41	1.30		

* p< 0.001 The effect size Cohen's d was found to be 0.61. This value is of medium size according to Cohen (1988).

As seen in Table 6, the difference between the perception pre-test and post-test average scores of the classroom teacher candidates, who take their lessons within the scope of EDBT, for career discipline, which is among the STEM disciplines, was statistically significant, t(-3,598), p<0,05. Among the perception average scores of the classroom teacher candidates, who take their lessons within the scope of EDBT, for engineering discipline, it can be said that the difference of 0.74 in favor of the post-test was arisen from EDBT practices.

To understand whether there is a significant difference between the perception average scores of the classroom teacher candidates, who take their lessons within the scope of EDBT, in general perception average scores for STEM discipline before and after the process, the dependent groups t-test was performed and the results are given in Table 7**.**

Table 7 General STEM Disciplines, Dependent Sample T-Test Results

Science Discipline	N	X̄	sd	T	p
Pre-test	28	4.75	1.01	-3.299	0.003*
Post-test	28	5.37	1.11		

* p< 0.005 The effect size Cohen's d was found to be 0.58. This value is of medium size according to Cohen (1988).

As seen in Table 7, pre-test average scores of the classroom teacher candidates, who take their lessons within the scope of EDBT, concerning the general perception of STEM disciplines, was found as 4,75 and average scores of post-test was found as 5,35. Between pre-test and post-test average scores, there was a statistically significant difference in favor of the post-test, t (-3,140), p <0.05. As a result, it can be said that the difference of 0,62 between the average scores before and after EDBT of the general perception of the EDBT classroom teacher candidates in the favor of post-test, was arisen from the practices.

CONCLUSION

In this study, in the context of Science and Technology Laboratory Practices -II course, engineering design-based teaching was applied to teacher candidates. STEM Semantic Awareness Scale was conducted as a pre- and post-test to 28 classroom teacher candidates who were in the study group. In this way, it was aimed to reveal the perceptions of classroom teacher candidates about STEM disciplines. When the data obtained according to sub-dimensions of scale are examined;

The study, it was observed that STEM activities applied to classroom teacher candidates, changed the *perception towards science discipline* positively. Yamak, Bulut, Dündar (2014) examined the effects of FeteMM activities on the attitudes of 20 middle school 5. grade students towards science in their study. At the end of the study, it was observed that secondary school students positively changed their attitudes towards science. Teachers and teacher candidates can change students attitudes and perception towards a course or discipline. In another study conducted by Hacıoğlu, Yamak, Kavak (2016), it was observed that engineering-based science education positively influenced teachers' opinions. Additionally, teachers who participated in the study emphasized that they were willing to apply engineering design-based science education in their own courses but there should be supportive training on this subject (Hacıoğlu, Yamak, Kavak, 2016). Yildirim and Selvi (2017), in a part of their study, examined the impact of STEM practices and complete learning on the secondary school students' attitudes towards STEM and their motivation for science, and they concluded that both of these activities contributed positively. In this study, it was determined that the perceptions of teacher candidates towards science differed significantly and statistically at the end of the application. This result can be interpreted that the engineering design-based process has a positive effect on students' perceptions about science. In addition, based on this conclusion, it is clearly seen that new approaches are needed in the science courses in order to gain students' interest in science.

At the end of the study, it was concluded that the classroom teacher candidates' *perceptions about mathematics discipline* changed but this change was not statistically significant. Similarly, Guzey, Moore, Harwell (2016) carried out 20 engineering design based STEM applications in their research with 48 teachers. As a result, it was concluded that the relationship between mathematics, science, and engineering did not have a strong impact. Pekbay (2017) examined the impact of FeteMM activities on secondary school students' ability to solve daily life problems and their interest in FeteMM areas. Similarly, at the end of the research, it was observed that applied activities did not make a difference in the fields of mathematics and engineering and its effect was low. Gülhan and Şahin (2016) examined the impact of STEM integration on the perceptions and attitudes of the 5th-grade students in STEM disciplines. As a result, in perception test, especially, engineering, technology, and career were in the forefront, and they found that there was no increase in attitude towards mathematics although there was an increase in attitude towards science. Especially in the mathematical dimension, the desired level of development has not been achieved in subjects such as

perception, interest, and attitude. This may be caused because teacher candidates get negative perceptions and attitudes towards their mathematics courses. It may also affect the perception, interest, and attitude of mathematics, which is difficult and time-consuming. Nevertheless, there are studies in the literature stating that studies conducted by applying STEM activities increase awareness of STEM in science and mathematics (Yıldırım, 2017; Gökbayrak, Karışan, 2017). It is stated that the activities that will change teacher candidates' perception of mathematics, will enrich the knowledge of mathematics and give an opportunity to use it in their lives will affect the perception of mathematics positively.

It is concluded that engineering design based applications improve teacher candidates' *perceptions about engineering discipline*. In a study conducted by Sumen and Çalışıcı (2016), after the STEM education, it was asked to teacher candidates whether there was a relationship between science course gains and engineering-based STEM education. In general, teacher candidates stated that there would be a harmonious relationship if science program and field of engineering integrated. Additionally, they made a positive feedback on STEM approach. Marulcu and Sungur (2012), in their study with 44 teacher candidates, concluded that teacher candidates had some basic knowledge about engineering but did not have enough knowledge about engineering process to be able to use it in science and technology concepts. Similarly, Sungur Gül, Marulcu (2014) in their study which was conducted with candidates of science teachers, researched the effect of lego use on the perspectives of teachers on the application of courses which was covered through engineering design method. As a result of the study, the importance of engineering and familiarity with engineering and the importance of lego usage and familiarity with legos were examined. It was seen that there was a significant difference between the pre-test and post-test scores of the teachers when the result of these examinations was analyzed. However, in the same study, there was no significant difference between the pre-test and post-test scores of the teachers about the characteristics of the engineers. As a result, it is seen that teacher candidates support covering science courses through engineering basis but they do not have a broad knowledge about the meaning of the engineering term, its professional content and how to integrate them with the education system. In Short, after the courses which are processed by engineering design-based process, there are positive changes in teacher perceptions.

Another result of the study, although the mean scores of classroom teacher candidates about *technology discipline* were higher in the post-test it was seen that the difference between the pre-test and post-test was not significant. During the applications, teacher candidates benefited from technology tools such as design programs, coding systems and so on. However, the rise in technology perceptions during the study is not significant. This may be caused because of inadequate emphasize on technology discipline. Altas (2018) investigated the effects of STEM applications on the technological perceptions of teacher candidates in a stage of his postgraduate thesis. While there was a significant difference in "Positive Faith to Technology in Education" subtitle, there was no significant difference in "Impact of Technology on Undergraduate Program" subtitle. While technological processes used between beginning and end of the application vary, from this, the constitution of no difference in regard to quantitative perception, does not mean that there is no positive progress among them in this understanding. Individuals can achieve more effective results by enriching the ways of revealing their perceptions of technology. Additionally, the fact that teacher candidates think that they should already benefit from technology in the 21st century and they already have a technology perception as a STEM discipline at the beginning of the study could be the causes of this result.

Also, positive developments were observed in the *perceptions of teacher candidates about career discipline* pre and post-application. In a study conducted with 246 secondary school students within the scope of STEM projects, Knezek, Christensen, Tyler-Wood & Periathiruvadi (2013) investigated the effects of their application to students STEM content information and perceptions. As a result of this research, similarly, there have been positive developments in students' perceptions about STEM content information, STEM issues and their careers. In his doctoral thesis, Ercan (2004) conducted a seven-week course with 30 secondary school 7th-grade students. In the applications for "Force and Motion" unit, students' academic achievements, decision-making skills, and engineering knowledge were examined. At the end of the applications, students who do not think engineering as a

profession changed their mind and they started considering engineering as an alternative profession. They also added their perception that engineering was a male-only profession has been changed. Pekbay (2017) examined the effects of FeteMM activities on secondary school students' skills in solving daily life problems and their interest in FeteMM areas. He added that students who had little knowledge about the professions in this field had a comprehensive knowledge at the end of the study. In his postgraduate thesis, Altas (2018) investigated the effects of STEM education approach on the engineering perceptions of classroom teacher candidates and a positive change in the engineering perceptions of the classroom teacher candidates were observed. When evaluated in light of similar studies, it can be mentioned that STEM education practices constitute positive experiences related to engineering and engineering profession.

Finally, a statistically significant difference was found in favor of posttest among the classroom teacher candidates' general perception mean scores for STEM disciplines and science lessons covered according to engineering design-base. When the studies are checked, it is seen that the perceptions of the STEM disciplines as a whole have been positive with the results of the separate disciplines (Gökbayrak, Karışan, 2017; Pekbay, 2017; Yıldırım, 2017). In their study, Gülhan and Şahin (2016) found that STEM integration makes 5th-grade students' to comprehend more effectively the 5th-grade science concepts by improving their perceptions about engineering and their tendency towards occupations in STEM-related fields.

In brief, in this study, generally, a positive change has taken place in the perceptions of classroom teacher candidates towards STEM disciplines. It is an important step in the name of education that future teachers of students will be educated as individuals who are dominant in the changing and renewed educational programs and apply them effectively. The perceptions of teacher candidates will have an impact on their teaching methods and will make it easier to reach the targeted achievements.

RECOMMENDATIONS

When the results of this research are evaluated, it is determined that in general, the interaction between science and engineering design based process is positive but there are some points to be developed about some disciplines. More studies should be conducted about how STEM education process examines especially mathematics and technology fields. It should be understood that the importance of the integrated STEM approach by incorporating science, mathematics, technology and engineering disciplines into the process, without forgetting that each discipline has a special and separate contribution to STEM Education. The use of technology in education should be followed up and applied in classrooms. In order to develop engineering skills, the level of knowledge about this area needs to be increased. Thus, students can understand the processes of STEM-related professions and deal with them. Individuals should have 21st-century skills such as problem-solving, critical thinking, creative thinking, whatever profession they choose in the direction of their career. In this respect, professions and job descriptions can be emphasized during lessons. In order to find a seat among the strongest societies of the future, it should be remembered that individuals should have the innovative vision and productive skills. By taking advantages of the results of this and similar studies, solutions should be developed about what kind of problems are encountered in which discipline and how to solve them.

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The Role of Metacognitive Awareness and Motivation of Prospective Primary School Teachers in Predicting Their Academic Achievement in the 'Science and Technology Laboratory Applications' Course

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Abstract

The present study aims to investigate the predictive effects of metacognitive awareness of prospective primary school teachers and their motivation to learn science subjects on their academic achievement in the 'Science and Technology Laboratory Applications' course. A total of 108 (72 females, 36 males) prospective primary school teachers participated in the study. The sample of the study consists of second-grade prospective primary school teachers attending the 'Primary School Teaching' department of a public university in the academic year of 2017-2018. The study was carried out with relational screening model, one of the descriptive research methods. As the data collection tools, metacognitive awareness scale, motivation scale for science learning, and the average grades of the prospective teachers from the science course were used. To determine the relationship between the prospective primary school teachers' academic achievements in their science courses and their metacognitive awareness and motivation for science learning, the Pearson Product-Moment Correlation Coefficient was used. Besides, multiple regression analysis was used to determine the extent to which the sub-factors of metacognitive awareness and motivation of prospective teachers accounted for the variance in their academic achievement. The study concludes the importance of the sub-factors predicting academic achievement as follows: knowledge of cognition, the motivation for research, the motivation for participation, the motivation for collaborative work, and motivation for performance. Furthermore, it has been determined that all factors accounted for 37% of the variance on academic achievement.

Keywords: Metacognitive awareness, motivation, science and technology laboratory applications, prospective primary school teachers

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INTRODUCTION

The primary objective of science education is to ensure that all individuals obtain scientific literacy during their education. Science literate individuals are expected to be individuals with psycho-motor skills who research and ask questions, make effective decisions, solve problems, have self-confidence, communicate effectively, are open to cooperation, and engage in life-long learning with the awareness of sustainable development. They are also expected to have the knowledge and skills of science and develop a positive attitude, perception, and value towards science, and an understanding of the importance of science and technology for the society and environment (Ministry of National Education, 2013). Science education enables students to learn and explore about the world and their environment, provide them with higher order thinking skills such as reasoning, problem-solving, critical thinking and creative thinking, and ensure that they acquire essential life skills and adapt to everyday life (Rowlands, 2008). Primary schools where students first encounter with science courses and where they start developing ideas about the phenomena and events around them play an essential role in ensuring that children obtain science literacy and are educated in line with the objectives of science education (Cepni, Kucuk and Ayvaci, 2003). The knowledge and skills taught at the primary school level significantly influence the future success of children. For this reason, efficient training of the primary school teachers who will take part in the science courses, which are so crucial for the students, has become more critical nowadays (Tekbiyik and Pirasa, 2009). In particular, primary school teachers should have sufficient knowledge of the science subjects at the primary school level (Uyanik, 2016). Furthermore, in addition to the knowledge of science subjects, primary school teachers should have sufficient knowledge and skills related to science and technology laboratory applications (Eryaman, 2007; Aydogdu and Buldur, 2013). As is known, a teacher equipped with adequate knowledge about the subjects he/she teaches will be more successful in ensuring his/her students achieve effective learning while those not having sufficient knowledge may fail to ensure that their students obtain an adequate understanding of the concepts being taught. Moreover, sufficient knowledge and skills related to the basic science subjects and laboratory applications will prevent misconceptions in students and ensure the correct transfer of relevant concepts to the students (Pardo and Portoles, 1995). However, when the relevant literature is examined, it is noteworthy that there are some studies suggesting that prospective primary school teachers' knowledge of science subjects and academic achievement in science courses is insufficient (Birinci-Konur and Ayas, 2008; Birinci-Konur and Ayas, 2010; Guven, Sulun and Cam, 2014; Kaptan and Korkmaz, 2001; Schoon and Boone, 1998; Tekkaya, Capa and Yilmaz, 2000).

One of the science courses in the 'Primary School Teaching' departments at universities is the 'Science and Technology Laboratory Applications' course. This course aims to provide prospective teachers with basic knowledge and skills about laboratory studies, about the preparation of laboratory study projects, about the evaluation of study results, and about the application of subject matter knowledge (Karaca, Ulucinar and Cansaran, 2006). What is more, efficient laboratory courses can improve the ability of students to conduct experiments and design new experiments, help them develop conceptual learning and the ability to interpret data obtained at the end of the experiment, and equip them with the habit of working in groups (Cox and Junkin, 2002; Slayton and Nelson, 2005). Besides, the 'Science and Technology Laboratory Applications' course provides students with an environment in which they can act like scientists, develop an insight into the scientific methodology, and develop their application skills. This, in turn, makes classes more interesting and increases students' academic achievement by affecting them positively (Karatay, Dogan & Sahin, 2014). However, in addition to cognitive features, different features can be useful in increasing academic achievement in science. One of these features is metacognition, which includes both cognitive and affective features and the other is motivation, one of the features of the affective domain.

Metacognition

Although metacognition still has no clear definition and is still a matter of debate, Flavel (1979) defines it as one's knowledge concerning one's cognitive processes or anything related to

them, e.g., the learning-relevant properties of information or data. Referring to the concept of metacognition as the inner voice of an individual, Perfect and Schwartz (2002) define it as "an individual's thinking about his/her own thinking processes", or "an individual's knowledge of his/her cognition and his/her ability to influence his/her own cognition."According to Hacker and Dunlosky (2003), metacognition is the state in which an individual is aware of and controls his/her mental activities related to perception, remembering and thinking. Metacognition has two primary components: knowledge of cognition and regulation of cognition (Schraw, 1998; Schraw and Moshman, 1995). Knowledge of cognition refers to an individual's awareness of his/her own cognition, and regulation of cognition refers to the activities that help the individual to control his/her learning (Schraw, 1998; Schraw and Moshman, 1995).

Knowledge of cognition consists of three components: declarative knowledge, procedural knowledge and conditional knowledge (Jacobs and Paris, 1987). Declarative knowledge involves an individual's knowledge, beliefs and cognitive characteristics about what he/she can/cannot do. Procedural knowledge is the knowledge of what strategy to implement for a cognitive job and how to implement that strategy. Conditional knowledge relates to when, why, and how to use declarative knowledge and procedural knowledge (Schraw, 1998). Therefore, in the context of knowledge of cognition, individuals should be aware of their own cognition, be aware of their skills, and know what strategies to use in learning. Furthermore, individuals should have cognition of when, how, and when to use these strategies in learning.

Regulation of cognition consists of planning, self-monitoring, and self-assessment (Schraw, 1998). Planning is the selection of appropriate strategies, the design of the process and the method to use for successful performance. It also includes setting goals, activating prior knowledge and setting the time. Self-monitoring is the awareness of one's performance when conducting a particular job and periodic control of the process (Nietfeld, Cao & Osborne, 2005) to see if the subject is understood. Self-assessment is one's own assessment of his/her own learning products and regulation process (Schraw & Moshman, 1995). In this context, individuals determine strategies to help their learning, make plans and monitor whether these strategies work. Finally, individuals assess their own learning situations.

In short, an individual's awareness of what he/she does, how he/she does it, and what he/she gets in return is explained with the concept of metacognition (Cakiroglu, 2007). Individuals should also be aware of their metacognition and should develop their metacognition in this respect (Jones, Farquhar and Surry, 1995). This is because metacognitive awareness involves an individual's ability to know how he/she learns what, to know whether he/she has learned it, to improve the system of thinking, and to learn to learn (Cakiroglu, 2007). Thus, because individuals' metacognitive awareness is improved, individuals can have more effective learning processes. This, in turn, can increase the performance of individuals in their courses, and also increase their academic achievement (Baltas, 2004; Desoete and Roeyers, 2002; Yang and Lee, 2013). In many studies in the relevant literature, metacognitive awareness has been found to be related to students' academic achievement (Bagceci, Dos, & Sarica, 2011; Balci, 2007; Coutinho, 2007; Emrahoglu, & Ozturk, 2010; Gul, & Shehzad, 2012; Landine, & Stewart, 1998; Schraw, & Dennison, 1994; Young, & Fry, 2008). Furthermore, some studies (Young, & Fry, 2008) determined a relationship between academic achievement and knowledge of cognition, one of the components of metacognition, while others (Everson, & Tobias, 1998; Nietfeld, Cao, & Osborne; 2005; Schraw, 1994) determined a relationship between academic achievement and regulation of cognition, another component of metacognition. In this respect, Bagci (2003) explains the relationship between metacognition and academic achievement as follows: "a student's awareness of the requirements of a course, his/her increased expectations from that course, the codification of information in an organized manner, and healthy transfer of it to future experiences." Caliskan (2010) notes that students who can use metacognitive knowledge and metacognitive skills in their learning process can achieve effective learning and therefore they can be successful. In this context, metacognitive awareness can be considered a good predictor of academic achievement.

Motivation

Motivation, which is seen as a prerequisite for the realization of learning, is defined by Eggen and Kauchak (1990) as a force that directs the behavior of individuals towards a goal in education. According to Lai (2011), motivation is a concept that includes perception, belief, value, areas of interest and actions related to each other. According to Budak (2015), motivation arises from a student's perception of his/her environment and him/herself and collects the interest of the student in the educational activities intended for learning and gives the student the determination to complete these activities. Motivation is divided into two different types (Ergun, 2009): intrinsic motivation arising from an individual's sense of interest, curiosity and personal development; and extrinsic motivation arising from external factors that direct and support an individual. Intrinsic motivation involves satisfaction and pleasure from participation in an activity. In other words, the movements of individuals based on their own will result from their intrinsic motivation. Extrinsic motivation, in contrast to intrinsic motivation, is related to a wide range of behaviors within the purposes of action beyond the nature of one's activities and implies a tendency to be influenced by environmental factors (Deci and Ryan, 1985). In this direction, in the process of emergence of motivation, when personal factors are effective, intrinsic motivation occurs; when external factors are effective, extrinsic motivation occurs. However, it is difficult to say whether a behavior originates from intrinsic or extrinsic motivation (Ilgar, 2004). For, it can be argued that the motivation of intrinsic and extrinsic structures can be eliminated or re-emerged in a complex order and with changing conditions (Paris and Turner, 1994).

In this context, the students' motivation for science learning is a multidimensional structure that is influenced by the individual characteristics of teachers and students, teaching methods and techniques, learning environment and curriculum (Barlia, 1999). For this reason, motivation is the most important of the affective differences, which play an important role in students' ability to obtain effective learning from science classes (Brossard, Lewenstein and Bonney, 2005). In the literature, it is emphasized that motivation is one of the key concepts of learning and should not be neglected in teaching environments. For, motivation is one of the important factors affecting learning and success. Students with high levels of motivation tend to exert more effort and persistence in classroom activities and tasks than students with low levels of motivation (Wolters and Rosenthal, 2000). Besides, students will be willing to participate actively in classroom tasks and activities when they consider science-related concepts and activities as important and meaningful for themselves. However, when students think that the subjects to be learned are not necessary and important for themselves, permanent learning will not occur because they will prefer the method of memorization. Relevant studies have also indicated a relationship between motivation and success (Gottfried, 1990; Kaya, 1995; Taspinar, 2004). However, although the effectiveness of motivation on learning and success is known and accepted, the effect of motivation on success along with other factors is not known. It is still an issue of concern how motivation, along with metacognition, one of these factors, affects academic achievement. Studies indicate that there is a relationship between motivation and metacognition in the literature (Sperling, Howard, Staley, & DuBois, 2004; Landine, & Stewart, 1998; Pintrich, Smith, Garcia, & McKeachie; 1991). These studies indicate that motivational values such as pre-knowledge of science subjects, communication in the learning environment, expectations and values affect the choice of learning strategies, metacognition and regulation (Linnenbrink and Pintrich, 2002). In this context, this paper provides an insight into the extent to which motivation and metacognition affect and predict academic achievement. The research questions of the study are as follows:

1. Is there a statistically significant relationship between prospective primary school teachers' academic achievement in science courses and their metacognitive awareness of science courses?

2. Is there a statistically significant relationship between prospective primary school teachers' academic achievement in science courses and their motivation for science learning?

3. To what extent do prospective teachers' metacognitive awareness and motivation for science learning predict their academic achievement in science courses?

METHOD

Research Model

In this research, relational screening model, one of the screening models, was used. The dependent variable is the academic achievement in science course while the independent variables are metacognitive awareness of and motivation for science learning.

Study Group

The sample of the study consisted of 108 second-grade students enrolled in the Primary School Teaching department of a public university in the spring semester of the 2017-2018 academic year. Of the participants, who were aged between 19 and 24, 72 (66%) were female and 36 (34%) were male.

Data Collection Tools

Metacognitive Awareness Inventory: The inventory developed by Schraw and Dennison (1994) was adapted to Turkish by Akin, Abaci, and Cetin (2007) who also performed its validity and reliability studies. The five-point Likert-type inventory with 52 items consists of two main sub-factors and their components. These factors are knowledge of cognition and regulation of cognition. The knowledge of cognition sub-factor consists of declarative knowledge, procedural knowledge and conditional knowledge components while the regulation of cognition sub-factor includes planning, monitoring, evaluation, debugging and information management. For the ' *declarative knowledge* ' component of the ' *knowledge of cognition' sub-factor, the item "I understand my intellectual strengths and weaknesses* " can be given as an example; for the 'procedural knowledge' component, the item " *I am aware of what strategies I use when I study"* can be given as an example; and for the 'conditional knowledge' component, the item "I know when each strategy I use will be most effective" can be given as an example. Furthermore, for the ' *planning* ' component of the ' *regulation of cognition' sub-factor, the item* " *I think of several ways to solve a problem and choose the best one* " can be given as an example; for the 'monitoring' component, the item " *I ask myself periodically if I am meeting my goals* " can be given as an example; for the 'evaluation' component, the item *"I summarize what I have learned after I finish"* can be given as an example; for the 'debugging' component, the item "I change strategies when I fail to understand" can be given as an example, and for the item "I try to break studying down into smaller steps" can be given as an example. The Cronbach alpha coefficient of the Turkish version of the scale was calculated as 0.95 for the entire scale. This coefficient varies between 0.66 and 0.87 for the sub-scales. Test-retest reliability was found to be 0.95 for the entire scale. The reliability coefficients of the subscales range between 0.93 and 0.98. The Cronbach's reliability coefficient for the present study was found to be 0.96. This coefficient varies between 0.71 and 0.91 for the subscales.

Motivation Scale for Science Learning: The scale consisting of 23 items was developed by Dede and Yaman (2008). The five-point Likert-type scale is scored as follows:1 point for "strongly disagree" and 5 points "for strongly agree". The scale consists of five factors: the motivation for research, the motivation for performance, the motivation for communication, the motivation for collaborative work and motivation for participation. For the *motivation for research* ' sub-factor, the item *"I like to learn the latest innovations about science* " can be given as an example; for the

'motivation for performance' sub-factor, the item *"I try hard to win the favor of my teacher in science classes"* can be given as an example; for the 'motivation for communication' sub-factor, the item *"I like to work in small groups* " can be given as an example; for the 'motivation for collaborative work' sub-factor, the item *"In group work, I don't care about other friends' ideas"* can be given as an example; and for the 'motivation for participation', the item "I'd like to suggest the best idea in class discussions" can be given as an example. These five factors account for 47.16% of the variance in all scale scores. The internal consistency reliability (Cronbach Alpha) of the whole scale was found to be 0.80. This figure varies between 0.55 and 0.75 for the sub-factors. The Cronbach Alpha internal consistency coefficient of the scale was found to be 0.82 after the test-retest method.

Average Grade from the Science and Technology Course: To determine the academic achievements of the prospective primary school teachers in the science course, their grade point averages from the "Science and Technology Laboratory Applications II" course were taken into consideration. These grades range from 0 to 100 points.

Data Collection

The collected data were related to the 'Science and Technology Laboratory Applications II' course in the second year of the Primary School Teaching department in the spring semester of 2017-2018. In the first week of the course, the participants were informed about the purpose of the research, the data collection tools to be used and where the results would be used. The data were collected during a class period in the second week.

Data Analysis

The data were analyzed using SPSS 20 statistical package program. The Pearson Product-Moment Correlation Coefficient was used to test the relationship between prospective primary school teachers' academic achievement in the science course and their metacognitive awareness and motivation for science learning and to determine the direction and extent of the relationship. Also, multiple linear regression analysis was used to determine to what extent metacognitive awareness and motivation for science learning predict the academic achievement of the prospective teachers. In the analysis, sub-factors of metacognitive awareness and motivation for science learning were taken as the independent variables while the academic achievement grade was taken as the dependent variable . In the analysis of the data, the statistical significance was accepted as 0.05. In addition, the Kolmogorov-Smirnov test was used to assess the normality of the data: the data were found to have a normal distribution. Mahalanobis distance was used to determine whether the variables exhibited a multivariate normal distribution and to examine the extreme values. As a result of the analysis, there was no extreme value that disrupts the multivariate normality.

FINDINGS

Table 1 presents the results of the descriptive statistical analysis of the academic achievement grades, and metacognitive awareness and motivation scores of prospective primary school teachers enrolled in the study.

Table 1. Descriptive statistical analysis results

Variables	N	x	ss	Skewness	Kurtosis
Academic achievement grade	108	65.47	15.77	-.533	.950
Sub-factors of Metacognitive awareness					
Knowledge of cognition	108	44.39	14.74	.532	1.442
Regulation of cognition	108	93.74	29.14	.558	1.762
Sub-factors of motivation for science learning					
Motivation for research	108	20.88	5.22	-.251	-.539
Motivation for performance	108	17.45	4.62	-.154	.022
Motivation for communication	108	18.10	4.22	-.408	.509
Motivation for cooperative work	108	15.39	3.18	-.568	-.062
Motivation for participation	108	11.43	2.96	-.695	.950

When the data in Table 1 are analyzed, it can be said that the prospective primary school teachers have a moderate level of grade point averages. The average scores of the prospective primary school teachers from the sub-factors of metacognitive awareness are also at a moderate level. However, it was determined that the average scores of the prospective primary school teachers from the sub-factors of motivation for science learning are at a high level. The normality of the data was examined using a histogram graph and skewness and kurtosis values. According to George and Mallery (2013), skewness and kurtosis values between +1 and -1 are ideal, and between +2 and -2 are acceptable. The skewness and normality values of the variables also indicate the normality of the distribution. Before analyzing the research questions, the normality values of each variable were examined. Cohen (1988)'s assessment was taken into consideration for the interpretation of coefficients in the correlation analysis. Accordingly, Cohen (1988) interpreted the correlation coefficients as follows: a value between 0.10 and 0.30 "small"; a value between 0.30 and 0.50 "medium"; and a value higher than 0.50 "large".

Findings related to the first research question

To find an answer to the question of "Is there a statistically significant relationship between prospective primary school teachers' academic achievement in science courses and their metacognitive awareness of science courses?", which is the first research question, preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. The results are given in Table 2.

Table 2. Results of the correlation between prospective teachers' academic achievement and their scores from the sub-factors of metacognitive awareness

Variables		1	2	3
Academic achievement	1	1		
Knowledge of cognition	2	.505*	1	
Regulation of cognition	3	.472*	.927*	1

*p<.05

It can be inferred from Table 2 that there is a high positive correlation between the prospective primary school teachers' academic achievement in science courses and their knowledge of cognition, which is a sub-factor of metacognitive awareness [r=472, n=108, p<.05] 05]. In addition, a positive correlation was found between the prospective primary school teachers' academic achievement and their regulation of cognition [r=. achievement and regulation of cognition, which is another of the sub-factors of metacognitive 05].

Findings related to the second research question

To find an answer to the question of "Is there a statistically significant relationship between prospective primary school teachers' academic achievement in science courses and their motivation for science learning?", which is the second research question, preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. Following the assumption of normality, the Pearson Correlation Coefficient was calculated. The results are given in Table 3.

Table 3. Correlation Values between the Sub-factors of Academic Achievement and Motivation for Science Learning

Variables		1	2	3	4	5	6
Academic achievement grade	1	1					
MfR	2	.469*	1				
MfP	3	.403*	.699*	1			
MfC	4	.394*	.717*	.758*	1		
MfCW	5	.360*	.569*	.542*	.667*	1	
MfPa	6	.386*	.564*	.754*	.694*	.660*	1

MfR: Motivation for Research; MfP: Motivation for Performance; MfC: Motivation for Communication; MfCW: Motivation for Collaborative Work; MfPa: Motivation for Participation

It can be inferred from Table 3 that there is a moderate positive relationship the prospective primary school teachers' academic achievement in science courses and their motivation for research [r=.469, p<.469, p<.their motivation for performance [r=.403, p<.005], their motivation for communication [r=.394, p<.05], their motivation for cooperative work [r=360, p<..05], and their motivation for participation [r=..386, p<.05]

Findings related to the third research question

To find an answer to the question of "To what extent do prospective teachers' metacognitive awareness and motivation for science learning predict their academic achievement in science courses?", which is the third research question, multiple linear regression analysis was performed. The results of the analysis are given in Table 4.

Table 4. Results of multiple linear regression analysis

Variables	B	Standard Error	β	t	p	Binary r	Partial r
Constant	19.579	6,880		2.816	.006		
Knowledge of cognition	.434	.233	.406	1.865	.045	.505	.183
Regulation of cognition	-.004	.117	-.007	-.034	.973	.472	-.003
MfR	.693	.381	.230	1.821	.032	.469	.179
MfP	.031	.512	.009	.060	.012	.403	.006
MfC	-.387	.544	-.104	-.712	.478	.394	-.071
MfCW	.599	.583	.121	1.026	.030	.360	.102
MfPa	.855	.728	.160	1.174	.024	.386	.117

*p<.05 MfR: Motivation for Research; MfP: Motivation for Performance; MfC: Motivation for Communication; MfCW: Motivation for Collaborative Work; MfPa: Motivation for Participation

When the binary and partial correlations between the predictive variables in Table 4 for predicting the academic achievement of prospective primary school teachers and the independent

variables are examined, significant relationships attract attention between all other variables and the dependent variable except between regulation of cognition and motivation for communication from the sub-factors of motivation for science learning. Academic achievement has a strong positive correlation with knowledge of cognition but a weak negative correlation with the regulation of cognition. Furthermore, academic achievement has moderate positive correlations with motivation for research, motivation for performance, motivation for collaborative work and motivation for participation, but a moderate negative correlation with motivation for communication. According to standardized regression coefficient (β), the relative importance of predictive variables on academic achievement is as follows: knowledge of cognition, motivation for research, motivation for participation, motivation for collaborative work, and motivation for performance. The variables of regulation of cognition and motivation for communication have no significant effect.

The results of the multiple linear regression model according to Table 4 can be shown as follows.

Academic achievement=(0.855*MfPa) + (0.693*MfR) + (0.599*MfCW) + (0.434*Knowledge of cognition) +(0.03*1MfP) + (-19.579)

Table 5. Summary of Regression Analysis Results

Model	R	R^2	Adjusted R^2	Standard error of estimate	F	p	D-W
Academic achievement	.612	.374	.343	12.778	12.194	.000*	1,962

*p<.05

To determine whether there are multiple connections between the predictive variables, correlation (r), VIF (variance inflation factor) and CI (condition index) values were examined (Buyukozturk, 2015) through the multiple linear regression analysis (Buyukozturk, 2015). The conformity of the scores of the predictive variables with the regression model was determined by the determination of the Durbin-Watson d value (D-W=1.962). A Durbin-Watson d value of 1.5-2.5 indicates no auto-correlation. Lack of multiple linear connection problems means that VIF values are below 10 and tolerance values are not very close to 0 (Gujarati, 1995). It was also found that CI values are not higher than 30. According to these results, in the regression model, there are no multiple linear connection problems and no auto-correlation; therefore, the model is reliable. In this respect, the prospective primary school teachers' knowledge of cognition and motivation for science learning are a significant and moderate predictor of their academic achievement in science courses (R=0.656, $R^{2=}$ 0.374, $p<$ .05). As a result of the regression analysis, it was determined that predictive variables accounted for 37% of the academic achievement variance.

DISCUSSION AND CONCLUSION

The present study was conducted to investigate the relationship between prospective primary school teachers' academic achievement in the 'Science and Technology Laboratory Applications' and their metacognitive awareness and motivation. Furthermore, the study aimed to determine to what extent the prospective primary school teachers' metacognitive awareness and motivation affect their academic achievement.

In the study, first of all, a strong positive relationship [r=.505, n=108, p<.05] was found between the prospective teachers' academic achievement in the "Science and Technology Laboratory Applications" course and knowledge of cognition, which is one of the sub-factors of metacognitive awareness, and a positive moderate relationship [r=.472, n=108, p<.05]was found between their academic achievement and regulation of cognition, which is another of the sub-factors of metacognitive awareness. In this context, the strong positive relationship between the prospective teachers' academic achievement in the 'Science and Technology Laboratory Applications' course and

their knowledge of cognition indicates that the prospective teachers are aware of their own cognition in their learning processes, are aware of their own skills, and are more successful in science courses when they know which strategies to use for their own learning. Furthermore, the moderate positive relationship between their academic achievement in the 'Science and Technology Laboratory Applications' course and their regulation of knowledge indicates that when the prospective teachers determine specific learning strategies for themselves and plan accordingly, when they monitor whether these strategies are helpful, and when they assess their own learning, they can learn effectively. Unal (2010) argues that the academic achievement of the students increase as their metacognitive awareness increases. Ulgen (2001) expresses the importance of metacognition on academic achievement as follows: "this skill allows the student to know what he/she knows and what he/she doesn't know (strengths/weaknesses)". Thus, the student can know his/her own learning, concentrate on what he/she does not know and direct his/her learning and thinking process in this direction (Namlu, 2004). Also, metacognition plays a vital role in helping students solving social problems outside of school life as it helps students discover their own learning methods, identify their strengths/weaknesses, and evaluate themselves. Metacognitive awareness is vital in the learning process as it enables successful students to manage their cognitive skills better and to evaluate and regulate their own learning by providing them with new cognitive skills (Schaw, 1998). Therefore, it can be said that metacognition can have an impact on students' conceptual understanding and academic achievement. When the relevant studies are examined, it is seen that metacognition has an effect on students' conceptual understanding, supports conceptual change and is an essential variable of academic achievement (Bagceci, Dos, & Sarica, 2011; Balci, 2007; Coutinho, 2007; Dunning, Johnson, Ehrlinger, & Kruger, 2003; Emrahoglu, & Ozturk, 2010; Gul, & Shehzad, 2012; Landine, & Stewart, 1998; Schraw, & Dennison, 1994; Yangin, 2014; Young, & Fry, 2008; Yuruk, 2005; Yuruk, Beeth, & Andersen, 2009; Yuruk, Selvi, &Yakisan, 2011).

Secondly, a moderate positive relationship was found between the prospective teachers' academic achievement in the 'Science and Technology Laboratory Applications' and their motivation for research (MfR) [$r=.469$, $p<.05$], motivation for performance (MfP) [$r=.403$, $p<.05$], motivation for communication (MfC) [$r=.394$, $p<.05$], motivation for collaborative work (MfCW) [$r=.360$, $p<.05$], and motivation for participation (MfPa) [$r=.386$, $p<.05$]. This result indicates that when prospective primary school teachers actively participate in the experiments in science classes, conduct research on the experiment, participate in the cooperative learning process, communicate with both their teachers and their group mates, and achieve high-level of performance in conducting and finalizing the experiment, effective learning can take place and their academic achievement in the course will increase. In this respect, Yenice, Saydam and Telli (2012) pointed out that as students' motivation levels increase, they devote more time to science courses and that the students with a high level of motivation have more academic achievement in science courses. Besides, Stipek (1998), Wolters and Rosental (2000) stated that students with higher levels of motivation learned more and had more positive thoughts about themselves. Considering that motivation is a force necessary for an individual to begin an action for a goal, this force refers to the internal factors that drive the individual and the external factors that encourage behavior (Walterman, 2005). Therefore, motivation can be considered as a force necessary for the initiation and continuation of the learning action. Because motivation makes students enthusiastic, excited and determined, it is seen as an important variable in ensuring that students participate in classroom activities, perform their tasks/assignments, achieve effective learning, and increase their academic achievement. In courses such as "Science and Laboratory Applications", the participation and willingness of students are important. Students' effective participation in experiments and their integration of experiences from experiments with scientific knowledge also play an important role in increasing their academic achievement in science courses. Therefore, it can be argued that motivation is an important variable in increasing academic achievement in laboratory applications. Some studies in the relevant literature also reported a positive relationship between motivation and academic achievement (Cakir, Sahin, & Sahin, 2000; Henderlong, & Lepper, 1997; Gottfried, 1990; Karsenti, & Thibert, 1995; Kaya, 1995; Taspinar, 2004).

Thirdly, it was determined that the prospective teachers' knowledge of cognition and their motivation for science learning are a significant and moderate predictor of their academic achievement in science courses (R= $^{0.656,\ R2=0.374}$, p<.05). Moreover, it was found out that the knowledge of cognition, one of the sub-factor of metacognitive awareness, and motivation for research (MfR), motivation for performance (MfP), motivation for collaborative work (MfCW), and motivation for participation (MfPa) variables, which are the sub-factors of motivation for science learning, account for 37% of the change in the academic achievement of prospective primary school teachers in science courses. The significance of the effect of these predictive variables on the academic achievement in science courses is as follows: motivation for participation (MfPa) (β=0.160), motivation for research (MfR) (β=0.230), motivation for collaborative work (MfCW) (β=0.121), knowledge of cognition (β=0.406), and motivation for performance (MfP) (β=0.009). In addition, when the test results of the p< .05 significance level of the regression coefficients are examined, it can be seen that motivation for participation (MfPa) (p <.05), motivation for research (MfR) (p <.05), motivation for collaborative work (MfCW) (p< .05), knowledge of cognition (p <.05), and motivation for performance (MfR) (pp <.05) are significant predictors of the academic achievement in science courses. This result indicates that prospective teachers have increased academic achievement in the 'Science and Technology Laboratory Applications' course when they are aware of their own cognition and of their own skills and when they know which strategies to use in their own learning processes (i.e. when they have a knowledge of cognition). In addition, it can be concluded that high-level of motivation is a significant predictor of their participation in laboratory applications, of their conducting research, of their engaging in collaborative work, and of their achieving high-level performance. A thorough search of the relevant literature indicates that studies have reported metacognitive awareness (Ugras, 2018), motivation, self-regulation and metacognition (Demir and Budak, 2016), and motivation (Aktan, 2012) as the predictors of academic achievement. In addition, some studies reported that there are relationships between academic achievement, metacognition and motivation. These studies indicated that there is a positive relationship between metacognition and motivation (Landine, & Stewart, 1998; Pintrich et al., 1991; Sperling et al., 2004); between motivation and academic achievement (Gottfried, 1990; Karsenti, & Thibert, 1995; Kaya, 1995; Taspinar, 2004); and between metacognition and academic achievement (Bagceci, Dos, & Sarica, 2011; Balci, 2007; Coutinho, 2007; Emrahoglu, & Ozturk, 2010; Gul, & Shehzad, 2012; Landine, & Stewart, 1998; Schraw, & Dennison, 1994; Young, & Fry, 2008). To sum up, studies have mostly highlighted the positive relationship between metacognition and motivation variables and academic achievement. Therefore, and in the light of the results of the present study, we recommend that activities that will improve the metacognition of prospective primary school teachers should be included in the curricula to increase their academic achievement in science courses (Cakir, Guven, & Ozdemir, 2018). Furthermore, we believe that motivational factors should also be taken into consideration in planning these courses.

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The Philosophy of Turkish and Ghanaian Curriculum Design Orientations of Teacher Candidates

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Abstract

This study aims to investigate the curriculum orientations of schools in Turkey and Ghana and to examine the relationship between curriculum orientations. The quantitative method (descriptive study) was adopted in this questionnaire survey-based study. This study was conducted in the Fırat University, Elazığ-Turkey and University of Education - Winneba, Kumasi-Ghana. Mean and standard deviation for the overall of the curriculum orientations and for each orientation were obtained. The results showed that the mean of Turkish students was higher than Ghanaian students in term subject-centred curriculum orientation. Meanwhile the for student-centred and problem-centred curriculum design orientations the means of Ghanaian students were higher than those of Turkish students. The country variable was found to be highly effective in classifying teachers in terms of curriculum design. Gender and department independent variables significantly differentiate teachers' views about curriculum design in some dimensions.

Keywords: Philosophy, Curriculum, Curriculum Design Orientation, Educational system.

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INTRODUCTION

Knowledge is one of the key elements of personal and social development. The information that meets the needs of everyday life about how a device or an object can be used has been a strategically superior tool over time. Therefore, meeting the need for information and the development of information are important educational tasks as well as acquiring the information.

Schunk (2011: 1) explained the content of learning as the acquisition and modification of knowledge, skills, strategies, beliefs, attitudes and behaviors. It is not possible today to transfer this content of cognitive, affective and psycho-motor behaviors through unstructured learning-teaching activities. In primitive societies, the information and culture required for the continuation of life were transferred to the younger generations randomly; however, in order to meet the individual learning needs, planned school education has become a demand of the today's societies. (Fer & Cırık, 2007:1). Basaran (1994) believes that an educational approach has started with the responsibility of the families and the society has started to take responsibility (Cit. Gültekin, 2017:2). Mialaret (2005: 8-10) examines the historical development of education and emphasizes that there are serious changes in the demand age, duration, purpose, scope (from a structure that prioritizes the development of intelligence to a structure that aims to develop all aspects) and understanding of education. Changes in the perspectives of the society towards education are also observed. Every member of society wants to regard education as a professional service for the development and prosperity of both their children and their community. This is a situation that encourages the use of curriculum in teaching. According to Tuncer & Berkant (2012), the most known way of introducing changes about the learning and teaching process to a wider audience is to prepare a curriculum and adhere to this curriculum.

Taşpınar (2014: 10), to define the curriculum, he includes planned activities both in and outside of the school in the scope of this curriculum. Curricula are regarded as a way of providing functionality to the education systems (Erden, 1998: 2). The success of the curriculum is mostly related to the education philosophy approach.

Educational Philosophies

The philosophy of education is counted as a starting point in the development of a curriculum and forms the foundations of the decisions about the curriculum. (Akpınar, 2010:21). In the general, philosophy is regarded as a field of knowledge (Gutek, 2001) that systematically explains the relationship of the universe with the human and the human with the universe. In educational philosophies, the scope by restricted further is reduced to a structure that targets teaching expertise. Aydın (2007: 4) thinks that the subject of social sciences, which includes education, is not the nature, but human and culture and also expresses that it is not possible to repeat the same events in the social sciences. According to him, the reasons why the events are handled independently of the laws are values, philosophical, religious and ideological differences within the historical context. Education processes can also be explained by this perspective. According to Ornstein & Hunkins (2014: 44) Philosophy is a necessary to explain why schools exist, which courses are valuable, how students learn, which methods and materials should be used. Philosophy science works as a kind of feasibility study before the curriculum is implemented. In terms of curriculum design, there are three basic design approaches: subject-centered, learner-centered, and problem-centered. (Ornstein & Hunkins, 2014:256).

Subject-Centered Curriculum Design Orientation

The content is in the foreground in the subject-centered curriculum design. Tucker (2011) believes that this curriculum design can be considered a favorite of many education systems. According to Ornstein (1982: 404), advocates of this design, thinks that this design is important because of the organizing of learning, easy recall of the information which has been taught, and the arrangement of books and materials based on the subject. Having various types, subject, field, wide

scope types of subject-centered design are based on essentialism and perennialism while correlation and process types are based on progressivism (Ornstein & Hunkins, 1993, Eryaman & Riedler, 2009). This curriculum design comes to the forefront with the characteristics of regarding learners' learning the subject enough, that there is unchanging universal knowledge, not being developed as a whole, and being able to make connections between subjects and courses (Akpınar, 2010: 39). Ellis (2015: 77) criticizes this design because it does not give enough room to innovative approaches. According to him, in the subject-centered design, it is not possible to take into account all the features of the curriculum and to meet the learner's needs. Targeting only cognitive domain in learning (Burul, 2018) is another subject of criticism.

Student-Centered (Learner-Centered) Curriculum Design Orientation

Learner-centered curriculum has played an important role in the curriculum design of many countries in recent years (Arceo, 2016). This curriculum design focuses on individual development and improvement (Ellis, 2015:31). This design, which cares about interest and experience, finds it useful if academic issues are valuable for the learner. This curriculum which is based on progressive, humanist and Gestalt psychology and it adopts a design that is formed in the process rather than a previously prepared (Akpınar, 2010:42). It aims to create opportunities for students to develop their learning in learner-centered curricula (Abdelmalak & Trespalacios, 2013). This curriculum design has two useful aspects for learners. Learners contribute to the formation of the curriculum and have the opportunity of multi-faceted learning (Emes & Clevelans-Innes, 2003; Eryaman, 2010). It is thought that these curricula can be applied at the level of elementary school where the teachers are more interested in their students since the education at high school only aims to prepare students to university degree (Alcı, 2014:74).

Problem-Centered Curriculum Design

This curriculum focuses on the real problems experienced by individuals and society (Ornstein & Hunkins, 2014:274). In this design based on progressive philosophy, the content is determined in relation to the problems as it is intended to restructure the society. (Akpınar, 2010:46). On the other hand, Baş (2013) bases the philosophical point of view of this design on the reconstructive philosophy, which is generally regarded as the continuation of pragmatism and progressivity. This design which is also called as community-centered is believed that the content in the textbooks and in-class trainings are to be related to the real world problems (Ellis, 2015:58). Demirel (2002: 52) states that the aim of this design is to develop students as well as their social and he says there are differences among their representatives in terms of individual balance.

Curriculum design approaches have several advantages and limitations when compared to each other. Nevertheless, it can be observed that learner-centered design has been adopted more recently. This means that the curriculum developers have determined how to teach. Constructivist approach is adopted in learner-centered curricula. It is believed that in learning constructivism, the learner is creative and self-organizing (Fosnot, 2007:37). According to this approach, the information is formed by the human and the individual characteristics affect this constructed knowledge. (Aydın, 2007:12). These features of constructivism necessitate a change in the duties of the teacher and the school. In this approach, the learner learns through a range of activities such as discussion, idea defense, hypothesis building, questioning and sharing ideas as well as reading and listening (Karadağ, Deniz, Korkmaz & Deniz, 2008). This means that the teacher takes on new duties in teaching and planning learning. Therefore, the importance and sensitivity given to the design and development of a curriculum does not guarantee the success of the curriculum in practice. Teachers need to have some skills and competences to meet the expectations from the philosophy and content of a pre-determined curriculum.

In this study, candidate teachers' opinions about curriculum design were evaluated by a country comparison. Designing a curriculum does not mean that the curriculum is fully adopted by

teachers. The culture and universal perspectives of teachers are believed to be effective on this level of adoption. Teachers' not adopting an improved curriculum or having negative reaction to the curriculum will significantly affect the success of the curriculum. This research is considered important in terms of the fact that it focuses on this problem and it provides an opportunity to compare cultures. This research is the first study in the literature comparing the Turkish and Ghanaian teacher candidates in terms of curriculum design.

Method

In this study, which was conducted according to the scanning method The curriculum design orientations developed by Baş (2013) were used. The scale consists of three sub-dimensions (Topic, Learner and Problem-centered design) and thirty questions and it is rated from Totally Disagree: 1 to Totally Agree: 5 There are ten questions in each sub-dimension. This three-dimensional structure explains 52 percent of the total variance, and it is stated that the Cronbach Alpha coefficient for the overall scale is .94.

The data were collected through easy sampling method by which the scale is applied at teacher training institutions in Turkey and Ghana. In this context, Fırat University in Turkey and University of Education - Winneba, Kumasi - Ghana University were included in the study. A total of 667 pre-service teachers, including 280 from Fırat University, and 387 from Ghana Kumasi- Winneba University of Education, constitute the sample of the study.

The general aim of the study is to compare the opinions of Turkish and Ghanaian teacher candidates about curriculum design orientations. In line with this general objective, views on the three sub-dimensions of the data collection tool were compared in terms of country, gender, and department. In cases where dependent variables were significantly different according to independent variables, not only the difference observed was given but also the effect sizes were calculated. As Özsoy & Özsoy (2013) stated, the statistical significance tests are vulnerable to the effect of chance factor. In other words, while the statistical significance is affected by the sample, the effect size can give more accurate results.

In the study, the effect sizes were also calculated for the cases with significant difference. To interpret the effect size, intervals of Green and Salkind (1997; trns. Büyüköztürk, Çokluk and Köklü, 2012) (.01: Small, .06: Medium, .14: large effect size) were used.

FINDINGS

Within the scope of the research, Turkish and Ghanaian teacher candidates' curriculum design tendencies were compared. Opinion means for subject, learner and problem centered designs are as in Table 1.

Table 1. Turkish and Ghanaian Teacher Candidates' Opinion Means For Curriculum Design

Dimension	Country	N	Mean	Std. Deviation	((SD/Mean)*100)	Distribution
Subject	Turkey	280	3,88	,76	19,59	Homogeneous
	Ghana	387	3,78	,61	16,14	Homogeneous
Student	Turkey	280	3,57	,70	19,61	Homogeneous
	Ghana	387	4,20	,42	10,00	Homogeneous
Problem	Turkey	280	3,49	,62	17,77	Homogeneous
	Ghana	387	4,26	,37	8,69	Homogeneous

As it can be observed in Table 1, while Turkish teacher candidates' means for subject-centered design are higher, Ghanaian teacher candidates' means are higher for learner and problem-centered design. It was determined that the opinions were distributed homogeneously in all dimensions, and the

views of Ghanaian teacher candidates on the problem centered design provides the most homogeneous distribution.

Independent groups t test was used to determine whether the opinions about these curriculum designs differed significantly according to the country. In cases where the distribution is not homogeneous, non-homogeneous t test was used and the results are given in Table 2.

Table 2. Comparison of Opinions about Curriculum Designs based on the Country

		F	Sig.	t	df	Sig. (2-tailed)	M. Differ.	Eta-Squared
Subject	Equal variances assumed	1,793	,181	1,923	665	,055	-	-
Student	Equal variances not assumed	32,110	,000*	-13,332	426,755	,000*	Ghanaian>Turkey	.237
Problem	Equal variances not assumed	41,762	,000*	-18,146	424,309	,000*	Ghanaian>Turkey	.365

*p<.05

According to the Levene test in Table 2, views of the learner on the problem-centered design are not distributed homogeneously. (p<.05). Therefore, t-test results that the variances were not homogeneous were taken into consideration. According to the findings in the table, the opinions of teacher candidates towards subject centered design do not differ significantly based on the countries. (p=.055>.05). On the other hand, a significant difference was found in comparing the views about the learner and the problem centered design and it was determined that the view means of Ghanaian teacher candidates were higher than the Turkish teacher candidates. According to the calculated effect sizes, the country variable has a strong effect on learning and problem centered designs.

In the study, it was also investigated whether the views of teacher candidates on curriculum design approaches differed significantly in terms of gender variable. Prior to this comparison, means for each curriculum design were calculated and listed in Table 3.

Table 3. The Means of Views on Curriculum Design in Terms of Gender

		Country	N	Mean	Std. Deviation
Female	Subject	Turkey	185	3,9222	,77698
		Ghana	234	3,8167	,61806
	Student	Turkey	185	3,5962	,67408
		Ghana	234	4,1650	,45696
	Problem	Turkey	185	3,4762	,58242
		Ghana	234	4,2150	,35058
Male	Subject	Turkey	95	3,8232	,74269
		Ghana	153	3,7386	,60395
	Student	Turkey	95	3,5379	,76536
		Ghana	153	4,2778	,37613
	Problem	Turkey	95	3,5453	,70421
		Ghana	153	4,3359	,40695

When the opinions of the female and male teacher candidates are examined, the means of the Turkish teacher candidates in the subject-centered design are higher, whereas the Ghanaian teacher candidates' means are higher in the learning and problem-centered designs. The gender means were also determined in terms of country. The fact that there is a significant differentiation of opinions about curriculum designs according to gender can be observed within the results of independent groups test in Table 4.

Table 4. Comparison of views on curriculum design according to gender

			F	Sig.	t	df	Sig.	M. Differ.	Eta-Squared
Female	Subject	Equal variances assumed	,856	,355	1,548	417	,122	-	-
	Student	Equal variances not assumed	8,826	,003*	-9,829	309,703	,000*	Ghanaian>Turkey	.202
	Problem	Equal variances not assumed	29,401	,000*	-15,210	285,984	,000*	Ghanaian>Turkey	.382
Male	Subject	Equal variances assumed	1,113	,292	,981	246	,328	-	-
	Student	Equal variances not assumed	29,357	,000*	-8,786	122,602	,000*	Ghanaian>Turkey	.295
	Problem	Equal variances not assumed	17,190	,000*	-9,960	133,475	,000*	Ghanaian>Turkey	.338

*p<.05

According to the Levene test in the table, while the opinions of female and male teacher candidates about subject-centered design are distributed homogenously (p>.05), the opinion about the learner and the problem-centered curriculum design are non-homogeneous (p<.05). In the comparison of the views towards the learner and the problem centered design, the t test results in which the variances were not homogeneous was used. The views on the subject-centered design where the distribution is homogeneous are not significantly different according to gender. [$t_{Female}(417)=1.548$, $p=.122>.05$; $t_{Male}(246)=.981$, $p=.328>.05$]. Views on learner-centered design ($t_{Female}(309.703)=-9.829$, $p=.000<.05$; $t_{Male}(122.602)=-8.786$, $p=.000<.05$) and views on the problem-centered design [$t_{Female}(285.984)=15.210$, $p=.000<.05$; $t_{Male}(133.475)=-9.960$, $p=.000<.05$] differ significantly in favor of Ghanaian teacher candidates. The effect sizes in all dimensions with significant difference are at "Strong" level.

Within the scope of the research, it was aimed to compare the views of the curriculum design orientations in terms of the department. However, since there are some differences in terms of teaching areas between the two countries, comparisons have been made for each country independently. Homogeneity of variance in each dimension in data collection tool which was applied to Fırat University teachers' candidates was investigated before comparing the means of opinion for design orientation by Levene Test. Results are given in Table 5.

Table 5. Homogeneity of Fırat University teacher candidates' views on curriculum design

	Levene Statistic	df1	df2	Sig.
Subject	7,699	6	273	,000*
Student	5,093	6	273	,000*
Problem	3,951	6	273	,001*

*p<.05

As can be seen in Table 5, the variances in all three sub-dimensions are not homogeneously distributed. (p<.05). Therefore, Kruskall Wallis H test was used for these nonparametric variances instead of Anova analysis. However, the means of each dimension were calculated and given in Table 6 before comparison.

Table 6. Opinions means of the candidate teachers of Fırat University about curriculum design orientations

		N	Mean	Std. Deviation	P. Level
Subject	Social Sciences	43	3,50	1,12	Agree
	Elementary Math	38	4,01	,73	Agree
	Physical Education	28	3,75	,47	Agree
	Sociology	36	3,82	,50	Agree
	History	41	3,93	,80	Agree
	Engineering	44	3,92	,63	Agree

	Science	50	4,16	,64	Agree
	Total	280	3,88	,76	Agree
Student	Social Sciences	43	3,52	1,06	Agree
	Elementary Math	38	3,58	,66	Agree
	Physical Education	28	3,53	,69	Agree
	Sociology	36	3,43	,53	Agree
	History	41	3,61	,76	Agree
	Engineering	44	3,58	,52	Agree
	Science	50	3,70	,55	Agree
	Total	280	3,57	,70	Agree
Problem	Social Sciences	43	3,37	,90	Neutral
	Elementary Math	38	3,43	,54	Agree
	Physical Education	28	3,54	,71	Agree
	Sociology	36	3,47	,39	Agree
	History	41	3,68	,73	Agree
	Engineering	44	3,55	,47	Agree
	Science	50	3,45	,46	Agree
	Total	280	3,49	,62	Agree

Considering the scoring method of the data collection tool, only social studies teacher candidates is neutral about the problem-centered design. All the other dimensions were answered as "agree". According to the evaluation made in terms of general means, an order as ($Mean_{Subject}$>$Mean_{Student}$>$Mean_{Problem}$) can be formed. Therefore, it was realized that the highest participation with highest mean in the subject-centered design, was in the departments of Science and Elementary Mathematics Teaching, respectively. The results of the Kruskal Wallis H (KWH) test, in which the means of views for each dimension are compared, are as in Table 7.

Table 7. Comparison of the Opinions of Teacher Candidates Studying at Fırat University on Curriculum Design Orientations (KWH Analysis)

	Department	N	Mean Rank	Chi-Square	df	Sig.	Diff.	Effect Size
Subject	1.Social Sciences	43	119,59	23.812	6	.001*	2>1, 7>1	.070
	2.Elementary Math	38	155,49					
	3.Physical Education	28	105,84					
	4.Sociology	36	118,04					
	5.History	41	147,18					
	6.Engineering	44	138,36					
	7.Science	50	179,07					
	Total	280						
	Test of Homogeneity of Variances (Levene Test, F=7.699, p=.000*)							
Student	1.Social Sciences	43	139,92	5.217	6	.516	-	
	2.Elementary Math	38	141,92					
	3.Physical Education	28	137,04					
	4.Sociology	36	114,93					
	5.History	41	147,70					
	6.Engineering	44	141,99					
	7.Science	50	153,06					
	Total	280						

Test of Homogeneity of Variances (Levene Test, F=5.093, p=.000*)							
Problem	1.Social Sciences	43	133,76	7.350	6	.290	-
	2.Elementary Math	38	130,71				
	3.Physical Education	28	154,38				
	4.Sociology	36	130,92				
	5.History	41	165,54				
	6.Engineering	44	144,84				
	7.Science	50	128,52				
	Total	280					
Test of Homogeneity of Variances (Levene Test, F=3.951, p=.001*)							

*p<.05

According to the KWH analysis in the table, opinions differ only in the subject-centered design. (p=.001<.05). This significant difference is between teacher candidates in Social Studies Education and teacher candidates in Elementary Mathematics Education and Science Education. According to the effect size calculated in this dimension, the department has a strong impact on the views on the subject-centered design. Before the comparison of the views of the Ghanaian teacher candidates on the curriculum design orientations homogeneity of variance was investigated to determine which analysis technique to be used. The findings for this situation are as in Table 8.

Table 8. Homogeneity of teacher candidates studying at Kumasi-Ghana Education University-Winneba on curriculum design orientations

	Levene Statistic	df1	df2	Sig.
Subject	,644	7	379	,719
Student	6,637	7	379	,000*
Problem	2,360	7	379	,023*

*p<.05

It was determined from the dimensions in Table 8 that the opinions about the learner-centered and problem-centered orientations were not homogenously distributed. For this reason, One-Way Anova was used to compare the opinions about the subject centered design, while KWH analysis was used to compare the views about the learner-centered and problem-centered design. Before these analyses, the section means for each dimension were calculated and given in Table 9.

Table 9. Opinion means of teacher candidates studying at Kumasi-Ghana Education University-Winneba on curriculum design orientations

Dimension	Department	N	Mean	Std. Dev.	P. Level
Subject	1.English Language Education	44	3,12	,52	Neutral
	2.Social Studies Education	50	3,43	,53	Agree
	3.Psychology Education	45	3,47	,52	Agree
	4.Early Childhood Education	47	3,62	,52	Agree
	5.Mathematics Education	34	4,08	,45	Agree
	6.Management Education	56	4,11	,45	Agree
	7.Special Education	41	4,13	,44	Agree
	8.Science Education	70	4,14	,46	Agree
	Total	387	3,78	,61	Agree
Student	1.English Language Education	44	4,24	,29	T. Agree
	2.Social Studies Education	50	4,17	,33	Agree
	3.Psychology Education	45	4,31	,32	T. Agree
	4.Early Childhood Education	47	4,44	,34	T. Agree
	5.Mathematics Education	34	4,17	,43	Agree

	6.Management Education	56	4,12	,50	Agree
	7.Special Education	41	4,13	,48	Agree
	8.Science Education	70	4,11	,50	Agree
	Total	387	4,20	,42	Agree
Problem	1.English Language Education	44	4,29	,45	T. Agree
	2.Social Studies Education	50	4,31	,38	T. Agree
	3.Psychology Education	45	4,27	,46	T. Agree
	4.Early Childhood Education	47	4,30	,41	T. Agree
	5.Mathematics Education	34	4,26	,27	T. Agree
	6.Management Education	56	4,17	,33	Agree
	7.Special Education	41	4,15	,30	Agree
	8.Science Education	70	4,30	,33	T. Agree
	Total	387	4,26	,37	T. Agree

Considering the scoring method of the data collection tool, only English Language Education teacher candidates is neutral about the subject-centered design. All the other dimensions were answered as agree or totally agree. It was determined that the opinions at the level of "totally agree" were mostly obtained for the problem-centered design. According to the evaluation made in terms of the overall opinion means, exactly the opposite way of order from Fırat University in Turkey ($Mean_{Problem}>Mean_{Student}>Mean_{Subject}$) was formed. Therefore, it was realized that the highest participation with the highest mean in the problem-centered design was in the Early Childhood, Science and English Language Teaching departments respectively. The results of the Anova and Kruskal Wallis H (KWH) tests, which compared the mean of views for each dimension, are as in Table 10.

Table 10. Comparison of the Opinions of Teacher Candidates Studying at Gana University of Education - Winneba, Kumasi-Ghana University on Curriculum Design Orientations (ANOVA and KWH Analysis)

		Sum of Squares	df	Mean Square	F (Chi-Square- X^2)	Sig. (Asymp. Sig)	Differ.	Effect Size
Subject	B. Groups	54,131	7	7,733	F=32,249	,000*	1<3,4,5,6,7,8 2<5,6,7,8 3<5,6,7,8 4<5,6,7	.373
	W. Groups	90,881	379	,240				
	Total	145,012	386					
Student	B. Groups	4,578	7	,654	X^2=24.538	.001*	3<6,7,8 2<3	.064
	W. Groups	66,757	379	,176				
	Total	71,335	386					
Problem	B. Groups	1,254	7	,179	X^2=15.160	.034*	6<8 2,7<8	.023
	W. Groups	53,910	379	,142				
	Total	55,164	386					

1.English Language Education, 2.Social Studies Education, 3.Psychology Education, 4.Early Childhood Education, 5.Mathematics Education, 6.Management Education, 7.Special Education, 8.Science Education

As can be seen from the results of the analysis in the table, a significant difference among opinions was determined in all three sub-dimensions. From the results of ANOVA analysis, it can be concluded that the opinions about subject-oriented design differed significantly, and this difference was found among English Language Teaching, Social Studies, Psychology, Early Childhood Education departments and many other departments. According to the KWH analysis, the views which significantly differentiated for learner-centered design are among Psychology Education and

Management, Special and Science Education, and Social Studies Education and Psychology Education. The significant difference determined in the problem-centered design is between Management Education and Science Education, Science Education and Social Studies Education and Special Education. The department has a weak impact on views on subject-centered and learner-centered designs and has a strong impact on views on problem-centered design. The last but not least, it was investigated whether a classification could be made in terms of the data obtained in the research. For this purpose, Country and curriculum designs were analyzed by Discriminat analysis. The Eigenvalues and Wilks' Lambda values obtained as a result of discriminant analysis are as in Table 11.

Table 11. Discriminate analysis Eigenvalue and Wilks'Lambda values

Function	Eigenvalues	% of Variance	Cumulative %	Canonical Cor.
1	.847	100.0	100.0	.677
	Wilks' Lambda	Chi-Square	Df	Sig.
	.541	381.332	3	.000

As seen in the table, the only function with an Eigenvalue value of .847 is generated. The Canonical Correlation coefficient of this function is .677. Since Wilks' lambda value is calculated as .541 and Chi-Square value is meaningful (Sig.=.000) It has been concluded that a classification is possible in terms of the country. Structure matrix coefficients and classification function coefficients for this function are given in Table 12.

Table 12. Structure matrix and classification function coefficients

Structure Matrix		Classification Function Coefficient (Country)	
Function(1)		Turkey	Ghana
Problem	.799	8.326	11.301
Student	.591	5.109	6.578
Subject	-.126	4.085	2.303
Constant		-32.339	-42.784

When the structure matrix coefficients in the table are examined, it is determined that the problem centered curriculum design has the highest relationship with discriminant function with .799 coefficients. When it comes to discriminant function,

for Turkey T= -32.339+8.326*Problem+5.109*Students+4.085*Subject

for Ghana G= -42.784+11.301*Problem+6.578*Student+2.303*Subject. The results obtained from the analysis are as shown in Table 13.

Table 13. Classification Results

			Predicted Group Membership		
		Country	Turkey	Ghana	Total
Original	Count	Turkey	231	49	280
		Ghana	44	301	345
	%	Turkey	82,5	17,5	100,0
		Ghana	12,8	87,2	100,0
Cross-validated	Count	Turkey	231	49	280
		Ghana	44	301	345
	%	Turkey	82,5	17,5	100,0
		Ghana	12,8	87,2	100,0

According to the classification results, 231 Turkish teacher candidates (82.5%) out of 280 and 301 Ghanaian teacher candidates (87.2%) out of 345 could be classified correctly. Graphical representation of the classification is given in Graph 1. According to this, Ghanaian teacher candidates' percentage of being classified is higher than Turkish teacher candidates in terms of curriculum design. In general, the correct classification rate is 85.1%.

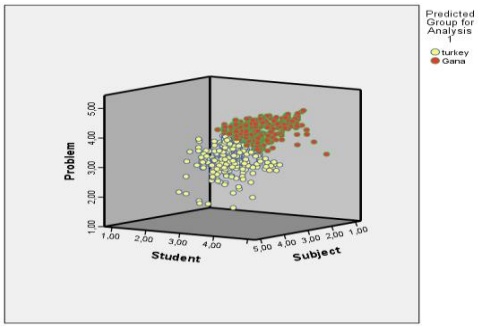

Figure 1. Classification Results

RESULTS AND DISCUSSION

As a result of the study, it has been determined that Ghanaian teacher candidates adopt more problem and learner-centered curriculum designs than Turkish teacher candidates do. This situation does not change in terms of gender. The view means of Ghanaian male and female teacher candidates about problem and learner-centered curriculum designs are higher than Turkish teacher candidates. Both Turkish and Ghanaian teacher candidates have expressed their opinion as ‘’ Agree’’ for the subject-based curriculum design. On the other hand, while Turkish teacher candidates' opinions on problem and learner-centered design were at the level of ‘’Agree’’ regardless of department, the views of Ghanaian teacher candidates on the problem-centered and then learner-centered design were as ‘’Completely Agree’’. All of these findings show that teacher candidates in both countries differ in terms of their views on curriculum design in some degree. In related literature, there is no study to be compared to these findings. However, in his study, Yıldız (2018) found that Turkish teacher candidates' perceptions about curriculum designs were at "Medium" level for the learner-centered and problem-centered designs and "High" level for the subject-centered design. Both researches are similar in terms of teacher candidates' opinion on curriculum design. Contrary to this research, Ünsal & Korkmaz (2017) found that teachers preferred students and problem-centered designs. Kozikoğlu & Uygun (2018), in their study which investigated the relationship between the philosophy of education and curriculum design concluded that the Turkish teacher candidates who make up their samples in their researches adopted the learning-centered least and subject-centered design most. According to this research, there is a moderate relationship between the education philosophy adopted and the educational curriculum design approach.

There are many changes in terms of education and training in the world. Similar developments are also observed in Turkey and Ghana. Turkey has experienced a change in terms of teaching philosophy since 2005. Although many revisions have been made over time, this philosophy has been adhered to. The Turkish Educational System, structured based on the progressive philosophy, is shaped according to the constructivism approach. As Yıldız (2011) explained, with the change in teaching approach, student-centered understanding rather than subject-centered understanding came to the forefront. This situation is frequently emphasized in the curriculum. However, the results of this study show that the curriculum and teacher preferences do not match. In a constructivist approach, students are trained as responsible for their own learning in collaboration. Teachers, rather than providing information to students, have assumed a role in guiding their learning. There are many research findings (Güven, 2011; Bal, 2008; Karacaoğlu & Acar, 2010; Epçaçan & Erzen, 2008; Yalar, 2010); Karaman & Karaman, 2016) that state Turkish teachers do not find new curriculum functional.

Since teachers do not find the curriculum functional, rather than following it, they may have preferred to teach in their own way.

The reason for the finding difference between Ghana and Turkey can be the practice style of the curriculum. Recently, Turkey has sat on the basic standards for curriculum. It is not possible to change the curriculum by teachers in terms of content and objective. Curricula are applied throughout the country without changing. The central authority controls many aspects of curriculum implementation. However, in Ghana, as Kwao (2017) stated, a curriculum approach that is non-static and allows for relative change is being implemented. Also, while teachers are active member of the curriculum development in Turkey, according to Abudi & Mensah (2016), the participation of teachers in Ghana to curriculum development studies are limited. In the same study, it was emphasized that Ghanaian teachers wanted to contribute more to the process through the localization of curriculum development studies. Nijhuis, Pieters & Voogt (2013) criticized the lack of a culturally sensitive structure in Ghana's curriculum. According to them, the culture of the country is not sufficiently reflected in the curricula. According to Adu-Gyamfi, Donkoh & Addo (2017), states such as Britain, Japan and USA have a great influence on the Ghana education system. In that, Kumi & Seidu (2017) found some similarities in terms of educational policies in their studies comparing USA, United Kingdom, Ghana and Burkina Faso. Ghana, where approximately sixty different languages are spoken, prefers English as the communication language whereas in Turkey, the foreign language teaching is regarded as unsuccessful, even university graduates are unable to speak English fluently. All these findings reveal an interesting situation. While Turkish teachers are an active member of curriculum development studies, teacher candidates adopt subject-centered curriculum design more. On the other hand, while Ghanaian teachers can participate in curriculum development studies limitedly, teacher candidates adopt learning and problem-centered orientations more. Can that teachers and teachers' candidates have the opportunity to teach in a freer environment encourage them to choose a problem and student-centered design?

Differences in curriculum may be another reason for the differences identified in both countries. Turkey currently has established 4 (primary) +4 (Secondary) +4 (High School) +4 (University) education system. However, in Ghana, there is a structure of 6 (primary school) +3 (Junior Secondary School) +3 (Senior Secondary School) +4 (University Course) education (Adu-Gyamfi, Donkoh & Addo, 2017). There is a more intensive course in Turkey compared to Ghana. Turkish teachers may have compulsorily adopted subject-centered design to complete the courses on time. It is known that Turkish teachers define the curriculum as a time-consuming curriculum, especially with their assessment and evaluation activities. (Acat & Uzunkol, 2010; Anıl & Acar, 2008; Tuncer, 2010).

Perhaps the most important finding of the research is that the views on the design of the curriculum have a high percentage in terms of country classification. It is thought that cultural and social plays an important role in this differentiation in terms of the country as well as educational activities. Teachers are role model for their students. Those who prefer the teaching profession are highly likely to be inspired by their past teachers. Even if there is a change in the curriculum approach over time, changing the preferences of the teaching habits is time consuming and sometimes not possible. In addition, the expectations of students and the society regarding an ideal teacher can be different from society to society. For example, the Turkish education system is structured based on central examinations in some curricula or transitions to the profession. Therefore, a great number of candidates have to be placed through multiple-choice tests. In addition to adopting the style of studying according to the type of exam, the family and society's expectation from the teachers is to be successful in these exams as well. Therefore, there is no expectation of targeting or measuring high-level learning. This situation causes the content of the curricula to be blessed, and also causes how and at what level the information is transformed into the product is taken to the backseat.

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Preservice Turkish Language Teachers' Opinions and Suggestions About the Teaching Turkish to Foreigners Course

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Abstract

The aim of this study was to determine the opinions and suggestions of preservice Turkish language teachers about the Teaching Turkish to Foreigners (TTF) course. The research population consisted of 79 junior students studying in the Department of Turkish Education at the Kazım Karabekir Faculty of Education, Atatürk University. A case study design, one of the qualitative research methods, was employed in the study. A semi-structured interview form was used to collect data. The descriptive analysis technique was used to analyze the data obtained from the interviews. Based on the study, it was found that the preservice Turkish teachers thought that the TTF lessons were interesting, adequate and fun in terms of content and scope. However, they thought that the credit hours were inadequate, that there was little chance to do practice in the lessons, and that the course did not achieve its goal in terms of practice. In addition to that, findings such as the following were obtained: The level thought to be the most difficult when teaching Turkish to foreigners was the beginner level (A1-A2); with this course, they thought they reached a competency level to teach this subject; however, there was a need for activities supported by various materials and practice courses offered in relevant centers.

Keywords: Teaching Turkish, preservice Turkish teachers, teaching Turkish to foreigners

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INTRODUCTION

There are two basic functions of language, such as to enhance the ability of an individual to analyze and synthesize, to think critically and creatively and to solve problems, and to help the individual enter a certain culture, experience the culture and sustain it (Yaşar, 2008). In today's world where borders are eliminated as a result of rapid progress and developments in science and technology, it has become almost inevitable that people and societies communicate with different people and societies. Therefore, although the desire to learn a new, different, and foreign language has existed since ancient times, it has now become a necessity. This is because language is universal with its characteristics of being an instrument of communication and thinking, in addition to the fact that it is national with its ability to transfer national and cultural values to future generations (Anılan & Kılıç, 2013). In addition to a native language, it is necessary to learn international common languages in order to establish and carry out all kinds of relations, including mutual and multiple relations with different levels of intensity, in the national and international arena, at an individual and institutional level, in the commercial, economic, political, military and scientific areas, or in the fields of business, tourism, education, culture, art and communication (Demircan, 1990). Along with political, economic and similar developments, both the aforementioned reasons and the increasing influence and importance of Turkey on the global scale have made it very important to learn and teach Turkish as a foreign language.

It is no doubt that Turkish is an international language, considering our country's commercial, political and cultural relations with many countries in the world in recent years, as well as the spread of Turkish people on a broad geography in the world. The use of Turkish not only as a mother tongue but also as a second language in a broad geography attracts attention to the teaching of Turkish (Demirel, 2011). In recent years, there has been a serious increase in the number of people who are in our country based on various agreements, projects, scholarships, and so forth, as well as by their own means or due to the activities of their institutions and organizations in Turkey. The number of people who want to learn Turkish in their country of residence has also increased. In this respect, the task of teaching Turkish to foreigners emerges to be an area that should be addressed and scrutinized from various aspects. With regard to Turkish education and teaching, only Turkish as a native language has been considered in the literature; in this context, curricula have been developed, materials have been produced, and studies have been carried out (Yıldız & Tunçel, 2012). Teaching Turkish to foreigners is one of the issues on which our country has been late to act and fallen behind. There have been many studies on this subject since the time of Divânü Lügâti't-Türk, which is considered as the first work on the teaching of the Turkish language — with a history going back a long way — to foreigners. There has also been a significant progress in the study and teaching of Turkish language in recent years, although not sufficient. Nevertheless, it is also a fact that Turkey is quite behind countries such as Britain, America and France that have developed methods on teaching foreign languages and that have been working on teaching their languages as a foreign language. There is no undergraduate program for teaching Turkish to foreigners in Turkey yet (Şahin et al., 2013). In this area, studies are being conducted in Turkish education departments of our universities (Alyılmaz, 2010). Moreover, graduate and doctoral programs related to the teaching of Turkish as a foreign language are also being established in universities (Ankara, Dokuz Eylül, Gazi, Hacettepe, İstanbul, Sakarya Universities and so forth), although not yet at a desired level, and in these programs, studies are being carried out to contribute to the field (Göçer & Moğul, 2011). Furthermore, the Yunus Emre Institute is one of the leading institutions for teaching Turkish to foreigners. With the help of the "Turcology Project Cooperation Protocol," signed by various universities and the Yunus Emre Institute, foreign students who want to study Turkish, and Turkish language and literature abroad are also being reached (Gürbüz & Güleç, 2016). There are also several language education centers established in universities. The first institutions that meet foreigners who come to carry out undergraduate studies in universities in Turkey are TÖMERs established to offer such students the Turkish education they need (Güleç & İnce, 2013).

A curriculum is the cornerstone of education. Curricula enable explicit expression of teaching, strategies, objectives and goals (Eryaman & Kana, 2012). The problem of training people to be qualified teachers is directly a problem related to the educational curricula of institutions that educate

teachers (Riedler & Eryaman, 2016; Şahin, 2005). A target language's being a usable language depends on addressing that language comprehensively and sufficiently. Because the teaching of Turkish to foreigners has not yet been addressed as a discipline in itself, experts and faculty members who would be required to teach Turkish as a foreign language have not been fully trained yet. Good quality materials with strong scientific background have not yet been developed in the strictest sense. Although this gap is tried to be filled with a course called Teaching Turkish to Foreigners (TTF) placed in the undergraduate curricula of Turkish education, it does not seem possible to achieve progress in a short time through a course offered 2 hours a week (although it has been increased to 3 hours a week in the new curriculum) which is heavily theoretical rather than practical. The TTF course aims, in general, to give theoretical information about subjects such as foreign language teaching methods, the history of TTF, the differences in teaching a native language and a foreign language, the materials used in foreign language teaching, and the motivation of foreign students. For example, students studying in the Turkish Education department are not able to get familiar with the methods of teaching foreign languages as these methods are not covered by the courses in the undergraduate curriculum. They take courses which treat Turkish as a native language and teach it that way. However, with the help of the TTF course, they learn about the methods of teaching foreign languages and learn about these theories of foreign language teaching (Şahin et al., 2013). In foreign language teaching, theoretical knowledge is highly important. The most important requirement for someone who teaches a foreign language is to be knowledgeable about theories in order to effectively teach students. This efficiency is enhanced by the competency of the person who teaches a foreign language and his or her having adequate methods and materials (Eryaman, 2008; Tarcan, 2004).

Educating preservice teachers — who study in the Turkish Education departments and who will be teaching Turkish to foreigners — to be well-equipped is closely related to how the TTF courses are thought in the relevant programs of faculties of education and what the faculty members teaching these courses do during these courses. Teachers' success during the teaching process depends on their ability to transform learning and teaching to practice (Erginer, 1994). It has been revealed that teachers' classroom activities and behaviors are largely effective on students' achievements and that students are influenced by what their teachers do rather than what their teachers say (Yıldıran, 1994; Gözütok, 1988).

The TTF course is an important course for preservice Turkish teachers to have academic knowledge about the methods and techniques of contemporary language teaching, to understand the similarities and differences between teaching native languages and foreign languages and for the internationalization of Turkish. Considering this significance of the course and in order to contribute to the academic studies on this course in the future, an attempt was made in this study to determine the opinions and suggestions of preservice teachers about the TTF course. It is believed that the results obtained from this research study will play a significant and effective role in transforming the TTF courses in faculties of education to be more effective and active, in evaluating the ways the courses are thought by faculty members, and in mediating new and different scientific studies for the TTF course. In all of these, the opinions and suggestions of the students, teachers and lecturers who are interested in teaching Turkish to foreigners have an important place, so do the studies conducted on this subject.

Purpose of the Study

The aim of this study was to determine the opinions and suggestions of preservice Turkish language teachers about the TTF course, and their competencies in teaching Turkish to foreigners. To that end, answers to the following questions were sought:

1. What are the opinions of preservice Turkish teachers about the content and scope of the TTF course?
2. What are the opinions of preservice Turkish teachers about the implementation and functionality of the TTF course?

3. What are the opinions of preservice Turkish teachers about whether the TTF course has achieved its goal?
4. What are the course levels that preservice Turkish teachers think would be difficult when teaching Turkish to foreigners and why do they think so?
5. What are preservice Turkish teachers' opinions about their competency level in teaching Turkish to foreigners?
6. What are preservice Turkish teachers' general views about the TTF course offered in the undergraduate program?

As a result of a literature review, it was found that there were studies on preservice teachers' opinions and suggestions about various courses. However, there was no current and comprehensive study of preservice Turkish teachers' opinions and suggestions about teaching Turkish to foreigners. This was considered as a deficiency, and it was desired to fill the gap in the literature with this study. It was also aimed to be beneficial to all stakeholders regarding the problems experienced by preservice teachers, to determine the future approaches of those concerned, and to make courses more productive.

METHOD

Research Model

This study — in which it was aimed to determine the opinions and suggestions of preservice Turkish language teachers about the TTF course, and their competencies in TTF — was a case study carried out qualitatively. Qualitative research is a study in which qualitative data collection methods such as observations, interviews and document analyses are used, and a qualitative process is carried out to reveal perceptions and phenomena in a realistic and holistic manner in the natural environment (Yıldırım & Şimşek, 2011). A case study, which is often used in research in social sciences to study an up-to-date phenomenon within its own real-life environment, such as a classroom, a neighborhood, or a political party, is a research method that is used in cases where the boundaries between the phenomenon and its surroundings are not clear and there are multiple evidence or data sources available (Yıldırım & Şimşek, 2011; Yin, 2003). Qualitative methods can be preferred in studies conducted to provide a detailed assessment by obtaining in-depth data in the studies aimed at revealing a specific situation (Cresswell, 2005; Woodside, 2010). Qualitative researchers do thorough and holistic research in the natural environment of the subject they are studying and try to understand and interpret the meanings that people attribute to the investigated phenomenon (Denzin & Lincoln, 1998). In accordance with the aim of this study, the case study model as one of the qualitative research methods was adopted in this study. A case study is carried out when the researcher wants to examine the targeted situation in depth and in detail by focusing on why and how questions (Ekiz, 2003). In this study, the case study model of the qualitative research methods was used as a base, as it was aimed to examine preservice Turkish teachers' opinions and suggestions about the TTF course and their judgments about their competencies in teaching Turkish to foreigners. It can be said that a scientific research study conducted in accordance with its goal will bring effective and lasting solutions to events with more objective results (Küçükoğlu, Taşgın, & Çelik, 2013)

Sample

The sample consisted of a total of 79 junior students who took the TTF course in the spring semester of 2017–2018 academic year in the Turkish Education Department of a State University in eastern Turkey. In the study, the students were determined using the convenience sampling method.

Data Collection Instrument

This study — in which it was aimed to determine the opinions and suggestions of preservice Turkish language teachers about the TTF course — was a descriptive study. A semi-structured

interview form with 10 questions was initially prepared as a data collection instrument to collect data after the review of relevant literature. A subject matter expert was consulted about the form that was prepared. Taking into consideration the advice of the subject matter expert, two questions were removed because they were not related to the solution of the research problems. A question was not included in the analysis process because it was not clearly understood and answered. Moreover, two questions were combined in one question because they were similar about evaluating the same situation, and thus the form was given its final shape with a total of 6 questions. The questions included in the interview form were as follows:

1. Please share your opinions about the content and scope of the TTF course.
2. Please share your opinions about the implementation and functionality of the TTF course.
3. Please share your opinions about whether the TTF course has achieved its goal.
4. Please share your opinions about the course levels that would be difficult for you when teaching Turkish to foreigners and the underlying reasons.
5. Please share your opinion about your level of competency in teaching Turkish to foreigners.
6. Please share your overall opinions about the TTF course offered in the undergraduate program.

Data Analysis

During the interviews with the students, the importance of the study and its contribution to the field were emphasized. The students were asked to answer the questions on a voluntary basis. Instead of the name and surname of the students, pseudo names abbreviated from “student” and represented with consecutive numbers (such as S1, S2, and S3) were used for data coding. The data obtained from the interview form were first analyzed and coded openly. And then, the themes that were reached were presented in the results and discussion section with their frequencies. Two of the forms contained identical answers, and 3 of them were incomplete. So, these forms were excluded from the study. A descriptive analysis technique was used in analyzing the opinions and suggestions of the preservice Turkish teachers about the TTF course.

RESULTS

In this section, the findings on the preservice Turkish teachers’ opinions and suggestions regarding the TTF course are given. In this context, first, the frequencies about the 6 open-ended questions directed to the preservice teachers are presented. Moreover, direct quotations from the preservice teachers’ answers to each question are given.

Table 1 shows the opinions of the preservice Turkish teachers about the content and scope of the TTF course.

Table 1 The Opinions of the Preservice Teachers About the Content and Scope of the TTF Course

Opinion	f
It is sufficient in terms of its content and scope.	27
It is not sufficient in terms of content and scope.	16
The topics are very dense, and there are too many details.	5
Its scope is sufficient, but the time allotted for the course is insufficient.	13
It is sufficient in terms of its content and scope, but there is no opportunity for practice.	18
Total	79

Considering Table 1, 27 of the preservice Turkish teachers found that the TTF course was adequate in terms of content and scope; 16 did not find it adequate; 18 found it to be sufficient in terms of content and scope, but thought there were not sufficient opportunities for practice; 13 thought the scope was sufficient, but the duration was a problem; and 5 of them indicated that the topics were very dense and that there were too many details.

The following are some of the direct quotations about the preservice Turkish teachers' opinions regarding the content and scope of the TTF course:

I guess some of the topics were too much to me since we took this course for the first time. If more examples of activities are given, the persistence will be that much better. (S2)

The TTF course is a very broad and useful course in terms of content and scope. It is an area that has just begun to develop in Turkey with regard to content and scope. (S3)

The TTF is a very condensed course in terms of content. I think it's too dense for a semester. There were subjects I couldn't grasp because of the intensity of the content. (S4)

The TTF course is among the courses that have contributed to me the most during the process I have studied Turkish. The content and scope of the course are very useful in terms of the first step for individuals who want to take place in the process of teaching Turkish to foreigners. With the contribution of the teacher, the content and scope of the course were very efficient for me. (S9)

The content is insufficient. Practices are limited. (S12)

It is very detailed in terms of content and scope. I think two credit hours are insufficient. (S17)

The content of the TTF course is somewhat boring and difficult to understand. Especially the methods and approaches or other information about the field are very complicated to me. (S22)

It has a wide range of content. Its content is engaging, and it inspires a desire to learn. (S36)

The content and scope of the TTF course is very good and sensible. We have kind of sufficiently learned how to teach Turkish to a foreigner in the best way. (S47)

Table 2 shows the opinions of the preservice Turkish teachers about the implementation and functionality of the TTF course.

Table 2 The Opinions of the Preservice Teachers About the Implementation and Functionality of the TTF Course

Opinion	f
It is sufficient in terms of its implementation and functionality.	19
It is not sufficient in terms of its implementation and functionality.	9
It has a high degree of functionality, but it has to be more practical.	33
Its functionality should be enhanced, and there should be more opportunities to carry out tangible lessons with foreigners.	18
Total	79

Considering Table 2, 19 of the preservice Turkish teachers found the TTF course adequate in terms of its implementation and functionality; 9 did not find it adequate; 33 thought that it was highly functional, but there should be more opportunities for practice; 18 commented that functionality should be enhanced and that there should be more opportunities to carry out tangible lessons with foreigners.

The following are some of the direct quotations about the preservice Turkish teachers' opinions regarding the implementation and functionality of the TTF course:

The TTF course was very well implemented thanks to the various activities carried out using slides and presentations, and the function of the course was served. (S27)

The way we practiced the course and its usefulness were very flexible, and it has become a successful course. Our practices during the course have enhanced its persistence in the mind. We had a very enjoyable time, as well. (S1)

The presentations and practices carried out in the TTF course have been quite effective in the persistence of its functionality. This is because the presentation materials that were used have made the course meaningful. (S33)

In my opinion, going to various lessons and language centers and making observations within the scope of the course can be useful for my fellow students who are interested in the field. It is an area where we can develop ourselves through experience, not just in terms of theoretical knowledge. (S4)

I think the lessons should be practice-based in order for the TTF course to be functional. We should work with foreign students. We should practice the techniques and methods implemented in the TTF course in application centers in detail. (S45)

The TTF course shows positive features for people who want to work in this area in the future. I think that there should be more practice to be done due to the fact that the TTF course is a difficult area and requires effort. (S10)

Table 3 shows the opinions of the preservice Turkish teachers about whether the TTF course achieved its goal.

Table 3 The Opinions of the Preservice Teachers About Whether the TTF Course Achieved Its Goal

Opinion	f
It has achieved its goal.	42
It has not achieved its goal.	14
If there are more credit hours and more opportunities for practice, it will achieve its goal better.	10
It has achieved the goal theoretically but not in terms of doing practice.	13
Total	79

Considering Table 3, 42 of the preservice Turkish teachers indicated that the TTF course achieved its goal; 14 of them indicated that it did not; 13 of them indicated that it achieved theoretically, but not in terms of doing practice; and 10 of them indicated that if there were more credit hours and more opportunities for doing practice, it would achieve its goal better.

The following are some of the direct quotations about the preservice Turkish teachers' opinions regarding whether the TTF course achieved its goal:

It certainly has achieved its goal. We have had a lot of information about TTF. We have had knowledge of concepts and methods that I have never heard before. (S26)

We can say that it has achieved. The presentation of the content was good, but the practice was not sufficient. This was due to the duration of the course. (S38)

The course has achieved its goal thanks to the activities and presentations carried out throughout the course. (S23)

I think the TTF course is positive in terms of teaching the issues related to both the European Union language policies and how the basic skills are given. (S19)

Thanks to this course, I've even decided to become a TTF teacher. This course has been useful and fun. (S42)

The TTF course has not been able fully achieve its goal because the credit hours were very limited. (S59)

We've reached our goal. But we were a little behind in terms of practice. This is because there was a shortage of time. Two hours of theory and two hours of practice are insufficient for this course. (S14)

Because the TTF course is limited to an academic year, we cannot literally say that it has achieved its goal. If the duration is increased and the number of practices is also increased, it would fully achieve its goal. (S56)

We can say that it has partially achieved. The lack of time and the fact that the classroom environment did not reflect the real settings are the main reasons. (S75)

Table 4 shows the opinions about the course levels that would be difficult for the preservice Turkish teachers when teaching Turkish to foreigners.

Table 4 Opinions of the Preservice Teachers About the Course Levels They Thought Would Be Difficult When Teaching Turkish to Foreigners

Opinion	f
I think I might have difficulty at the beginner level (A1-A2).	54
I think I might have difficulty at the intermediate level (B1-B2).	11
I think I might have difficulty at the advanced level (C1-C2).	14
Total	79

Considering Table 4, 54 of the preservice Turkish teachers stated that they thought they might have difficulty in teaching Turkish to foreigners at the A1-A2 (beginner) level, 14 at the C1-C2 (advanced) level, and 11 thought that they might have difficulty at the B1-B2 (intermediate) level.

The following are some of the direct quotations about the preservice Turkish teachers' opinions regarding the course levels that would be difficult when teaching Turkish to foreigners:

Because I have a personality with a tendency for deeper and more abstract thinking, I had difficulty mostly at the A1-A2 level frankly. (S1)

I think most people might call it the C1/C2 level, but I'll say the A1 level. This is because it is always difficult to teach the first stage and requires attention. (S12)

I have difficulty teaching the A1/A2 levels. This is because it will be difficult to teach Turkish to someone who does not speak the language. (S25)

The B1/B2 levels are more difficult because it is difficult to teach students who have learned something but have not been able learn many things yet. (S30)

I would mostly have difficulty in the A1 and A2 levels. This is because it is the first level in language learning; so, it will be difficult to teach basic skills. (S38)

I think I'm going to be struggling with the C1 and C2 levels. This is because the C1 and C2 levels aim to use the language academically. (S42)

I think I'll be struggling at the C level. This is because the concepts that are difficult to describe are concentrated at this level. (S55)

I think the levels I would have difficulty would be the first levels (A1-A2). This is because the student has entered a new environment and does not know how to learn. He or she is a stranger to the culture and society. (S57)

I think I'll have difficulty at the basic level. This is because this process, in which the student should be learned, also requires to identify the teaching methods through which the student learns. (S62)

Table 5 shows the opinions of the preservice Turkish teachers about their competencies in teaching Turkish to foreigners.

Table 5 The Opinions of the Preservice Teachers About Their Competencies in Teaching Turkish to Foreigners

Opinion	f
I think I have the competence to be an educator in this subject.	40
I do not find myself competent yet.	19
I think I need to do a little more practice.	15
I think I should learn a foreign language.	5
Total	79

Considering Table 5, 19 of the preservice Turkish teachers found themselves competent about teaching Turkish to foreigners; 19 of them did not think they were competent; 15 of them thought they needed to do a little more practice; and 5 of them thought they needed to learn a foreign language.

The following are some of the direct quotations about the preservice Turkish teachers' opinions regarding their competencies in teaching Turkish to foreigners:

I can now carry out Turkish activities for a foreign student. I know how to teach what subjects and stages in which levels. (S38)

If my English level was good, I think I'd be successful in TTF. I think I will convey the culture well in TTF. (S5)

I'm confident about TTF. But the problems I have in transferring my knowledge restrict me. I'm sure I can have better education in the future. (S6)

At the moment, I think I have enough knowledge in terms of preliminary knowledge in TTF, but I do not have a full qualification. (S9)

Although I don't think I'm very good at this, I would like to say that after taking this course, I have created a foundation, at least a draft in my head. (S21)

In this course, we've become conscious about the subject, but I do not think I am ready in terms of self-efficacy. We couldn't see the course exactly in its environment. We didn't see how it was handled in the field. That's why I don't think I'm competent. (S24)

I don't think I'm much competent. The lack of practices caused the information I learned to fail to settle down. (S28)

I don't think I'm fully competent, but the things we saw and learned in the course encouraged me in this respect. I can understand if I'm competent through practice. I can't measure my competency level with just knowledge. (S36)

I am aware of many of my mistakes and deficiencies in teaching Turkish as a mother tongue. Besides, I don't speak any foreign languages. And I haven't met any foreign students, either. Although all these show that I lack competence in this subject, I think I can enhance my knowledge and skills. (S51)

Table 6 shows the overall opinions of the preservice Turkish teachers about the TTF course.

Table 6 The Preservice Turkish Teachers' Overall Opinions About the TTF Course Offered in the Undergraduate Program

Opinion	f
I think it's an efficient and entertaining course.	18
I don't think it was productive and adequate.	8
I think it's a theory-based and superficially-taught course.	13
More room should be given to practices and activities.	14
The number of credit hours and semesters should be increased.	19
An opportunity to do internships should be provided.	18
It should be addressed in comparison with other languages.	9
Materials should be emphasized, and materials should be developed.	8
I think it should be supported by tools such as the Internet and social media.	5
Total	79

Considering Table 6, 18 of the preservice Turkish teachers thought that the TTF course was an efficient and entertaining course, and 8 of them did not think that the course was efficient and adequate. However, 13 of them stated that the course was a theory-based and superficially-taught course; and 14 of them stated, in addition to their other thoughts, that more practices and activities should be provided. Once again, when the opinions of the preservice teachers were evaluated, it was understood that 19 of them thought that this course should have more credit hours and be offered in more semesters. Of them, 18 indicated that there should be internship opportunities; 8 indicated that it should be taught comparatively with other languages; 8 indicated that the subject of materials should also be emphasized; and 5 indicated that the course should also be addressed in light of current developments such as the Internet and social media.

The following are some of the direct quotes from the statements of the preservice Turkish teachers' overall views about the TTF course:

Materials and activities will be more effective than presenting the subject. (S2)

The TTF lessons are very entertaining. It is a course that helps us improve ourselves. (S4)

I think it's a pretty heavy lesson for a semester. It should be offered for at least two semesters. I think the number of credit hours should also be increased. (S5)

I think it should be mandatory to have the TTF course in undergraduate programs. However, I think that this course will be more beneficial in terms of teacher candidates if taught in collaboration with foreign students. If necessary, successful students should be sent abroad, and it would be more suitable for them to learn in real settings. (S6)

The number of credit hours is insufficient. At least, it should be supported with practices. It should be spread over a year or two. (S8)

The TTF course has been a very productive and enjoyable course from our perspective. In this respect, the number of credit hours should be increased, and it should be included in internship programs. (S19)

Course duration is limited. TTF can be carried out with practice. We can learn lessons with students who are trying to learn foreign languages. An environment can be created to teach students from the A1 level to the C2 level. (S12)

This course is taught for two hours and is useful. In my opinion, it should be given as four hours a week to the students of Departments of Turkish and Literature in Teacher Education. There should be two hours of theory and two hours of practice so that the acquired information can come to light and be grasped in the real sense. (S22)

CONCLUSION AND DISCUSSION

The TTF course has an important place in the Turkish education program in order for teachers, lecturers and faculty members — who are interested in teaching Turkish to foreigners — to become more qualified, to master the content knowledge and to acquire the necessary knowledge and skills. Therefore, studies that are carried out on the subject in question will facilitate offering these courses more effectively and facilitate concerned parties to have the necessary knowledge.

When the findings obtained from this study carried out to identify the preservice Turkish teachers' opinions and suggestions about the TTF course are examined, the following are seen:

1. This course offers those who are interested in teaching Turkish as a native language an accumulation of knowledge in the field of "teaching Turkish to foreigners," as well as creating an awareness about this field, offering a new study area and a new job opportunity.

2. The preservice teachers not only thought that such a course — which helped them learn how to teach Turkish as a foreign language with methods and techniques that they had seen for the first time — was a necessity for them and would contribute to their development in this field, but also thought that overall it became a course that they enjoyed and in which they became interested.

3. A significant portion of the preservice teachers stated that the course was sufficient in terms of content and scope, but the time allotted for the course and the opportunity to practice were low.

4. They thought that it was an undesirable situation that the course was offered as a 2-hour course in the 6th semester at that time. They thought not only that they should be taking the course earlier and in multiple semesters, but also that the number of credit hours had to be increased.

5. Although they found the course sufficient in terms of its implementation and functionality, they emphasized that its functionality should be enhanced and that opportunities should be provided to put theoretical knowledge into practice in the field.

6. A significant part of the preservice teachers indicated that the course achieved its goal. They indicated, however, that it would fully achieve its goal if the credit hours were increased, if internship opportunities were provided in institutions and organizations

serving on this subject, and if an opportunity was provided to work and practice abroad through projects such as Erasmus and Farabi.

7. The majority of the preservice teachers thought that when teaching Turkish to foreigners they would have difficulties mostly at the beginner level (A1-A2), followed by the advanced level (C1-C2) and the intermediate level (B1-B2).

8. A significant portion of the preservice teachers thought that they were competent enough to teach this subject. There were also those who did not see themselves competent enough, but they believed that if they did a little more practice and could speak a foreign language, their competency levels would increase.

9. The preservice teachers stated that it would be beneficial to carry out the TTF course at a special class enriched with various materials such as Turkish special classes, language classes and science classes, and, if possible, to carry it out with the participation of foreign guests at times.

10. The preservice teachers stated that they were highly interested in and satisfied with the TTF course. However, they stated that they would like modifications about the issues they pointed out, and thus, a more efficient process and a more competent result could be achieved.

Based on the results presented above, the TTF course contributed to the enhancement of communication language and various skills of the preservice teachers, and it motivated them to learn. In this respect, it shows similarities to the studies in the relevant literature (Biçer, 2012; Doll, 1993; Şahin et al., 2013). Moreover, taking into consideration students' opinions and suggestions will also ensure that the lessons are more active, efficient and permanent. This is because there are learners at every stage of Turkish teaching as the target audience, and everything is aimed at the objectives and requirements of the learners. The teacher should facilitate learners to love the language, which provides communication and helps transfer national and universal values (Alyılmaz, 2018; Mert, Alyılmaz, Bay, & Akbaba, 2009). Otherwise, issues such as the lack of credit hours and materials and limitations of practice opportunities will increasingly cause preservice teachers to think that the issue is not given due importance and that these deficiencies cause the teaching of Turkish to foreigners to fall behind the teaching of languages such as English and French (Demirel, 2011). The preservice teachers stated that the TTF course achieved its goal. However, they thought that it was a weakness that the course was taught in a theory-based manner, its practice part remained weak, and the lessons were framed with an academic orientation. The fact that the students of the same program have similar ideas about different courses support this idea here (Sevim & Şeref, 2015). When the relevant literature is examined, it is found to support the concerns of the preservice Turkish teachers about whether the course achieves its goal, about its functionality and about their competency levels. "Turkish" and "Turkish Language and Literature" graduates have stated that teaching only theoretical information on this subject is not sufficient, that they encounter very serious problems when they are stationed abroad, and that they do not know what to do in the face of students who do not speak Turkish at all (Çiçek, 2010). It is an extremely wrong attitude to appoint elementary school teachers and teachers from other disciplines in addition to the "Turkish" and "Turkish Language and Literature" teachers to teach Turkish to foreigners and to teach Turkish language and Turkish culture to people of Turkish origin. This is because although the aforementioned departments may appear to be the most suitable or closest fields for this task — and even the contents of the undergraduate and graduate programs of such departments are not fully qualified to meet the requirements of Turkish teaching to foreigners (Karababa, 2010) — other branch teachers are not academically suitable to work on this issue. On the other hand, the students considered that it would be useful to carry out practices such as internships and projects in institutions and organizations serving domestically and abroad to teach Turkish to foreigners, and this is important. In order to expand the widespread use of Turkish and in order for it to be accepted as a universal language, there may be opportunities for internships in the country, as well as joint studies with the cognate or foreign countries where our language (Turkish)

is taught (Ungan, 2006). Although there are many issues in teaching Turkish as a foreign language, three main issues can be mentioned: the lack of institutional ownership in teaching Turkish as a foreign language, the inability to produce adequate instructional materials, and the lack of rigor in educating faculty to teach Turkish as a foreign language (Akış, 2009). The steps to be taken to resolve these problems and the modifications to be made will enable Turkish to become a professional research and practice field carried out by professional experts, as in English, German and Spanish, and thus to obtain faster and more robust results in the process of opening up to the world.

Recommendations

- The TTF course offered in the Turkish Education departments fills a significant gap in this field. Studies should be carried out to examine the effects of the opportunity to do practice and the location, method and type of practices. Studies should also be carried out to test the presence of this course in the undergraduate programs beginning with the first year and/or increasing its credit hours.

- It should be determined to what extent the content, scope and implementation of the course meets the goals and objectives specified in the curriculum. Moreover, attention should be paid not only to the fact that the target audience of the TTF course is not just foreigners, but also to the need that the course should have the capability to teach Turkish to bilingual and multilingual people and people of Turkish origin.

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Values and Values Education As Perceived By Primary School Teacher Candidates

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Abstract

In this study which is carried out in the phenomenology pattern, the aim of this course is to determine the opinions of the pre-service teachers about the value concept and values education. In this study, twelve prospective teachers in 4th grade in the department of primary education in a faculty of education were interviewed. The opinions of prospective teachers on values and values education were grouped under two categories as "My Values" and "Values Education". In the category of "My Values", prospective teachers included the concept of values and the values that guided their lives within personal and social values. The category of Values Education was examined under the purpose of values education and the path I will follow. While some prospective teachers emphasized that the primary goal in values education should be to raise good citizens, other teacher candidates highlighted the importance of having a good character by focusing on personal values. Prospective teachers thought that active learning methods, modelling, and cooperating with family would be effective in values education.

Key Words: Values, Values Education, Phenomenology

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INTRODUCTION

The concept of value has different definitions in the literature. For example; Rokeach defines values as enduring beliefs that indicate whether behaviours are personally or socially acceptable (cited in Lyons, 2003). Another definition suggests that values are systematic and to some extent precise ideas that ensure the interaction of an individual with the environment (Veugelers & Vedder, 2003). According to Yeşil and Aydın (2007), people who use the features obtained through the sense organs in defining the beings can benefit from the impressions they emotionally have in attributing importance to that being and appraising it. These emotion-based impressions are generally called "values". In another definition, values are described as a tendency to prefer certain states in human relations (Hofstede, 1991). In the most general sense, we can define values as a reflection of the wishes, preferences and desired and undesired situations by defining what individuals consider important (Erdem, 2003, p. 56).

However, Ministry of National Education (2005) defines values by determining the features of values. Accordingly, a value consists of criteria which are adopted by society and individuals and believed to be in the interests of society and individuals, judgements involving qualifications, consciousness, emotions and excitement and management and integration of an individual's behaviour. The acquisition of these qualities can be achieved by values education. This is because the common point of the definitions is that values combine the common wishes, preferences and beliefs that are effective in the psychological and sociological well-being of the individual and the society. Therefore, values education becomes even more important for the continuity of societies.

Values education starts in family, the first social institution, with the birth of the child. (Fidan, 2009; Yazıcı, 2006; Bal, 2004; Cotton, 1996). However, when it comes to the continuity of societies and social peace, it is possible that values education is addressed in a more formal way and at this point schools have come into play. Taylor has emphasized the formal part of values education by using it as an inclusive concept that consists of terms such as moral education, civic education and citizenship education (Thornberg, 2008, cited in Taylor, 1994).

An individual's realizing certain values, creating new values, adopting them and displaying them through his behaviours by attributing them to his personality is associated with education (Genc & Eryaman, 2008; Yeşil & Aydın, 2007). Implicit or planned values education in schools plays an active role in transferring values from society to society (Kasa, 2015). Kale (2007) has listed the characteristics of values education in four items as follows:

1. To raise individuals' awareness of universal (ethical), cultural values, and their importance,

2. To relate democratic attitudes and tolerance to multiculturalism,

3. To evaluate all values with the criteria of improving people's living conditions and facilities,

4. To turn life into knowledge and/or knowledge into life considering concrete problems related to ethical values.

When these qualities are taken into consideration, the main purpose of values education is to make values permanent behaviours in students. Considering that the role of experiences in values education is also essential, if teachers support their students by giving them the opportunity to practice about values in daily life, values can be internalized by students (Eryaman, 2007; Aydın, 2010). In our country, the function of adding values to individuals in education programs used to be carried out through education programs such as life sciences, social studies and citizenship and human rights education (Akengin, Sağlam, & Dilek, 2002). However, upon the need revealed, the principle of offering values education to students directly is adopted. For this purpose, it is aimed to give certain

values to students directly with unit gains in primary education programs in our country. In this context, the following decisions regarding Values Education were taken in the 18th National Education Council (National Education Council Decisions-www.meb.gov.tr):

a) Programs and materials for values education that can be shared by field teachers in all levels of education should be developed in cooperation with the Non-Governmental Organizations.

b) Values education should be included in all courses and school culture at all levels of education, including non-formal education, starting from pre-school and cooperation should be made with teachers, administrators, students, family and environment in this regard and necessary arrangements should be made to use mass media in order to raise awareness.

c) Arrangements should be made in reward criteria for students who exhibit exemplary behaviours in terms of values education.

d) Importance should be given to research and training activities to raise awareness on the relationship between media and values education, and necessary legal arrangements should be made in this regard.

As stated in the National Education Council, Ministry of Education has been creating values education programs since 2010. These programs are created by the provincial directorates of national education. Each month, a value is determined and in-class and extracurricular activities regarding that value are organized throughout the school in accordance with the decision of the council.

The provision of values education depends on teachers' effective implementation of the programs because there are many research findings in the literature about the fact that teachers' values affect student behaviour (Babayiğit and Kılıç, 2017, cited in Brophy and Good; Yılmaz, 2009; Oğuz, 2012). Due to their position, teachers have an important role in the process of adding values to their students (Yilmaz, 2009, cited in Suh and Traiger,). That is why students are absolutely influenced by their teachers' value judgments (Yiğittir and Öcal, 2011, cited in Halstead and Taylor).

At this point; it is important that teacher candidates know the values added to the education program and awareness is created. In particular, values education in preschool and primary school teaching gains great importance. Studies show that foundations of personality are laid and values are formed in pre-school and primary school (Çengelci & Hancı, (2013); Kolaç (2010), Ogelman, Sarıkaya (2015); Yeşil and Aydın, 2007). The subject of values education is included in the social studies teaching program which is a third year class in the department of primary education in education faculties. Today, with the inclusion of values education in primary school programs, values education has been added as a separate course under the name of "Character and Value Education" in fourth grade in the new primary education programs in education faculties in 2018-2019 academic year.

For this reason, the opinions of primary school teacher candidates who will teach in primary school, where the foundations of values are laid, about the concept of values and values education and how values education should be given have gained importance. For this purpose, this study was conducted with 4th grade teacher candidates who took social studies in the department of primary education in a faculty of education.

METHOD

This section gives information about the research model, study group, data collection tools, and data collection and analysis.

Research Model

This study had a qualitative research design. The reason for choosing qualitative research design was to investigate by focusing on the meaning of the concept of values and values education and making sense of it. According to Merriam (2013), the primary purpose of qualitative research is to reveal and interpret these meanings. From this perspective, phenomenological (phenomenon) pattern, a qualitative research design was used to explain the concepts of values and values education based on the opinions of the primary school teacher candidates in this study. In the phenomenological pattern, which takes its origin from philosophy and psychology, phenomena of which we are aware but do not have an in-depth and detailed understanding are described in terms of the experiences of individuals or a group. (Yıldırım, Şimşek, 2013; Merriam, 2013, Creswell, 2013; Christensen, Johnson, Turner, 2015).

Study group

According to Yıldırım and Şimşek (2016), phenomenology studies can be carried out with 5-6 people. In this study, twelve teacher candidates in 4th grade in the department of primary education in a faculty of education were interviewed. Volunteer teacher candidates who took social studies in 3rd grade were selected. Table 1 shows the genders, hometowns and occupations of the mother and father of the participants. A total of eight participants (names in the table are pseudonyms) are from the Aegean region. One participant (Merve) is originally from Konya, but she was born and raised in Germany. She came to Turkey for high school and university education. Her parents live in Germany. Participants are the children of workers and officers. The family of one participant (Ferhat) is farmer.

Table 1: Characteristics of the Participants

Participant	Gender	Hometown	Mother's occupation	Father's occupation
Burçin	Female	Denizli	Worker	Retired worker
Damla	Female	İzmir	Retired worker	Retired worker
Banu	Female	Denizli	Housewife	Tradesman
Merve	Female	Konya (Germany)	Works abroad	Works abroad
Rabia	Female	Bilecik	Housewife	Accountant
Bilge	Female	Denizli	Teacher	Architect
Nur	Female	Aydın	Nurse	Police officer
Beste	Female	Denizli	Private sector	Officer
Ferhat	Male	Manisa	Housewife	Farmer
Hasan	Male	Bursa	Officer	Officer
Serhat	Male	Muğla	Housewife	Civil engineer
Kemal	Male	Tunceli	Nurse	Health officer

Data Collection and Analysis

Research data were obtained from semi-structured interviews conducted with the participants. A total of five questions were asked in the interview. The interviews lasted for 28-37 minutes. Content analysis, a qualitative data analysis was used in the analysis of the data. In content analysis, frequency of the statements about the subject is determined and their categorization is done (Balcı, 2001; Yıldırım and Şimşek 2016). The interviews were recorded within the knowledge of the participants. The recorded interviews were transferred to computer environment by the researcher. The interviews transcribed were grouped under codes, themes, and sub-themes (Creswell, 2007: 243).

Validity and Reliability Studies

In order to ensure credibility (internal validity) in the study, interview data were transcribed and submitted to the approval of the participants in order to obtain participant confirmation. For the reliability of the study, the examination, explanation, and interpretation of the study by different

researchers increase the consistency and comprehensibility of the study (Yıldırım, 2010). Therefore, in the process of data analysis; researcher variation was achieved by consulting researchers, field experts in education programs, and experts in qualitative research methods (The codes which reached a consensus were used as they were after unity of the codes was examined).

For the reliability of the analysis of the interview data, the reliability formula developed by Miles and Huberman (2015: 64) [(reliability=number of consensus / (total number of agreements + disagreements)] was used, and accordingly the coefficients that are above .90 are considered highly reliable for the research. According to this formula, the reliability coefficient of the study was .92, which indicates that the coding was reliable.

RESULTS

Based on the findings obtained from the interviews with the teacher candidates, two categories were formed. Also, themes were created under the categories of my values and values education.

My values

As seen in Figure 1, two main themes were created under the category of my values: the concept of values and values that guide my life. The themes, the concept of values and values that guide my life, were examined under two separate themes.

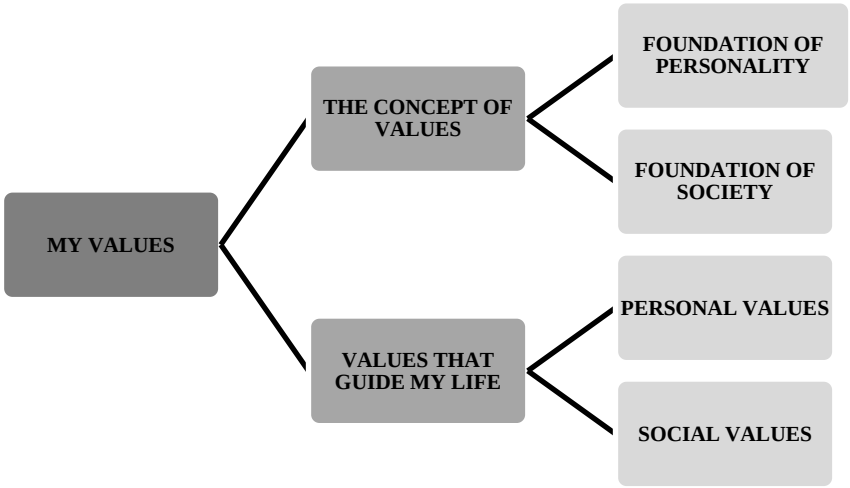

Figure 1: Themes and sub-themes related to my values category

The responses of the teacher candidates about the concept of values and values that guided their lives were examined under the category of “My Values”. The themes called foundations of personality and foundations of society were created in accordance with the meanings ascribed to the concept of values by the teacher candidates. Under the theme of the foundation of personality, the teacher candidates defined values as basic elements and characteristics that made a person an individual. Examples of the opinions of the teacher candidates on the theme of the foundation of personality are as follows:

Values are the characteristics that shape the individual. They are certain qualities that a person needs to gain in order to get to know himself/herself and become a better person (Ferhat).

I can say that values are a person’s entire thoughts or thought prototypes through which he shapes his red lines, behaviours, and what he is going to do or not going to do (Bilge).

Values, in fact, comprise the qualities that make us who we are. In other words, we can say that they create our identity (Rabia).

Values are the things that are important for people. People have different priorities. Values are the effective in this (Merve).

Some teacher candidates defined values as the cornerstone of society. They emphasized that the common beliefs, customs and traditions of societies constituted values. These definitions of the teacher candidates were discussed under the theme of the foundations of society. The teacher candidates stated the following opinions:

Values are the commonly-held things in the eyes of the society from past to present (Nur).

They are important things envisaged for a community. These may be behaviours, expressions, desired gains, and cultural transmission (Beste).

They are the power that creates societies. Values are common ideas and beliefs that constitute the society (Hasan).

It is everything that is commonly created by the society. Values are the things that society gives importance to (Serhat).

The teacher candidates were asked about the values that guided their lives and were effective in their decisions. Values that guided their lives were examined under two themes: personal and social values. Teacher candidates who defined values as the basic elements of personality highlighted the values of respect for them, responsibility, and love by describing values that guided their lives as "values that made me the person I am". These opinions formed the sub-theme of personal values. For instance;

Love is always in the foreground. This is followed by responsibility, which makes me who I am. In the first place, I need to love the job I have to do, the people who will be with me all my life, the place where I live, my home and everything. I can fulfil my responsibilities if there is love ... I have responsibilities for myself in this life. When I love myself, I fulfil my responsibilities. My self-esteem increases when I fulfil my responsibilities (Rabia).

Responsibility is important in my life. It's my responsibility to be honest with myself. In fact, everything is about how people see themselves... I mean, if I have respect for myself, I can look at my environment positively. The values that constitute my personality are the responsibility and respect I have for myself (Kemal).

The most important things for me are love and respect. If I'm full of love, everything is shaped around it. Then, honesty is also an important value (Banu).

Teacher candidates who defined values as the cornerstone of the society described the values that guided their lives as values that enabled them to exist in society. They highlighted values such as respect, tolerance, patriotism, equality and justice. These views of the teacher candidates created the sub-theme of social values. The statements of the teacher candidates on this subject are presented below.

I can say that respect comes first for me... Respect for ideas. Social order is achieved through the respect of individuals in society for each other. That's why it's my priority. As a teacher candidate, of course, patriotism is an important value. This is ultimately the element that constitutes the society as well. It is one of our essentials (Beste).

Patriotism, respect, tolerance... However, I think it is patriotism that has priority. These values should be accepted in our lives, and I think these values are universal. These are the commonly-held values in the society we live in as well. Love; we can be a humanist society that protects its country and respects its environment if we can instil love into people in general (Nur).

Social order is important to me. Certain common values that will maintain order guide my life too. For example, one's love for the place he lives in and patriotism are values that hold us together. Tolerance, for instance, is an important value for our society because it brings along respect for differences (Hasan).

The values that guide the lives of teacher candidates through the meanings they attribute to the concept of values and the values that affect the decision making processes in their lives are similar. There is consistency. Teacher candidates, who define values as the element that constitutes the society, shape their own behaviours according to the social norms. The teacher candidates who view values that guide their life in terms of their own identity define values as the element that constitutes their personality.

Values education

According to the findings obtained from the interviews with the teacher candidates, two main themes were determined under the category of Values Education. The main themes in this category are "Purpose of values education" and "The path I will follow".

The teacher candidates explained how they made sense of values education by explaining the objectives in values education offered in schools under the main theme of my objectives in values education. While determining the purpose of values education, they also stated what values should primarily be given in schools. Under the theme of the path I will follow in values education, they explained how they could help their students gain values when they became teachers. Themes and codes are given in Figure 2.

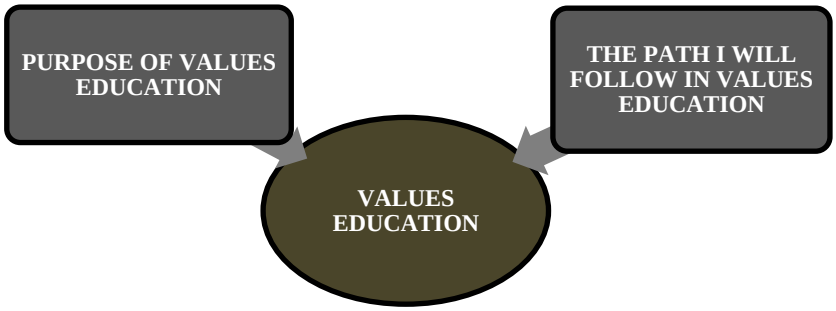

Figure 2: Values Education as Perceived by Teacher Candidates

The Purpose of Values Education: Good Citizen, Good Character

In this main theme, the teacher candidates stated the purpose of values education as raising good citizens or having good character. These expressions formed the sub-themes of the main theme of my objectives in values education. Themes and codes are given in Figure 3.

THE PURPOSE OF VALUES EDUCATION

Figure 3: The main theme of the purpose of values education, sub-themes and codes
In the good citizen sub-theme, teacher candidates explained values education in terms of ensuring the continuity of society and cultural transmission. The statements of the teacher candidates are presented below.

.. You cannot teach an old dog new tricks. If we can bring these values as soon as possible, we will lay the foundations of society. The importance of being a community is to keep common values alive. For this, we will raise good citizens who will protect their culture and values, so there will be social order (Hasan).

...We always provide information in schools, but it is also important to offer values education in order to address the behavioural dimension of the issue. I think preventing corruption will help citizens to find the right thing to do (Nur).

The teacher candidates, who claimed that the purpose of values education was to raise good citizens, emphasized the importance of social values such as being scientific, respect, love, patriotism, helpfulness and sharing. For example; Damla, Serhat and Hasan explained this as follows:

...For example; love, respect, and sharing are vital. This is because we form a community together. If we cannot have these values, we cannot fulfil the conditions to be a society (Damla).

There are values that a child must have in order to live in society. Like patriotism and helpfulness. Providing these is important (Serhat).

When it comes to education, I think there must be patriotism in the first place. This is because we need to start with patriotism in values education in school so that we can create awareness of the reason for being here. One should be able to say "since I love my country, I am here to be a good citizen" (Hasan).

The teacher candidates stated that the purpose of values education is to ensure the social and psychological well-being of individuals in every aspect under the sub-theme of good character. Their statements on this issue are as follows;

...In fact, children actually come to us with some values. But all of these are not formed right... I think values education is important to help children become a right person by directing them towards right things in their mind (Burçin).

Values have a major contribution to the child's personality development. This is because we socially have many of these values. They can come with customs and traditions, and we have them all. However, the purpose in schools is to make sure that children have the right personality (Banu).

Values education helps the person to have the right character. It helps the child find himself... Values are the things that make us who we are. It is important to provide these. A healthy individual is essential to be a healthy society (Merve).

Values education is provided in order to help children form a character and guide them (Ferhat).

The teacher candidates, who stated that the purpose of values education was to raise individuals with good character, emphasized the importance of the education of personal values such as self-respect, love, tolerance and honesty. For example; Bilge, Beste and Burçin explained this issue as follows:

In values education, being honest and scientific is a must … The important thing for a person is being scientific and honesty (Bilge).

Values education starts with love... I think the child whom we can instil the seeds of love in will be respectful, tolerant, hardworking, and responsible. Thus, we can ensure the formation of a strong personality (Beste).

Tolerance is very important in my opinion... We can ensure one's inner peace and happiness through these two values. These values should be emphasized first (Burçin).

The Path I Will Follow in Values Education: Active Learning, Modelling, Family-School Cooperation

Three sub-themes were identified for the theme of the path I will follow in values education: active learning, modelling and family-school cooperation. Teacher candidates stated that values education could be provided through the teacher's being a good model in schools, using active learning methods, and cooperating with families. Sub-themes and codes are given in Figure 4.

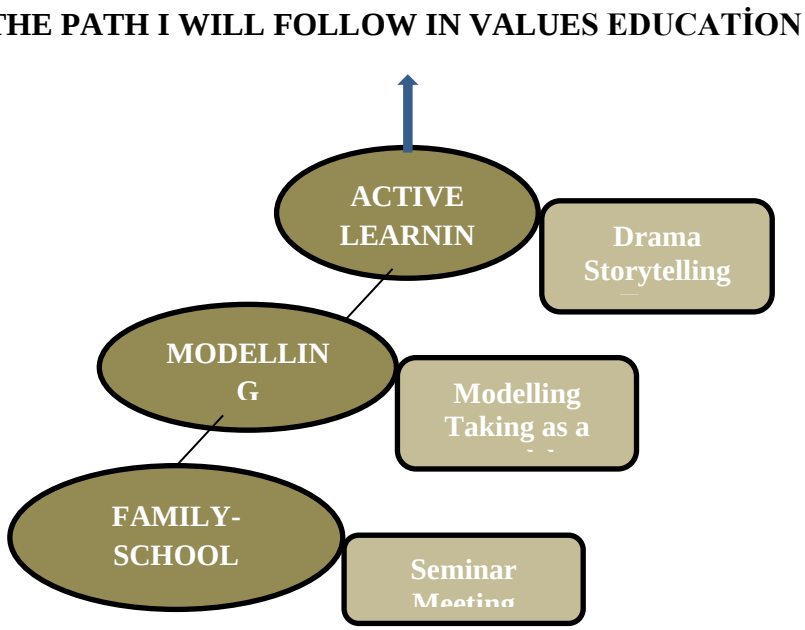

Figure 4: The main theme of the path I will follow in values education, sub-themes and codes

In values education, teacher candidates stated that it would be effective to use active learning methods such as drama, narration and storytelling, role playing and arranging tours. For example; Burçin and Damla put forward their ideas on this issue as follows:

Drama is an effective method. I know that it is very effective especially on abstract concepts. For example, I can create classroom experiences with small plays... We can put on a play where children are distributed characters and they can be guided. In this way, I learn what the children think and their viewpoints more easily (Burcin).

Now, stories really attract the attention of children. Stories should definitely be used. Especially true stories; they can draw their attention more (Damla).

The teacher candidates stated that behaviours of teachers that primary school students consider role models were effective in values education. It has been emphasized that if their teachers become the right role model for students, they can adopt many values such as justice, love, respect, and responsibility.

I try being a role model, because when children look at me, they say my teacher does in this way, thus I'll do so. Here is, for example, responsibility; if I come to my class preparedly every day and students will willy-nilly say that our teacher comes to class preparedly, so we should do the same, as well. Thus, they will turn the value of responsibility into a habit (Rabia).

I have to demonstrate these values myself as a teacher, too. That is, I have to be a model... For example, when a student has a question or when he wants to say something, bending down to his height and listening to him by making eye contact indicate that we respect the student. I think that this would be effective in creating that value in the child (Nur).

The teacher candidates emphasized the importance of cooperation with the family under the theme of the path I will follow in values education. It was suggested that if the value to be gained in school was considered important in family too, this would help students acquire positive and permanent learning. The views of the teacher candidates on this issue are given below.

...It can go hand in hand with family education. For example, encouraging the child to behave correctly, giving applauses as a class, and praising the child help him gain self-confidence... Informing the family about this issue and arranging meetings with them help the child maintain that behaviour at home and make it part of his personality (Merve).

The family should be sensitive to make the behaviour or value that I want children to gain permanent. Therefore, I can work with them or I can encourage them to attend a seminar... This is because the people that the child cares in his life are his family and teacher. If they care about this issue, the child will say that it is important for me too (Serhat).

DISCUSSION AND CONCLUSION

The main purpose of the study was to determine how the concept of values is defined by teacher candidates and what they think about values education. In this respect, individual interviews were conducted with teacher candidates who will work in primary school where the first seeds of values education will be planted.

The opinions of teacher candidates on values and values education were grouped under two categories as "My Values" and "Values Education". In the category of "My Values", teacher candidates included the concept of values and the values that guided their lives within personal and social values. The category of Values Education was examined under the purpose of values education and the path I will follow. While some teacher candidates emphasized that the primary goal in values education should be to raise good citizens, other teacher candidates highlighted the importance of

having a good character by focusing on personal values. The teacher candidates thought that active learning methods, modelling, and cooperating with family would be effective in values education.

The teacher candidates defined the concept of values in two different ways as the foundations of personality and society. In parallel with the results of the research, the concept of values is defined in two dimensions in the studies in the literature. While character formation forms one dimension, other dimension is made up of the unifying character of the society (Aydın, 2003; Büyükdüvenci, 2002; Özgüven, 2003; Sağnak, 2004; TDK, 2010; Turan and Aktan; 2008; Winter, Newton and Kirkpatrick (1998). Dhar & Dhar expressed this situation as follows: Values are concepts that have both micro and macro meanings. On the basis of individual behaviour, values are internalized standards that reconcile the needs of the individual and the demands of social life. In this case, values provide individuals with appropriate options for their actions. At the macro level, such as cultural life, values indicate shared meanings that allow for the integration with social life (cited in Balcı and Yelken, 2010).

In the sub-theme of "the foundations of personality" under the theme of the concept of values, teacher candidates defined value as the basic elements or features that make up personality and the element that makes a person an individual. Socrates emphasized the foundations of personality by stating that it was necessary to teach children to be a good person years ago. The definition obtained under this theme is similar to the definitions of Avcı, (2007), Bono (2007) and UNESCO (2005). According to Avcı, (2007), Bono (2007) and UNESCO (2005), value is the real factor behind the attitudes and acknowledgements of an individual. Schwartz (2001) defines values as guiding principles and purposes in people's lives although the importance of values varies, and this definition coincides with the definition made under this theme.

In the sub-theme of "the foundations of society" under the theme of the concept of values, teacher candidates stressed that common beliefs, customs and traditions of societies constituted values. They defined value as the cornerstone of society. In the literature, there are definitions that address value in social dimension: Akbaş (2007) defined values as the things considered the best, most correct, and most beneficial by the society. By addressing values in social dimension, Kolaç (2010) put forward that the future of a society would be determined by the robustness of the bridge between the past and future values. In the study conducted by Kolaç and Karadağ (2012), teacher candidates defined values as the criteria adopted by the society.

The second theme in my values category is "the values that guide my life". Based on the statements of the teacher candidates, the values that guided their lives were examined under two sub-themes as personal and social values. This finding matches the meanings that the teacher candidates attributed to the concept of values. The teacher candidates who defined the concept of values as the basic elements of personality emphasized the personal values in the values that guided their lives while those who defined values as the cornerstone of society highlighted social values in the values that guided their lives. In their study, Altunay and Yalcinkaya (2011) put forward that values, on the one hand, affect cognitive processes, individual attitudes and behaviours, but on the other hand they interact with the cultural stereotypes of society and reflect them.

In this case, we can say that values constitute the identity of the society together with the individual characteristics of people, and this situation explains why there was a similarity between the meaning attributed to the concept of values and the values that guided life at the end of the study.

Teacher candidates stated that values like love, self-esteem and tolerance are the factors that influence how one gives his decisions and shapes his life. Therefore, some teacher candidates described values as the characteristics that make a person an individual. In the classification of Schwartz, values such as self-esteem are found in the dimension of self-orientation (Schwartz, 1992). In this study, in accordance with the classification of Schwartz, this finding is discussed under the theme of the foundations of personality. The definition by Allport (1961) is similar to those of some teacher candidates in this study. According to Allport (1961), values are beliefs based on individuals'

preferred actions. In a study by Balci and Yelken (2010), teachers described values as "characteristics that make a person an individual". Similarly, Aktepe and Yel (2009) revealed that self-respect is one of the values considered most important by the teachers. In a study conducted by Yazar (2012), the teachers addressed intangibles by primarily pointing out personal attitudes in values that guided their lives.

Some of the teachers talked about social values under the theme of the values that guide their lives. They focused on values such as respect, tolerance, patriotism, equality and justice. Fichter emphasized the social aspect of values by stating "values show the ideal ways of thinking and behaving in every society" (2002, p. 157). Likewise, in the studies conducted by Aladağ and Kuzgun (2015), Güven (2015), and Kolaç and Karadağ (2012) teachers defined values as common feelings and thoughts that are conveyed from one generation to the next and hold the society together.

Values can be taught and learned. People are not born as values-aware. Different forms and evaluation of values in different societies show that they are learned later in life (Aydın, 2010). Therefore, the concept of values education was also discussed in the study. Two themes were determined under the category of Values Education as "The Purpose of Values Education" and "The Path I Will Follow".

Under the main theme of the purpose of values education, the teacher candidates explained how they made sense of values education by clarifying what was desired to be achieved in values education provided at school. While determining the purpose of values education, they also pointed out the values that should primarily be given in schools. Under the theme of the path I will follow in values education, they explained how they could help students gain the values when they became teachers.

Some of the teacher candidates indicated that the purpose of values education was to raise good citizens, that is to say, values education is important in terms of ensuring the continuity of society and cultural transmission. According to Patrick (2003), one of the characteristics of an effective and good citizen is that they have moral and social virtues like public interest (Patrick, 2003, p.1). At this point, it can be suggested that values education is also a tool for raising good citizens. Bono (2007) pointed out values education in providing social continuity by expressing that social values can be transferred to the next generations through the continuity of values.

Some of the teacher candidates stated that the purpose of values education was to raise individuals who had good character, that is, to ensure social and psychological well-being of individuals in every aspect. In a study, Aydın (2010) claimed that the right and wrong behaviours for a person who has newly begun the process of growth and the basic principles a person should base his life on must be directly or indirectly included in the school curricula. At this point, it has been reported that one of the objectives of values education in schools is to develop a healthy, consistent and balanced personality in students (Aydın, 2010). In the curricula of the MoNE, the purpose of values education is explained in a similar way to the research findings as follows: One of the objectives of values education is to help students develop a healthy, consistent, and balanced personality. For this, multidimensional development of the individual is essential. In addition, values that have an important role in shaping the attitudes and behaviours of people contribute to the healthy and balanced development of students (Turkish Language Teaching Program, 2017: 8).

Teachers have an important role in the process of adding values to their students due to their position (Yilmaz, 2009, cited in Suh and Traiger). At this point, the path the teacher will follow in values education gains importance. In this study, three sub-themes were identified under the theme of the path I will follow in values education: active learning, modelling, and family-school cooperation. The teacher candidates stated that values education could be provided at schools by using active learning methods, modelling and cooperating with families.

Some of the teacher candidates claimed that it would be effective to use active learning methods such as drama, storytelling and narration, role playing, and tours. Values are abstract concepts for children, especially for primary school children. It can be argued that while teaching abstract concepts, preferring methods that can easily be made concrete by students and that are embellished with examples that can be based on their daily lives can be effective in gaining the behaviour. Accordingly, in this study, teacher candidates stated that the best way to make things concrete could be using active learning methods. Likewise, in the study of Kurtdede Fidan (2009), teacher candidates suggested activities such as telling didactic stories and having students watch movies, films, and plays with a value dimension for values education. In the literature, there are similar studies on the necessity of using active learning methods such as tours and drama, in particular, in values education (Bayır, Köse and Deveci, 2016; Bhardwaj, Tyagi and Ameta, 2015; Çengelci, 2015).

Some of the teacher candidates emphasized the importance of modelling in values education. As put forward by Bayır, Köse and Deveci (2016) in their studies, in order to add values, which are abstract terms, to students, teachers should behave in accordance with these values as well since children, especially at the primary school level, learn by taking their teachers as a model in every aspect. William Ward defines teacher as follows: An average teacher tells, a good teacher explains, a qualified teacher shows, and an ideal teacher makes students think. A qualified teacher should be able to show the students the right way. The teacher's being the right model in values education is a finding obtained in many studies in the literature (Çelikkaya and Filoğlu, 2014; Çengelci 2010; Kurtdede Fidan, 2009; Sever, 2015).

In the research, the teacher candidates emphasized the importance of cooperation with the family in order to have permanent learning in values education. It can be argued that the fact that knowledge, skills and behaviours given at school for an effective values education does not clash with the family is effective in terms of permanent learning. A study by Güven (2015) concluded that a family understanding that contradicts with the values education given at school would confuse students and eventually the education process would not succeed. For this reason, school-family associations should act as bridges between schools and families and organize active and productive activities. In parallel with the results of the study, there are many studies in the literature highlighting the importance of cooperation with the family in values education (Akbaş, 2004; Sarı, 2007; Yalar and Yelken, 2011; Yılmaz, 2009).

SUGGESTIONS

Based on the findings of the research, the following suggestions can be made:

Studies can be conducted on active learning methods in values education.

Values education practices can be done with school-family cooperation.

In order to determine teacher candidates' views on the concept of values and values education, mixed research studies can be carried out with a more comprehensive and large sample.

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Role of Temperament Traits and Empathy Skills of Preschool Children in Predicting Emotional Adjustment

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Abstract

This research aimed to investigate the role of temperament traits and empathy skills of preschool children in predicting social emotional adjustment. Designed in accordance with the relational screening method, the study was completed with 284 children attending preschool educational institutions in Çanakkale provincial center in the 2017-2018 educational year, their teachers, and parents. Research data were collected using the Short Temperament Scale (Yağmurlu & Sanson, 2009), Preschool Behavioral and Emotional Rating Scale (Balat Uyanık & Özdemir Beceren, 2014) and Empathy Questionnaire (Adak Özdemir & Uysal, 2017). The research results show that there are significant correlations between temperament traits, empathy skills and social emotional adjustment of children. The subdimensions of temperament and empathy significantly predicted the social emotional adjustment subdimensions of family involvement, social confidence, readiness for school and emotional adjustment.

Key words: empathy, temperament, social emotional adjustment, preschool, children

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INTRODUCTION

Temperament, which may be a determinant of a variety of traits like empathy and social behavior, plays a significant role in different development areas in children (Rothbart, Ahadi & Evans, 2000). Research have found correlations between children's temperament traits and variables like behavior problems, peer acceptance, friend selection and social sufficiency, social-based school success, self-regulation and self-efficacy capacity and love of school with student-teacher interactions. In other words, temperament determines the child's unique behavior style and provides information about the child's individuality (Kaya & Akgün, 2016). Debated for centuries, the temperament concept was defined by Robert and Bates (1998) as genetically-sourced variability observed in individual behavior. Temperament is the quantitative and qualitative aspects of changes in emotionally-sourced reactions unique to the individual displayed in certain situations during daily life (Köknel,1999). According to Derryberry and Rothbart (1997), temperament is emotional-motivating and careful adaptation variations shaped and formed by human experience. Özdemir and Acarkan (2010) defined temperament as the psychological source of genetics in a person, a psychic aspect of DNA. Robert McCall stated temperament traits were probably strongly affected by biological factors and were more affected by experience and context with increasing development (Shiner et al., 2012). The root of research about temperament in infants and children is based in the 1950s, and in the 1980s it became one of the topics of current developmental psychology and child psychiatry (Zentner & Bates, 2008). Alexander Thomas and Stella Chess, Arnold Buss and Robert Plomin, Hill Goldsmith, and Mary Klevjord Rothbart significantly contributed to the literature with research about temperament in children based on different approaches and are noteworthy for different definitions related to temperament. According to Buss and Plomin, temperament is a hereditary personality trait which can be observed from early childhood (Buss & Plomin, 1984; Bee 1995). Thomas and Chess defined temperament as elements related to style of behavior and stated nine defining traits of temperament in children. These traits were determined to be activity level, regularity, approach and withdrawal, adaptability, sensory threshold, intensity, mood, distractibility, and attention duration and persistence. Rothbart and Bates defined a biological basis for temperament in children representing emotionality, activity and attention and defined personal differences in self-regulation and reactions. They stated that temperament included positive effects and approach to behavior, mood and thought, and included the variability of fear, disappointment, sadness, and discomfort in addition to careful reaction and self-control. Individual differences due to temperament have different effects on development in infancy and childhood and they proposed it formed the core of personality (Rothbart & Bates, 2000; Rothbart, Ahadi & Evans, 2010; Rothbart, 2011). Goldsmith defined temperament as differences in primary mood statements in infancy (joy, anger, fear, interest/curiosity) and stated that temperament had dimensions of emotionality, activity and sociability (Goldsmith et al., 1987).

When approaches to child temperament are investigated, five different approaches are noted. These are Cloninger's temperament approach (Cloninger, Svrakic & Przybecek, 1993), Thomas and Chess's approach (Chess & Thomas 1991), Buss and Plomin's temperament approach (Buss & Plomin, 1984), Rothbart's temperament approach (Rothbart & Bates, 2000) and Kagan's biotypologic approach (Kagan & Snidman, 2004). Among these, the most commonly used approach referenced in the field of temperament is Thomas and Chess's approach. Thomas and Chess investigated participants in certain periods from infancy to adulthood in longitudinal studies completed with parents. At the end of the study, they stated there were nine definitive traits of children's temperament (Chess & Thomas, 1991; Chess & Thomas, 1996; cited in Dinç, 2017). Children's temperament traits were represented by subdimensions of activity level, regularity, approach or withdrawal, adaptability, sensory threshold, intensity, mood, distractibility, attention, and persistence (Burger, 2006). Additionally, collecting these traits together three child types were defined. These were "easy temperament" children with regular feeding and sleep times, easily adapting to changes. Children with irregular feeding and sleep times, who had difficulty adapting to innovations and changes and with negative moods had "difficult temperament." Children called "slow to warm up" were children in the center of these two endpoints, with occasional increasing adaptability skills, withdrawing in some situations with both calm and negative moods (Yağmurlu & Kodalak, 2010).

An important part of social emotional development, empathy is defined as the ability to feel or imagine the emotional experiences of others. Empathy affects a person's behavior and social relationships with others (McDonald & Messinger, 2011; Kaya & Siyez, 2010). Individuals may be born with empathic capacity; however, empathic behavior is primarily learned through social experiences (Eryaman, 2008). At the same time, empathy is the source of all social skills (Shapiro, 2012; Goleman, 2008; cited in Santi, 2014; Rieffe, Ketelaar & Wiefferink, 2009). The relevant literature related to empathy shows that the consistency and attitudes displayed by the family to the child during interactions, behavior and practices affect the child's development of empathy (Tong et al., 2012) and shows that the child can understand the feelings of others (Mortari, 2011). Additionally, some research results have revealed a correlation (Koçak & Önen, 2013; Şen & Özbey, 2017; Parker, Mathis & Kupersmidt, 2013) between children's skills in recognizing emotion and social skills and problem behaviors, empathy skills and emotional intelligence (Akaydın & Akduman, 2016).

Temperament traits in children have been associated with many behaviors and skills in the literature. Among studies related to temperament traits in children, there is research investigating the correlations of temperament with gender, number of siblings, emotional regulation skills, parenting styles, school adjustment and interaction with teachers. Temperament determining the quality of sibling relationships begins to be affected by social and emotional skills with advancing years (Stocker, Dunn and Plomin 1989). Research by Yoleri and Küçükyeşil (2014) revealed temperament (rhythmicity, warmth-shyness) predicted language skills while other research revealed temperament (reactivity) predicted open aggression at low levels. According to Önder, Balaban-Dağal and Bayındır (2018) authoritarian and permissive parenting styles explained the temperament traits of persistency and reactivity along with ego robustness at moderate levels. Some research findings have revealed temperament is associated with the school adjustment of children (Kaya & Akgün, 2016).

Kaytez (2016) emphasized the correlation between maternal acceptance-rejection levels and a child's temperament. There was a significant correlation between the mothers' total acceptance-rejection points and total temperament points. Findings of emotional regulation studies related to temperament revealed a significant correlation between emotional regulation skills and temperament traits (Blair, Denham Kochanoff Whipple, 2004). Research showed the temperament traits of preschool children affected friend selection (Gleason, Gower, Gleason & Hohmann, 2005; Metin-Aslan, 2017) and relationships with teachers and peers. Research has revealed that children with difficult temperament have high intensity conflicts with teachers and peers (Acar, 2013; Acar & Rudasill, 2015; Acar, Torquati, Encinger & Colgrove, 2018; Griggs, Gagnon, Huelsman, Kidder-Ashley & Ballard, 2009; Oren, 2009; Rudasill & Rimm-Kaufman 2009; Rudasill, Hawley, Molfese, Tu, Prokasky & Sirota, 2016).

Temperament is thought to affect social and emotional development by determining perception styles and reactions given to surroundings (Rothbart, Ahadi & Hershey, 1994). It is necessary to determine the temperament of children that are excluded and which traits of this temperament the exclusion is caused by and the problems related to this to resolve them within the classroom. Identifying the temperament structure of a child carries foremost importance in terms of displaying the necessary behavior, attitudes and direction needed to develop the personality traits in this structure in a positive way (Özdemir & Acarkan, 2010). By openly defining the structural aspects of temperament traits, we can reach conclusions related to reactions children give to their surroundings, forms of perception of the outer world and behaviors developed based on this perception. Based on this information the strong aspects of children can be found, their environment can be organized as necessary and external factors can be organized to support success (Erşahin Şafak, 2016). There are many studies completed in the field related to temperament. When the research is considered, findings obtained related to positive development of social behavior show that some temperament traits are associated with positive development of social behavior (Yağmurlu, Sanson & Köymen, 2005). There are many studies about temperament and social skills of children in the preschool period. Research has revealed correlations between temperament with social abilities, social adjustment and social competence (Akbaş, 2016; Altun Nalbant, 2015; Arı & Yaban, 2016; Erşahin Şafak, 2016, Griggs, Gagnon, Huelsman, Kidder-Ashley & Ballard, 2009; Kılıç & Güngör 2017;

Aytar, 2017; Pekdoğan & Kanak, 2011; Rudasill & Konold, 2008; Sterry, Reiter-Purtill, Gartstein, Gerhardt, Vannatta & Noll, 2010;Walker, 2009; Van Hecke et al., 2007; Zembat, Yılmaz & İlçi Küsmez, 2017; Zembat, Koçyiğit, Akşin-Yavuz & Tunceli, 2018). Research by Akbaş (2016) investigating the correlation between the social adjustment skills and temperament traits of children in the preschool period identified that variations in the social adjustment and social incompatibility subdimensions were due to variations in the temperament traits of children.

The information stated above indicates the correlation between temperament, empathy, and social emotional adjustment. However, it is noteworthy that the research into temperament, empathy, and social emotional adjustment of children in the relevant literature is limited. As a result, this research aims to research the role of temperament and empathy skills in predicting social emotional adjustment.

METHOD

Research Model

This research on the topic of the prediction of social emotional adjustment of children in the preschool period by temperament and empathy is a descriptive study using the relational screening model. Sample selection is based on the simple random method.

Study Group

The study group in the research comprised 284 children (174 girls, 137 boys) chosen with the simple random method from among 60-month-old children attending preschools and preschool classes in Çanakkale provincial center, their parents, and their teachers. As data were collected during the spring semester of the educational year, children had been attending preschool for at least 4 months.

Data Collection Tools

In this research the “Short Temperament Scale” was used for temperament traits, the “Empathy Questionnaire” was used for empathy skills and the “Preschool Behavioral and Emotional Rating Scale” was used for social emotional adjustment. Additionally, a Personal Information Form was used to obtain demographic information.

Short Temperament Scale: The scale was developed by Prior, Sanson and Oberklaid in 1989. Turkish adaptation was completed by Yağmurlu and Sanson (2009). The Short Temperament Scale is completed by the mother and father and comprises 30 items with a six-point Likert scale from one (almost never) to six (nearly all the time). The scale has four subdimensions of reactivity, persistence, approach, and rhythmicity. These subdimensions measure reactivity meaning the child’s state of being ready to react to a certain stimulus or event; persistence is the child’s ability to focus their attention on an activity; approach is whether the child has a tendency to approach new people and environments or not; and rhythmicity is the child’s regularity of routine behaviors in daily life like eating and sleeping over time. To calculate the points for each subdimension firstly it is necessary or organize the inversely-coded items and obtain the mean for the items in the subdimension. Approach comprises items 1, 4, 13, 15, 18, 21 and 28; persistence comprises items 2, 5, 10, 12, 23, 27 and 30; rhythmicity dimension comprises items 3, 6, 9, 14, 17, 22 and 26; and the reactivity dimension comprises items 7, 8, 11, 16, 19, 20, 24, 25 and 29. Items 1, 4, 8, 14, 17, 22, 23 and 28 are coded inversely. High points obtained from the dimensions indicate high reactivity, high persistence, low approach and low rhythmicity traits in the child. The internal consistency points for the Turkish version of the scale were calculated as .80 for approach, .77 for reactivity, .76 for persistence and .48 for rhythmicity (Yağmurlu & Sanson, 2009).

Preschool Behavioral and Emotional Rating Scale: The Preschool Behavioral and Emotional Rating Scale (PreBERS) was developed by Epstein and Synhorst (2009) to assess the social and emotional aspects of adjustment in preschool children. The language equivalency and validity-reliability studies for the scale were completed by Balat Uyanık and Özdemir Beceren (2014). The scale comprises a total of 4 subdimension with 13 items about emotional adjustment, 13 items about school readiness, 7 items about family involvement and 9 items about social confidence. Comprising 42 items, the scale has a 4-point Likert answer scale. Items are given points from "(0=not at all like the child; 1=not much like the child; 2=like the child; 3=very much like the child), with high points obtained from the scale showing positive social-emotional adjustment in the child. Statements in items answered by teachers request they assess by considering the child's behavior displayed in the class environment. The internal consistency coefficient calculated for the whole scale had a Cronbach alpha value of .95. The internal consistency coefficients for the subdimensions of the scale were calculated as .90 for social confidence, .95 for school readiness, .94 for social adjustment and .86 for family involvement.

Empathy Questionnaire: The "Empathy Questionnaire" developed by Rieffe, Ketelaar and Wiefferink (2009) to determine the behavior related to empathy among preschool children ensures identification of empathy skills of children with an assessment of behavior displayed in the last two months by teachers or parents. The scale gained a 20-item form as a result of pilot studies of a 60-item scale tool developed based on observational studies by child psychologists Eisenberg et al. working with developmental psychologists, teachers and children with autism spectrum disorder. The Empathy Questionnaire comprises three subdimensions of "emotional transition", "attention to the emotions of others" and "pro-social behavior". The scale has a 3-point Likert answer scale of "never", "sometimes" and "often". The validity and reliability studies for the original scale were completed using data obtained from 109 families with children from 1-5 years of age. According to the reliability analysis results, the emotional transition/transmission subdimension had an internal consistency coefficient of $\alpha = .58$; the attention to emotions of others subdimension had $\alpha = .71$ and prosocial-behavior subdimension had $\alpha = .80$ calculated. The scale was adapted to Turkish by Adak-Özdemir and Uysal (2017).

Collection of Data

The mothers and fathers of children included in the study group completed the forms about their children, personal information, temperament traits and empathy skills. For social emotional adjustment behavior, the teachers of children participating in the research completed the scale. After receiving permission from the Provincial Directorate of National Education, school principals were approached, and scales were given to the families by the preschool teachers.

Analysis of Data

In line with the aims of the research, firstly the assumption of normality was tested with the Kolmogorov-Smirnov (K-S) test and data were determined to show normal distribution ($p>.05$). The t test was used to determine whether temperament traits, empathy skills and social emotional adjustment behavior of children differed according to gender. Multiple regression analysis was used to investigate the role of temperament traits and empathy skills in predicting social emotional adjustment behavior. Regression analysis was based on the Forward method. With this method, independent variables are inserted into the model according to the strength of their correlation with the dependent variable. After measuring the effect of each variable entering the model, variables that do not significantly affect the model are removed (Kalaycı, 2010). The significance level was taken as at least 0.05 in the research.

Results

Multiple regression analysis (forward method) was completed to determine the predictive role of temperament and empathy on social emotional adjustment behavior. In addition, t-test was conducted to investigate whether temperament, empathy and social emotional adaptation differed according to gender. Findings related to the analyses are presented below.

Table 1. Multiple Linear Regression analysis results related to prediction of social emotional adjustment subdimension of family involvement by temperament subdimensions

Predictive Variables	B	Std. E	ß	t	p	Two-way r	Partial R
(Fixed)	-.148	.397		-.373	.710		
Temperament reactivity	.102	.059	.100	1.718	.087	.026	.102
Temperament persistence	.198	.052	.224	3.781	.000**	.268	.221
Temperament approach	.013	.053	.015	.255	.799	.064	.015
Temperament rhythmicity	.251	.066	.227	3.787	.000**	.281	.221
R=.36	R^2=.13	F=10.165	p=.0.00**				
Social Emotional Adjustment Family Involvement = (-.148+.10tep+-..01sıc) - (.25rit+.20seb)							

**p<.01

When Table 1 is investigated, it appears there are significant correlations between the reactivity, persistence, approach, and rhythmicity subdimensions of temperament for the social emotional adjustment family involvement subdimension (R=.36, R^2=.13, F=10.165, p<0.01). These variables together explain a total of 13% of the variance in family participation. According to the standardized regression coefficient (ß), the order of importance of the predictive variables for family involvement is rhythmicity, persistence, reactivity, and approach. When t test results for significance of regression coefficients are investigated, only the persistence and rhythmicity subdimensions of temperament can be said to significantly predict family involvement.

Table 2. Multiple Linear Regression analysis results related to prediction of social emotional adjustment subdimension of social confidence by temperament subdimensions

Predictive Variables	B	Std. E	ß	t	p	Two way r	Partial R
(Fixed)	-.033	.381		-.085	.932		
Temperament reactivity	.111	.057	.114	1.947	.053	.042	.116
Temperament persistence	.192	.050	.228	3.831	.000**	.262	.224
Temperament approach	.015	.050	.018	.306	.760	.057	.018
Temperament rhythmicity	.207	.064	.196	3.247	.001**	.250	.191
R=.34	R^2=.12	F=9.021	p=.0.00**				
Social Emotional Adjustment Social Confidence = (-.03+..11tep+.02sıc) - (.19seb+.21rit)							

**p<.01

When Table 2 is investigated, it appears there are significant correlations between reactivity, persistence, approach, and rhythmicity temperament traits with social confidence subdimension of social emotional adjustment (R=.34, R^2=.12, F=9.021, p<0.01). These variables together explain 12% of the total variance in social confidence. According to standardized regression coefficient (ß), the order of the predictive variables according to importance for social confidence is persistence, rhythmicity, reactivity, and approach. When t test results about regression coefficient significance are investigated, only the persistence and rhythmicity subdimensions of temperament can be said to be significant predictors of the social confidence subdimension of social emotional adjustment.

Table 3. Multiple Linear Regression analysis results related to prediction of social emotional adjustment subdimension of school readiness by temperament subdimensions

Predictive Variables	B	Std. E	ß	t	p	Two-way r	Partial R
(Fixed)	-.190	.393		-.483	.629		
Temperament reactivity	.136	.059	.134	2.306	.022*	.061	.137
Temperament persistence	.197	.052	.226	3.798	.000**	.258	.222
Temperament approach	.020	.052	.022	.382	.703	.060	.023
Temperament rhythmicity	.225	.066	.206	3.434	.001**	.259	.201
R=.35 R^2=.12 F=9.605 p=.0.00**							
Social Emotional Adjustment School Readiness = (-.19+.14tep+.20seb+.23rit) - (.02sıc)							

**p<.01; *p<.05

When Table 3 is investigated, it appears there are significant correlations between reactivity, persistence, approach, and rhythmicity temperament subdimensions with the school readiness subdimension of social emotional adjustment (R=.35, R^2=.12, F=9.605, p<0.01). These four variables together explain 12% of the total variance in the school readiness subdimension of social emotional adjustment. When t test results about regression coefficient significance are investigated, only the reactivity, persistence, and rhythmicity subdimensions of temperament can be said to be significant predictors of school readiness, while the approach subdimension does not have a significant effect. When beta coefficients are investigated, the most important predictor of the social emotional adjustment subdimension of school readiness was the persistence subdimension of temperament, and this is followed by reactivity and approach subdimensions in order of relative importance.

Table 4. Multiple Linear Regression analysis results related to prediction of social emotional adjustment subdimension of emotional adjustment by temperament subdimensions

Predictive Variables	B	Std. E	ß	t	p	Two-way r	Partial R
(Fixed)	.172	.360		.477	.633		
Temperament reactivity	.109	.054	.119	2.022	.044*	.058	.120
Temperament persistence	.167	.048	.211	3.514	.001**	.239	.206
Temperament approach	-.012	.048	-.014	-.244	.807	.021	-.015
Temperament rhythmicity	.185	.060	.186	3.068	.002**	.228	.181
R=.32 R^2=.10 F=7.71 p=.0.00**							
Social emotional adjustment emotional adjustment = (.17+.11tep+.17seb+.19rit) - (-.01sıc)							

**p<.01;*p<.05

When Table 4 is investigated, it appears the reactivity, persistence, approach and rhythmicity temperament subdimensions are significantly associated with the social emotional adjustment subdimension of emotional adjustment (R=.32, R^2=.10, F=7.71, p<0.01). These four variables together explain 10% of the total variance of the social emotional adjustment subdimension. When t test results about the significance of regression coefficients are investigated, only reactivity, persistence and rhythmicity subdimensions were significant predictors of emotional adjustment, while the approach variable did not have significant effects. When beta coefficients are investigated, the most important predictor of the emotional adjustment subdimension of social emotional adjustment was the persistence subdimension and this was followed by rhythmicity and reactivity subdimensions in order of relative importance.

Table 5. Multiple Linear Regression analysis results related to prediction of social emotional adjustment subdimension of family involvement by empathy subdimensions

Predictive Variables	B	Std. E	ß	t	p	Two-way r	Partial R
(Fixed)	2.707	.321		8.422	.000		
Emotional transmission	-.144	.117	-.098	-1.231	.219	-.290	-.073
Attention to other's feelings	.283	.137	.130	2.064	.040*	-.051	.122
Pro-social	-.535	.141	-.324	-3.786	.000**	-.334	-.221
R=.36 R^2=.13	F=13.987	p=.0.00**					
Social Emotional adjustment family involvement = (2.71+-.54pro+.-.28dikkat)-(-.14bul)							

**p<.01; *p<.05

According to the regression analysis results in Table 5, there were significant correlations at low levels for the emotional transmission, attention to other's feelings and pro-social behavior subdimensions of empathy with the social emotional adjustment subdimension of family involvement (R=.36, R^2=.13, F=13.987, p<0.01). These three variables together explain 13% of the total variance related to the family involvement subdimension of social emotional adjustment. When t-test results related to significance of regression coefficients is examined, it appears emotional attention and pro-social behavior subdimensions of empathy were significant predictors of the social emotional adjustment family involvement subdimension. When beta coefficients are investigated, the most important predictor of social emotional adjustment family involvement is the pro-social behavior subdimension of empathy.

Table 6. Multiple Linear Regression analysis results related to prediction of social emotional adjustment subdimension of social confidence by empathy subdimensions

Predictive Variables	B	Std. E	ß	t	p	Two way r	Partial R
(Fixed)	2.579	.311		8.301	.000		
Emotional transmission	-.219	.113	-.157	-1.942	.053	-.286	-.115
Attention to other's feelings	.211	.133	.102	1.590	.113	-.051	.095
Pro-social	-.351	.137	-.223	-2.569	.011*	-.289	-.152
R=.32 R^2=.10	F=10.580	p=.0.00**					
Social Emotional Adjustment Social Confidence = (2.58+-.22bul+.21dik)-(-.35pro)							

*p<.05

According to the regression analysis results included in Table 6, the emotional transmission, attention to other's feelings and pro-social behavior subdimensions of empathy had a significant

correlation at low levels with the social confidence subdimension of social emotional adjustment (R=.32, R^2=.10, F=10.580, p<0.01). These three variables together explain 10% of the total variance related to the social confidence subdimension of social emotional adjustment. When t-test results related to significance of regression coefficients is examined, it appears only the pro-social behavior subdimension of empathy was a significant predictor of the social emotional adjustment social confidence subdimension. In this situation, the most important predictor of social emotional adjustment social confidence can be said to be the pro-social behavior subdimension of empathy.

Table 7. Multiple Linear Regression analysis results related to prediction of social emotional adjustment subdimension of school readiness by empathy subdimensions

Predictive Variables	B	Std. E	ß	t	p	Two way r	Partial R
(Fixed)	2.503	.322		7.763	.000		
Emotional transmission	-.223	.117	-.155	-1.906	.058	-.275	-.113
Attention to other's feelings	.260	.138	.121	1.887	.060	-.029	.112
Pro-social	-.358	.142	-.220	-2.525	.012*	-.275	-.149
R=.32 R^2=.10 F=10.315 p=.0.00**							
Social Emotional Adjustment School Readiness = (2.503+-.22bul+.26dik)-(-.36pro+)							

*p<.05

According to the regression analysis results included in Table 7, the emotional transmission, attention to other's feelings and pro-social behavior subdimensions of empathy had a significant correlation at low levels with the school readiness subdimension of social emotional adjustment (R=.32, R^2=.10, F=10.315, p<0.01). These three variables together explain 10% of the total variance related to the school readiness subdimension of social emotional adjustment. When t-test results related to significance of regression coefficients is examined, it appears only the pro-social behavior subdimension of empathy was a significant predictor of the social emotional adjustment school readiness subdimension. In this situation, the most important predictor of social emotional adjustment school readiness can be said to be the pro-social behavior subdimension of empathy.

Table 8. Multiple Linear Regression analysis results related to prediction of social emotional adjustment subdimension of emotional adjustment by empathy subdimensions

Predictive Variables	B	Std. E	ß	t	p	Two-way r	Partial R
(Fixed)	2.145	.292		7.355	.000		
Emotional transmission	-.283	.106	-.216	-2.669	.008**	-.285	-.158
Attention to other's feelings	.302	.124	.155	2.427	.016*	.013	.144
Pro-social	-.240	.128	-.162	-1.869	.063	-.246	-.111
R=.32 R^2=.10 F=10.767 p=.0.00**							
Social Emotional Adjustment Emotional Adjustment = (2.15+-24pro)-(-.28dikkat+.30bulaşma)							

**p<.01; *p<.05

According to the regression analysis results included in Table 8, the emotional transmission, attention to other's feelings and pro-social behavior subdimensions of empathy had a significant correlation at low levels with the emotional adjustment subdimension of social emotional adjustment (R=.32, R^2=.10, F=10.580, p<0.01). These three variables together explain 10% of the total variance related to the emotional adjustment subdimension of social emotional adjustment. When t-test results related to significance of regression coefficients are examined, it appears the emotional transmission and attention to other's feelings subdimensions of empathy were significant predictors of the emotional adjustment subdimension of social emotional adjustment. When beta coefficients are

examined, the most important predictor of the emotional adjustment subdimension of social emotional adjustment can be said to be the emotional transmission subdimension of empathy.

Table 9. T-test analysis results for unrelated measurements of temperament, empathy, and social emotional adjustment subdimensions related to the Gender Factor

		N	$\bar{x}$	*ss*	$Sh_{\bar{x}}$	*t* Test		
						t	*Sd*	*p*
Temperament-reactivity	Girl	147	2.9040	.75546	.06231	-.739	282	.461
	Boy	137	2.9711	.77511	.06622			
Temperament-persistence	Girl	147	3.4976	.91601	.07555	-.871	282	.384
	Boy	137	3.5881	.82939	.07086			
Temperament-approach	Girl	147	3.7405	.83701	.06904	-.169	282	.866
	Boy	137	3.7570	.80763	.06900			
Temperament-rhythmicity	Girl	147	3.4937	.77550	.06396	-.402	282	.688
	Boy	137	3.5283	.66701	.05699			
Adjustment-family involvement	Girl	147	2.9359	.78695	.06491	.363	282	.717
	Boy	137	2.9016	.80214	.06853			
Adjustment-social confidence	Girl	147	2.8912	.74666	.06158	.657	282	.512
	Boy	137	2.8321	.76674	.06551			
Adjustment-school readiness	Girl	147	2.8722	.75871	.06258	.047	282	.963
	Boy	137	2.8765	.78698	.06724			
Adjustment-emotional	Girl	147	2.8058	.69973	.05771	.564	282	.574
	Boy	137	2.7584	.71877	.06141			
Empathy-emotional transmission	Girl	147	2.1139	.53173	.04386	2.087	282	.038*
	Boy	137	1.9818	.53519	.04572			
Empathy-attention to other's feelings	Girl	147	2.5569	.37675	.03107	1.000	282	.318
	Boy	137	2.5141	.34144	.02917			
Empathy-pro-social behavior	Girl	147	2.3333	.45623	.03763	3.105	282	.002**
	Boy	137	2.1606	.48144	.04113			

**p<.01; *p<0.5

When Table 9 is investigated, there was no statistically significant differences between temperament, empathy, and social emotional adjustment subdimensions in terms of gender, apart from the empathy subdimensions of emotional transmission and pro-social behavior. In line with this, the empathy subdimensions of emotional transmission and pro-social behavior were significantly different in favor of girls (t=3.105; 2.087, p<.05).

DISCUSSION

This research investigated the predictive role of temperament traits and empathy skills of children for social emotional adjustment. According to the results of regression analysis performed to determine the prediction of social emotional adjustment by temperament and empathy, the subdimensions of temperament significantly predicted the social emotional adjustment subdimensions of family involvement, social confidence, readiness for school and emotional adjustment. Persistence was seen to have a positive and low-level correlation with family involvement, social confidence, readiness for school and emotional adjustment. Rhythmicity was observed to have a positive and low-level correlation with family involvement, social confidence, readiness for school and emotional adjustment. Prosocial behavior had a negative and low-level correlation with rhythmicity, family involvement, social confidence, readiness for school and emotional adjustment. Emotional transmission was found to have a negative and low-level correlation with family involvement, social confidence, readiness for school and emotional adjustment. The empathy subdimensions of emotional transmission and pro-social behavior differed significantly in favor of girls. The findings obtained in

some research in the relevant literature are consistent with the findings in this research. Research results related to temperament traits in children in the relevant literatures indicated that temperament traits were affected by emotions, behavior, skills, adjustment and learning of children in other areas (Coplan, Wichman & Lagace-Seguin, 2001; Yoleri & Küçükyeşil, 2014; Zembat, Koçyiğit, Yavuz, & Tunçeli, 2018). Akbaş (2016) in research investigating the correlation between social adjustment skills and temperament traits in preschool children identified that variations in the social adjustment subdimensions and variations in social maladjustment subdimensions were due to changes in the temperament traits of children.

Yoleri (2014) in research investigating the "effects of age, gender and temperament traits on school adjustment in preschool children" identified that the temperament traits of children were correlated with school adjustment and concluded that the reactivity dimension of temperament was a significant predictor of adjustment. The temperament trait of reactivity is encountered as a dimension affecting school adjustment of children. Emotions contained within the reactivity dimension of anger, sadness and shame affect the academic success and adjustment of children (Valiente, Lemery-Chalfant & Swanson 2010). A study by Stoeckli (2010) showed that shy children have low class participation and low school adjustment. For the subdimension of approach, the school adjustment of children severely affected by the situation of being shy was affected by this trait in later years. The researchers reached a consensus that there was a high rate of correlation between temperament traits (low negative effect, high behavior control, low reactivity levels, etc.) with adjustment. Kılıç and Aytar (2017) revealed the correlation between social skills and temperament traits of preschool children with a training program prepared for these children. Akbaş (2016) in research investigating social adjustment and temperament traits of children aged 60 months and older attending preschool educational institutions and found the temperament subdimensions of persistence, approach and reactivity were correlated with social skills scale subdimensions. There are research results showing temperament predicts social behavior in children (Yağmurlu, Sanson, & Köymen, 2015). Bárrig and Alarcón (2017) found a correlation between social skills and temperament traits of Spanish children aged 2-6 years. Pekdoğan and Kanak (2016) investigated the social skills and temperament traits of children aged 4-6 years and concluded social skills were correlated with temperament traits of children.

In this research, social emotional adjustment behavior, temperament traits and empathy skills of children were investigated to see whether they differed according to gender and the empathy subdimensions of emotional transmission and prosocial behavior were revealed to differ significantly according to gender. When the means are investigated, this difference was understood to be in favor of girls in terms of empathy skills. Some research findings in the relevant literature are similar to the findings obtained in this research. Duru (2002) stated there were significant differences in favor of girls for empathic tendencies according to gender. Similarly, Derman (2013) and Dereli and Aypay (2012) stated that gender was effective on empathy skill levels and tendencies. Some research findings in the relevant literature are in parallel with the findings obtained in this study revealing temperament traits differ according to gender (Acar et al., 2018; Zembat, Koçyiğit, Yavuz & Tunçeli 2018; Zembat, Yılmaz & İşçi Küsmüş, 2018; Visu-Petra, Cheie, Câmpan, Scutelnicu & Benga 2018; Erşahin-Şafak, 2016; Rudasil et al., 2016; Aytar, 2014). However, there are studies in the literature showing it does not differ according to gender. For example, Akbaş (2016) in study investigating social adjustment skills and temperament traits in children aged 60 months and older revealed that the reactivity subdimension differed significantly in favor of boys, while the persistence subdimension differed significantly in favor of girls. Mathieson (2011) in research about preschool children stated the temperament traits of boys and girls differed, with family attitudes playing a key role in this differentiation. These findings may be assessed as showing temperament is affected by biological traits, in addition to environmental factors (attitudes to child-raising, culture, etc.).

Studies stating that temperament traits affected by gender were determinant of children's participation in social life, stated that children's gender-based temperament traits differentiate from childhood towards adolescence (Sanson, Kennedy, Matjacic, Reid & Smart,1994). Temperament research identified that reactivity and activity traits were dominant in male children compared to female children (Mullineaux, Deater-Deckard, Petrill,Thompson & Dethome, 2009; Eisenberg, Fabes

& Spinrad, 2006) while persistency traits come to the fore in female children (Liew, Eisenberg & Reiser, 2004).

This research was completed on children aged 60 months attending preschool educational institutions. As temperament is affected by environmental conditions and can be sharpened, though a little, the features of the age group included in the study must be determined considering periods when these effects are less. For research to be performed about temperament, it will be helpful if researchers work with younger age groups with higher effect rates. Additionally, the correlations between temperament, social emotional adjustment and empathy skills can be investigated after applying developmental training programs for social emotional adjustment behavior.

Studies may be performed on a variety of variables in addition to the environmental factors assumed to affect social adjustment skills and temperament traits. It is considered that variables like peer acceptance, emotional regulation skills, parental attitudes, etc. may provide important results in this area. The data obtained in this research may be enriched by assessing the correlations between temperament, empathy, and social emotional adjustment behavior in children with longitudinal research.

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Children's Geometric Understanding through Digital Activities: The Case of Basic Geometric Shapes

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Abstract

Early mathematics education bases a foundation of academic success in mathematics for higher grades. Studies show that introducing mathematical contents in preschool level is a strong predictor of success in mathematics for children during their progress in other school levels. Digital technologies can support children's learning mathematical concepts by means of the exploration and the manipulation of concrete representations. Therefore, digital activities provide opportunities for children to engage with experimental mathematics. In this study, the effects of digital learning tools on learning about geometric shapes in early childhood education were investigated. Hence, this study aimed to investigate children progresses on digital learning activities in terms of recognition and discrimination of basic geometric shapes. Participants of the study were six children from a kindergarten in Kırşehir, Turkey. Six digital learning activities were engaged by children with tablets about four weeks in learning settings. Task-based interview sessions were handled in this study. Results of this study show that these series of activities helped children to achieve higher cognitive levels. They improved their understanding through digital activities.

Keywords: Digital Learning Activities, Early Childhood Education, Basic Geometric Shape, Geometry Education

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INTRODUCTION

Mathematics has an important place in educational curricula through kindergarten to college levels (National Council of Teachers of Mathematics [NCTM], 2000). Learning mathematics is considered as subject specific for elementary, secondary and college levels of education while it is taken into consideration as a cognitive skill for kindergarten in Turkey (Ministry of National Education [MoNE], 2013, 2018). Therefore, it was aimed to gain cognitive skills and intuitions about mathematical contents by combining with skills related other areas as science, literacy or social science, for preschool, rather than posing it as separate subject area as in higher school (MoNE, 2013). They have education as more concrete and in a multidisciplinary way in Turkey. The early childhood education curriculum in Turkey underlines the importance of integrated activities in learning phases. Furthermore, it is strongly advised that all activities should be play-based since it is stated that play based learning is one of the most efficient ways of learning for children in preschool (MoNE, 2013). Therefore, the curriculum offers activities which are child-centered, hands-on and engaging.

Digital devices have quickly become the tools of the culture at home and school (Rideout, 2013). Therefore, investigation of digital technology use in early childhood education has become a necessity as there is a dramatic increase in the interaction of children with the technology (Eryaman, 2007; Blackwell, Lauricella, & Wartella, 2014). Some educators have conducted research to integrate digital technologies into early childhood education and utilize from them for learning of preschool children (Baroody, Eiland & Thompson, 2009). Researchers seek to answer how children best benefit from digital technologies as there are some concerns about children's use of digital technologies such as developmental issues (American Academy of Pediatrics, 2016). Accordingly, this study focuses on children's learning geometric shapes through digital activities. It is aimed to investigate how children improve their understanding of geometric shapes via digital activities.

Early Mathematics Education

Early mathematics education could provide the foundation for later academic success in higher levels of education. Studies show that introducing mathematical contents in preschool is beneficial for children during their progress-in other school levels (Gormley, 2007; Ludwig & Phillips, 2007). Children encounter with situations related mathematical contents as an informal ways through their first steps to school life, such as directions for spatial intuitions like up and down, quantities like more or less, geometrical information like shape, size, location and so on. This type of getting mathematical information in life situations is defined as everyday mathematics (Ginsburg, Lee & Boyd, 2008). These informal ways learning is different between individuals. Thus, children begin their school life with individual differences in terms of informal mathematics since they had different experiences for everyday mathematics. Therefore, their readiness for learning formal mathematics are affected from these individual differences. Everyday mathematics is an inevitable concept for learning mathematics as an informal way. This informal way of gaining skills for doing mathematics is a foundation of learning formal mathematics (Baroody & Ginsburg, 1986).

Children prior experiences with the geometrical concept embody the concept image (Vinner & Hershkowitz, 1980). In other words, since they have informal experiences of geometric figures before kindergarten, and these informal experiences give a basis for learning basic geometric shapes (Clements & Battista, 1992). According to van Hiele geometric thinking theory, in the kindergarten, children may know and recognize some geometric shapes by their names via their experiences with and manipulation of them (Clements & Battista, 1992). However, this recognition mostly consists of the prototype images. Many students have problems in recognizing different geometrical shapes in non-standard orientation, for example, a square is not a square if its base is not horizontal (Mayberry, 1983; Clements & Battista, 1992) since they classify geometric figures with visual information.

Studies emphasized unfavorable effects of the prototype image in identifying and recognizing a geometric shape (Clements, 2002). According to studies children focus on the resemblance of figures

and form a concept about these figures from similarity with their prototype images (Fischbein, 1993; Hershkowitz, 1993; Tall & Vinner, 1981). They form some concept families in regarding with their central member of the prototype images. These central members generally consist basic representation of a geometric shape such as a figure resemble equilateral or isosceles triangle for triangle family, a rectangle with a base horizontal to a plane, a trapezoid having the larger bottom base, etc. (Hansen, Drews, Dudgeon, Lawton, & Surtees, 2005). These type of lack of knowledge about geometric figures could lead children difficulties in learning and understanding basic geometric concepts and solving problems about them (Clements, Swaminathan, Hannibal & Sarama, 1999). Providing children activities rich with multiple representations of concepts and opportunities for investigating relationships between these representations could be helpful to overcome prototype images and extend concept image families with different orientation of geometric figures (Clements & Battista, 1992; Mooney, Briggs, Hansen, McCullouch, & Fletcher, 2014). With the help of the digital learning tools, children could have the opportunity of investigating different and numerous multiple representations in the instructional phase.

Digital Activities in Early Mathematics Education

Digital technologies can facilitate access to mathematical concepts by means of the exploration and the manipulation of concrete representations. Therefore, they can provide opportunities for children to engage with experimental mathematics by giving them an understanding of and practice in mathematics (Bottino & Kynigos, 2009). Many researchers have focused on the effect of digital technologies on children's learning of mathematical concepts, including on quantity and the position of objects (Çankaya, 2012), numbers (Alabay, 2006; Baroody, Eiland & Thompson, 2009; Obersteiner, Reiss & Ufer, 2013), geometric shapes (Kesicioğlu, 2011), and problem solving (Fessakis, Goul & Mavroudi, 2013). These research projects were either experimental or quasi-experimental studies and reported the positive effects of digital technology use on early mathematics education. Kesicioğlu (2011) investigated in detail the effect of computer-assisted instruction on young children's learning of geometric shapes (the triangle, circle, square, rectangle) in a pretest-posttest control group design study. The researcher reported a significantly positive effect of computer use in the learning of geometric shapes.

In parallel with innovations in technology, the effect of new forms of technology on children's cognitive learning has become an area of interest for researchers. The researchers emphasized the support role of the teacher during the implementation and the specific role of the digital technology in supporting young children's learning (Fletcher, 2015; Hsiao & Chen, 2016; Ng & Sinclair, 2015). As with other tools, the role of the teacher is key to the enhancement of digital learning materials, in particular with regard to the capacity to understand the classroom situation, make decisions and possibly modify the initial plan during the process, select appropriate examples and orchestrate a discussion in order to allow students' insights and shifts in their personal perspectives to emerge (Biza, 2011). Therefore, the teachers' decisions to use and about how to implement digital learning materials are important. NAEYC (2012) underlines that the appropriate use of technology is related to the age, developmental level, needs, interests, linguistic background, and abilities of children. Students' perspectives, their capacity and knowledge of how to use technology are important while making these decisions.

In preschool settings, mathematics can be understood through concrete materials, hands-on activities, paper-pencil activities and stories. Digital technologies can give visually rich opportunities in early childhood mathematics. It can provide challenging activities for exploration and discovery (Hatzigianni & Margetts, 2012), and enhance student achievement by helping students in developing a strategy and improving mathematical understanding (Clements, 2002; Wu, Choiu, Kao, Hu & Huang, 2012). Hence, this research focuses on the use of digital learning materials in children's learning of basic geometric shapes. The purpose of this case study was to investigate possible contributions of digital activities to the understanding of children. Therefore, in parallel with the purpose, this study seeks an answer to "How children's understanding of geometric shapes are improved through tablet-

based digital activities?”. In this research, the basic geometric shapes are defined as the circle, square, rectangle and triangle with regarding current Turkish kindergarten curriculum (MoNE, 2013).

METHODOLOGY

This study was designed considering qualitative research methodologies since for the purpose of answering the research question, it was necessary to gain in-depth knowledge about children learning and to find out how the children interacted with digital learning activities. Qualitative methodologies of inquiry are powerful and useful tools for enhancing one's understanding of teaching and learning processes (Creswell, 2007).

Participants

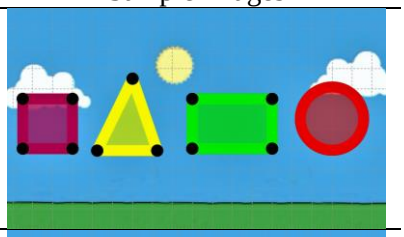
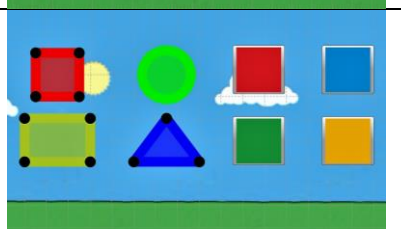
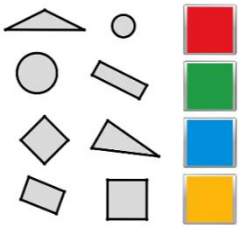
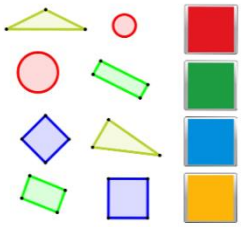
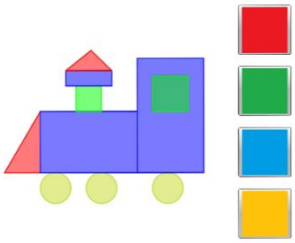
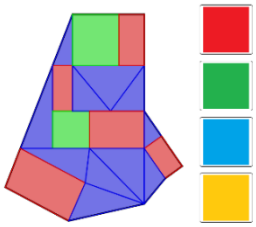
Participants of this study were six children in a kindergarten. The kindergarten in which this study was conducted was located in an outer district of Kırşehir, Turkey. The class was selected for convenience since we had a limited number of tablets and this class included only six children. In addition, the classroom itself fitted the requirements of this study, having a separate room in which the children could be interviewed and interactive whiteboard in order to present required information about tablets and digital activities. These participants of the study were six five-year-old children. One of the children was female and five were male. All children had low economic status, however, they had experiences of using tablets and mobile phones. In data analysis, pseudonyms were used to ensure the confidentiality of the participants.

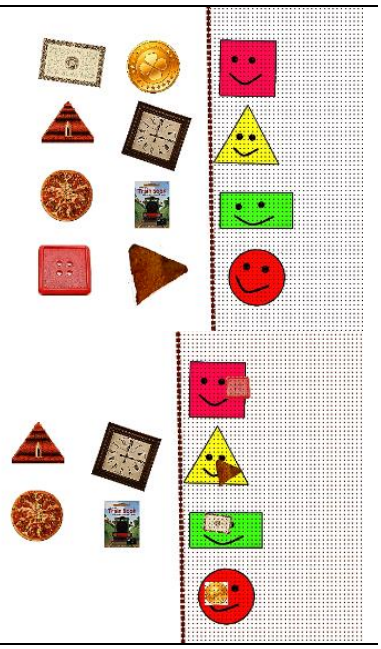
Procedure

In Turkey, early childhood curriculum includes geometry contents as a process of cognitive development (MoNE, 2013). Three objectives were considered for this study from this curriculum. These objectives were; (i) identifying names of geometric figures, (ii) recognizing basic properties of geometric figures, and (iii) matching geometric figures with real objects. The regarded geometric figures in this research were square, rectangle, triangle and circle.

In this study, researchers were designed and developed six activities for these objectives. These activities were included basic information and describing tasks, painting tasks, and matching tasks about geometric figures with real objects. The learning activities in this study were designed to allow children to achieve these objectives in a technology-supported learning environment. In designing processes, Geogebra, which is a dynamic geometry software, was used as the tool for design the tasks since this dynamic geometry software supports analytic and logical functions in mathematics so that allows a mathematician program and design a learning task with mathematical knowledge in a dynamic environment. Therefore, researchers designed and developed these digital learning tasks without using any programming language except their knowledge about mathematics. These learning activities were designed as edutainment activities for children. For this reason, these activities included multimedia items such as audio, colourful shapes and animations. These activities were checked by three experts; one of them had a doctoral degree from the field of mathematics education, other one had a doctoral degree from early childhood education and the last one had a doctoral degree from instructional technologies, in order to provide appropriate learning tasks for intended curriculum and children’s level. These activities were designed to be very basic for usage so on any individual could use these learning tasks without any technical knowledge. These digital activities were described in Table 1, briefly. The children were thus able to use the tablets and carry out the activities with little support required. The study was carried in a kindergarten and lasted about four weeks. The six children participating carried out digital activities on tablet computers.

Table 1. Description of digital learning activities

Content	Description	Sample images
1. Basic information about geometric figures	There were four geometric figures – a square, a triangle, a rectangle and a circle. When children touched one of these shapes an audio file played and described the shape in the first-person voice.	
2. Coloring basic geometric figures	Children were asked to color in one of these figures and try to explain the basic properties of that figure, in this activity. In this activity, firstly, children were asked to find a figure, define its some basic properties and color it in any color that they want.	
3. Coloring in groups of basic geometric figures	In this activity, geometric figures in different orientations were given to children in order to engage them in learning task to generalize their definitions about these figures to figures with unusual positions, such as slightly rotated triangle, square in traditional representation of a rhombus, etc. In the process of learning, children were asked to color in similar shapes with the same color and to say the names of these figures by explaining similarities of them.	 
4. Coloring in a group of basic geometric shapes which formed a locomotive	Students were asked to color in similar figures with the same color and to say the name of these figures by explaining why they were similar. There are some figures over another and in different sizes.	
5. Coloring a group of geometric figures in a complex figure	There were some complex figures like rectangles which were formed using triangles and multiple representation of figures in different orientations. Children were asked to color in similar figures with the same color and to say the names of these figures with explaining why they were similar.	

6. Matching representatives of real objects with the geometric figures	There were eight pictures of different real objects. These were a rug, a coin, a gable, a clock, a pizza, a book, a button and a corn chip. The main purpose of this task was to match these pictures with the four geometric figures according to their views. In the activity process, children allowed to drag and drop these pictures onto the geometric figures. If a child dragged one of these pictures correctly, the picture correctly took its place on its resembling one at the right of the screen and if he failed to drag correctly, this picture was refused and would return to its original places.	

These developed activities were handled by the children in this study by tablet computers in learning processes. The children did not have any difficulties while using tablet computer with these activities. Hence, these activities were in successful to be appropriate to targeted children's level of understanding and also they were easy to use by these children.

Data Collection and Analysis

Qualitative data collection procedures were used in the study. Observational notes, video recordings, and task-based interviews were employed to collect data during the study. Two documentary cameras were used to record the children's interaction with their tablets. A video camera was also used to record children's behaviour and speech during the activities. The task-based interviews were handled by teacher through digital activities to understand children's actions within the activities.

These audial and visual data transcribed into verbatim and analyzed through content analysis regarding themes, categories and codes derived from Marzano and Kendall's Taxonomy (Marzano & Kendall, 2007). The taxonomy has six levels for the mental processes; retrieval, comprehension, analysis, knowledge utilization, metacognitive system and self-system. The categories of each level were considered as iterative as stated by Marzano and Kendall (2007). The considered objectives for this study from early childhood curriculum in Turkey are at very basic level of cognitive development. Therefore, children's progress was supposed to occur from within the first to the second level of mental processes. Correspondingly, first two levels of the taxonomy were considered for this study in order to serve as themes for data analysis procedure (Table 2). For this study, the recognize, recall and integrate sublevels were focused on since children were not expected to demonstrate, draw or symbolize geometrical shapes during the activities. Therefore, executing and symbolizing categories were excluded from the coding procedure of the study. In addition,

Table 2. The taxonomy's first two levels as a codebook for data analysis

Themes	Categories	Codes
Retrieval	Recognize	Recognize, select, identify (from a list)
	Recall	Name, list, describe, state
	Executing	Demonstrate, show, make, draft
Comprehension	Integrating	Summarize, describe the key parts, describe how or why, describe the effects, paraphrase, describe the effects
	Symbolizing	Use models, symbolize, represent, draw, diagram, chart, depict, illustrate

The data were separately coded by the researchers. Then, the coded data were merged on by agreements in discussion sessions. To ensure reliability of the analysis, Miles and Huberman's (1994) formula was used to determine interrater reliability which was calculated as .94. Therefore, the reliability level of the analysis was considered as acceptable (Creswell, 2007).

RESULTS

Children's progresses on digital activities related to geometric shapes in kindergarten were coded in terms of two main themes regarding levels of Marzano and Kendall's (2007) Taxonomy. Thus, children's understanding processes via digital activities were reported in terms of retrieval and comprehension procedures. Table 3 presents a general outline of the children's progress during the activities.

Table 3. Summary of children's progresses with digital activities (F: Failure; R: Recognize; RC: Recall; I: Integrating)

Child	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Activity 6
A..	R	RC	I	I	I	I
B..	R	RC	RC	RC	I	I
C..	R	RC	RC	I	I	I
D..	R	RC	RC	RC	I	I
E..	R	RC	RC	RC	I	I
F..	F	RC	RC	RC	RC	I

This table gives a piece quick summary information about the results of the study. As seen on the table, students had basic preliminary knowledge about geometric figures at the beginning of the study and all of them achieved to reach integration sublevel of the comprehension cognitive level of the Marzano and Kendall's (2007) Taxonomy.

Retrieval Procedures through Digital Activities

Children's understanding processes related to recognizing information or recalling of it when asked but without understanding their rationale, were briefly described in this part. Children's understanding processes were extracted through their works on digital activities.

First of all, Child A (pseudonym), successfully pointed square, rectangle, triangle and circle when names of them asked to her in the task-based interview session for the first activity, so that her works for this activity had clues for recognizing names of these geometric shapes. She also repeated the basic description of these shapes after she touched on shapes and listened descriptions of them in this activity. However, she could not point all geometric shapes while asking with descriptions not only with names. For instance, she could point circle while asking her "which one of these shapes has no corner", but she could not give any response for other shapes. Since her actions were only limited to pointing all shapes with their names and pointing circle with its description, her actions were noted on recognizing sublevel. In the second activity, she identified the geometric shapes by their names and correctly colored these shapes without any distractions. Moreover, she also correctly discriminated some of these shapes by asked properties such as corners or sides. However, she confused to determine and discriminate rectangle and square from each other while asking "which shape has four equal sides". She could not give any answer and stated "this one triangle has three sides, this (circle) has no side and these (rectangle and square) have four sides and they are rectangle". In fact, from a mathematical point of view, the child was correct since a square is also a rectangle. In this situation, this child could not give any explanation about differences among a square and a rectangle. This situation was overcome with scaffolding student in order to understand that these both shapes had four sides, but their difference was about the length of these sides. Hence, her works in the second activity showed clues about the recall category.

Child B (pseudonym) failed to recognize the square while asking to find square by its name, but he could find and showed the rectangle, triangle and circle, in the first activity. Additionally, he tried to describe the triangle by counting corners with his fingers. Since his works in this activity included pointing some shapes except square by their names and realizing one basic property of triangle, he was considered to be at the recognition sublevel for the first activity. In the second, third and fourth activities, he again had some difficulties to identify square either by name or from its basic properties. It was discovered that this child also confused to discriminate rectangle and square similar to child A. This situation was tried to be eliminated by giving some example shapes in order to show similarities and differences between two shapes. After this scaffolding process, he could find all geometric shapes including rectangle and square while asking their basic properties about the number of sides or corners and by their names. After completing the first four activities, however, he cannot describe these geometric shapes with his own terms, yet. Therefore, his works limited to give clues for the recall category in these activities.

Child C (pseudonym) found geometric shapes but the circle with asking by their names, in the first activity. Moreover, he could realize some basic properties of the rectangle and triangle by counting corners or sides with fingers. Therefore, he can be considered at the recognition sublevel. At the second and third activities, he could identify and point the square, triangle and circle by their names and properties, but he became confused when he was asked "which shapes had four sides". He pointed and colored in only the square after this question. After this action with a little support, he was able to point the rectangle as having four sides, also. Hence, Child C was considered to be in the recall category for these activities.

Child D and Child E (pseudonyms) followed similar progress throughout the study. In the first activity, they could find all geometric shapes by their names. Therefore, their works were scored at the recognition level. In the second activity, Child D and Child E confused to discriminate square and rectangle by asking to find four-sided shapes, similar to other children. They could point out either square or rectangle separately after this question. With some minor assistance from the teacher, they did work out how to identify the square and rectangle. At the third activity, they found and matched the basic geometric shapes while asking their names and descriptions. However, they could not describe these shapes by their own terminology, yet. Their works in the fourth activity showed that they still suffered to differentiate the square and rectangle. Moreover, Child C had difficulties to find triangles if it was given in different orientation than the usual triangle demonstration. They still need some helps to differentiate some shapes. However, they could define other basic geometric shapes

with their own terminology at this activity. Therefore, they considered at the recall category according to their works in these activities.

Child F failed to point out and name the rectangle and triangle but could indicate which shape was square or circular, at the beginning of the study. Therefore, he failed to accomplish recognition sublevel for the first activity. In the second and third activities, Child F needed help to identify and colour in the circle after the question: "Is there a shape that has no corners?" However, he identified and coloured in the other shapes correctly. At the fourth activity, he confused to differentiate rectangle and square. He found and coloured both squares and rectangles when they were asked to colour only the rectangles. He had difficulty in differentiating squares and rectangles in the fifth activity, too. When he was asked to paint rectangles, he also painted squares. Thus, F could also be considered to be in the recall category for these activities.

Comprehension Procedures through Digital Activities

Children's understanding ways related to the second cognitive level of the New Taxonomy were explained in this part. According to objectives and designed activities, only integrating sublevel, which "involves identifying and articulating the critical or essential elements of knowledge" (Marzano & Kendall, 2007, p.43), was focused while describing evidences.

Child A was the first one who reached comprehension level. At the third activity, Child A successfully matched geometric shapes and described their properties in her own words without any mistake. Therefore, she was considered to proceed integrating sublevel of the New Taxonomy. Similarly, she was also complete all tasks in the fourth activity. Her works in the fourth activity showed that she could use some descriptions of the shapes while working on them. In other words, she could determine and discriminate shapes correctly even the shapes were given in different orientations by using their properties. Therefore, these works strengthened clues about being at integrating sublevel. In the last two activities, she could name all parts of the given shape in terms of known geometric shapes and she also defined these shapes with her own terms. Therefore, it can be said that Child A was able to reach integrating category at the end of the study, according to her works which pointed out some descriptions of integrating sublevel.

Child B was not successful in defining geometric shapes with his own terms in the fourth activity. However, in that activity, he achieved the goal of the activity by scaffolding. After the fourth activity, he started to recognize and discriminate square and rectangle without any help. For example, at the last two activities, he was able to identify, and paint asked all shapes either by names or basic properties. Moreover, he also defined these shapes with his own words by giving some basic properties of them, i.e. "square has four similar length sides and four corners", etc. Hence, Child B was able to achieve integrating category at the end of the study.

Child C was successful to identify and point the square, triangle and circle but the rectangle in the third activity. At the following activities, he was able to use some descriptions of the basic geometric shapes and recognize shapes at any direction and orientation by simply following their properties. Moreover, at the last activity, he could dissemble the given shape into parts in terms of known basic geometric shapes. Finally, he was considered as his works which showed clues for integrating category.

Although Child D and Child E had difficulty in differentiating square and rectangle in the first four activities, they started to differentiate all the geometric shapes correctly and also define all these shapes in their own terminology at the last two activities. Hence, they found and define geometric shapes even if they were given in different orientations and locations. They started to use descriptions of the shapes while working on them. Therefore, at last, they achieved integrating category.

Child F was unsuccessful in differentiating rectangle and square in the fifth activity. The teacher scaffolded him to discriminate those shapes. Then, during the sixth activity, he could define

and discriminate all the shapes including rectangle and square without any mistakes along with other shapes. Hence, his works showed that he could use descriptions of the shapes and define them with his own terminology. Therefore, according to these clues in his works in the last activity, he could achieve the integrating sublevel of the second level of the New Taxonomy, at the end of the study.

DISCUSSION AND SUGGESTIONS

This study focused on preschool children's improvement in their understanding of geometric shapes through a series of digital activities. The results of the study showed that children developed their understanding of geometric shapes from the retrieval to the comprehension. However, each child had a different pace and path to reach the upper level. Besides, the activities which included rotated figures and real-life objects were effective on developing children's understanding. Furthermore, only one child did not require scaffolding while moving from the retrieval to the comprehension level. However, other children benefited from scaffolding to improve their understanding during the digital activities.

First of all, since this study was conducted with Turkish children it could be important what are the clues hidden within Turkish words for these geometric figures. For example, triangle means "üçgen" in Turkish. This word is formed with the unity of three (üç) and -gon (-gen) like in pentagon. Similarly, rectangle means "dörtgen" in Turkish and this word is formed with the unity of four (dört) and -gon (-gen). Therefore, names of these two geometric figures have clues about meaning of them although -gen (-gon) suffix has no meaning separately and only numbers as affix provide clues about figures. On the other hand, other geometric figures, which were circle (çember) and square (kare) have not clues in their meaning to imply their geometric properties like number of sides or corners.

In this study, it was seen that, the series of digital learning activities helped children to achieve higher cognitive levels regarding Marzano and Kendall's (2007) taxonomy. Although children were at recognize level in the beginning, they improved their understanding and reached integrating level through these digital activities. According to results, these improvements were occurred in different speed and in different ways. Children's task processes in the first activity revealed that nearly all students were in recognizing sublevel of retrieval cognitive level for the taxonomy except one child. This child also struggled to accomplished for recall sublevel of retrieval cognitive level and integrating sublevel of comprehension cognitive level. In fact, he could not achieve to reach integrating sublevel until the last digital activity. Other children eventually accomplished recall and integrating sublevels through digital learning activities but in different times and situation. To the best of our knowledge, these children had not have a formal learning experiences for basic geometric figures. They engaged learning phases for basic geometric shapes in a formal way of learning in our observation with digital activities. However, since at the beginning of the research some of them were more receptive than others. Even some of them had preliminary information about some basic properties such as having four sides for rectangle or three sides for triangle, in informal way. Their difference in encountered everyday of mathematics could lead these differences of readiness for formal mathematics as stated Baroody and Ginsburg (1986). Hence, their informal experiences about geometric shapes resulted with these learning differences (Clements & Battista, 1992; Ginsburg, Lee & Boyd, 2008). Therefore, they followed different routes for reaching higher sublevels of the cognitive levels of the Taxonomy.

In this study, all the children had their own informal explanations about basic geometric shapes such as, "It looks like a watch", "It's like a door", "It's like a wheel", etc. However, it can be seen that this recognition of basic shapes from their own previous experience generally consisted of prototype images with specific properties as Battista and Clements (2000) stated. In the study, some children had difficulties recognizing rotated or extended shapes. For example, a child was not able to recognize all the squares in the fourth activity and another had difficulties finding all the rectangles during this activity. When a rectangle which had been rotated 90 degrees from its usual position was given to children some of them identified it as a square. This study revealed that the digital learning activities helped the children to overcome with these types of prototype images, as it was seen that in the last two activities the children were able to recognize even rotated geometric figures when given

descriptions or their names. These improvements showed that providing multiple representation of same figures in different orientation helped children (Hansen, et al., 2005). At the end of the study, all the children were able to recognize figures from their names or simple definitions, and they were able to name the figures or describe at least one property of each figure such as, “It has four sides”, “It has no corners”, “One side is long, one side is short”. Children had some similar ways for learning process with these digital learning activities as well as they had differences. Results enlightened that half of the children presented some indicators about that they accomplished integrating sublevel of the comprehension cognitive level at the end of the fifth activity. This digital activity included multiple figures in different orientations. Therefore, this digital learning activity provided children to interact with geometric figures in different orientations. This opportunity could lead children to realize interdependence of concept for a geometric figure from its orientation or representation (Mooney, et al., 2014). Since, they were provided with multiple representations for the geometric figures, they could reform their concept image for families of geometric figures (Clements & Battista, 1992; Fischbein, 1993; Fujita & Jones, 2007; Hansen, et al., 2005). As a result of this fifth digital activity, it was revealed that figures represented in different orientations helped children to accomplish integration sublevel of the comprehension cognitive level.

The study showed that children actively participated in the activities and engaged in decision-making processes during the digital activities. Children controlled their tablets and practised identifying, matching and labelling geometric shapes. Although the teacher provided a tablet for each child and the children used them individually, children displayed social behaviours such as helping, explaining ideas and observing their peers while engaging in the activities. Lim (2013) has stated that working in pairs is a factor that supports children’s social interaction when integrating technology into education. Further investigations along these lines could provide more information in order to determine which factors most influence children’s social interactions in which situations. In addition, the teacher supported children in achieving the goals of these activities. These points of the study are in accordance with NAEYC’s (2012) principles that, “Effective uses of technology and media are active, hands-on, engaging, and empowering; give the child control; provide adaptive scaffolds to ease the accomplishment of tasks; and are used as one of many options to support children’s learning” (p. 6). The activities that were used in this study are available for researchers and developers to make them more developmentally appropriate (NAEYC, 2012) for young children.

It was also seen that when the digital activity included a link to the real life of young children, the activity was effective on engaging children and supporting their learning. When children encountered with the objects which they could be familiar in the real life, they used their prior information about the objects to improve their understanding during the digital activities. Bishop (1988) labelled mathematics as a cultural phenomenon. He conceived mathematics as a cultural product which was developed as a result of various experiences. He included geometric figures in designing activities which was defined as creating a shape or design for an object or for any part of one’s spatial environment. Thus, children’s learning of mathematics through digital activities cannot be separated from the culture of children. Furthermore, NAEYC (2009) emphasizes key role of culture within the framework of developmentally appropriate practice (DAP). Therefore, appropriateness of the digital activity to the social and cultural contexts in which children live. This construct is also inline with everyday mathematics phenomena (Ginsburg, Lee & Boyd, 2008).

In the light of the result of this study, it could be specified that digital activities could help children learning through the content familiar to their experiences in real life with scaffolding as they need. Therefore, future studies with digital activities should be conducted by considering transforming children’s informal mathematics to formal learning by providing teacher or peer supporting environment. Since children’s informal mathematics could include some prototype images which cause difficulties for them to identify figures in unusual orientations, learning activities should provide multiple drawings to illustrate concepts. Therefore, children can focus on not only the visual aspects of shapes but also its essential aspects like properties which remain unchanged by altering drawings. Varying in pictures and diagrams is a need to overcome to form misconceptions.

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The Opinions of University Graduate Working Mothers Who Have 36-60-Months-Old Children about the Quality of the Time Spent with Their Children: A Phenomenological Analysis*

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Abstract

The main aim of this study is to examine the perceptions of university graduate working mothers who have 36-60 months-old children of the quality of the time spent with their children. In the study, the phenomenology design was used among qualitative research techniques. The study group consisted of 32 mothers selected by using a maximum variation sampling method. The data of the study were collected using the semi-structured interview technique, and the data were analyzed using the descriptive analysis technique. The majority of the mothers who participated in the interview described the quality time spent between the mother and child as the time which is spent with activities that the mother and child enjoy equally. The majority of the mothers stated that they believe that it is necessary to spend quality time with their children since it affects mother-child communication positively, they want to participate in the training during which they can learn activities appropriate to different age ranges and different areas of development with their children, they play games with their children to spend quality time, and they believe that spending quality time contributes to mother-child communication. Half of the mothers stated that the process was turned into quality time by including the child in all responsibilities at home, while the other half stated that no quality time could be spent with the child while fulfilling the responsibilities at home. The mothers emphasized that the periods that can be spent in a quality way are weekends and annual leave periods and stated that the main factor which prevents spending the quality time is the intensity of working hours. It is thought that organizing practical training seminars that will enable mothers to learn how to make the time spent with their children more qualified will contribute to mothers.

Keywords: Quality time, 36-60-months-old child, mothers' views, phenomenology

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INTRODUCTION

The family is a social institution that consists of a mother, father and children and forms the basis of community life. The family takes a significant place in the development of the child, especially in the early years, so early childhood education starts and continues at home (Çağdaş & Seçer, 2010; Ülgen & Fidan, 2003). The child mimics the attitudes and behaviors of his/her mother and father, by observing them, taking them as a model, and identifying with them (Vaizoğlu, 2008). In this way, the child gains his/her first education through the parents, in his/her family. To which extent the child's genetic characteristics obtained from his/her parents will evolve and change is closely related to the socio-economic and cultural situation of the family, the relationships of the family members, the child-rearing attitudes of the parents, the parents' knowledge levels about child development and education, and the stimulus environments they offer to their children (Kaya, 1994). It is possible for children to be able to adapt to their social environment, to be effective in the friend relationships, entrepreneurial, and creative, be able to self-check and express emotions and thoughts freely through the healthy communication they establish with their parents (Yavuzer, 2010).

Children's daily interactions with their parents support their emotional, physical and intellectual development and develop their sense of self (Brazelton & Cramer, 1990; Dawson & Ashman, 2000; Tronick & Beeghly, 2011). Parents can support mathematics and literacy skills of their children through game interactions and support healthy brain development through a warm, sensitive, and soft care, and thus increase their children's academic achievement. They can also develop the skills which children need in order to succeed in life, manage their emotions and behaviors, establish healthy relationships with adults and peers, and adapt to new situations (Cook, Roggman, & Boyce, 2011; Lerner, Rothbaum, Boulos, & Castellino, 2002; National Scientific Council on the Developing Child, 2004; Rogoff, 2003; De Wolff & Van Ijzendoorn, 1997). For this reason, it is essential that the parents take equal responsibilities in the upbringing of the child because child education is a duty which is heavy and important to be left only to mothers (Eryaman, 2007; Saygılı, 2008). Fathers also have an important impact on their children at least as much as mothers have. Studies have demonstrated that children interacting with their fathers through games have the opportunity to develop more easily their skills such as emotional adjustment, problem-solving, risk-taking, coping with difficulties, communicating with others (Amato, 1986; Biller, 1993; Biller & Solomon, 1986; Easterbrooks & Goldberg, 1990; Labrell, 1996; Lamb, 2004; Paquette, 2004; Radin, 1982). Supporting the child in all developmental fields is the parents' most important responsibility which they should carry out in partnership within the team spirit. This case is the primary condition of child development as a healthy individual in every aspect. However, parenting studies focus mainly on the mother because mothers are considered as the main source of routine care, comfort, and safety of the child. The great part of the responsibility of raising children has been left to mothers since especially after birth, all physiological needs of the baby such as feeding, sleeping, and cleaning are met by the mother, and the mother is the person with whom the baby interacts first and who is the closest person to the baby (Çağdaş, 2002; Dempsey, 2000; Lamb, 2004; Parke, 1996). Babies establish important bonds also with their fathers. However, when the effects of the bond between mother-infant and father-infant on child development are compared, the mother-infant relationship has been revealed to have a stronger effect (Thompson, 1998).

While working mothers struggle with the difficulties of the business life, they try to fulfill their responsibilities related to house works, on the one hand, and make efforts to spend enough time with their children, on the other hand. The important point in parent-child communication is, undoubtedly, the quality, not the quantity of the time spent. Studies have demonstrated that the types of activities which parents do together with their children rather than the total time they devote to their children are more effective on the talent development and academic achievement of children (Mancini & Pasqua, 2012; Zick, Bryant, & Österbacka, 2001). Of course, it is not possible to speak of communication and interaction in environments where hours are spent side by side, but nothing is shared. For this reason, quality time can be defined as certain activities done in order to create and maintain the family's entertainment, interest, and togetherness, or it can be defined as spending the time needed by the child as minutes full of sharing which puts a smile on the faces of children and

parents, develops both sides, and provides mutual enjoyment (Christensen, 2002; Semerci, 2009). Quality time was defined as the mother-child interaction that will contribute to the development of children by Bryant (1992), as "close, nurturing and love-based" interactions between parents and children in everyday routines such as housework by Spock (1998), and as getting healthy, positive, nutritious experiences between the child and the parent by Fogarty and Evans (2009). Through quality time activities, it is significant that parents give the child the message that they are together not only physically but also with their feelings and thoughts. From this point of view, it is definitely not a quality time activity to walk around with the child and to do whatever he wants (Semerci, 2009).

There are studies demonstrating that working mothers allocate less time to their children in terms of primary care and quality time activities compared to non-working mothers (Anxo et al., 2007; Bloemen & Stancanelli, 2008; Bloemen et al., 2008; Burda et al., 2006; Connelly & Kimmel, 2007; Craig & Bittman, 2008; Kalenkoski, Ribar, & Stratton, 2008; Mencarini & Tanturri, 2004). However, there are also studies which demonstrate that working mothers spend more time helping their children in reading books and doing their homework, in comparison with non-working mothers, and in case the mother works, the quality time which is allocated by the parents to their children increases (Zick et al., 2001). The quality of mother-child interaction and attachment security is evaluated in relation to the number of hours the mother spends with the child and the number of hours the mother works (NICHD ECCRN, 1999; Thompson, 1998). Studies also emphasize that the time that mothers spend with their children partly depends on demographic factors. For example, there are studies which demonstrate that maternal education level affects the quality and quantity of mother-child social interaction (Bryant & Zick, 1996; Clarke-Stewart, Gruber, & Fitzgerald, 1994; Hill & Stafford, 1980; NICHD ECCRN, 1999). Some studies have revealed that the majority of working mothers want to spend more time with their children (Bond, Galinsky, & Swanberg, 1998) and that university graduate mothers spend more quality time with their children (Craig, 2006; Gutierrez-Domenech, 2008).

Aim and Importance of the Study

The main aim of this study is to examine the perceptions of university graduate working mothers, who have 36-60-months-old children and who are in the age range of 25-45 years, of the quality of the time spent with their children. The question "What are the views of mothers about quality time?" constitutes the problem of the study. In accordance with the sub-problems of the study, the mothers were asked the questions about what quality time means to them, the necessity of this time, training needs, activities in this process, quality time in the context of responsibilities, the benefits of this process, the time they spend with their children in a quality way and the reasons that prevent spending the quality time.

In this study, based on the relevant literature, the quality of the time that mothers spend with their children was attempted to be addressed with all dimensions as much as possible. This study differs from the studies in the literature in that it determines comprehensively the views of university graduate working mothers about the quality time they spend with their pre-school children. Therefore, this study is thought to contribute to the literature. It is thought that this study will shed light on developing solutions for how to make this time more qualified by determining the views of working mothers about the quality of the time they spend with their children.

METHOD

Research Design

This research, which was carried out in order to determine the views of mothers about the quality of the time they spend with their children, is a qualitative study. Qualitative research is studies in which qualitative data collection methods such as observation, interview, and document analysis are used, in which data are collected in detail, and which follow the qualitative research process with the aim of learning directly participants' perceptions, experiences and perspectives, understanding and

explaining current situations, and revealing the events in the natural environment in a holistic way (Büyüköztürk, Çakmak, Akgün, Karadeniz, & Demirel, 2009; Yıldırım & Şimşek, 2011). The phenomenology design, one of the qualitative research methods, was used in this study. Phenomenology is an approach that focuses on the commonality of a lived experience within a particular group and the facts that we are aware of but do not have an in-depth and detailed understanding. The facts may appear in the forms like the events, experiences, perceptions, orientations, concepts, and situations in the world we live in. Phenomenology studies focus on the direct description of experiences. The primary objective of a phenomenology study is to explicate the meaning, structure, and essence of the lived experiences of a person, or a group of people, around a specific phenomenon; that's to arrive at a description of the nature of the particular phenomenon. Typically, interviews are conducted with a group of individuals who have first-hand knowledge of an event, situation or experience (Christensen, Johnson, & Turner, 2010; Creswell, 2013; Merleau-Ponty, 1962; Yıldırım & Şimşek, 2011).

Study Group

The maximum variation sampling method among purposeful sampling methods was used to determine the mothers to be included in the study. In the maximum variation sampling method, the aim is to create a relatively small sample and to reflect the variation of the individuals who can be a part of the problem in this sample at the maximum degree (Yıldırım & Şimşek, 2011). The aim is not to provide variation in order to make a generalization, on the contrary, to try to find out whether there are common or shared facts and differences between different situations and to reveal different dimensions of the problem according to variation (Erdoğan, 1998; Yıldırım & Şimşek, 2011). For this purpose, the diversity was taken according to age, education level, type of occupation, weekly working hours, and the number of children. The study group consisted of 32 mothers who have 36-60-months-old children, who are aged between 25-45 years, who have at most four children, who are university graduates, who work, and volunteer to participate in the study. Data on the mothers in the study group are presented in Table 1.

Table 1. Demographic Information on Mothers

Demographic Information on Mothers		N	f	%
Age	25-29	32	8	25
	30-34		10	31
	35-39		8	25
	40-45		6	19
Education Status	Associate Degree	32	5	16
	Bachelor's Degree		13	40
	Master's Degree		8	25
	Ph.D.		6	19
Profession	Civil servant	32	14	44
	Worker		7	22
	Self-employment		11	34
Weekly Working Hours	Less than 40 hours	32	5	16
	40 hours		15	37
	More than 40 hours		12	47
Number of Children	1	32	9	28
	2		10	31
	3		7	22
	4		6	19
Number of 36-60-months-old children	1	32	21	66
	2		9	28
	3		2	6

According to Table 1, the majority of the mothers who participated in the study are between the ages of 30-34 years (10 - 31%), have bachelor's degree (13 - 40%), serve as civil servants (14 - 44%), work weekly for 40 hours (15 - 37%), have 2 children (10 - 31%), and have one 36-60-months-old child (21 - 66%).

Data Collection Tools

In this study, in order to determine the views of working mothers about the quality of the time spent with their children, the "Personal Information Form," which includes questions intended for mothers, and a semi-structured "Mother Interview Form," which consists of open-ended questions suitable for qualitative research, were used as data collection tools. In the semi-structured interview technique, the researcher maintains his/her interview depending on the interview protocol which includes the questions that he/she has planned to ask in advance, but depending on the flow of the interview, the researcher can influence the flow of the interview with different side or sub-questions and ask the person to open his/her answers. This method is not as rigid as structured interviews, nor as flexible as unstructured interviews (Büyüköztürk, Çakmak, Akgün, Karadeniz, & Demirel, 2009; Karasar, 2012; Türnüklü, 2000). Before starting the research, the literature was reviewed, and the researcher prepared the questions which were intended to be included in the interview form. Afterward, views of 3 domain experts were received in order to evaluate and validate the interview form in terms of aim, meaning, and scope, and a semi-structured interview form consisting of 8 questions was created. Pre-implementation of the interview questions was performed with three mothers who did not participate in the study, and the final state of the Mother Interview Form was decided. The views of these three mothers were not included in the study.

Data Collection

While collecting the data, firstly the mothers were asked whether they wanted to participate in the study or not, and each of the 32 volunteer mothers was interviewed separately between 29 May and 16 June 2017. First of all, in order to prevent the loss of data, permission was obtained from the mothers to use a recording device in the interviews. The negative effect of using a recording device was tried to be reduced by stating that the mothers could listen to the recording again after the interview and that the sections that they did not desire could be removed in accordance with their wishes. All the mothers allowed to use a recording device and any adverse situation was not encountered. The interviews were conducted in environments where mothers felt comfortable and peaceful. In terms of the study, the importance of the mothers' expressing their opinions sincerely was mentioned, and each interview was limited to 40 minutes. After the interviews, the records were put down on paper.

Data Analysis

The analysis of the responses obtained from the interviews was performed by using the descriptive analysis technique which is one of the qualitative data analysis methods. Yıldırım and Şimşek (2011) collect the descriptive analysis technique in four steps. The first one is "creating a framework for descriptive analysis," the second one is "data processing according to the thematic framework," the third one is "identification of the results", and the fourth one is "interpretation of the results." After the data collection process was completed, the data obtained for each question were examined in detail, and as a result of this review, the main heading for each interview question and sub-categories under this main heading were formed. The results in each category were supported by direct quotations from the mothers' views, and internal reliability was ensured. In the analyses, the mothers were given code numbers as (M1, M2, M3 ...). The results were presented with frequency and percentage values. Internal validity was provided by presenting clearly and in detail how the findings, results, and interpretations were reached, while external validity was provided by explaining all processes of the research in detail. In order to be able to test the study with other studies, explanations, conceptual framework, and all monitored processes related to data collection and analysis methods

were performed in detail, and external reliability was ensured. The obtained data were coded by the researcher and by a specialist, experienced in qualitative research, separately, and the codings were compared. The following reliability formula of Miles and Huberman (1994) was applied to the codings of both researchers: Reliability = Agreement / (Agreement + Disagreement) x 100. Compliance between the two encoders was calculated to be 88%. The reliability analysis result greater than 70% is considered as reliable for research (Miles & Huberman, 1994; Yıldırım & Şimşek, 2011). This result displays that the desired reliability level was reached for the research.

FINDINGS

As a result of this study which was conducted to determine the views of mothers about the quality of the time spent with their children, 8 main categories were created: "definition of quality time", "the necessity of spending quality time", "training need", "quality time activities", "quality time in the context of responsibilities", "benefits of spending quality time", "periods of spending quality time" and "quality time obstacles." The findings of these categories are listed below.

Table 2. Views of Mothers About the Quality of the Time They Spend with Their Children

Category	Sub-Category	n	f	%
Definition of Quality Time	Time spent with activities that the mother and child enjoy equally	32	21	66
	Time spent with activities intended for the child development		7	22
	Time spent with activities the child wants		4	12
The Necessity of Spending Quality Time	Necessary since it affects mother-child communication positively	32	28	88
	Unnecessary since every time spent with the child is important		4	12
Training Need	Training during which activities appropriate for different age ranges and different development areas can be learned	32	19	59
	Training during which activities to increase mother-child communication can be learned		13	41
Quality Time Activities	To play a game	32	15	47
	To carry out an educational activity		10	31
	To talk		4	13
	To cook		3	9
Quality Time in the Context of Responsibilities	Transformation of the process into quality time by including the child in all responsibilities at home	32	16	50
	Inability to spend quality time with the child while fulfilling responsibilities at home		16	50
Benefits of Spending Quality Time	Contribution to mother-child communication	32	10	31
	Contribution to the social-emotional development of the child		9	28
	Contribution to the cognitive development of the child		7	22
	Contribution to the language development of the child		6	19
Periods of Spending Quality Time	Weekend days	32	12	38
	Annual leave periods		12	38
	Weekday evening hours		8	24
Quality Time Obstacles	The intensity of working hours	32	19	59
	Excessive responsibilities at home		8	25
	Limited information on quality time activities		5	16

Findings Regarding the Definition of the Quality Time Spent Between the Mother and Child

When the data obtained from the interviews were analyzed, three subcategories were created for the definition of the quality time spent between the mother and child, including "time spent with activities that the mother and child enjoy equally", "time spent with activities intended for the child development" and "time spent with activities the child wants." The majority of the mothers, who participated in the interview, i.e. 21 mothers (66%), defined the quality time spent between the mother and the child as the time spent with activities that the mother and child enjoy equally, while 7 of the

mothers (22%) defined it as the time spent with activities intended for the child development, and 4 of the mothers (12%) defined it as the time spent with activities the child wants.

Answers that define quality time as the time spent with activities that the mother and child enjoy equally are as follows:

"It is the process during which my children and I spend time together by sharing happiness and by making all kinds of activities with great enthusiasm." (M13)

"No matter what we do, every second we spend with our children enjoyingly means for us quality time." (M17)

Answers that define quality time as the time spent with activities intended for child development are as follows:

"It is the time which I spend with various activities to support my child's mental and social development." (M4)

"It is the process that involves activities I do with my children for different areas of development." (M28)

Answers that define quality time as the time spent with activities that the child wants are as follows:

"This is the *time we spend with activities that my son enjoys doing." (M31)*

*"It is the time when we play my kids' favorite games, the time that we spend in the w*ay just only they want." (M7)

Findings Regarding the Necessity of Spending Quality Time with Children

When the data obtained from the interviews were analyzed, two sub-categories regarding the necessity of spending quality time with children were created, namely "necessary since it affects mother-child communication positively" and "unnecessary since every time spent with the child is important." The majority of the mothers participating in the interview, i.e. 28 mothers (88%), stated that they believed in the necessity of spending quality time with their children since it affects mother-child communication positively, while 4 of the mothers (12%) stated that it was not necessary to spend quality time because every time spent with the child is important.

Answers stating that it is necessary to spend quality time with children since it affects mother-child communication positively are presented below:

"I feel that our communication is improving considerably when my children and I are involved in common activities with which we will be happy." (M3)

"It is really necessary for the mother to spend active time with her child for the quality of their communication." (M21)

Answers stating that it is not necessary to spend quality time because every time spent with the child is important are as follows:

"I find it unnecessary to carry out activities which require special effort and to allocate time to these activities because every time spent by the mother with her child is precious." (M19)

"The bond between the mother and child is so strong that without doing anything, even just being in the same environment strengthens communication, so I don't think that it is necessary to do special things." (M30)

Findings Regarding the Training During Which Quality Time Activities Will Be Taught

With regard to the training during which mothers can learn how to spend quality time with their children, two subcategories were created: "training during which activities appropriate for different age ranges and different development areas can be learned" and "training during which activities to increase mother-child communication can be learned." The majority of the mothers participating in the interview, i.e. 19 mothers (59%), stated that they want to participate in training during which they could learn activities appropriate for different age ranges and different development areas, and 13 (41%) of the mothers wanted to participate in training during which they could learn activities that would increase mother-child communication.

Answers about the training during which mothers could learn activities appropriate for different age ranges and different development areas are presented below:

"There is a two-year age difference between my children, and I feel inadequate in preparing appropriate activities that differentiate by their age and needs, and I would like to receive training at this point." (M2)

"As children grow up, developmental training needs become different, but I think I cannot keep up with this difference, so I want to support myself, hence, my children, not only with theoretical training but also with applied training." (M11)

Answers about training during which activities to increase mother-child communication can be learned are as follows:

"I think that I cannot communicate with my child sufficiently, so I feel insufficient, and it is my greatest wish to receive training in which I can reach practical information on this issue." (M29)

"The way we communicate with children is changing every day, but since I think I cannot adapt to this situation, I would like to participate in practical training which will support mother-child communication with different workshops according to different ages, and I want to improve myself and our relationship." (M22)

Findings Regarding Activities Conducted for Spending Quality Time with Children

The activities carried out by mothers to spend quality time with their children were gathered in four sub-categories including "playing a game," "carrying out an educational activity," "talking" and "cooking." The majority of the mothers participating in the interview, i.e. 15 mothers (47%), stated that they play games with their children for spending quality time, 10 mothers (31%) stated that they carry out educational activities with their children, 4 mothers (13%) stated that they talk with their children, and 3 mothers (9%) stated that they cook with their children.

Answers stating that games are played for spending quality time with children are as follows:

"Both my children and I enjoy playing games of all kinds, and we have fun." (M15)

"We definitely find a fun game to play at home, on the street, in the park, in short, everywhere." (M23)

Answers stating that educational activities are carried out in order to spend quality time with the child are presented below:

"We make different origami with my children, and we keep them in the corner of our home." (M26)

"We are doing different activities that are compatible with their level of development, such as painting, cutting and folding, playing dough, and we have much fun." (M32)

Answers stating that mothers talk with their children for spending quality time are as follows:

"After my daughter comes from the kindergarten and I come from work, the first thing we do is to sit next to each other and to tell about our day, in our view, the most precious time of the day is these minutes." (M7)

"After reading a book or watching a documentary, it is good for both of us to share on the issue and to listen to each other." (M11)

Answers stating that mothers cook with their children in order to spend quality time are presented below:

"Our biggest pleasure with my daughter is to try new meals together and enjoy the meal with the whole family." (M4)

"It is really enjoyable for both of us to have my son help me while cooking, offer creative ideas, and we try out those ideas together." (M16)

Findings Regarding Transforming Responsibilities into a Quality Time Activity

Two subcategories related to the case of mothers transforming responsibilities for their children into quality time activities were created, namely "transformation of the process into quality time by including the child in all responsibilities at home," and "inability to spend quality time with the child while fulfilling responsibilities at home." Half of the mothers participating in the interview, i.e. 16 mothers (50%) stated that the process was transformed into quality time by including the child in all responsibilities at home, while the other half stated that they could not spend quality time with the child while fulfilling the responsibilities at home.

Answers stating that the process is transformed into quality time by including the child in all responsibilities at home are presented below:

"In all the things I have to do at home, I would certainly ask my children to help according to their age, so that I share something with them, and they can develop some of their competencies." (M8)

"My son is my greatest assistant while cleaning, preparing meals, washing clothes, that is, in all the housework. Our communication is getting stronger while we are doing these works together." (M29)

Answers stating that quality time cannot be spent with the child while fulfilling the responsibilities at home are as follows:

"While I fulfill my responsibilities at home, my children often play games among themselves, and unfortunately, we cannot get in touch meanwhile because I am trying to catch up with every job." (M20)

"Since my responsibilities and the work I do at home take too much time, unfortunately, I cannot spend time with my children in this process, so I feel very inadequate." (M32)

Findings Regarding the Benefits of Spending Quality Time

Four subcategories were created as mothers stated that spending quality time with their children contributes to "mother-child communication," "social-emotional development," "cognitive development," and "language development" of children. 10 (31%) of the mothers who participated in the interview, stated that spending quality time contributes to mother-child communication, 9 (28%) of the mothers stated that it supports their children's social-emotional development, 7 (22%) mothers stated that it supports cognitive development, and 6 (19 %) mothers stated that it supports language development.

Answers stating that spending quality time contributes to mother-child communication are as follows:

"Whenever I spend time with my daughter, I feel that a magical bond is formed between us that no one can damage." (M8)

"After every precious second we spend together, we dig up lovely moments to our brains, so we know and understand each other better." (M11)

Answers stating that spending quality time supports the social-emotional development of children are listed below:

"When we perform activities that both of us enjoy, I notice that my child becomes a more self-confident and happier child." (M1)

"I observe that the more I spend and share time with my daughter, the more positively she can communicate with other people." (M18)

Answers stating that spending quality time supports the cognitive development of children are presented below:

"In the intelligent games which we play with my child by having much fun, I am witnessing outstanding progress in his skills such as reasoning and establishing cause and effect relationships." (M14)

"I think that the activities which we do during the time we spend together improve my child's ability to solve problems positively." (M18)

Answers stating that spending quality time supports the language development of children are as follows:

"We make evaluations together after a book we read, a cartoon film we watched, and this contributes to my son's speaking skill." (M6)

"We love to talk with my children about everything, and this improves their expression skills." (M7)

Findings Regarding the Periods of Spending Quality Time with Children

Since mothers indicated that the periods when they could spend quality time with their children were "weekend days," "annual leave periods," and "weekday evening hours," three subcategories were created. The periods when quality time could be spent were indicated as weekend days by 12 of (38%) the mothers who participated in the interview, as annual leave periods by 12 (38%) of the mothers, and as weekday evening hours by 8 (24%) of the mothers.

Answers stating that the periods when quality time can be spent are weekend days are as follows:

"We collect the most beautiful memories with my children on Saturdays and Sundays, and we spend perfect time together." (M15)

"We spend the weekends so full with my daughter that we never want them to end." (M13)

Answers stating that the periods when quality time can be spent are annual leave periods are presented below:

"The most efficient time we can spend with my children is the period when I use my annual leave because I can spend all my time with them without any worry." (M24)

"No time we spend together is not as effective as the time when I use my annual leave." (M17)

Answers stating that the periods when quality time can be spent are weekday evening hours are listed below:

"My child and I have a special time that we spend with each other after work every evening on weekdays." (M8)

" After work on weekdays, I spend all my time with my daughter, and even if I am tired, we do the activity which she wants together." (M12)

Findings Regarding Factors that Prevent Spending More Quality Time with Children

Since the mothers indicated that the factors that prevent them from spending more quality time with their children were "the intensity of working hours," "excessive responsibilities at home" and "limited information on quality time activities," three subcategories were created. The factors that prevent mothers from spending quality time were indicated as the intensity of working hours by the majority of the mothers, i.e. 19 mothers (59%) who participated in the interview, as excessive responsibilities at home by 8 mothers (25%), and as limited information on quality time activities by 5 mothers (16%).

Answers stating that the intensity of working hours prevents spending quality time are as follows:

"I am at work from 7 in the morning until 7 in the evening, when I get home, I am very tired, and I do not have any energy to spend time with my child." (M19)

"My busy working program is the biggest obstacle in front of my spending pleasant time with my child." (M27)

Answers stating that excessive responsibilities at home prevent spending quality time are listed below:

"The intensity of the works I have to do at home exhausts me too much, and I have minimal time for my children." (M4)

"There is a limited time which I can spend with my child because things such as preparing food and cleaning take too much of my time at home." (M6)

Answers stating that limited information on quality time activities prevents spending quality time are presented below:

"I feel like I am inadequate for my child; we just play the games he wants, I do not know what else I can do." (M19)

"When we are alone, we are just playing lego with my son, and we are moving through the activity book, I am always anxious about what I can do differently for his development." (M23)

DISCUSSION, CONCLUSION, AND RECOMMENDATIONS

The active participation of mothers in working life has caused concern that they will not be able to spare enough time for their children. As a result of this concern, researchers have investigated whether having a working mother affects children adversely. The researchers have evaluated the children of working and non-working mothers according to criteria such as psychological health, social cohesion, behavior problems, and academic achievement. These studies have demonstrated that being a working mother does not have negative consequences which will prevent mothers from working and that mother's working time does not constitute an obstacle for the quality time spent with the child (Belle, 1999; Galinsky, 1999; Hoffman, 1989). In contrast, there are studies which have proven that working mothers strive to interact more with their children in comparison with non-working mothers (Ahnert, Rickert, & Lamb, 2000; Booth, Clarke-Stewart, Vandell, McCartney, & Owen, 2002; Bryant & Zick, 1996; Nock & Kingston, 1988). One of the first famous debates about quality time was about the tendencies of mothers who had a managerial duty. In the study, most mothers stated that having a challenging career could affect their children negatively, but that they cared about the quality of time rather than the time spent with their children so that their children did not suffer (Business Week, 1977). In this study, the views of university graduate working mothers who have 36-60-months-old children about the quality of the time spent with their children were discussed in the light of the literature.

The concept of quality time emphasizes interactions of the parent and child rather than the amount of time they spend together (Milkie, Mattingly, Nomaguchi, Bianchi, & Johnson, 2004; Snyder, 2007). In general, mothers stated that they investigate what they could do on behalf of spending quality time with their children and how their children will benefit from this process, they read various books about this subject, and they try to develop themselves. Mothers described the quality time spent between the mother and child as "the time spent with activities that the mother and child enjoy equally," "time spent with activities intended for the child development" and "time spent with activities the child wants." As it is expressed in the literature, the majority of the mothers defined quality time as a process, which requires both the mother's and the child's participation and having fun (Christensen, 2002; Semerci, 2009) and in which a kind of interaction that will contribute to the development of the child (Bryant, 1992) is formed. It can be stated that the mothers' knowledge about the definition of quality time matches up with the literature, and this is closely related to their education levels, the research they conduct to improve themselves, and the books they read.

In the study, some of the working mothers argued that spending quality time is "necessary since it affects mother-child communication positively," and they expressed that they were trying to perform more special activities in order to spend quality time with their children. The other mothers expressed their views about the necessity of spending quality time and stated that it is "not necessary since every time spent with the child is important," so they mentioned that they were trying to make

the whole time they spent with their children quality. This case suggests that all mothers believe in the necessity and importance of spending time with their children. The studies demonstrate that working mothers, who are well educated, devote more time to their children, and they try to perform more activities both in terms of type and number (Craig, 2006; Gimenez-Nadal & Molina, 2013; Gutierrez-Domenech, 2008; Ichino & Sanz de Galdeano, 2004; Kalenkoski, Ribar, & Stratton, 2005; Ramey & Ramey, 2009).

Studies demonstrate that effective parenting behaviors can be taught through parenting programs. Parent support programs increase mother knowledge and self-esteem, decrease mother's stress and improve the mother-child interaction (Britner & Reppucci, 1997; Bunting, 2004; Reid, Webster-Stratton, & Baydar, 2004). Mothers stated that they need training in which they could learn activities which are "suitable for different age ranges and different developmental areas" and which will "increase mother-child communication," and that they felt quite inadequate in these subjects. This case may be caused by the fact that mothers were not able to transfer the theoretical knowledge they obtain from books into their communication with their children. Mothers stated that they needed workshops, especially which include different activities and practices. In this respect, it is thought that mothers will become more competent parents in their communication with their children through the parent support programs they will participate in.

Some studies suggest that the increase in the participation rate of mothers in the working life does not cause a decrease in the time allocated to their children and thus does not harm their children. Since the number of children per household is few, mothers can allocate time to their children, even it is little. What is important here is not the total time they allocate to their children, but it is the kind of activities they perform with their children (Craig, 2006; Sandberg & Hoffert, 2001; Zick et al., 2001). Studies demonstrate that mothers usually choose shared activities during the time they spend with their children (Baxter, 2010). Besides, more educated mothers spend their time playing games with their children, reading books and teaching them something (Hill & Stafford, 1985; Timmer, Eccles, & O'Brien, 1985). Activities that parents do on behalf of spending time with their children can vary in a wide range from education, sports, playing a game, going to a store or doing housework (Brown, Michelsen, Halle, & Moore, 2001; Türkoğlu, Çeliköz, & Uslu, 2013). The mothers mentioned that the activities which they do in order to spend quality time with their children are "playing a game," "carrying out an educational activity," "talking," and "cooking." The mothers who aimed to spend quality time by playing games and carrying out educational activities stated that they wanted to contribute especially to the communication skills and mental development of their children. The mothers who preferred to chat frequently with their children stated that they aimed to develop the language and social-emotional development of their children, while the mothers who expressed that they enjoyed cooking with their children wanted to strengthen communication between them by spending shared time with their children. It can be stated that mothers want to contribute to the development of their children, and therefore they choose quality time activities appropriate for the development areas they wish to support.

In the study, half of the mothers stated that they "transformed the process into quality time by including their children in all their responsibilities at home," while the other half stated that they were not "able to spend quality time with their children while fulfilling responsibilities at home." The mothers who involve their children and even their spouses in their responsibilities at home stated that they see every situation as an opportunity to interact with their children and that this situation facilitates their lives. However, the mothers, who stated that they neglected their children because of the works they had to do at home, mentioned that they tried to be sufficient for everyone and every situation, they had many responsibilities, so they felt inadequate. It was determined that the weekly working hours of the mothers who supported two different ideas were not very different from each other. In this case, it can be stated that whether mothers could make the time spent with their children quality or not is related to the mothers' temperament rather than their working status or working time. Nock and Kingston (1988) did not determine a significant decrease in the amount of quality time allocated by working mothers to their children. Even Zick et al. (2001) revealed that in the families

where the mother works, the amount of quality time allocated by both parents to their children increases.

In the study, the mothers indicated that spending quality time with their children contributes to "mother-child communication" and that it supports their children's "social-emotional development," "cognitive development," and "language development." The mothers stated that the more they spend time with their children, the more the communication between them improves, and through this, children recognize both their own and their mothers' feelings easier, and they are able to express themselves more easily. The mothers who perform more academic activities to spend quality time with their children mentioned the impact of quality time on the cognitive development of their children. While most of the studies reveal that there is no difference between working mothers and non-working mothers in terms of mother-child interaction (Owen & Cox, 1988; Stifter, Coulehan, & Fish, 1993), some studies argue that working mothers are more interactive, sensitive and positive to their children than non-working mothers (Broom, 1998; Crockenberg & Litman, 1991). While fewer behavioral problems are encountered in children who interact more with their mothers (NICHD Eccrn, 2003), studies support that less mother-child interaction can also adversely affect cognitive and language development (Brooks-Gunn, Han, & Waldfogel, 2002; Han, Waldfogel, & Brooks-Gunn, 2001; Harvey, 1999; Waldfogel, Han & Brooks-Gunn, 2002).

Mothers indicated that the periods when they could spend quality time with their children were "weekend days," "annual leave periods," and "weekday evening hours." The majority of the mothers stated that they were able to allocate more time to more enjoyable activities with their children during the weekends and their annual leave periods, but that generally, they performed calmer activities during the weekday evening hours. This situation may be thought to be due to the intensive work of mothers on weekdays and getting tired in the working environment. Studies show that working mothers try to spend more time with their children during the periods outside working hours and especially during the evening hours, and try to compensate for their absence during the day (Easterbrooks & Goldberg, 1985; Hill & Stafford, 1985; Nock & Kingston, 1988; Rushing & Powell, 2014; Zaslow, Pederson, Suwalsky, Cain & Fivel, 1985). Moreover, mothers are making a special effort to spend more quality time with their children on weekends (Hochschild, 1989; Rachlin, 1987).

Mothers indicated the factors that prevent them from spending more quality time with their children as "the intensity of working hours," "excessive responsibilities at home," and "limited information on quality time activities." This situation can be thought to be mainly due to the fact that working mothers carry different roles at home and outside the home. Studies have demonstrated that due to their multiple roles and responsibilities, working mothers can devote more limited time and less energy to their children in comparison with non-working mothers, and that non-working mothers focus more on spending interactive and quality time with their children (Baydar, Greek & Gritz, 1999; Bianchi, 2000; Hochschild, 1989; Nock & Kingston, 1989; Rachlin, 1987).

In the light of the study results, the following suggestions could be made:

- Training seminars which will allow mothers to learn how to make the time they spend with their children more quality can be organized. In organizing these seminars, the necessary support may be requested from the Ministry of National Education, municipalities and non-governmental organizations.

- Mothers can be supported by practical workshops during which they can learn games and activities that will enable them to make the time they spend with their children more quality.

- For the mother to be able to have the time during which she can communicate with her child in a qualified way, the father must have a mission that will alleviate the responsibilities of his wife. For this purpose, it should be attempted to ensure that fathers gain the necessary awareness through educational seminars.

- In early childhood, teachers should try to help the mother and the child to make the time they spend together more qualified, by using different channels of information.

- In early childhood, the importance of quality communication between the mother and the child should be emphasized through the media channels, and the interest of society should be drawn to this issue more.

- Similar studies can be carried out with sample groups with different characteristics.

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Turkish Teachers' Opinions about the Use of Drama Method

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Abstract

The purpose of the current study is to determine how Turkish teachers use the drama method in their classes and what difficulties/problems they experience during their implementations of the drama method. This is a qualitative study. The study employed the case study design. The study group of the current research is comprised of 17 Turkish teachers working in the city of Kars. The participating teachers were selected by using the maximum variation sampling method, one of the purposive sampling methods. In the current study, a semi-structured interview form was used as the data collection tool. The collected data were analyzed by means of the content analysis method. The findings of the current study have revealed that the participating teachers mainly define drama as acting out and empathy development. They use the drama method most in the warm-up and wrap-up sections of the lesson, while studying texts including four basic language skills and didactic and critical texts, theatrical texts, and tales, folktales and fables. The drama method is believed to make its greatest contribution to the development of the skill of establishing empathy and the most important difficulty encountered is related to preparedness of students. The suggestion made by most of the teachers is to make drama a separate course.

Keywords: Drama**,** Turkish teaching, Turkish teachers

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INTRODUCTION

Frequent use of the drama method in a school environment where the main focus is on learning by doing and on student-centered teaching rather than teacher-centered teaching and students are allowed to engage in activities rather than listening to a teacher lecturing can increase the efficiency of learning-teaching process. By nature, the child acquires the best and permanent learning through games. Games can be played alone or in groups. Adıgüzel (2006: 23) defined creative drama as a way of acting out and making sense of an experience or an event by adding something from individuals' own experiences within a group work. Through creative drama activities, students not only learn but also socialize, enhance their self-confidence and nurture self-esteem and respect to others. They develop independent and democratic attitudes. Creative drama can be incorporated into courses at every level of formal education as a method of instruction and can be offered to students as an area of interest in itself (San, 1992).

"Creative drama has features that can realize a holistic learning, facilitates the simultaneous realization of cognitive, affective and kinesthetic development and is made up of practices through which learning occurs experientially" (Adıgüzel, 2013, p.54-55).

Adıgüzel (2010) defines the goals of creative drama as follows:

- Promoting creativity and imagination.
- Developing self-recognition, self-actualization and communication skills.
- Developing democratic attitudes and behaviors.
- Developing aesthetic behaviors.
- Developing critical and independent thinking skill.
- Developing cooperation-collaboration skill.
- Creating social sensitivity.
- Teaching how to release and control feelings.
- Contributing to language development and to the development of verbal and non-verbal expression skill (Adıgüzel, 2010).

The Turkish Course Curriculum is structured in such a way as to include knowledge, skills and values in an integrated manner so that it can enable students to acquire language skills related to listening, speaking, reading and writing and cognitive skills that they will use throughout their lives, to use these skills to develop themselves personally and socially, to communicate effectively and to develop the habit of reading and writing willingly with the love of Turkish. The Turkish Course Curriculum considers the development of language skills and competences as a pre-requisite for learning in all other areas, personal and social development and the acquisition of professional skills (MEB, 2018). In line with these objectives set in the Turkish curriculum, it is necessary to create settings in the classroom environment where students can develop themselves socially and academically, express themselves freely, acquire four basic language skills, relate these skills to the real life and develop these skills continuously. For students to actively participate in lessons and to be successful, they need to be provided with opportunities to learn by doing and experiencing. The drama method is an important method for students to express themselves well, to be a good listener, to produce solutions in the face of questions and problems and to have empathy. According to Aytaş (2008: 15), creative drama is one of the most effective teaching methods because it stimulates more

than one emotion. Especially in Turkish classes, it is necessary to apply creative drama to develop language skills and to make comprehension and expression more effective.

Given that Turkish course is a skill course and skill is gained through practice and experience, it becomes clear that the methods and techniques to be used in Turkish course should make the student effective and active and that it is not possible to reach the determined targets unless these methods and techniques are implemented (Aktaş, 2006).

Aykaç (2011) stated that the activities conducted in the creative drama process enable students to use their language skills by placing them to the center. Again, Aykaç stated that students can participate effectively in the lesson through the use of creative drama method, and that with the creative drama activities based on the works of children's literature, it is possible to educate versatile individuals who can speak, write, investigate, question and critically think.

Şimşek et al. (2010) stated that the methods and applications that can teach students the usage of grammar subjects in Turkish classes in a permanent way should be used in Turkish teaching rather than the methods and applications focusing on the theory of the use of phoneme-letters, words and sentences. They also stated that the applications to be performed to make students internalize grammar rules and teach students their usage should be play-based so that that they can appeal to the interests of students and when such play-based activities are used as an instructional tool, the resulting learning can be more permanent. Without doubt, play is a tool through which the child can learn, create, experience, communicate and prepare for adulthood.

According to Maden (2010), the Turkish teacher should transmit his / her subject knowledge to the student with appropriate techniques within games. During the act of drama, a relationship should be established with other fields, attention should be paid to verbal expression and, if necessary, time should be devoted to various sound studies in social children's games. The Turkish teacher should give importance to the process of drama as a leader and value students' opinions and criticisms about games. The child should not be fully committed to the teacher directives in the course. A free environment should be provided. Such opportunities can only be provided by the drama methods and techniques for the Turkish teacher in the teaching process of Turkish.

During the drama process, participants perform activities to promote their language skills in a comfortable and free environment. There are also elements like curiosity and excitement involved in the process. In this process, different activities directed to the development of cognitive, affective and kinesthetic areas are performed. Participants both learn and have fun during the drama process (Bruce & Eryaman, 2015). The different experiences they are engaged in have a positive effect on their affective development. These features of the drama process increase the interest and desires of participants towards language skills (Erdoğan, 2016).

In empirical studies focusing on the use of drama in Turkish teaching, Şimşek, Topal, Maden and Şahin (2010), Kara (2010), Karateke (2006), Ünsal (2005), Köklü (2003), Çebi (1996) concluded that drama is more effective in teaching language skills than the traditional methods.

Turkish teachers can use the drama methods and techniques in their classes as they allow their students to learn by doing and experiencing, to convert their behaviors and habits into skills through acting out, make the use of written and spoken language easier and more effective, provide students with opportunities to use written, spoken and visual language products to express their feelings, thoughts and wishes and teach them how to communicate with body language and movements (Maden, 2010).

According to Erdoğan (2013: 9), the first thing that the leader / teacher has to do about creative drama activities is to plan the activity. The leader has to answer "what, why, when, how, where, who" questions about the activity to be conducted and to plan the activity according to the answers to these questions. In addition, age, gender, readiness level and developmental characteristics

of the group with which the activity will be conducted should be known and taken into consideration by the teacher, which will affect the whole process. Research shows that drama method has an important place in teaching Turkish. The person who will apply drama methods and techniques effectively and actively is the drama leader; that is, the teacher. The teacher needs to have sufficient knowledge and skills in this area so that he/she can plan the drama process, the distribution of duties, and actively involve and direct students through the activities. The extent to which students accomplish the course objectives and the effectiveness and efficiency of the methods and techniques to be used by the teacher depends on the competence of the teacher in this area. In this context, it is important to determine the state of Turkish teachers' use of the drama method in their classes, identify the difficulties and deficiencies they encounter while using it, and their opinions and suggestions in relation to the use of it.

METHOD

Research model

The current study conducted to determine the opinions of Turkish teachers about the use of the drama method is a qualitative research. The current study employed the case study design. The interview method was used in the study. The aim of the interviewer is to elicit the participating Turkish teachers' opinions about the drama method.

Participants

The study group of the current research is comprised of 17 Turkish teachers working in the city of Kars. The participating teachers were selected by means of the maximum variation sampling method, one of the purposive sampling methods. In the maximum case sampling, the variation of the individuals to be included in the sample should be maximum. That is, rich variation in the groups taken as the sampling will help collect more materials (Yıldırım and Şimşek, 2006). Thus, in the current study, the Turkish teachers working at schools from low, medium and high socio-economic levels were included in the study group. The names of the teachers included in the study group were coded as Ö1, Ö2 ….

Table 1. Demographic features of the participating teachers

		Number
Length of professional service	1-10 years	12
	11-20 years	5
Education level	Education Faculty Turkish Teaching	17
Gender	Female	8
	Male	9
Total		17

Data collection instrument

In the current study, a semi-structured interview form was used as the data collection instrument. In the construction process of the interview form, first an item pool was established and then the items were subjected to the review of two academicians specialized in teaching Turkish. On the basis of the academicians' opinions and suggestions, the final form of the interview form was given.

Data analysis

The collected data were analyzed by means of the content analysis method. The main operation performed in content analysis is to combine similar data around certain concepts and themes and to arrange and interpret them in such a way that the reader can comprehend them (Yıldırım and Şimşek; 2006). The interview data were read line by line and codes and themes were formed. As a result of the content analysis conducted, the codes and themes were derived from the teachers' responses. These codes were then grouped under the determined themes. After a while, the interview data were re-read and the final forms of the codes and themes were given. "Coding concerns how you define what the data you have analyzed communicate" (Gibbs, 2007: 38, cited in Glesne, 2012: 265).

For the reliability of the study, the determined themes and codes were analyzed by another researcher and these two analyses were compared. Through agreement, themes and codes were formed. The inter-rater reliability obtained as a result of the comparison of the two researchers' opinions was found to be .85 (Reliability=agreement/agreement + disagreement) (Miles and Huberman, 1994). Moreover, the codes on which the two researchers disagreed were discussed and were placed under suitable categories. Moreover, the frequencies for each code are presented in tables and then the findings are interpreted. In order to establish the reliability in the current study, two important procedures were followed. In the first one, the analysis process was explained in detail (how the conceptual category has been arrived at) and in the second one, for each of the categories elicited, the samples thought to best represent it were selected and they are presented in the findings section.

FINDINGS

Table 2. Teachers' opinions about the concept of drama

Theme	Codes	f
About drama	Acting out	5
	Establishing empathy	5
	Teaching through games	4
	Developing cognitive skills	2
	Creativity	1
	Imagination	1
	Imitation	2
	Reification	1
	Learning by having fun	1
	Being active	1
	Learning by doing and experiencing	2
	Reflection of life	2
Total		27

When the concept of drama was asked to the participating teachers, they defined the drama primarily as acting out, developing empathy and teaching through games. One of the teachers stated his/her opinions about drama as follows; (Ö6): "*It is a way of acting out of an activity, event, emotion, different roles or a story verbally or non-verbally through imitation.*" Another teacher (Ö13) defined the drama as: *"Establishing empathy, reconciling with different viewpoints."* The teacher (Ö16) is placed in the code of teaching through games with the following statement: *"Drama refers to teaching of a subject through gamification."* On the other hand, (Ö12) defined drama as learning by doing and experiencing; "*One of the most effective types of learning is learning by doing and experiencing.*" In general, the teachers indicated that they see drama as a method that makes students active yet they used different statements to say so.

Table 3. Teachers' opinions about text types they use the drama method to study

Theme	Codes	f
Where	To study texts including four language skills	4
	To study didactic and critical texts	4
	To study theatrical texts	4
	To study tales, folktales and fables	4
	To study dialogue-based texts	3
	To study idioms	1
	To study narrative texts	1
	To study historical texts	1
Total		22

When the teachers were asked the types of texts they use the drama method to study, it was found that they most use it to study **"**texts including four language skills, didactic and critical texts, theatrical texts, tales, folktales and fables, dialogue-based texts" and aside from these they use it "to study idioms, narrative texts and historical texts". Some sample statements from the interviews conducted with the teachers about the theme of the texts for which the drama method is used are given below; (Ö7) *"I use the drama method in my classes. Particularly for listening and writing texts, I prefer the drama method. I attach great importance to using creative drama for activities including four language skills."* (Ö3) *"I particularly prefer the drama method for didactic and critical texts."* (Ö8) "*I frequently use it as it makes students' active participation possible while studying activities related to theatrical texts and idioms."* (Ö10) *"I use the drama method while particularly studying tales, folktales and fables. I want students to enact the characters in the texts by establishing empathy."* (Ö15) *"I generally use it in dialogue-based texts. Though not very frequently, I use it in historical texts."*

Table 4. Teachers' opinions about the stages of their lesson where they use the drama method

Theme	Codes	f
Stages of the lesson	Warm-up	8
	Wrap-up	8
	Activities	4
	The situations not understood	1
Total		21

The teachers stated that they generally use the drama method in the introduction and conclusion sections of the lesson. Some teacher opinions about this theme are given below; (Ö16) *"I use the drama method at the beginning of the lesson to draw the attention of students. I use it when I want to motivate students to direct their attention to a subject. Sometimes, I use it in the conclusion section of the lesson. I use it to make a subject understood better and to determine how much a subject has been understood."* (Ö12) *"I sometimes use it in the introduction section of the lesson to draw students' attention. Sometimes, after studying a text, I assign students a drama task for them to better understand the text."* (Ö2) *"I generally use it at the beginning of the lesson to raise students' awareness of the subject to be studied."*

Table 5. Teachers' opinions about the benefits of the drama method

Theme	Codes	f
Benefits	Developing the skill of establishing empathy	10
	Reinforcing a subject through games	6
	Developing critical thinking skill	4
	Increasing love for and interest in the course	4
	Increasing self-confidence	4
	Promoting creativity	2
	Socialization	3
	Developing four language skills	2
	Developing problem-solving skills	2
	Promoting learning by doing and experiencing	2
	Allowing the use of body language	1
	Helping the teacher get to know the student	1
	Preparation for the lesson	1
Total		42

The teachers think that the most important benefit of the drama method for the student is to develop the skill of establishing empathy. In addition, the drama method is believed to reinforce the studied subjects, to foster students' thinking skills, to raise students' interest in the course and to increase students' self-confidence. (Ö1) *"It has significant benefits in terms of developing the use of four basic language skills (reading, listening, speaking, writing). More importantly it improves students' empathic thinking skill. In addition, students' critical thinking and problem-solving skills also improve."* (Ö7) *"Primarily, it helps me to get to know students and to evaluate their interests, attitudes and abilities. When evaluated in terms of the benefits it provides for students, I think that it improves students' creative thinking, analysis, evaluation and empathy skills."* (Ö11) *"It develops the student's self-confidence. It enables students who are cognitively less developed to say something. It positively affects students' participation in lesson."* (Ö16) "*It may be difficult to teach some concepts to students. They try to learn such concepts by memorizing. This prevents permanent learning from occurring. As the child learns by doing and experiencing through drama, it increases the retention of the learned information. It raises the child's awareness. They can learn by having fun."*

Table 6. Teachers' opinions about their state of having taken drama training

Theme	Codes	f
Having taken drama training	Yes	13
	No	4
Total		17

During the interviews conducted with the teachers, it was elicited that 13 of the teachers had taken drama training while four hadn't. Only one of the teachers, Ö9 stated that he/she had received drama training both during his/her undergraduate education and in seminars, courses and in-service training. Yet, Ö9 said the following in relation to his/her competence in drama; *"I am good but I am not good enough. This is related to limited opportunities and professional development. I have come to a certain level but I need to advance."* Some other teachers' opinions about their competence in the drama method are as follows; (Ö3) *"I feel competent due to the training I received at university. I was engaged in theater and drama activities at high school and university."* (Ö8) *"Yes, I find my competence enough because I do not have any problems in improvising a scenario and acting it out. In this way, I can explain events more realistically."* (Ö16) "*I feel competent in drama because I took drama courses at school. I actively participated in drama activities at school. From time to time, I get my students engaged in drama activities; therefore, I feel competent."* (Ö4) *"I do not feel competent enough because I believe that creative drama activities should be offered to students from*

kindergarten to university. Therefore, as I have not systematically participated in creative drama activities in the past, I do not see myself competent enough." (Ö13) *"I do not see competent because I have not received any training about it."*

Table 7. Teachers' opinions about the difficulties they have encountered while employing the drama method

Theme	Codes	f
Difficulties encountered	Lack of preparedness on the part of students	11
	Crowded classrooms	5
	Bad physical conditions of the class	4
	Unsuitable texts	4
	Shortage of time	3
Total		27

When the teachers were asked what difficulties they encounter while using the drama method, the teachers stated that they mostly experience student-induced difficulties and students do not have necessary skills to get engaged in drama activities. In addition, crowded classrooms, bad physical conditions in the class, unsuitable texts for the drama method and shortage of time are other difficulties encountered by the teachers. Some teacher opinions about this theme are given below: (Ö5) *"I sometimes cannot find texts suitable for the level of students. Students' drama skills are weak and the drama training should be given from the kindergarten; thus, students are not competent enough."* (Ö10) *"As classrooms are crowded, it may not be possible to assign tasks to all students. There can be extremely eager students to take part while there can be some others who do not want to participate in. Involving reluctant students in drama activities can sometimes be highly difficult."* (Ö15) "*There are too many objectives to be addressed in a short time."* (Ö6) *"The textbooks prepared in line with the curriculum do not provide many opportunities to use the method because some of the activities are not suitable for the level of students. Students confuse drama with theatrical texts. There is no suitable environment in classes."*

Table 8. Teachers' suggestions for the more effective use of the drama method in class

Theme	Codes	f
Suggestions	It should be a separate course	6
	It should be used in other courses	5
	In-service training should be given to teachers	5
	Drama classes should be established	2
	Textbooks should be prepared as suitable for the drama method	2
	It should be required and planned from kindergarten	2
Total		22

According to the data obtained from the interviews conducted with the teachers, for the more effective use of the drama method in classes, drama should be offered as a separate course. Moreover, they believe that the use of the drama method in other classes would be useful. In addition, it has been suggested that teachers should be given in-service training by the ministry, drama classes should be established at schools, activities in the textbooks should be prepared to be suitable for the drama method and drama training should be actively given to students from kindergarten. Some teacher opinions about this theme are given below; (Ö1) *"A drama course independent of the Turkish course should be incorporated into curriculum. Teachers should be given in-service training about the use of drama. In all levels of education and within different courses, the creative drama method should be employed."* (Ö5) *"The drama course should be incorporated into curriculum as a course independent*

of the Turkish course. Textbooks should have content allowing students to use the drama method." (Ö9) *"At schools, at least one drama class can be established. There are stages at schools but it is difficult to use them."* (Ö8) "*We are acting in compliance with plans. In place of the texts in textbooks, situations suitable for drama can be used. That is, situations allowing the teacher to create games or activities can be provided. As I am concerned about catching up with the curriculum, we cannot devote much time to such activities."*

DISCUSSION AND RESULTS

In the current study conducted to determine Turkish teachers' self-efficacy in relation to the use of creative drama, the teachers were asked what drama connotes to them, the concepts emerging are; acting out, establishing empathy, learning through games, development of cognitive skills, creativity, imagination, imitation, reification, learning by having fun, being active, learning by doing and experiencing, relating to the real life. When we look at these findings, we can see that the teachers associate drama mostly with acting out, learning through games and establishing empathy. In a study conducted by Güven (2012) on the use of the drama method by classroom teachers in the Turkish class, the teachers defined drama as play, acting out, imitation, theater-stage play and learning from experiences. In both of the studies, the codes derived from the teachers' opinions are similar to each other.

According to the findings of the current study, the teachers use the drama method most to study texts including four language skills, didactic and critical texts, theatrical texts, tales, folktales and fables and dialogue-based texts. "As language development requires rapid cognitive development and high level of communication, it is considerably suitable for the use of the drama method. As drama activities provide opportunities for students to practice the real life through active participation, quality creative drama activities seem to be of great importance in language teaching" (Maden 2010b).

When teachers were asked where they use the drama more; they responded that they use it in the introduction, conclusion and activities of the lesson. The teachers stated that they use drama in the .introduction section of the lesson to draw students' interest and to increase their motivation. Some of the teachers stated that they use in the conclusion section of the lesson and some stated that they prefer it in activities. Güven (2012) also reported that teachers use drama most to motivate students.

The findings of the current study have also revealed that the drama method can provide the following benefits for students: developing the skill of establishing empathy, reinforcing the studied subjects through games, developing students' thinking skills, enhancing students' interest in the course, increasing students' self-confidence, developing students' creativity, socialization, developing four basic language skills, developing problem-solving skills, learning by doing and experiencing, using body language, getting to know what learning is. Tutuman (2011) conducted a study with the participation of Turkish teachers and concluded that; the Turkish teachers using the creative drama method in their classes use it as it is an effective method and makes the lesson more enjoyable. In the study by Güven (2012), the participating teachers stated that they find drama useful as it allows learning by doing and experiencing, makes learning more permanent, motivates students, helps students socialize and increases students' self-confidence. In a study carried out by Aykaç and Metinnam (2019) on teachers, all of the participants were found to be of the opinion that the use of creative drama as a method of instruction in their classes makes learning more effective and enjoyable, helps students socialize and increases their self-confidence, promotes communication among students, allows teachers to reach all of the students, eliminates monotony from classes and makes learning fun. As can be seen in the studies reported in the literature, teachers find using drama in their classes useful for various reasons.

According to the data of the current study, 13 of the participating teachers have taken training about the use of drama in classes while 4 of them haven't. The teachers stating that they had taken training about drama took this training in their undergraduate education and participated in various drama activities and thus they found themselves competent in the use of drama in their classes. The

other teachers on the other hand stated that they had not taken any training about drama; therefore, they did not find themselves competent in using drama in their classes. Tutuman (2011) concluded that the Turkish teachers having participated in in-service drama training, having taken courses about drama are better at knowing and applying drama than the teachers not having taken any courses about drama. The course given in the undergraduate education in the department of Turkish teaching is a course given together with theatre. The drama course is not offered as a separate course. And given that this course is given just for one term, it is not adequate for students to acquire enough knowledge and skills related to drama. Elitok Kesici (2014) conducted a study on 10 teachers and found that only three of the teachers had participated in training about drama and concluded that this number is highly inadequate and all teachers should take part in drama courses. In all the studies, the teachers not having taken any drama training stated that they feel incompetent in this area.

When the participating teachers were asked their opinions about the difficulties they encounter while using the drama method, they stated that they experience some problems and difficulties as students are not prepared, classrooms are crowded, physical conditions of classrooms are bad, texts are not suitable for drama activities and there is a shortage of time. Aykaç and Metinnam's study (2019) found that the participating teachers encounter many problems in the administration process of creative drama at schools. The problems they experienced were found to be crowded classrooms, classroom settings unsuitable for drama, lack of drama workshops at schools, intense curriculum, long time needed for drama activities and difficulty in controlling the class. In relation to students, students' reluctance, students' experiencing problems in role sharing, students' inability to express themselves, students' inability to understand what they are expected to do, lack of compliance between the level of the selected drama and students' competence level and domination of the activities by students with better talent for drama have been reported to be causing problems in different stages of the drama process (Ormancı and Şaşmaz Ören, 2010). Adıgüzel (2002) also stated that students always want to play games in the warm-up section of the lesson, that they are not much willing to participate in and they do not show enough interest, that shy children do not want to improvise, that they keep away from sharing and that they cannot adapt to the process easily.

The other findings of the current study are related to the teachers' suggestions. The teachers made the following suggestions for the drama method to be more effective and efficient; drama should be a separate course, it should be used in other courses, in-service training should be given to teachers, drama classes should be established, textbooks should be prepared as suitable for drama activities, the drama course should be compulsory and planned from the kindergarten onwards. All of the teachers participating in Güven's study (2012) stated that for the more effective use of the drama method in Turkish classes, this method should be learned and implemented well by the teachers. To this end, they argued that effective and efficient in-service training programs should be organized by the Ministry of National Education. All of the teachers stressed that the drama course should be compulsory in elementary education. Moreover, some of the teachers maintained that while designing the elementary school Turkish curriculum, it should be related to the drama method. In the literature, it has been reported that in-service trainings organized to inform teachers about the use of drama are inadequate and more effective in-service trainings are required by teachers. Moreover, many schools do not have settings suitable for performing drama activities, which has been reported to be an important problem.

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Investigation of Tales in Turkish Textbooks in Terms of Conveying Values

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Abstract

The aim of this study is to examine the tales in Turkish textbooks in terms of the values they convey. In this study, organized according to qualitative research method, the data have been obtained by document examination which is one of the qualitative data collection tools. A total of 29 tales in Turkish textbooks of 3-8 grades in the 2017-2018 academic year, were examined. Content analysis of qualitative data analysis techniques was conducted to analyze the data. In the analysis of the data the coding reliability was made and all the tales were analyzed together by two researchers. The total frequency of the sub-values determined in the examined tales is 70. When the distribution of lower values to the main values determined by MEB (2017) is examined, it is seen that there are 17 lower values related to responsibility main value, 11 lower values related to friendship and respect main values and 7 lower values related to self-regulation main value. While there is only 1 lower value for patience main value, there is no lower value for patriotism main value. Transfer method of 70 sub-values in the tales becomes different. These transfers were mostly positive sample behavior (f = 31), negative sample behavior (f = 21) and direct transfer (f = 12). The least used transfer method in tales is indirect transfer (f = 1). Almost all of the most frequently encountered humility sub-value is conveyed through negative examples; industriousness sub-value is mostly conveyed through direct (word) transfer. Among the main values (deep values) that are intended to be given in the whole of the tales in Turkish textbooks, friendship and responsibility take place 3 times; confidence, perseverance, humility, sense of mission, cooperation and empathy take place 2 times; and the other values take place once. When sub-values obtained from investigating tales as a whole are examined in the context of main values, it is seen that there is no sub-value reflecting the main value of justice and patriotism, and therefore no tale text was encountered on that.

Key words: Values education, tales, Turkish textbooks

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INTRODUCTION

Education is the process of delivering the individual to the designated target in terms of knowledge, skills, attitudes and values. The aim of education is not only to train individuals who have knowledge, but also to educate individuals with values. Because in today's world, it is the desire of the society as well as the education to educate individuals who have every moral value supporting societies, and who fulfills the requirements of contemporary life and who are based on reason and conscience; in addition to educate individuals who have the knowledge and skills that are the indicators of academic success. According to Fidan (2009), individuals whose knowledge, skills and values, make changes in the social structure. The continuation of a regular social structure is possible with the good values of the members of that society (Kan, 2010: 138). It is one of the main goals of national education to educate individuals whose love for their homeland, who know their national culture and who have a consciousness of contemporary citizenship. In this case, it can be said that education has a more social and cultural importance (Kafadar, 2002).

Values show individuals what is important, what should be preferred and briefly how to live (Kaygana et al., 2013). Values are superior behaviors that bring the individual to moral maturity, as well as affective and cognitive competence. In the literature, values are defined by researchers as a system of beliefs, ideas and norms that constitute social culture (Tural, 1992); the unifying factors adopted by society or individuals, measures meeting the social needs of society and good for the individuals (Özgüven, 1994); internalized standards that reconcile the needs of the individual with the demands of social life (Parashar, Dhar & Dhar, 2004; Balcı and Yanpar Yelken 2010). When we look carefully at the definitions made about values, it is understood that the values are not in a stable structure, and that they lead to significant changes and formations in every stage of life and in every layer of life as long as they are functional (Genc & Eryaman,2008). While values do not differ much from society to society, the view of societies on values can vary. Some values may be primary and dominant in some societies. Pepper (1958) describes moral values as values that exceed individual interest (cited in Güngör, 1998); Yiğittir & Öcal (2010) consider the dominant values as values that exceed the individual and concern the general public.

Although it may seem impossible to delimit values within a framework, it is possible to render them roughly in a classification. Values can be classified as religious, national, universal, individual and social values. Winter, Newton and Kirkpatrick (1998) also state that values can be classified as social values in the social context, individual values in the individual context, and family values in the context of small groups (cited in Dilmaç et al., 2008). Akbaş (2004) classifies the values as traditional values, democratic values, work-business values, scientific values and basic values.

Karagöz (2009) states that teaching of values aims to create moral character in the individual. In fact, values education is too extensive to be limited into moral education. Haydon (2004) states that value education cannot be distinguished from other concepts, especially moral education, but states that the idea that moral education has a more comprehensive meaning is dominant in the field of value education (Yiğittir & Öcal, 2010).

Values education is gaining more importance in the periods when societies are in crisis. The devaluation imposed by the globalizing world causes value erosion and disrupts the unity and peace of communities. On the other hand, societies are in endevaour to convey the values to the next generations for their future. Stanley (1983) states that studies are conducted on how to teach values in a large number of countries in order to prevent increasing values crisis (Yiğittir, 2010; 208). Today, both in Turkey and across the world there is definitely a crisis experiencing onto values. This crisis can only be eliminated by a disciplined and systematic effort. This systematic work is carried out through the education systems of states. In Turkey, this is carried out in the framework of education and training activities through the Ministry of Education and the curriculum of the courses in accordance with the Basic Law of National Education.

The aim of the education system is to educate individuals whose a personality and character in a balanced and healthy manner in terms of body, mind, morality, spirit and emotion, as well as having a free and scientific thinking power, having a wide world view, respecting human rights, having constructive, productive and responsible characteristics. Today, in the days of loss of value, it is becoming increasingly important that individuals have a healthy and effective adaptation to society and have a sound and ethical structure to ensure the sustainability and development of society (Eryaman, 2008; Kolaç and Montenegro, 2012). Individuals acquire these values and beliefs / behaviors firstly from the people in the family and their immediate surroundings and then from the educational institutions. Kolaç and Montenegro (2012) state that family, immediate surroundings and educational institutions play a very important role in the acquisition of values, and especially the educational institutions have very important responsibilities in their acquisitions and that the teachers have an important role in conveying values in educational institutions.

When the general objectives of educational institutions are examined, it is seen that many of them consist of many values such as being patriot, being clean, taking care of health, being regular, being fair, being creative, being entrepreneur. Educational institutions guide students with similar values and indicate what is important and how they should live (Akbaş, 2008). In addition, the school environment as a whole and the inter-school interaction areas provide a socialization environment for values. Therefore, it is expected that the perception of value will have important effects on teachers' views of life, practices in teaching value and attitudes towards their profession (Balcı & Yanpar Yelken, 2010).

Considering the subject within the framework of the curriculum, it is aimed to educate individuals who are able to stand on their own legs, are good, respectful to the law (Yiğittir and Öcal, 2010) and think about the lasting of the society. Two important factors are needed to educate individuals who recognize, know and adopt national, moral, humanistic, spiritual and cultural values targeted by Turkish National Education. The first one is the family and the second one is the school. First of all, it is the responsibility of the parents to bring basic moral values to children. The school is the educational institution that teaches social values to educate good citizens. The value judgments are made children to understand in the family with the help of tales, stories, epics, lullabies and cults that are told by parents or grandparents. In the school, these values are tried to be taught in a permanent way through the reading texts in the textbooks and the written literary products. In this respect, the textbooks in Turkish textbooks are used as a tool for conveying values as well as various cognitive and affective information. Meanwhile, the most important lesson in value teaching is the Turkish course. Çeçen and Çiftçi (2007) state that Turkish textbooks prepared on the basis of the curriculum are the main sources used for both education and teaching purposes. The textbooks are important material which provides systematic information to children and young people with their content and discourses and which shares the common values, behaviors and mentality patterns that are considered legitimate in the society they live in (Tanrıöver, 2003: 110). Turkish lesson and the main materials of this lesson have an important denominator in the process of value conveying. Values are delivered to the target audience through different types of texts or activities. Tale is one of the species in which convey values. Tale, inherently, convey the traditions, culture and national consciousness of a society. Tales taken in textbooks have a functional role in the conveying of the required values. Considering the function of the tales in conveying values to both societies and individuals, it is important to examine the tales taken in Turkish lessons. Based on this importance, the aim of this study is to examine the tales in Turkish textbooks in terms of the values they convey. For this purpose, the sub-objectives of the study are as follows:

- To determine the distribution of attitudes and behaviors (sub-values) in the tales taken in Turkish textbooks in terms of main values and class levels,

- To determine the manner of transfer of attitudes and behaviors (sub-values) determined in tales taken in the context of Turkish textbooks,

- To determine the distribution of the basic values (deep-values) given in all tales of Turkish textbooks according to the class levels.

METHOD

This study, which aims to investigate the tales in Turkish textbooks in terms of value conveying, is arranged according to qualitative research method. The qualitative research method is a research which is followed by a process aimed at revealing the facts and events that are used in qualitative data collection tools such as observation, interview and document analysis in a natural environment in a realistic and holistic manner (Yıldırım & Şimşek, 2008). In this study, data were also collected and obtained with qualitative data collection tools. Document review is an analysis of materials containing information on the subject of the study. These materials may include books, magazines, newspapers, archives, letters, etc. and also films, videos or photographs (Cansız Aktaş, 2014).

The Study material

In this study, 3-8 grade Turkish textbooks which were taught in primary and secondary schools in 2017-2018 academic year were used as material. In order to determine the textbooks, we made a point of selecting the textbooks presented to the use of Turkish teachers that are available through the MEBBIS system. The following table provides information about which publishers and tales are used at which class level.

Table 1: Information on the study materials

Grade	Publisher	Name of Tale
3rd grade	NOVA	Kırlangıcın Dostluğu
		Şakacı Fil
		Çiftçi ve Oğulları
		Rüya Bahçesi
		Rengini Arayan Top
		Günebakanlar
		Gezmeyi Seven Ağaç
		Büyük Yarış
	MEB	Eşek Arsının Başına Gelenler
		Kendine Hayran Olan Geyik
		Güneşle Rüzgârın İddiası
		Mor Ülkenin Kuşları
		Şah ve Pat
		Ay'la Güneş'in Oyunu
		Ağustos Böceği ile Karınca
4th grade	DOKU	Paylaşmayı Öğrenen Sincap
		Sihirli Çoraplar
5th grade	MEB	Alice Harikalar Diyarında
		Güneş'in Uyuduğu Yer
		Güvercin
		Kar Tanesi
6th grade	MEB	Aslan, Tilki Bir de Geyik
		Görevini Unutan Saat
	BAŞAK	Dünyanın Gezginleri
7th grade	EZ-DE	Tasa Kuşu
		Balıkçıl Kuşu
		Kış Mevsimi
8th grade	DÖRTEL	-
	MEB	Martı
		Tasmalı Güvercin

As can be seen from the table above, in the 2017-2018 academic year, Turkish textbooks belonging to 2 publishers in the 3rd grade level, 1 publisher in the 4th class level, 1 publisher in the 5th grade level, 2 publishers in the 6th grade level, 1 publisher in the 7th grade and 2 publishers in the 8th grade were used. 15 tales in the 3rd grade Turkish textbooks, 2 tales in the 4th grade Turkish textbook, 4 tales in the 5th grade Turkish textbook, 3 tales in the 6th grade Turkish textbooks, 3 tales in the 7th grade Turkish textbook and 2 tales in the 8th grade Turkish textbooks, a total of 29 tales were examined in this study.

Data collection and analysis

In the process of collecting the data, each of the 3-8 grade Turkish textbooks ,available through MEBBİS, was examined separately and tales were determined. In the next stage, three of the tales were analyzed by two different researchers and the sub-values (attitudes and behaviors) were determined. Then, the researchers who came together compared the sub-values (attitudes and behaviors) they determined separately; after the common vision on codes was obtained, all the tales were examined by both two researchers together. Sub-values obtained from examination were placed under the appropriate values from the main values in the list of values given by MoNE (2017). Thus, the main values and the sub-values belonging to these main values were occurred.

Afterwards, it was demonstrated in which ways the values are tried to be given (direct transfer, direct emotion transfer, indirect transfer, positive sample behavior, negative sample behavior). Finally, the basic (deep) values that have spread throughout the tale were determined.

Validity and reliability

In order to ensure the validity of the study and increase the credibility of the data, it is suggested that the obtained data should be presented clearly and consistently, and the data analysis process should be confirmed by another researcher (Cansız, Aktaş, 2014). From this point of view, data were tried to be presented clearly and researcher confirmation was taken in the data analysis process. The reliability of the coding was made for reliability, and then all of the data were analyzed together by two researchers and converted into findings.

FINDINGS

In this section, the findings about the analysis of the tales (3-8 grades) in Turkish textbooks are given. Table below shows the distribution of attitudes and behaviors (sub-values) according to grades and main values.

Table 2: The distribution of attitudes and behaviors in tales according to main values and grades

Values	Sub-values (attitudes and behaviors)	Grades						Total
		3 (*f*)	4 (*f*)	5 (*f*)	6 (*f*)	7 (*f*)	8 (*f*)	
Justice	Justice	2	-	-	-	1	-	3
	Equation	1	-	-	-	-	-	1
Friendship	Fidelity	1	-	-	-	-	-	1
	Friendship	3	1	-	-	-	-	4
	Amity	1	-	1	1	-	1	4
	Association	-	1	1	-	-	-	2
Honesty	Accuracy	1	-	-	-	-	-	1
	Confidence	-	-	1	-	1	-	2
	Honesty	-	-	-	-	1	-	1
Self-regulation	Austerity	2	-	-	-	-	-	2
	Regret	1	-	-	-	-	-	1
	Self-confidence	1	-	-	-	-	-	1
	Keeping secret	-	1	-	-	-	-	1
	Self control	-	-	-	1	-	-	1
	Frugality	-	-	-	1	-	-	1
Patience	Perseverance	1	-	-	-	-	-	1
Respect	Respect	2	-	-	1	-	-	3
	Humility	5	-	-	1	-	-	6
	Acceptance of differences	1	-	-	-	-	-	1
	Valuation	-	1	-	-	-	-	1
Love	Missing	1	-	-	-	-	-	1

	Love	1	-	-	-	-	-	1
	Love for nature	1	-	-	-	-	-	1
	Love for animals	-	-	1	-	-	-	1
Responsibility	Diligence	3	-	-	1	2	-	6
	Sense of mission	1	-	-	1	-	-	2
	Unity-Solidarity	1	-	-	-	-	1	2
	Responsibility	2	-	-	2	-	-	4
	Self Sacrifice	-	-	1	-	-	1	2
	Leadership	-	-	1	-	-	-	1
Patriotism		-	-	-	-	-	-	-
Helpfulness	Helping	1	1	-	-	-	-	2
	Sharing	1	1	-	-	-	-	2
Other	Optimism	2	-	-	-	2	-	4
	Empathy	2	-	-	-	-	-	2
	Gift exchanging		1	-	-	-	-	1
Total		38	7	6	9	7	3	70

According to the table, the total frequency of sub-values was determined to be 70. The majority of the sub-values was determined in the tales of the 3rd grade Turkish textbooks (f = 38); the minimum number of attitudes and behavior (f = 3) takes place in the 8th grade Turkish textbook. The reason why there are more sub-levels at the 3rd grade level is that two different publishers books were examined and there were more texts of the tale type.

When the distribution of the sub-values to the main values determined by MoNE (2017) is examined, it is seen that there are 17 sub-values related to 'responsibility' main value, 11 sub-values related to 'friendship and respect' main values and 7 sub-values related to 'self-regulation' main value. While there was only 1 sub-value for 'patience' main value, there was no sub-value for 'patriotism' main value.

On the other hand, the frequencies of the most frequently accentuated sub-values on the tales were determined respectively like that: humility (f = 6), diligence (f = 6), optimism (f = 5), friendship (f = 4), amity (f = 4) and responsibility (f = 4). As optimism, empathy and gift exchanging sub-values were not considered under any titles of the main values, they were examined under the 'other' title.

The ways in which sub-values in Turkish textbooks are tried to be conveyed in texts are determined. The determined sub-values are in the following table according to the conveying ways.

Table 3: Conveying ways of sub-values (attitudes and behaviors) in the tales

Sub-values (Attitudes and behaviors)	Conveying ways / Transfer Method					Total
	Direct Transfer	Direct emotion transfer	Indirect Transfer	Positive sample behavior	Negative sample behavior	
Justice	-	-	-	1	2	3
Equation	-	-	-	1	-	1
Fidelity	-	1	-	-	-	1
Friendship	1	1	-	2	-	4
Amity	1	1	-	2	-	4
Association	-	-	-	2	-	2
Truth	1	-	-	-	-	1
Confidence	-	-	-	1	1	2
Honesty	-	-	-	-	1	1
Austerity	-	-	-	1	1	2
Regret	-	-	-	1	-	1
Self-confidence	-	-	-		1	1
Keeping secret	-	-	-	1	-	1
Self control	-	-	-	1	-	1

Frugality	1	-	-	-	-	1
Resolution	-	-	-	1	-	1
Respect	-	-	-	-	3	3
Humility	-	-	-	1	5	6
Accepting differences	-	-	1	-	-	1
Valuation	-	-	-	-	1	1
Missing	-	1	-	-		1
Love	-	-	-	-	1	1
Love for nature	-	-	-	1	-	1
Love for animals	-	-	-	-	1	1
Diligence	3	-	-	2	1	6
Sense of mission	1	-	-	1	-	2
Unity-Solidarity	-	-	-	2	-	2
Responsibility	1	-	-	2	1	4
Self sacrifice	-	-	-	2	-	2
Leadership	-	-	-	1	-	1
Patriotism	-	-	-	-	-	
Helping	-	-	-	2	-	2
Sharing	-	-	-	1	1	2
Optimism	2	1	-	-	1	4
Empathy	1	-	-	1	-	2
Gift exchanging	-	-	-	1	-	1
Total	12	5	1	31	21	70

When the above table is examined, it is seen that 70 sub-values which are included in tales are tried to reach to the target audience in different ways. The conveying ways of these sub-values were mostly positive sample behavior (f = 31), negative sample behavior (f = 21) and direct transmission (f = 12). The conveying way used less in tales is indirect transfer (f = 1). Almost all of the most common modesty of humility sub-value is tried to be conveyed through the negative sample. The sub-value of diligence was mostly through direct transfer. The values of friendship, amity and responsibility are tried to be given through positive sample behavior while the lower value of optimism is given through direct transfer.

Text examples related to Table 3

The ways used in the conveying of values in tales are illustrated with the sentences taken from the texts as follows.

Direct transfer - amity

— *No man in his right mind would equate anything to amity. Because the comrades, who help in difficult time and is a comforter when touched. One of these examples is a pigeon on a leash (neck engaged), mouse, gazelle and crow.* (Turkish 8, MoNE, Pigeon on a Leash)

Direct transfer - Diligence

Once upon a time in a very remote country, an old farmer lived. The old farmer had a huge farm. He had sheep, lambs, horses, cows, ducks and chickens. The old farmer would feed them, raise them, then sell them. That's how he survive. The old farmer was hard-working. (Turkish 3, Nova, Farmer and His Sons)

Negative sample behavior - honesty

.... In the end, s/he resorted to a subtle way. There was no other way to get the food. S/He was immediately lured by a crab in the lake. To Crab;

"The other day a group of hunters came here." said. "They told me they were going to go to the lake, and how much fish they'd be holding. All the fishes would be pitiful! Their descendants will run out!"

The crab was scared when It heard this news. Because it thought it would be caught by them with the fish too. (Turkish 7, EZ-DE, Heron Bird)

Positive sample behavior - amity

The town was happy to return to its old order. They went to work early every morning. The clock on our clock tower greeted them. The clock had learned his responsibilities. He knew now that there would be no happiness alone. He understood that the real happiness was what he felt in it when he performed his duties among his friends. (Turkish 6, MoNE, The Clock Forgetting Its Task).

Direct emotion transfer - fidelity

The swallow migrates to the south every autumn, back in the spring. On a warm spring morning, it returned to the forest with joy. It started to look for the oak tree she stayed in last summer. It's walking all over the woods. But It couldn't find the oak tree. It was sadly put on the branch of a hornbeam tree. (Turkish 6, Nova, Fellowship of Swallow).

Direct emotion transfer - optimism

"Please don't worry. Because I also work as a table. Children eat on me, play games and study. I am very happy in this way as well." table said. The oak tree table and little swallow chatted that day until the evening. (Turkish 3, Nova, Fellowship of Swallow).

Indirect transfer - accepting differences

Does the red ball stay in place? "You're right, friends." it said. "Whatever color we may be, we are all beautiful for all children. Why envy each other?" (Turkish 3, Nova, Ball Seeking Its Color).

The tales in Turkish textbooks were examined in terms of the basic value of the text. The findings related to the distribution of the basic values (deep value) according to the main values and classes are given in the table below.

Table 4: Basic values (Deep values) determined at the tales in Turkish textbooks

Main Values	Texts	Basic (deep) values	3(*f*)	4(*f*)	5(*f*)	6(*f*)	7(*f*)	8(*f*)	Total
Justice	-	-	-	-	-	-	-	-	-
Amity / Fellowship	Kırlangıcın Dostluğu Ay'la Güneş'in Oyunu- Tasmalı Güvercin	Amity / Fellowship	2	-	-	-	-	1	3
	Aslan, Tilki Bir de Geyik Tasa Kuşu	Trust	-	-	-	1	1	-	2
	Çiftçi ve Oğulları	Association	1	-	-	-	-	-	1

Honesty	Balıkçıl Kuşu	Honesty	-	-	-	-	1	-	1
Self control	Kendine Hayran Olan Geyik	Austerity	1	-	-	-	-	-	1
Patience	Büyük Yarış Martı	Resolution	1	-	-	-	-	1	2
Respect	Şakacı Fil	Respect	1	-	-	-	-	-	1
	Güneşle Rüzgârın İddiası Şah ve Pat	Humility	2	-	-	-	-	-	2
Love	Alice Harikalar Diyarında	Love	-	-	1	-	-	-	1
Responsibility	Ağustos Böceği ile Karınca Görevini Unutan Saat Kış Mevsimi	Responsibility	1	-	-	1	1	-	3
	Eşek Arısının Başına Gelenler Dünyanın Gezginleri	Sense of duty	1	-	-	1	-	-	2
Patriotism	-	-	-	-	-	-	-	-	-
Helpfulness	Rengini Arayan Top Sihirli Çoraplar	Helpfulness	1	1	-	-	-	-	2
	Güneş'in Uyuduğu Yer	Mercy	-	-	1	-	-	-	1
	Güvercin	Cooperation	-	-	1	-	-	-	1
	Paylaşmayı Öğrenen Sincap	Sharing	-	1	-	-	-	-	1
Other	Rüya Bahçesi Kar Tanesi	Empathy	1	-	1	-	-	-	2
	Günebakanlar	Optimism	1	-	-	-	-	-	1
	Gezmeyi Seven Ağaç	Freedom	1	-	-	-	-	-	1
	Mor Ülkenin Kuşları	Innovation	1	-	-	-	-	-	1
		Total	15	2	4	3	3	2	29

When the table above is examined, the basic values (deep value) that are intended to be given in the whole of the tales in Turkish textbooks are taken as amity and responsibility 3 times, trust, perseverance, humility, duty awareness, cooperation and empathy 2 times and other values 1 times. In the distribution of the basic values determined according to the main values in all the tales examined in this study, it was determined that there was no basic value related to justice and patriotism. Another noteworthy point is the lack of a main value in accordance with the basic values of empathy, optimism, freedom and innovation, which are included under the "other" title.

CONCLUSION AND DISCUSSION

In this study which was aimed to examine the tales in the 3-8 grade Turkish textbooks in terms of the values, the frequencies of the determined attitudes and behaviors (sub-values), the distribution of the sub-values to 10 main values determined by MEB and the conveying ways of these sub-values were analyzed. In addition, deep values reflected in all texts were tried to be determined.

According to the findings of the study, the total frequency of the sub-values determined at the tales in Turkish textbooks is determined as 70. When the sub-values are distributed to the main values, there are 17 sub-values in the main value of responsibility, while 11 sub-values are in the main values of amity and respect, 7 sub-values are in the main value of self-control, and only 1 sub-value is found in the main value of patience. The remarkable point is the absence of any sub-value of patriotism. In the studies conducted by Güzel (2013) and Karagöz (2009), the value of patriotism was one of the

least emphasized values. Contrary to these studies, in the studies of Şen (2008) and Aral (2008), the value of patriotism was one of the most emphasized values. In these studies, values of love, respect and sensitivity were the most processed values with patriotism. In the study conducted by Çapoğlu (2015), the most emphasized values were "human love", "love of nature" and "respect for Turkish adults" values.In the study of Kırmızı (2014), love of nature was the most processed values. In the studies, the least conveyed values are "hospitality" (Şen, 2008), "accuracy" and "courage" (Çapoğlu, 2015). In the study of Yaman et al. (2009), it was seen that the texts included in the second grade Turkish textbooks the most conveyed values were social and theoretical values, and at the least ones were religious and economic values.

The opinions of parents, teachers and students, who are important stakeholders of education as well as textbooks which are a reflection of the curriculum, are also important. As a matter of fact, in the study conducted by Yiğittir (2010), national, traditional and moral values are among the most preferred values of the parents. It was seen that democratic and environmental values were not preferred by parents. In the study conducted by Çengelci et al. (2013) with teachers and students, the basic values tried to be gained in the school environment according to both teachers and students were values of love, respect, tolerance, solidarity and responsibility. In another study conducted with students (Yiğittir and Öcal, 2010), students want to find 97 different values in the people around them. The values that students bring to the foreground are environmental cleanliness, respect, nice words and behaviors, honesty, diligence, environmental sensitivity, helpfulness, being good people, tolerance, love of nature, cleanliness, love and reliability. In Balcı and Yelken's study (2010), named The Meanings of Primary School Teachers on the Concept of Value, teachers emphasized the value of value in social life and the role of value in the socialization and personal development of the individual. Teachers also point to the relationship between values and social norms and rules, and the relationships between values and behaviors, based on the regulatory role of values and the mutual relationship of the individual and society.

In the study of Pilav and Erdoğan (2016) named Examination of Informative Texts in Secondary School Turkish Textbooks in terms of Value Conveying, it was evaluated that the informative texts in the 5th, 6th, 7th and 8th grade Turkish textbooks did not contain much value and the value of peace and honesty was not included in the informative texts in the 5th grade Turkish textbook. In our study, there were not enough values in the other class levels except for the 3rd grade tales.

Texts selected in the textbooks are texts having literary text attributes taken from literary works. Ayrancı (2018) emphasizes the choice of texts including the beautiful narratives and metaphors of the language, and emphasizes the necessity of the inclusion of cultural elements. As stated by Yaman et al. (2009), literary works (texts) are texts that convey the life styles, traditions, customs and values of a society to future generations by keeping a mirror on life. Because of being literary works, texts also take on the function of conveying the values desired by the society. The fact that some of the values (patriotism, hospitality, courage, accuracy, etc.) requested more frequently in every stage of life are not adequately conveyed means that the texts in the textbooks are insufficient in the transfer of value. In the study of Kaygana, Yapıcı and Aytan (2013), it is considered that the texts are not sufficiently suitable for value education, and in the study of Ateş (2014), it is thought that existing value education practices are mostly on paper.

According to the distribution of the sub-values to the grade levels obtained in the findings of this study, the most sub-values take place in the tales of third grade textbooks (f=38); the least sub-values take place in the tales of eighth grade Turkish textbooks (f=3). This difference occurred because of the examination of total 15 tale texts in 3rd grade Turkish textbooks. Two Turkish textbooks, both at the third grade level and eighth grade level, were examined. In the eighth grade Turkish textbooks there are a total of two tales, while the fifth grade Turkish textbooks contain a total of fifteen tales. In the study of Özkan (2010), among the Turkish textbooks which were the subject of this study, the 5th and 8th grade Turkish textbooks contain the least values. This result coincides with the results of our study on 8th grade Turkish textbooks. On the other hand, the frequency of the sub-

values in the tales was determined respectively as humility (f = 6), diligence (f = 6), optimism (f = 5), friendship, amity and responsibility (f = 4).

As in all literary texts, 70 sub-values determined at tale texts in Turkish textbooks are conveyed to target audience in different ways. The lessons to be taken from a bad character or a wrong action are taken into consideration. The conveying of sub-values determined in this study was more like this; "positive sample behavior", "negative sample behavior" and "direct transfer". The least used mode of conveying way is the indirect transfer. Almost all of the most common sub-value "humility" is conveyed through the negative sample. One of the most common values, the sub-value of diligence, was tried to be given to the target audience through direct transfer. The values of friendship, amity and responsibility were tried to be given through positive sample behavior while the sub-value of optimism was given through direct transfer. As also reported by Şahbaz and Çekici (2012), children's images that are not as favorable as the images of children preferred in textbooks are also important. Positive behaviors can be gained through negative examples in such texts. Distinctive images that draw attention are some of the negative examples in tale texts that serve to add value and give some lessons. In our study, although the values are mostly based on positive sample behavior, the values tried to be given on the negative sample are inevitable number.

In addition to the "visible" values that are conveyed with the help of sentences and paragraphs in the texts, "deep values" are reflected in the whole text. It was determined that the deep values of friendship and responsibility were mostly used in the texts examined in this study. In addition, when the tales are examined as a whole and the deep values are examined in the context of main values, it is seen that there is no deep value that reflects the main value of justice and patriotism. Another noteworthy point is the fact that the main values of empathy, optimism, freedom and innovation which are discussed under the "other" title were not determined. It is noteworthy that no tale text addressed directly to the main value of justice, which is important in the healthy conduct of the life of individuals in social life. Another issue is main value of patriotism. There is no deep value for this main value. However, tales can play an important role in conveying the consciousness of being a good citizen and patriotism. Another point to be emphasized in the results of the study is the sub-value of empathy. This deep value was not evaluated under any of the main values. The deep value of empathy, which is an important task for the individuals to understand each other and establish healthy communication, should be considered as a main value.

When the results of the study and the related literature are examined, the values that prepare the individuals to be good people and thus shape the future of the societies have once again revealed the importance of education. Although values are tried to be acquired by students through different disciplines in educational system, Turkish lessons have never lost their duty to be the key at this point. Texts, which are the main material of Turkish lessons, and tales within these texts, play an important role in the conveying of values both in social and universal dimensions.

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3. sınıf Türkçe Ders Kitabı (2017) - MEB Yay.

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Physically Active Leisure Participants Segmentation: PCM Stage-Based Investigation

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Abstract

Recent recreation and sports marketing research demonstrates that involvement can be used as a new segmentation strategy and offers potential opportunities for better understanding of leisure participants. In the current study, the three-step the Psychological Continuum Model (PCM) segmentation procedure was performed for participant segmentation by using physically active leisure involvement profiles. This study consisted of 561 (n_{male}=321 and n_{female}=240) physically active leisure participants and three involvement facets of hedonic value, centrality and symbolic value were conducted to segment participants. Confirmatory factor analysis, the Pearson correlation coefficient and multivariate analysis of variance were used for data analysis. Our findings showed that a significant majority of the participants were allocated to the attraction stage (n = 306, 54.5%) and awareness (n = 106, 18.9%), attachment (n = 104, 18.5%) and allegiance (n = 45, 8%), respectively. Consequently, the segmentation revealed that differences in attitudes from awareness to attraction, attachment and allegiance stages, become strengthened among physically active leisure participants. Thus, this information can be used to better understand the leisure activity participation habits of students for marketers-practitioners.

Keywords: Campus recreation, Segmentation, PCM stage, Leisure activity

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INTRODUCTION

Increasing the level of participation in physically active leisure is among the most important targets of the institutions and organizations that are responsible for providing active recreation services / opportunities in the community (Beaton & Funk, 2008). Many non-governmental organizations, especially governments and health organizations, highlight the importance of being physically active and the health problems caused by being inactive (Gobster, 2005; Jackson, Howes, Gupta, Doyle, & Waters, 2005; Priest, Armstrong, Doyle, & Waters, 2008). The World Health Organization (WHO) European Ministerial Conference on Counteracting Obesity was held on November 2016 in Turkey and Turkish Healthy Nutrition and Active Life Programme has been introduced by the General Directorate of Primary Health Care Services of Ministry of Health (Atasever, 2018). Similarly, although wide levels of attention have been increased physical activity levels across various settings and communities, leisure physical activity is declining while physical inactivity is rising (Howes, Doyle, Jackson, & Waters, 2003; Van Sluijs et al., 2005). Research indicates that more than half of the world's population does not have sufficient physical activity to benefit their health (WHO, 2003). Reducing the levels of activity required in daily life (working / work and home life), especially due to technological developments and modernization (Bulut, 2013), increases the importance of participation in physically active leisure. On the other hand, it is stated that participation in passive recreation activities is relatively higher in societies that do not have sufficient knowledge, skills and cultural level about how free time can be evaluated positively and effectively (Karaküçük, 1999). A research has been carried on leisure habits of the secondary education and university students in Turkey shows that more students interest in a passive activity (Kahraman, Çolak, Bayazıt & Yılmaz, 2017; Kuş Şahin, Akten, & Erol, 2009). Therefore, the capacity to understand and increase participation in physically active leisure is one of the main tasks of higher education institutions, which are responsible for protecting public interest as well as sports and recreation managers (Beaton, Funk & Alexandris, 2009).

Campus recreation services are an essential part of many university campuses. (Hurd & Forrester, 2006; Watson, Ayers, Zizzi, & Naoi, 2006). These services have positive effects on students (*mentally and physically healthy, developing healthy behaviors throughout life, socialization, clarification of social values*), as well as academic performance, organizational satisfaction and community sensation. (Belch, Gebel, & Maas, 2001; Gobster, 2005; Huesman, Brown, Lee, Kellogg, & Radcliffe, 2009; Watson et al., 2006). Despite the benefits of campus recreation activities/physical activity to individuals in especially health (Gobster, 2005), it is stated that many students do not show the desired participation in the activities (Stankowski, Trauntvein, & Hall, 2017; Young, Ross, & Barcelona, 2003). On the other hand, the main objective of the campus recreation programs is to ensure the continuity of the current participants and to acquire new customers (participants). (Kaltenbaugh, Molnar, Bonadio, Divito, & Roeder, 2011). Thus, encouraging campus recreation professionals to focus on current and potential participants' marketing agenda based on participants' needs and desires is increasingly important for the development and implementation of a sound marketing campaign (Funk & James, 2006; Kaltenbaugh et al., 2011). There is a need for a comprehensive marketing strategy to increase students' participation in campus recreation program / physically active leisure. Market segmentation is the basis of an effective marketing strategy (Kotler, 2000). It is known that all active leisure participants are not the same in terms of their interests and needs. For this reason, separating potential active leisure participants into segments that share similar characteristics and give similar reactions to marketing efforts will increase the effectiveness and efficiency of the activities that will be offered to them. (Kotler, 2000; Perreault, Cannon & McCarthy, 2012). In recent years, researchers have demonstrated that involvement as a segmention leisure participants is an important psychological variable (Alexandris, 2013; Alexandris, Douka, & Balaska, 2011; Kyle, Kerstetter, & Guadagnolo, 2002). On the other hand, the Psychological Continuum Model (PCM) by Funk & James (2001) was introduced as a conceptual framework in the classification of individuals participating in sports and various recreational activities. (Beaton et al., 2009). The PCM has been used in various sports (Beaton et al., 2009; Beaton, Funk, Ridinger & Jordan, 2011; Doyle, Kunkel, & Funk, 2013), recreation (Funk, Beaton, & Pritchard, 2011) and tourism research (Filo, Chen, King, & Funk, 2013) to understand the psychological connections that consumers develop with

various sports and leisure objects. In other words, it is theoretically accepted to understand both active and passive leisure participation. (Beaton & Funk, 2008). The PCM provides a framework for conceptualizing a person's psychological development in the process of becoming an allegiance leisure participant (de Groot, & Robinson, 2008). This model is a stage based framework that investigate cognitive, sociological and psychological processes that affect formation and change of attitudes during the four stages of awareness, attraction, attachment and allegiance (Beaton & Funk, 2008; Funk & James, 2006).

Awareness refers to any activity, the process of socialization that helps the individual to introduction. The introduction is based on personal, psychological and environmental factors throughout the life of the individual (Funk, Alexandris, & McDonald, 2008; 2016). It refers to the process by which an individual first learns about specific sports and/or leisure effects, but does not have a certain motivation for participation and seeks alternative activities (Funk & James, 2001, 2006). In this context, cognitive outcomes serve as input to the attraction stage (Doyle et al., 2013). *Attraction* consists of personal (knowledge, personality, etc.), psychological (will, respect, entertainment, etc.) and environmental inputs (marketing efforts) (Funk, et al., 2016). It is the stage in which individuals use their knowledge of the available options and develop an appreciation for a particular sport object (Doyle et al., 2013). At this stage, emotions are effective, and there is a significant interest or initial attitude to the effects of sport and/or leisure. In order to perform a certain behavior (participation in and/or monitoring of activities), the individual is ready to select or is to make a choice among alternatives (Funk & James, 2006; Funk et al., 2016).

Attachment can be defined as a subjective psychological process connected with the phenomenon of sport / leisure and is much stronger than the socio-structural and individual processes at the stage of attraction. (Beaton et al., 2011; Funk et al., 2016). In other words, the individual participating in a specific activity represents the assigning of emotional, functional and symbolic meanings into the activity rather than sociological reasons (Funk & James, 2006). In this context, it is stated that participation a concomitant transition to more stable and predictable behavior occur has gained a personalized meaning in the literature. Individuals in the attachment stage are resistant to alternative options (Doyle et al., 2013) and more likely to overcome potential barriers that prevent their participation in a particular event. (Beaton et al., 2011). *Allegiance* is the final stage of the PCM framework, which represents the highest level of psychological connectivity that can be achieved with a leisure activity. (Doyle et al., 2013). At this stage, the individual is an allegiance (or committed) fan of leisure activity. Allegiance results in effective attitudes (resistant, persistent, cognitive bias and behavior) that produce consistent and durable behavior. (Funk & James, 2001). In other words, the thoughts of the individual about a sport phenomenon and the evaluation of the information related to this phenomenon are shaped as a result of the prejudices of the individual (Funk et al., 2016).

As mentioned above, PCM is a hierarchical structure to organize different academic disciplines and to explain consumer behavior in sport and/or leisure activity according to Funk & James (2001) and Funk et al., (2008). Besides, Funk & James (2001) stated that the attitudinal component of loyalty separated into three independent but related components including persistence, resistance, and cognitive processes. In this context, the purpose of the study was to evaluate the functionality of the sports involvement to segment in active leisure participants. The research problems of the current study were follows: Is there identification distinct market segments (awareness, attraction, attachment and allegiance) using active leisure participants' involvement profiles? and Is there any differences among active leisure participants segments (awareness, attraction, attachment and allegiance) in terms of attitude (persistence, resistance to change and biases in cognitive processing)?

METHODS

Participants and Procedures

The data were collected from students of Sakarya University in Turkey. In Sakarya University, the use of 1 football ground, 2 multipurpose sport hall, 2 astro pitch, 3 tennis court and 3 basketball-volleyball court are allocated to students. Additionally, different activities (hiking/trekking, etc.) are organized throughout the year by the Directorate of Health, Culture and Sport, and provide bicycles at low cost are available to students on campus. For this reason, necessary permissions were obtained from the university management. The questionnaires were distributed by a team of five pollsters on different days and hours of the week. The students who volunteered to participate in the research filled the questionnaires in the cafeteria and recreation areas at the sports facilities. In terms of demographics, more than half of the sample was allocated to attraction (54.5%) and 57.2% (n = 321) of participants were male and 42.8% (n = 240) were female belonging to the age group of 18-29 (M = 21.38 ± 1.64). Participants were educated in 9 different faculties (Table 1).

Materials Used

We used questionnaire based survey method as the descriptive research method in the present study. A questionnaire distributed to potential-respondents about their interpretation of the following items. In order to determine involvement level of participants, nine items representing the hedonic value, centrality and symbolic value facets which were adapted to Beaton et al, (2011) study and to suit physically active leisure activity (campus recreation services). Beaton et al. (2011) found that the structures had internal consistency (hedonic value $\alpha = .86$, centrality $\alpha = .82$, symbolic value $\alpha = .86$) and the correlations between facets were moderate to high, (hedonic value-centrality $r = .74$, symbolic value- hedonic value $r = .66$, centrality-symbolic value at $r = .74$). In the scale language adaptation process, we used translation-back translation and reverse translation methods (Brislin, 1970). The Turkish form were conducted to the scholars of scale development and to determine the most appropriate items by applying on a test group of 35. All items were measured by 7-point scales anchored with 1 = Strongly Disagree and 7 = Strongly Agree. In addition, active leisure attitudes (persistence, resistance to change, and biases in cognitive processing) of the participants were measured by three items through the literature review and expert opinions.

Statistical Analysis

All data were analyzed by SPSS 20 and confirmatory factor analysis was conducted using AMOS 20 software. The demographic characteristic of participant was analyzed by descriptive statistics (percentage, frequency, means and standard deviation). The Pearson correlation coefficient was used to determine the relationship between variables. Multivariate analysis of variance (MANOVA) was performed to determine the differences among PCM stages.

RESULTS

Confirmatory factor analysis (CFA) was performed using AMOS 20.0 by maximum likelihood estimation method to analyze the measurement specifications of the active leisure involvement facets. Reliability and convergent and discriminant validities were acceptable along with the factorial structure as summarized in Table 2 (Hair, Black, Babin, & Anderson, 2009; Noar, 2003). Additionally, model fit adequate: $\chi 2/df = 3,78$, GFI = .974, CFI = .986, NFI = .948, RMSEA = .07.

Table 1. Demographic profile of respondents

		PCM Stage n (%)				**Total** n (%)
		Awareness	**Attraction**	**Attachment**	**Allegiance**	
Sex	Female	49 (46.2)	126 (41.2)	43(41.3)	22 (48.9)	240 (42.8)
	Male	57 (53.8)	180 (58.8)	61 (58.7)	23 (51.1)	321 (57.2)
Age	<19	18 (17.0)	27 (8.8)	10 (9.6)	4 (8.9)	59 (10.5)
	20	18 (17.0)	69 (22.5)	25 (24.0)	10 (22.2)	122 (21.7)
	21	30 (28.3)	74 (24.2)	27 (26.0)	11 (24.4)	142 (25.3)
	22	18 (17.0)	68 (22.2)	19 (18.3)	7 (15.6)	112 (20.09)
	23	14 (13.2)	33 (10.8)	12 (11.5)	5 (11.1)	64 (11.4)
	24	5 (4.7)	14 (4.6)	3 (2.9)	4 (8.9)	26 (4.6)
	>25	3 (2.8)	21 (6.9)	8 (7.7)	4 (8.9)	36 (6.4)
Faculty of …	Engineering	24 (22.6)	71 (23.2)	24 (23.1)	6 (13.3)	125 (22.3)
	Science and Literature	20 (18.9)	57 (18.6)	25 (24.0)	8 (17.8)	110 (19.6)
	Political Sciences	14 (13.2)	51 (16.7)	11 (10.6)	9 (20.0)	85 (15.2)
	Technology	11 (10.4)	23 (7.5)	9 (8.7)	4 (8.9)	47 (8.4)
	Law	9 (8.5)	22 (7.2)	4 (3.8)	-	35 (6.2)
	Computer and Information Sciences	9 (8.5)	20 (6.5)	7 (6.7)	8 (17.8)	44 (7.8)
	Sports Sciences	8 (7.5)	18 (5.9)	8 (7.7)	3 (6.7)	37 (6.6)
	Management	8 (7.5)	31 (10.1)	9 (8.7)	5 (11.1)	53 (9.4)
	Communication	3 (2.8)	13 (4.2)	7 (6.7)	2 (4.4)	25 (4.5)

The scale items were evaluated according to the reliability and validity criterion to ensure accurately capture the items what they wanted to measure (Hair et al., 2009) and then the three-step segmentation procedure developed by Beaton et al. (2009; 2011) was used to place participants into the four PCM stages.

The PCM three-step staging procedure was used to segment participants according to Funk and James (2001), Beaton et al. (2009; 2011) studies. Detailed information on the PCM three-step staging procedure can be investigated as defined in Beaton et al. (2011) study. According to this procedure, we found that 306, 106, 104 and 45 respondents were allocated into attraction, awareness, attachment and allegiance, respectively (Table 3). Afterwards, MANOVA was used to determine the differences among active leisure involvement in terms of hedonic value, centrality and symbolic value. As a result, MANOVA revealed significant differences ($p<.01$) for all levels of active leisure involvement in PCM stages. Post hoc analysis showed that there was no statistically significant difference between attraction and attachment in terms of hedonic value ($p > .05$). On the other hand, there was a statistically significant difference between all stages (awareness, attraction, attachment and allegiance) and all facets (hedonic value, centrality and symbolic value) in terms of averages ($p <.01$).

Table 2. Confirmatory factor analysis results for physically active leisure involvement facets

	M	SD	CR	α	AVE	MSV	ASV	Centrality	Hedonic value	Symbolic value
Centrality	3.06	1.63	0.88	0.90	0.71	0.62	0.38	0.84		
Hedonic value	5.47	1.42	0.86	0.94	0.68	0.15	0.13	0.39	0.82	
Symbolic value	2.97	1.72	0.92	0.96	0.81	0.62	0.36	0.78	0.32	0.90
Reliability						CR > .70 and α = .70				
Convergent validity						CR > AVE and AVE > .50				
Discriminant validity						ASV < MSV < AVE				

The bolded figures represent the square roots of the AVE of the corresponding constructs.
CR = Composite Reliability, AVE = Average Variance Extracted, MSV = Maximum Shared Variance, ASV = Average Shared Variance.

Table 3. Physically active leisure involvement facets by stage of PCM

PCM STAGE (n)	Hedonic value		Centrality		Symbolic value	
	M	*SD*	*M*	*SD*	*M*	*SD*
Awareness (106)	3,36 [a]	,98	1,82 [a]	,99	1,82 [a]	,99
Attraction (306)	5,90 [b]	,77	2,56 [a]	1,04	2,32 [a]	1,11
Attachment (104)	5,78 [b]	1,51	4,48 [a]	1,29	4,64 [a]	1,19
Allegiance (45)	6,76 [a]	,35	6,15 [a]	,59	6,18 [a]	,76
	$F_{(3, 557)}$=217.95		$F_{(3, 557)}$=264.60		$F_{(3, 557)}$=292.31	

Wilks' λ= .166; F= 163.61; p< .001; η^2= .450
[a]: Post hoc tests revealed significant difference from all other stages at p < .01.
[b]: Post hoc tests revealed no significant difference at p>0.05

After PCM staging, correlation analysis was performed to determine which analysis could be used to assess differences between stages (Table 4). In this context, MANOVA was used to investigate the differences among persistence, resistance to change and biases in cognitive processing variables in terms of hedonic value, centrality and symbolic value (Pallant, 2015). The correlation analysis demonstrated that biases in cognitive processing, persistence and resistance to change showed strong to moderately positive relationships. Symbolic value and centrality had the strong correlation persistence followed by resistance to change and biases in cognitive processing. Additionally, hedonic value indicated moderately correlation biases in cognitive processing with its weakest correlation with persistence and resistance to change.

Table 4. Construct Correlations

		(1)	(2)	(3)	Hedonic value	Centrality	Symbolic value
Biases in cognitive processing (1)	r	1	.680**	.679**	.459**	.597**	.621**
Persistence (2)	r		1	.751**	.291**	.693**	.749**
Resistance to change (3)	r			1	.288**	.610**	.652**

**p < .01, N = 561

Finally, MANOVA was used to reveal significant differences among persistence, resistance to change and biases in cognitive processing variables by the stage of PCM as shown in Table 5. Post hoc tests were next performed to determine significant differences across the PCM stages of the dependent variables. According to the variation in sample sizes across the PCM stages, homogeneity of variance assumption was not satisfied. All means significantly increased from awareness to attraction to attachment to allegiance according to PCM stages: biases in cognitive processing, $F_{(3, 557)}$ = 94.87, p < .01, partial η^2 = .335; persistence, $F_{(3, 557)}$ = 138.80, p < .01, partial η^2 = .425; and resistance to change, $F_{(3, 557)}$ = 84.73, p < .01, partial η^2 = .31.

Table 5. Descriptive statistics for constructs by stage of PCM

PCM STAGE (n)		Biases in cognitive processing		Persistence		Resistance to change	
		M	*SD*	*M*	*SD*	*M*	*SD*
Awareness	(106)	2.14 [a]	1.26	1.74 [a]	1.12	1.87 [a]	1.31
Attraction	(306)	3.49 [a]	1.78	2.17 [a]	1.41	2.67 [a]	1.71
Attachment	(104)	5.11 [a]	1.60	4.07 [a]	1.70	4.51 [a]	1.87
Allegiance	(45)	6.13 [a]	1.06	5.87 [a]	1.29	5.58 [a]	1.53
		$F_{(3, 557)}$=94.87		$F_{(3, 557)}$=138.80		$F_{(3, 557)}$=84.73	

Wilks' λ= .506; F= 48.43; p< .001; η^2= .203

[a]: Post hoc tests revealed significant difference from all other stages at p < .01.

DISCUSSION AND CONCLUSION

The purpose of current study was to categorize students who benefited from campus recreation services (physically active leisure) as a significant part of the university campus by using PCM and to examine them by attitude variables (persistence, resistance to change and biases in cognitive processing). In this context, firstly active leisure involvement profiles which will be used to identify the different market segments of the participants were constituted. Confirmatory factor analysis supported the three-dimensional (hedonic value, centrality, and symbolic value) independent structure of active leisure involvement to provide discrete information (Beaton et al., 2011; Havitz & Dimache, 1997; Kyle & Mowen, 2005). In other words, the obtained results demonstrated that leisure involvement was a multi-dimensional structure that provided a hedonic and symbolic value as well as a central component of person's life. According to Beaton et al. (2011), leisure involvement represent a multi-dimensional attitude structure that encompasses total participation beyond person's physical participation, rather than only representing perceived personal interest of an activity. PCM has been introduced by Beaton et al. (2009) as a staging mechanism that can be implemented by both practitioners and academics within the framework of research-practice relations, facilitating qualified and quantified academic challenges. The results of the study indicated that the structure of involvement was a useful psychographic segmentation variable supporting the studies of Beaton et al. (2009), Beaton et al. (2011), Doyle et al., (2013), Funk et al., (2011) and Filo et al. (2013) carried out in different cultures and activities.

The results of the segmentation procedure using the staging algorithm (Beaton et al. 2009; 2011) within the framework of the PCM, revealed four distinct participation segments which significantly differed in all dimensions of involvement (Table 5). The findings indicated that a significant majority of the participants were allocated to the attraction stage (n = 306, 54.5%) and awareness (n = 106, 18.9%), attachment (n = 104, 18.5%) and allegiance (n = 45, 8%), respectively. The results of the study conducted by Filo et al. (2013) in the sample of sports tourists were consistent with the findings of this study. On the other hand, Beaton et al. (2011) reported that the participants were mostly allocated to the attachment and allegiance stages. The discrepancy between the findings may be due to the fact that marathon activities are an activity that requires more earnestness, sincerity, importance, and carefulness than on campus leisure activities in the framework of Stebbins (1982) 's serious leisure classification. In this context, both in theory and practice, there is evidence that active leisure participants on campus can demonstrate different levels of leisure involvement through the application of the PCM framework and staging mechanism. Furthermore, PCM has been developed for application to a wide range of sports and leisure objects, but thus far has been mainly tested on sports, physical activities, tourism (Chen & Funk, 2010; Filo et al., 2013). However, this study was performed on a different culture and physically active leisure experience on campus. This study provided empirical support for its predictive abilities in the context of leisure activities on campus and opened new ways to use this theoretical framework.

According to Funk & James (2006), "the PCM suggests that physically active leisure participation follows a developmental progression across hierarchical stages of attraction, attachment and attachment". Furthermore, Funk & James (2001) propose that commitment to a sport phenomenon

reflects an attitude that persists over time, resists knowledge of the attitude, prevents biases cognitive processing and leads behaviors. Therefore, MANOVA analysis was used to determine the differences in persistence, resistance to change and biases in cognitive processing during PCM stages (Table 6). The results demonstrated that the stages increased from awareness to attraction to attachment to allegiance in persistence, resistance to change and biases cognitive processing according to PCM hierarchy and this increase was statistically significant. Indeed, the results indicated that attitudes from awareness to attraction, attachment and allegiance stages, become strengthened (Doyle et al., 2013). This findings were consistent with previous research with leisure participants (eg Beaton et al., 2009; 2011; Doyle, et al., 2013; Funk et al., 2011).

In summary, different market segments (awareness, attraction, attachment and allegiance) can be defined by using profiles of active leisure involvement and there are inter-segmental attitudes differences in the present study. The obtained results provide useful information for campus recreation services managers. Indeed, Kaltenbaugh et al. (2011) stated that campus recreation has the ability to undertake activities that directly affecting students' attitudes, abilities and quality of life. Besides, active recreation was found to be positively related to the satisfaction of the institution and the awakening of community feeling (Huesman et al., 2009; Beaton et al., 2011). It can be stated that campus recreation professionals are obliged to strengthen/fruitful marketing efforts to allocate more participants from awareness to allegiance. For this reason, PCM stages can be utilized in the systematic and consistent of the marketing strategies and applications. Furthermore, different marketing practices for the participants in each segment can be implemented. In this respect, Funk & James (2001) state that the relationship marketing approach will be useful. Similarly, Kuh, Buckley and Kinzie (2007:79) report that marketing applications are one direct way to influence participation is by "*intentionally designing programs and practices that channel behavior into purposeful activities*".

Finally, this study has some possible limitations which should be pointed out. First of all, data were collected from a university in Turkey with a relatively small sample. Therefore, the results of this study should be verified the validation of the data in larger samples and tested data from samples in different cultures. Additionally, the determination of motivational levels, constraints (Beaton et al., 2009), expected benefits and personality characteristics of participants (Alexandris, 2013) at different stages of PCM can contribute to the field.

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Effects of Interactive Book Reading Activities on Improvement of Elementary School Students' Reading Skills

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Abstract

This research investigated how interactive book reading activities affect elementary school students' reading fluency and reading comprehension skills. The research was performed in 2017-2018 academic year with 705 students (358 males, 347 females) studying at four state schools of low socio-economic level in Polatlı district of Ankara. 309 of the students were in the second grade, 200 of them were in the third and 196 of them were in the fourth grade. The implementation stage of the research was conducted in the interactive reading classrooms established at the four schools. These classrooms were equipped with wallpapers, shoe racks, stools, bookcases, puppets, wooden geometric shapes, hanging lights, light-proof curtains, material cupboards, computers and sound systems so that the students might feel that they were in a different environment and might gain different learning experiences. Pretest-posttest one-group quasi-experimental design was used in the research. Students' reading fluency and reading comprehension skills were measured before and after the procedure. The findings showed that the interactive book reading activities performed during the study revealed a significant difference in favor of students' posttest scores in regard to reading fluency and reading comprehension. The results were discussed within the context of the related literature and recommendations were made accordingly.

Keywords: Children's picture books, elementary school students, interactive book reading, reading, reading comprehension

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INTRODUCTION

In this study, the effects of interactive book reading activities on improvement of Turkish elementary school students' reading skills are explored. Reading can be regarded as one of the most important skills learners gain as they progress through their early school years. As a foundation for learning across all subjects, reading can be used for recreation and personal growth, while simultaneously providing young children with the ability to take part more extensively in their communities and societies (Van Staden & Bosker, 2014). Several research studies have shown that children who grow in an environment rich in terms of literacy are better readers and make meaning of texts easier than their peers who did not (Rosenhouse, Feitelson, Kita & Goldstein, 1997). Family, various institutions and teachers are essential elements that determine the quality of such an environment. Starting to be carried out as of early childhood, interactive reading activities are some of the most important parameters that enhance the quality of this environment and contribute to children's literacy skills. Indeed, increasing children's experiences with books are considered among the main parameters in gaining and improving literacy skills (Juel, 2006; Mol, Bus & Jong, 2009; Senechal & LeFevre, 2002). Interactive reading opportunities, which are social exchanges, facilitate enriched language exposure, foster the development of receptive language and spelling, increase vocabulary knowledge, and establish essential foundational literacy skills. Additionally, interactive book reading activities activate brain parts related to narrative comprehension and mental imaginary (Merga, 2017).

Overview of Existing Literature

Previous meta-analysis studies have shown that interactive book reading experiences make major contributions to gaining alphabetic knowledge and the phonetic and written awareness, development of vocabulary, and developing sensitivity toward syntactic and semantic structures (Wasik & Bond, 2001; Whitehurst, Arnold, Epstein, Angeli, Smith & Fischel, 1988). Books include several words, concepts and idioms which children may not encounter in daily life. Interactive reading activities make these structures more meaningful for children. As children develop an awareness of writing and syntax in this process, analyses conducted within the context of interactive reading through books that involve pictures-texts together contribute to children's gaining positive experience with important aspects of the reading-writing process such as word recognition, discrimination, comprehension and text production.

Interactive reading activities enable conversations between adult and child rich in content. Meanwhile, the child-adult interaction transforms by getting out of the text in the book. Conversations going beyond the story in the book allow children to earn more words and pave the way for conversations requiring top-level mental activity through a richer content.

Interactive book reading activities can be mentioned in a different name such as shared or dialogical reading in the literature. Despite potential changing aspects, children generally play an active role rather than a passive listener in the reading process in such activities. Reader–parents, teacher or any other adult–asks questions or make comments to help the child to achieve the implicit information that is not presented in the text. Drawing children's attention both to pictures and story enable them to give clearer and more understandable answers to questions. Consequently, their ideas enrich. Further reinforcement of the reading process with games and materials contribute to children's playing more active role (Kim & Hall, 2002). Teale and Sulzby (1989) stated in their study which examined several research studies that activities such as writing awareness, monitoring the comprehension process while retelling the story and models set by adults about the written materials enable children's active participation, and these activities make significant contributions to bringing reading and writing skills to children as of early childhood. Researchers (Seheridan, 1995; Teale, Hieber & Chittenden, 1987) state that such interactions between parents and children in preschool and teacher and children during the school years are crucial for the development of reading and writing skills.

In the international literature, there are several studies which investigate the effectiveness of interactive reading activities starting from early childhood to advanced levels. Many of these studies have addressed the effects of interactive book reading activities on the development of reading and writing skills of children from low socioeconomic levels (Dickinson & Smith, 1994; Senechal, Thomas & Monker, 1995; Wasik & Bond, 2001; Whitehurst et al., 1988), relationships between interactive book reading activities and children's mental development (Adrian, Clemente & Villaunueva, 2005), how certain book reading methods affect the development of children's linguistic skills (Reese & Cox, 1999), effects of interactive book reading activities on children's awareness of written language (Bus, Van Ijzendoorn & Pellegrini, 1995; DeBaryshe, 1993), relationships between interactive book reading activities and listening comprehension (Senechal & LeFevre, 2002), and effects of asking questions when and how in the interactive book reading process (Blewitt, Rump, Shealy & Cook, 2009). It can be assumed that the most basic variables featured in such interactive reading-based studies are a child, the quality of children's books and interaction type. In Turkey, there have been positive developments in the qualified children's books in recent years. It is thought that adaptation of several awarded foreign children's books by Turkish and foreign publishers and their presentation to the Turkish readers as well as foreign publishers starting to sell books in Turkey have sped up these positive developments. However, how and in what ways to bring children's book with children despite these positive developments are still to be a matter studied adequately in Turkey and remains as an important problem in the agenda. Several variables such as efficient family participation, qualifications of teacher, quality of children's books, educational expenditures for children and socioeconomic indicators, and content of the activities performed with children may affect this process either in a positive or negative way (Cakmak, 2010; Erbay & Ozturk Samur, 2010; Erdogan, 2015; Erdogan & Akay, 2015; Gonen & Balat, 2002; Gurler, 2017; Sahin & Kalburan, 2009; Uzmen & Magden, 2002; Veziroglu & Gonen, 2012).

It is observed in the national scientific literature that there are several studies on interactive reading. Cengiz (2010) examined the language and interaction types used by Turkish mothers while reading a book. Akoglu, Ergul and Duman (2014) investigated how interactive book reading activities affect receptive and expressive linguistic skills of children in need of protection. The research results showed that such activities affected the number of different words that children know. Simsek and Erdogan (2015) examined the effects of interactive reading and traditional reading techniques on linguistic development among children. The findings showed that interactive reading activities contributed to their linguistic developments in a positive way. In the study conducted by Ergul, Akoglu, Karaman and Sarica (2017), they addressed the effects of interactive reading program applied in the preschool on later reading skills. According to the research findings, the first-grade students who participated in the interactive reading activities performed more successfully in reading fluency and reading comprehension than their peers who did not participate. In their study, Bıcakci, Er and Aral (2017) received the mothers' opinions on the interactive book reading activities they performed with their children. It was concluded that the activities contribute to children's developments and mothers' interactive book reading skills. Again, Erdogan, Simşek and Canbeldek (2017) stated that home-based interactive book reading activities have important impacts on the development of children's linguistic skills in early childhood. Ergul, Akoglu, Sarica, Tufan and Karaman (2015) examined the effects of interactive book reading activities on preschool children's linguistic skills. Their study showed that these activities are important for the development of linguistic skills. The study performed by Oncu (2016) investigated how interactive book reading activities affect five-six-year-old children approaches to social situations. The findings put forth that the children who read books performed positively in understanding and proposing solutions to social situations. Likewise, Tetik and Erdogan (2016) concluded the positive effects of interactive book reading activities on children's linguistic developments.

Problem Statement

Considering the studies on the national level, there has been a significant increase in numbers. It is, however, understood that these studies generally focus on preschool and aim to improve

development of linguistic skills among children in these periods. However, it is also stated in the literature that interactive reading activities and children's books are crucial parts of formal school education and some of the most important tools that can be used for improving children's reading and writing skills (Merga, 2017; Mol et al., 2009). On the other hand, several scientific studies emphasize that interactive reading and children's picture books function importantly in bringing many skills to school-age children. Particularly, whole language approaches (Cullinan, 1992), literature-based reading programs (Giddings, 1991) and programs adapting the balanced reading approach (Rupley, Logan & Nichols, 1998) highlight the requirement of integrating the children's books with the instructional process in phonics-based or other reading-writing instruction systems. It is thought that this study is of great value for understanding the importance of elementary school-level interactive book reading activities. Beside this, Turkey is one of the advanced emerging economies in the world (e.g., Greece, Hungary, Mexico, South Africa). The changing power capacity, policy preferences and role conceptions of emerging markets are becoming key properties that will inform the future of regional and global governance (Jednak, 2017; Onis & Kutlay, 2017). Turkey invests in education, market development, institutions, and management. It is estimated that these economies will push forward world economy and surpass advanced countries like Turkey. Consequently, the results obtained from this study would also make contributions to the other emerging economies sharing the similarities with Turkish educational context. The same procedures would be used in their contexts to improve children's reading skills through the similar activities. Within this framework, answers to the following questions were sought for:

1. Do interactive reading activities create a significant difference between elementary school second-grade students' pretest-posttest scores of reading comprehension and reading fluency?

2. Do interactive reading activities create a significant difference between elementary school third-grade students' pretest-posttest scores of reading comprehension and reading fluency?

3. Do interactive reading activities create a significant difference between elementary school fourth-grade students' pretest-posttest scores of reading comprehension and reading fluency?

METHOD

This study investigated how interactive reading method affects reading skills. It is a quasi-experimental study. Quasi-experimental designs are used in many cases where the controls required by true experimental designs cannot be established or even these controls are not sufficient. Because of the variables that affected the groups and could not be controlled and since the participants in the groups were non-randomly created by including the whole classrooms, this study used the "pretest-posttest one-group design" which is a quasi-experimental model and used frequently in social sciences (Campbell & Riecken, 1968).

Participants

The research was conducted with 705 students (358 males, 347 females) attending four different public elementary schools which were from low socioeconomic status in Polatlı district of Ankara in the school year of 2017-2018. 309 of them were second-grade, 200 were third-grade and 196 were fourth-grade students.

Materials

The implementation stage of the research was conducted in the interactive reading classrooms established at the four schools. These classrooms were equipped with wallpapers, shoe racks, stools, bookcases, puppets, wooden geometric shapes, hanging lights, light-proof curtains, Tatami mattress floors, material cupboards, computers and sound systems so that the students might feel in a different environment and might gain different learning experiences. It was observed during the procedure that

both our teachers and students take part in the interactive reading classrooms very eagerly. The researchers and teachers decided the children's picture books used in the research. Teachers used same 95 books in the interactive reading classroom of each school. 15 out of 95 books were chosen for the teacher training. Teachers used the books at four different schools in the same order. The interactive reading activities were performed by the researchers with these books (author one). They paid attention to the fact that the books were visible and accessible at all times for the participant during the procedure. Information on the books used in the awareness program for the teachers are in the following table.

Table 1. Children's picture books used in the training program for the teachers

	Name	Author	Publisher
1	Nokta (or. ti. The Dot)	Peter H. Reynolds	Altın Kitaplar
2	Kim Korkar Kirmizi Baslikli Kızdan (transl. ti. Who's Afraid of Little Red Riding Hood)	Sara Sahinkanat / AySe Inan Alican	YKY
3	Bu Kis Kimse Usumeyecek (transl. ti. Nobody Will Be Cold This Winter)	Feridun Oral	YKY
4	Balikci Osman (or. ti. Osman, der Angler)	Anne Hofman	YKY
5	Babaannem Kime Benziyor? (transl. ti. Whom Does my Nanny Resemble?)	Feridun Oral	YKY
6	Ac Titrtil (or. ti. The Very Hungry Caterpillar)	Eric Carle	Mavibulut
7	Kucuk Kara Balik (transl. ti. Little Black Fish)	Samed Behrengi	Can Cocuk
8	Mamut Avcisi (or. ti. Chasseur de Mammouths)	Gérard Moncomble	YKY
9	Farkli ama Ayni (transl. ti. Different but the Same)	Feridun Oral	YKY
10	Kulaktan Kulaga (transl. ti. Chinese Whispers)	Filiz Ozdem	YKY
11	Nerede Bu Fil (or. ti. Where's the Elephant?)	Barroux	Redkidz
12	Temiz (or. ti. Tidy)	Emily Gravett	Beta Kids
13	Neden Okula Gitmek Zorundayim? (transl. ti. Why Must I Go to School?)	Muge Erel	TUDEM
14	Bir Seftali Bin Seftali (transl. ti. One Peach One Thousand Peach)	Samed Behrengi	Can Çocuk
15	Annemin Cantasi (transl. ti. My Mother's Purse)	Sara Sahinkanat	YKY

Measures

The same texts were used for pretest and posttest in the research. It was ensured that the chosen books were the ones which the students did not see before. Lengths, levels and subjects of the text chosen from the Turkish course books are below.

Table 2. Lengths, levels and subjects of the texts chosen for evaluating students' reading comprehension levels

Grade Level	Length of Text	Title
Fourth-Grade	263 words	Edison
Third-Grade	184 words	Bucket with a Hole
Second-Grade	121 words	White Pigeon

The literal and inferential comprehension questions used in the pretest and posttest were open-ended questions; the literal comprehension questions had their answers in the text whereas the inferential comprehension questions had their answers outside the text or required intertextual meaning-making.

Procedure

The study was conducted at four different elementary schools under Polatli District Directorate of National Education in Ankara. After having established the interactive reading classrooms at the schools, both theoretical and practical activities on interactive reading were carried out with the classroom teachers serving at those schools. The awareness program was conducted with 12 classroom teachers each in two schools and 17 classroom teachers each in other two. Exemplary procedures were applied following the presentations about the importance of interactive reading by the researchers. In these awareness applications, examples were given the teachers about the contents and contributions of the interactive book reading activities and how they would be constructed, and the teachers conducted workshops. Feedbacks were provided during these exemplary procedures, and teachers' shortcomings were eliminated in an effort. The following examples are about the activities performed with the teachers:

Example 1: Out of the 95 books which were decided for using in the interactive reading classrooms, story cards were created about the book "Nokta" which was one of the books chosen for the teacher training. Teachers gave these cards to the groups created after the warm-up activity with the teachers in a mixed manner, and they asked students to order them in accordance with their opinion. After absorbing the story ordered by the teachers, each group was asked to act out the story. Following the performances of the groups, students opened their books and the teacher asked: "Do you wonder what kind of a text the author wrote with the same visuals?" and they started to read the book aloud. This way, the book turned into a center which the whole group focused on and listened curiously. After reading aloud, participants' stated opinions on the book and the procedure and the activity ended with participants' feedbacks.

Example 2: Out of the 95 books which were decided for using in the interactive reading classrooms, the book "Nerede Bu Fil?" which was one of the books chosen for the teacher training is a silent book. In this book not involving any texts, students try to find an elephant, a bird and a monkey hidden among the trees; when they noticed all of them, the page is turned, and they try to find the same animals in the next page. In each page, the number of trees decreases while the number of skyscrapers increases. The book was interrupted at a right point and main characteristics of some trees were discussed with the help of nature cards named "Agaclar" ("Trees") published by TUBITAK Popular Science Books, and it was pretended that the classroom was a big forest and the participants were asked to be trees. They were asked to touch each tree and talk about their proximity to water, length, leaves, ages, etc., and the book continued to be read aloud following the activity. The participants discussed about the subjects of industrialization, forest fires and technology after the activity, which increased their awareness of the process.

The trainings involving the abovementioned examples were 15 hours for each school. The children's picture books that would be used during the procedure by the teachers were utilized in the exemplary application, and matters such as introduction to the book, reading aloud of the book, pauses during reading aloud, questions for predicting skills and intertextual meaning making, content of evaluation and activities to be performed after reading aloud were addressed in detail. The teachers agreed at the end of the 15-hour training that interactive reading is an important tool that will contribute to a child's development in every area, sufficient information was provided theoretically on the subject, and information was provided on the process through several exemplary applications. It was told to the teachers who now had faith in performing this procedure as a leader that guidance would be provided for the potential problems during the procedure.

A pretest had been conducted before the teachers started the procedure with the students, and texts from Turkish course books approved by the Ministry of Education appropriate for each grade level were chosen. It was ensured that the chosen books were the ones which the students did not see before. Each student read aloud the texts once and completed the test by answering 3 literal and 3 inferential comprehension questions. Through the recorded reading process, the researchers identified the number of words read by the students per minute. Following the pretest, the teachers started the

interactive reading activities. Students performed two interactive reading activities at least at three schools each week, and they performed only one activity at the other school in some weeks because of a high number of students. It was ensured that each student spent their 30 class ours in these classrooms. This process added up to 6 months. The posttest was conducted with the same texts after the completion of the interactive reading activities.

FINDINGS

The results achieved in the independent groups' t-test analyses are presented in the tables below. Findings on whether interactive reading created a significant difference in the second-grade students' reading fluency skills and reading comprehensions are given in Table 4. The results regarding the normal distribution of the second-grade students' pretest and posttest scores are primarily presented. Central tendency measures of the data were obtained in these results, and the values of kurtosis and skewness are in Table 3.

Table 3. Measures of central tendency regarding the normal distribution of the second-grade students' pretest and posttest scores

		M	Median	*SD*	Skewness	Kurtosis
Fluency	Pretest	57.66	57.00	25.57	.063	-.618
	Posttest	69.82	71.00	25.70	-.090	-.531
Literal	Pretest	2.10	2.00	.93	-.785	-.316
Comprehension	Posttest	2.43	3.00	.75	-1.219	.958
Inferential	Pretest	1.27	1.00	.97	.22	-.942
Comprehension	Posttest	1.80	2.00	1.01	-.253	-1.121

According to the measures of central tendency regarding the second-grade students' pretest and posttest scores, the kurtosis and skewness values varied between -2 and +2. This shows that these values are within an acceptable range in terms of normality (Field, 2013). Standard deviation and mean values regarding the second-grade students' reading skills are in Table 4.

Table 4. Mean and standard deviation scores regarding the second-grade students' reading skills

	Group	*N*	*M*	*SD*
Fluency	Pretest	309	57.66	25.57
	Posttest	309	69.82	25.70
Literal	Pretest	309	2.10	.93
Comprehension	Posttest	309	2.43	.75
Inferential	Pretest	309	1.27	.96
Comprehension	Posttest	309	1.80	1.01

The independent groups' *t*-test analyses performed to see whether interactive reading was effective in the second-grade students' reading fluency and reading comprehension skills showed that there was a significant difference by reading fluency ($t(616)= 5.916$, $p= .000$), literal ($t(616)= 588.889$, $p= .000$) and inferential comprehension ($t(616)= 6.662$, $p= .000$) in favor of the group's posttest scores. Central tendency measures regarding the third-grade students' pretest and posttest scores are in Table 5.

Table 5. Measures of central tendency regarding the normal distribution of the third-grade students' pretest and posttest scores

		M	Median	*SD*	Skewness	Kurtosis
Fluency	Pretest	72.54	70.00	34.45	.554	.653
	Posttest	86.17	83.500	35.92	.519	.653
Literal	Pretest	2.10	2.00	.97	-.733	-.587
Comprehension	Posttest	2.41	3.00	.81	-1.240	.705
Inferential	Pretest	1.80	2.00	.91	-.367	-.645
Comprehension	Posttest	2.22	2.00	.86	-.783	-.389

According to the measures of central tendency regarding the third-grade students' pretest and posttest scores, the kurtosis and skewness values varied between -2 and +2. This shows that these values are within an acceptable range in terms of normality (Field, 2013). Standard deviation and mean values regarding the third-grade students' reading skills are in Table 6.

Table 6. Mean and standard deviation scores regarding the third-grade students' reading skills

	Group	*N*	*M*	*SD*
Fluency	Pretest	200	72.54	34.45
	Posttest	200	86.17	35.93
Literal	Pretest	200	2.10	.97
Comprehension	Posttest	200	2.41	.81
Inferential	Pretest	200	1.80	.91
Comprehension	Posttest	200	2.22	.86

The independent groups *t*-test analyses performed to see whether interactive reading was effective in the third-grade students' reading fluency and reading comprehension skills showed that there was a significant difference by reading fluency ($t(398)= 3.874$, $p= .000$), literal ($t(398)= 3.521$, $p= .000$) and inferential comprehension ($t(398)= 4.726$, $p= .000$) in favor of the group's posttest scores. Central tendency measures regarding the fourth-grade students' pretest and posttest scores are in Table 7.

Table 7. Measures of central tendency regarding the normal distribution of the fourth-grade students' pretest and posttest scores

		M	Median	*SD*	Skewness	Kurtosis
Fluency	Pretest	85.57	87.50	27.51	-.129	-.111
	Posttest	94.75	95.50	29.13	-.298	-.353
Literal	Pretest	2.12	2.00	.91	-.749	-.367
Comprehension	Posttest	2.35	3.00	.85	-1.151	.458
Inferential	Pretest	1.84	2.00	1.02	-.253	-1.181
Comprehension	Posttest	2.14	2.00	.92	-.610	-.835

According to the measures of central tendency regarding the fourth-grade students' pretest and posttest scores, the kurtosis and skewness values varied between -2 and +2. This shows that these values are within an acceptable range in terms of normality (Field, 2013). Standard deviation and mean values regarding the fourth-grade students' reading skills are in Table 8.

Table 8. Arithmetic Mean and Standard Deviation Values Regarding the Fourth-Grade Students' Reading Skills

	Group	*N*	*M*	*SD*
Fluency	Pretest	196	85.57	27.51
	Posttest	196	94.75	29.13
Literal Comprehension	Pretest	196	2.13	.91
	Posttest	196	2.35	.85
Inferential Comprehension	Pretest	196	1.84	1.02
	Posttest	196	2.14	.92

The independent groups' *t*-test analyses performed to see whether interactive reading was effective in the fourth-grade students' reading fluency and reading comprehension skills showed that there was a significant difference by reading fluency ($t(390)= 3.209$, $p= .001$), literal ($t(390)= 2.523$, $p= .012$) and inferential comprehension ($t(390)= 3.125$, $p= .002$) in favor of the group's posttest scores.

DISCUSSION

This research investigated how interactive book reading activities affect elementary school students' reading fluency and reading comprehension skills. The research results showed that the interactive reading activities performed in different grade levels were effective in children's reading fluency and reading comprehension skills. These results coincide with the results of many other research studies (e.g., Klesius & Griffith, 1996; Martinez & Teale, 1993; Morrow, 1984, 1988).

Reading aloud is one of the most important cornerstones in the development of reading and writing skills and classroom applications (Huey, 1908; Snow, Burns & Griffin, 1998; Teale, 1984). Listening to stories contribute to how children understand the relationships between the written and spoken language (Clay, 1993), written and oral styles (Feitelson, Golstein & Sahare, 1993); and gain experience with different standard and non-standard language (Cullinan, Jaggar & Stricklan, 1974). Such activities also play a crucial role in transferring cultural values. Activities performed in classrooms even if children have not such an experience at home or in their surroundings help them with introduction to cultural literacy (as cited in Brabham & Lynch-Brown, 2002).

Interactive book reading activities and reading aloud by the teachers in classrooms assist students to understand the components of reading and writing. Children learn the content through these activities, enriching their vocabularies in a considerable extent (Brabham, Boyd & Edgington, 2000). These results achieved in previous studies increase the expectations that interactive book reading activities should become part of the programs applied at schools and teachers should improve themselves in this matter (Brabham & Lynch-Brown, 2002). Yet, another important issue is how teachers carry out these pieces of interactive reading. Several researches have shown that reading aloud for students alone does not contribute to reading and writing achievements of elementary school students (e.g., Meyer, Stahl, Linn & Wardrop, 1994; Morrow, 1984, 1988; Morrow, Rand & Smith, 1995). On the other hand, many studies (Dickinson & Keebler, 1989; Kleisus & Griffith, 1996; Martinez & Teale, 1993; Teale & Martinez, 1986) showed that student participation about the content of text presented during reading, pictures associated with content and other physical characteristics of the book increases, learning occurs on the top level and students have more esthetic and knowledge-based reactions toward literature when book reading activities are carried out in an interactive or performance-based manner. Similarly, it was observed in this research that content-based interactive reading activities contributed to the students' reading comprehension and reading fluency skills. In order to understand the results about what the present study reveals, it needs to be given more attention to two underlying profound effects of the study. One is that this study provides new insight into understanding the importance of interactive book reading activities on the elementary grade students' reading skills improvement beyond the early childhood years. Because, despite the importance of interactive book reading, relatively there is not much information about older children's experiences of

interactive reading beyond the period of initial independent reading skill acquisition (Merga, 2017). Another importance of the study is that this research took place in Turkey which is one of the emerging economies and emerging economies are developing economies where economic development and growth is much faster and efficient than in other developing countries. Also, it is drawn attention to educational expansion and income inequalities in emerging economies to decrease inequalities. Expansion of education is often seen as an important policy instrument for combating rising income inequality over the medium term. Not only is education expansion viewed as being important for promoting economic growth but it can also help to break the intergenerational transmission of poverty and reduce inequality of opportunity, which reduces future income inequality (as cited in Coady & Dizioli, 2018). That's why, some of emerging economies sharing the similar educational contexts and features, would have benefit as much as Turkish students would have.

CONCLUSION

The results of this research are of importance in that it puts forth the effectiveness of interactive book reading activities on elementary school students' reading skills. Particularly assuming we confine children to obligatory school programs and their requirements through the formal school education, activities such as interactive book reading that can be integrated with the instructional process will provide children with alternatives and help them to learn by having fun. Such activities will also enable students to encounter original texts outside the course books and experience different problems and their solutions. In addition, the study will contribute to the training of individuals who internalize this process positively rather than those who do not like "reading and writing "and do not adopt "lifelong learning", which we do not accept as a social notion all the time.

Limitations and Recommendations for Future Research

This research used the pretest-posttest one-group method as a quasi-experimental design. The nature of this quasi-experimental design brings about several negative situations in terms of internal and external validity and mitigates the manipulation of both the researcher and the method used in the research. Therefore, several problems arise regarding the internal and external validity. Considering these in future similar studies, stronger quasi-experimental designs can be included in the process. Effectiveness of interactive book reading activities can also be tested in higher grade levels (secondary school, etc.) Effectiveness of the interactive reading process in this research was only explored statistically. In future research, qualitative paradigm techniques such as interview and observation that can provide more in-depth data can be utilized, presenting a richer perspective of interactive reading process. In this process, the interactive book reading activities were conducted indirectly through the concept of teacher as only a reader. Future studies can investigate the effectiveness of interactive book reading activities with family participation in a similar experimental process.

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Mathematics self-efficacy beliefs and sources of self-efficacy: A Descriptive Study with two Elementary School Students

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Abstract

The purpose of this study is to examine the relationship between mathematics self-efficacy beliefs and sources of self-efficacy in two elementary school students whose mathematics achievement are at different levels. Case study design, which is one of the qualitative research designs, was used in the study. Two 4th grade elementary school students have participated in the study, one with high mathematics achievement and the other with low mathematics achievement. Participants have been selected according to purposive sampling method. Mathematics achievement of the students have been determined through their mathematics scores and the information obtained from their teachers. Data was collected through semi-structured interviews conducted with the students. Descriptive analysis was used in the analysis of the data. As a result of the research it was found that students' mathematics achievement is parallel to their mathematics self-efficacy beliefs. It was found that the student, whose mathematics achievement is high, has positive experiences concerning the sources of self-efficacy, whereas the student, whose mathematics achievement is low, mostly encounters negative experiences.

Keywords: Self-efficacy beliefs, sources of self-efficacy, mathematics achievement

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INTRODUCTION

Self-efficacy, is a key concept that was emphasized in Social Learning Theory (Bandura, 1977). This concept is also expressed as self-efficacy perception, belief or judgement (Aşkar & Umay, 2001). Bandura (1994) has defined self-efficacy as, individuals' self-beliefs about the capacity to produce determined behaviors on the events that affect their lives. On the other hand, Zimmerman (2000) has defined the concept as the judgments of an individual about the ability to be able to carry out, to perform a task. From this perspective, self-efficacy shows the judgements of an individual about carrying out an activity. In other words, it is the individual's belief that he/she can or can't do (Siegle, 2003). According to Bandura (1982; 1989; 1994) the beliefs of the individuals, the effects of the events on them and their behaviors depend on what they believe rather than the actual situation. Therefore, the individual's beliefs about own ability may be more deterministic than his/her actual ability and play in important role in deciding what he/she will perform with the abilities that he/she possesses (Pajares and Miller, 1995). This fact plays an important role in explaining the differences between the performance of the individuals who have similar abilities.

Self-efficacy beliefs determine how individuals feel, think, motivate themselves and behave (Bandura, 1994). Individuals may have low or high self-efficacy beliefs. The self-efficacy beliefs that are lower than existing abilities prevent the individual to use the abilities that he/she possesses properly, whereas higher self-efficacy beliefs usually have a positive impact on the performance of the individual (Diseth, 2011; Fackler & Malmberg, 2016; Feldman & Kubota, 2015; Honicke & Broadbent, 2016; Komarraju & Nadler,2013; Tschannen-Moran, Hoy & Hoy, 1998). Individuals with high self-efficacy beliefs tackle challenging tasks rather than fleeing from them. In case of failure, they continue and increase the efforts that they put. They are persistent and patient against negativities. They can recover their self-efficacy beliefs swiftly after failures or losses. They explain the cause of the failure with insufficient efforts (or imperfect knowledge) and acquirable skills (Bandura, 1994; Fackler & Malmberg, 2016; Komarraju & Nadler, 2013; Umay, 2001). On the other hand, individuals with low self-efficacy beliefs flee from difficult tasks that they see as a threat for them, they reduce the efforts that they show in case of encountering a challenge, they give up easily and explain the reason of their failure with lack of ability (Bandura, 1994).

Bandura (1994) has defined four main sources that shape self-efficacy of the individuals as: mastery experiences, vicarious experiences, social persuasion and emotional and physiological states. Mastery experiences are the most effective tools in the formation of self-efficacy beliefs because they are based on real experiences. The successes increase self-efficacy beliefs whereas repeated mistakes decrease them (Bandura, 1982). If someone believes that his/her efforts are successful, then the belief that he/she would be successful in similar or related tasks in the future increases. If the individual fails to create the desired effect, the belief that he/she will be successful in similar situations that he/she will face in the future decreases. Mastery experiences have the longest lasting effect on the individual's self-efficacy (Usher & Pajares, 2006).

Another important source that constitutes self-efficacy beliefs is vicarious experiences. An individual can evaluate his/her own ability as a result of observations. But the information from the external environment is also effective in the evaluation of the behavior. For example, a student will take the scores of his/her friends as a criterion in deciding whether the grade that he/she received on a test is good or bad (Bandura, 1977). In the formation of self-efficacy beliefs, the information taken from the experiences of the others are not as effective as the ones obtained from the individual's own mastery experiences. However, if someone has no experience in the related area, he/she is deeply affected by the experiences of the others in the formation of self-efficacy. Other's experiences are more effective if the person taken as the model shows similarities with the individual. If there are similarities between the individual and the model in terms of demographic characteristics, such as age, education level, gender, the success of the model creates a sense of I can do. On the other hand, the failure of the model may cause to have doubts about the capacity of the person's own achievement (Pajares, 2002). If the model is very different from the individual, he/she cannot be affected very much by the model and the results produced by her/him (Bandura, 1994). Another source affecting

individuals' self-efficacy is social persuasion. Individuals are affected from the reactions of other individuals while developing their self-efficacy beliefs. This mostly includes oral reviews of the others about certain skills that the individual possesses. It is known that a review from outside about accomplishing a task positively affects the efforts that the individual makes for his/her self-efficacy beliefs. On the other hand, negative comments weaken self-efficacy of the individual (Pajares, 2002). Bandura (1994) suggested that weakening individuals' self-efficacy beliefs through social persuasion is easier than planting high self-efficacy beliefs on them. This fact causes individuals who are persuaded that they don't have sufficient capacity to flee from challenging activities and to give up easily in the face of difficulties (Bandura, 1994). Individuals can assess their beliefs about their performance on an issue through emotional and physiological states that they exhibit while accomplishing this task. In other words, someone's perception about his/her emotional and physiological states during his/her performance is effective on assessing his/her performance. Strong emotional reactions exhibited by the individual during any action, such as excitement, stress, anxiety and fear, provide clues about the success or failure of the result. In addition, positive emotions enhance someone's self-efficacy beliefs, whereas negative emotions weaken them (Bandura, 1994, 1977).

Problem Status

Bandura's view that self-efficacy beliefs affect an individual's selection of activities, his/her persistence against challenges, the level of his/her efforts and his/her performance, is the subject of numerous researches. Researches show that individuals with high self-efficacy beliefs show great effort to accomplish a job, they do not give up easily when faced with negativity, they are persistent and patient. From this perspective, self-efficacy belief is one of the characteristics that should be considered on the education (Aşkar & Umay, 2001).

The research conducted in the field of mathematics education show that self-efficacy belief is a significant predictor of mathematics achievement (Hackett, 1985; Hackett & Betz, 1989; Honicke & Broadbent; Lent, Lopez, Brown & Gore, 1997; Pajares & Graham, 1999; Pajares & Miller, 1994). Hackett and Betz (1989) defined mathematics self-efficacy beliefs as; situational or problem-based assessment of the individual's self-confidence in accomplishing a mathematical task or a problem successfully. Students' achievement or failure in the mathematics course are in-line with their self-efficacy beliefs towards mathematics. It is known that students who are successful in mathematics course have higher self-efficacy beliefs than other students (Hackett, 1985; Hackett & Betz, 1989; Pajares & Miller, 1994).

Bandura (1977), stated that mastery experiences is the most effective source in the formation of self-efficacy beliefs. Studies analyzing the relationships between mathematics self-efficacy beliefs and the sources of self-efficacy also show that mastery experience is the strongest source that feed students' mathematics self-efficacy (Lent, Lopez & Bieschke, 1991; Lopez & Lent, 1992). Lent et al. (1991) has conducted a research with university students and found that mastery experience explains 36% of the mathematics self-efficacy, whereas other sources of self-efficacy explained only 2% of it. In addition, past achievements in mathematics were found to have a direct effect on mathematics grades and an indirect effect on mathematics self-efficacy.

In the literature there are studies suggesting that emotional states are more effective on the mathematics self-efficacy of the students compared to other sources. In the study of Phan and Walker (2000) conducted with 383 3rd and 4th grade elementary school students, emotional state was observed to be the most effective source in determining mathematics self-efficacy. In addition, the outcomes showed that mastery experience was the third source in predicting mathematics self-efficacy. Researchers suggested that this was emerged from the fact that mastery experience of younger students are less than older students. In addition, in the study of Klassen (2004) conducted with 7th grade Anglo-Canadians and Indo-Canadians, emotional and physiological states (Anglo-Canadian) and indirect learnings (Indo-Canadian) were found to be important sources shaping mathematics self-efficacy. The majority of the researches show that vicarious experience has the lowest impact on

mathematics self-efficacy (Joët, Usher & Bressoux (2011); Klassen, 2004, Lopez & Lent, 1992). Anderson and Betz (2001), suggested that since vicarious experience mostly reflect indirect experiences, they are not often a significant self-efficacy source.

The overall review of the researches featuring the relations with mathematics self-efficacy beliefs and mathematics achievement shows that mathematics self-efficacy is an important affective factor for mathematics achievement. On the other hand, different results were obtained regarding the relationships between the sources of mathematics self-efficacy and mathematics achievement. In this research, mathematics self-efficacy beliefs and self-efficacy sources of two elementary school students, one with low mathematics achievement and the other with high mathematics achievement, will be compared and their associations with mathematics achievements will be deeply analyzed. In this regard, two cases where mathematics self-efficacy beliefs and mathematics self-efficacy sources differentiate according to mathematics achievements were selected.

METHODOLOGY

Research Design

Case study design, which is one of the qualitative research designs, was used in the study. Case study is a method for gaining an in-depth understanding about the facts with clearly definable boundaries and for comparing more than one cases (Creswell, 2007; Punch, 2005). In this research, the differences between mathematics self-efficacy beliefs and self-efficacy sources (mastery experiences, vicarious experiences, social persuasion, emotional and physiological states) of two elementary school students, one with low mathematics achievement and the other with high mathematics achievement were deeply analyzed

The research was carried out in a middle-level school in terms of socio-economic status and mathematics achievement. The purpose of qualitative research is to get a holistic picture by in-depth examination of the subject to be studied rather than making a generalization. Purposive sampling methods have emerged from the qualitative research tradition on this basis (Yıldırım & Şimşek, 2011). In purposive sampling method, the cases considered to provide rich data for the purpose of the study are included in the study (Patton, 2002). Thus, the study was conducted with two 4th grade elementary school students who have different mathematics achievement levels. In order to identify these students criteria sampling method was employed. In the selection of the students to be included in the study, first of all 6 students from the same class, 3 with high-level and 3 with low-level mathematics achievements were identified. Mathematics achievement levels of the students were defined according to their mathematics scores and the information taken from their teachers. Preliminary interviews were conducted with these students; then Burcu and Derya, who were able to share their ideas freely, were included in the research. Mathematics achievement of Burcu was low, whereas Duygu's was high. For the sake of confidentiality, code names were used for both students instead of their real names.

Data Collection

The data of the research was collected through the interviews, personally conducted with the students. A total of three semi-structured interviews were conducted with the students, which were preliminary interview, interview I and interview II. Data collected in the preliminary interview was for getting familiar with the students, whereas the purpose of the interviews I and II was gaining detailed information about students' mathematics self-efficacy beliefs and self-efficacy sources.

First interviews were kept shorter in order to allow students to get used to the researcher, whereas further interviews were longer. Each interview lasted about 40 minutes; they are recorded with audio recorder. Below, some questions asked in the interviews are outlined:

- What is your thoughts about mathematics? (What do you feel when you think about mathematics?)
- Can you please tell me about a moment that you thought being successful or unsuccessful in math class?
- Can you please tell me about a friend that you thought being very good in mathematics?
- What kind of reactions do you get from the people around you about your math achievement? Can you talk about it?
- Your teacher wrote a math question on the black board. You are invited to the board for solving this question. Can you tell me your feelings?

Data Analysis

The main objective of data analysis is analyzing, explaining and interpreting self-efficacy beliefs and the sources feeding the self-efficacy of two elementary school students with low and high mathematics achievement. The data was analyzed through descriptive analysis, in which research findings are presented such that they are organized and interpreted according to some pre-defined themes. In addition to the descriptions, research data are supported with direct quotations to make the comments more meaningful (Creswell, 2007; Patton, 2002).

During data analysis, first of all interview data were organized and audio records were decoded and a data set was formed for each student. Afterwards, decoded data were divided into themes for self-efficacy beliefs and sources of self-efficacy. In the last stage of the data analysis, themed data was defined and interpreted. The findings of the research are presented under mathematics self-efficacy, mastery experiences, vicarious experiences, social persuasion and affective states. Description process includes direct quotations from students' statements providing evidences of data analysis. Afterwards, the presented data are interpreted and associated with students' self-efficacy beliefs and sources through direct quotations.

FINDINGS

The findings obtained in the research are presented under two main headings; first of them contains the findings about students' self-efficacy, whereas the second shows the findings associated with their self-efficacy sources. The findings about self-efficacy sources are analyzed under the following sub-headings; mastery experiences, vicarious experiences, social persuasion and emotional and physiological states.

Findings about Mathematics Self-Efficacy Beliefs of the Students

The analysis of the findings about mathematics self-efficacy beliefs of the students showed that there are clear differences between self-efficacy of Burcu, whose mathematics achievement is low, and Derya, whose mathematics achievement is high. Derya believes in being successful in mathematics and has self-confidence because she can answer math questions correctly

Researcher: What do you feel when you think about mathematics?

Derya: I like mathematics. Finding the correct answer makes me happy. I like it because I can solve. I can solve the questions that my friends fail.

Researcher: Can you answer all questions correctly?

Derya: Yes, most of the time. I often answer immediately.

Researcher: Dou you have difficulties in solving the questions? What do you do in such cases?

Derya: Yes, it happens from time to time, I work harder. I can solve when I work harder. If I fail again, I ask to my teacher. I solve as soon as I get the issue.

The statements of Derya shows that her mathematics self-efficacy is high. Her statements such as "… I like it because I can solve. I can solve the questions that my friends fail" support this fact. Since her self-efficacy is high, she persists and continues her efforts in the questions that challenge her, which was expressed as "…I can solve when I work harder".

On the other hand, Burcu believes that she is unsuccessful in mathematics. Similar to Derya, Burcu associates her achievement in mathematics with being able to solve the questions correctly. She defines herself as unsuccessful in mathematics because she can only solve a few questions correctly in the exam.

Researcher: What do you think about mathematics?

Burcu: A tough course… I don't like it much.

Researcher: Do you think you are successful in mathematics?

Burcu: I'm not successful. I'm failing in math. It sounds like I will fail no matter how much I studied. I can only solve 1-2 questions that my teacher asked on the exam. Thus, I feel unsuccessful.

"… It sounds like I will fail no matter how much I studied" statement of Burcu shows that her mathematics self-efficacy is low. In addition, the statement that she made in the following part of the interview "… I believe that I will fail no matter how much exam I take" supports this fact. Burcu thinks that she cannot solve the questions correctly and she expressed this thought as "… I say to myself, why I work on it since I won't be able solve this problem". These statements can be considered as an indication that Burcu doesn't want to make efforts for solving the questions because her mathematics self-efficacy is low.

Findings about Mathematics Self-Efficacy Sources of the Students

Mastery Experiences

The findings show that Burcu had failures related to mathematics. In the statements below Burcu talks about the negative experiences that she lived in math exams and in the class.

"In math, I always get low scores from the exams. I think that I cannot make it even I work hard. During the exam, I remember previous exams. I believe that I will fail no matter how much exam I take. I get angry when I cannot solve the math questions that my teacher asks in the class. I say to myself, here another math questions and I won't be able to solve it again. Why I make efforts, I won't be able to solve it. Consequently, I cannot solve the problem correctly" (Burcu)

The negativities that Burcu experienced during the exams and course process are negatively reflected in her beliefs about being successful in similar situations of the future. "I believe that I will fail no matter how much exam I take" statement clearly shows this. It is observed that she is desperate as a result of the experiences that she lived. It can be said that this fact poses a barrier to achieving any success that she desires.

On the other hand, Burcu has lived few successful experiences but they lasted short. As a result of the negativities that she encountered after successful experiences, she sank into despair again.

Researcher: Can you please tell me about a moment that you thought being successful in math class?

Burcu: Once, my teacher asked a question, he said "Anybody solved it?". Only I raised hand. My teacher invited me to the board and I solved the question. He said "bravo Burcu". I was so happy that day. On the school bus, while returning to the village I asked myself if this is a coincidence. I got desperate again the day after, when I encountered questions that I couldn't solve.

Derya has positive and successful experiences in mathematics. She stated that in the exams she answers most of the questions correctly. She believes that correctly solving a question that was not solved by other students increases her faith in herself.

Researcher: What makes you believe that you are successful in math class?

Derya: I answer most of the questions correctly. In the exams, I get maximum 2 faults over 20 questions.

Researcher: Can you please tell me about a moment that you thought being successful?

Derya: Once, our teacher has instructed fractions, after the instruction he asked a question. Nobody answered correctly, except me.

Researcher: What makes you feel to be the only one who answered this question?

Derya: I mean, I can solve tough questions as well. I believe that I can solve when I face with a difficult problem.

Researcher: Can you solve it correctly?

Derya: Yes.

Derya's statements shows that this experience enhanced her belief that she can success and played a role in her achievement. On the other hand, it was observed that when faced with negativities Derya doesn't lose her faith and try to accomplish the task. In addition, she believes that she will be successful in more difficult tasks that she will face in the future.

Researcher: Is there any cases that you couldn't solve the question in the class? Can you talk about it?

Derya: Our teacher was instructing the fractions. He wrote a question on the blackboard and came next to me while we were working on the question in our desk. I wasn't able to solve the question. But I didn't sink into despair. Because these things happen from time to time. I can solve after studying on it. I try to understand where I made a mistake. It happens once a while but I overcome.

Researcher: Can you solve more difficult questions?

Derya: Yes… I think…

Vicarious Experiences

The findings showed that Burcu and Derya assess their own achievement by following achievement level of their peers. Burcu compares her mathematics achievement with her classmates having higher performance, which reduces her self-efficacy and it is reflected negatively to her future performances.

Researcher: What do you think about the mathematics achievement of your friends?

Burcu: The scores that my friends got from the exams are important for me. Because their scores give clue about how successful I am. I follow the scores of my friends while the teacher announcing exam results.

Researcher: How that affects you?

Burcu: When they get high scores and I get low, I ask myself if I can do better than them in the future. I get upset when they get higher scores than me. Usually I turn in on myself (Burcu)

The assessments of Derya about her own achievement are reflected positively on her self-efficacy. Getting lower scores than her peers increases her success in the exams.

"The scores of my friends are important for me. I compare my score with theirs. I also got friends who get higher scores than me. Then, I say to myself that I can get better scores but I don't hurt myself. I work harder on the questions that I missed. I say to myself I will get better scores next time and I get." (Derya)

Burcu takes the students of the class with high mathematics achievement as a model. Among them, Ibrahim is the student with who Burcu compares herself the most. Burcu think that Ibrahim is very successful in math and believes that she cannot never be as successful as he is. Burcu expressed this though as "I ask myself why I can't be like him. It seems impossible to me to be like Ibrahim".

Similarly, Derya also takes the students of the class with high mathematics achievement as a model. She likens Enes to herself because of his success. She expressed this thought as "Enes is successful as I am, he solves like I do". After comparing Enes' achievement with herself, Derya concluded "So, successful students solve like this". This conclusion shows that she formed a similarity with successful students and herself.

Social Persuasion

The responses of the teacher and the peer are more effective on the self-efficacies of Burcu and Derya, compared to the responses they got from their parents. Their teacher and friends give information to Burcu and Derya about their mathematics achievement. Burcu gets negative assessments from some friends, which makes her upset.

"My peers who don't like me much, says that Burcu fails in math. I have a friend from the village; one day we were playing together, he said "You know, Burcu get this score from a very simple test. This irritated me a lot." (Burcu)

On the other hand, Burcu wishes to hear motivating words from her teacher about her mathematics achievement. She expressed this wish as "I wish my teacher tells me "Burcu you can do it, you are a clever girl, there is nothing you can't do, you will success if you work". In addition, she added "If he had told these words maybe I would believe that I will succeed and I might be successful

after working. In this case (lacking encouraging words) I don't want to study", which shows that this fact is reflected on her self-efficacy and achievement negatively.

Derya gets positive comments from her teachers and friends, which make her happy and they are reflected positively on her performance by improving her belief of succeeding in similar situations.

> "For example, my teacher tells me that I am very studious, successful. He says that I answer questions very well. When I get 95-100 from a math exam, my friends tell that I'm expected to get this score. Or they say you're quite successful, congratulations Derya. Getting such responses motivates me. I can solve problems better if I believe that I will succeed in exams." (Derya)

Emotional / Physiological States

It was found that Burcu and Derya are at different physiological states during a mathematics task. Burcu feels negative emotions in this process. For example, she doesn't want to go to the blackboard in the course. He thinks that both her teacher and her friends will react negatively against her. Burcu explains her feelings as below:

> "I afraid my teacher gets mad, angry. In such a case I worry a lot. I'm wondering whether they're laughing behind my back. I'm afraid I'd be miserable. I thrill when I cannot solve such a simple question even though I know. For example, I'm wondering whether my friends talk behind my back. It has happened once. They said how Burcu couldn't answer such a simple question." (Burcu)

Regarding the statements of Burcu, it can be seen that her past experiences are effective on the negative emotions that she feels. Therefore, the fear and thrill that she feels are reflected in her self-efficacy negatively. She experiences similar feelings in mathematics exams as well. She expressed how low scores that she had increases her anxiety as "I remember the exams that I got low scores. I fear from what happens if I get a low score from this exam as well". In addition, experiencing the same anxiety both in the course and in the exam seems to reduce her faith of being successful and prevent her to achieve the success that she wishes.

On the other hand, Derya feels positive emotions while accomplishing a mathematics task. In addition, she gets successful results by controlling her emotions in this process. Therefore, her faith on being successful increases as well. She expressed her feelings while she is on the blackboard during math class and during the example as below:

> "I wait a bit, since I know the answer I read the question at least three times. Then I solve slowly. I do not panic. If I panic, I cannot solve the problem on the blackboard. I have no fear because I know that I will solve it." (Derya)

> "I feel happy and excited. But usually I feel comfortable. I feel a sweet excitement. I neither fear, nor feel anxious, I have joy in me. I try not to feel fear because my friends who fear cannot solve the problems that they know because of the fear" (Derya)

DISCUSSION AND CONCLUSION

The findings show that self-efficacy beliefs and mathematics achievement of the students who participated in the study are parallel. Mathematics self-efficacy beliefs of the student with high mathematics achievement (Derya) were found to be high, whereas mathematics self-efficacy beliefs of the student with low mathematics achievement (Burcu) were found to be low. The researches in the literature also indicate a strong relationship between mathematics achievement and mathematics self-efficacy beliefs. The results of the research show that self-efficacy of the students with high mathematics achievement are significantly high (Hackett, 1985; Hackett & Betz, 1989; Honicke &

Broadbent; 2016; Pajares & Graham, 1999; Lent et al. 1997; Pajares & Kranzler, 1995; Pajares & Miller, 1994). On the other hand, the analysis of the research findings shows that high mathematics self-efficacy beliefs increase the efforts made for accomplishing a mathematics task, whereas low self-efficacy beliefs create a "I won't succeed" belief for the future and prevent the individual to put efforts to accomplish a task. Bandura (1994) stated that self-efficacy beliefs are effective on the targets of the individuals. According to Bandura, individuals with high self-efficacy beliefs make efforts for reaching the targets that they have set and do not give up when encountered with a negativity.

The findings about mathematics self-efficacy sources show that mathematics achievement of the participant students is associated with positive and successful mastery experiences. For example, Derya usually solves mathematics problems correctly whereas Burcu encounters difficulties in this process. It was observed that after these experiences Derya's motivation was increased, whereas Burcu sank into despair, which were determinants of their following performances. From these findings it was concluded that successful experiences in mathematics are reflected positively in self-efficacy beliefs, whereas failures are reflected negatively; thus, both of them affect mathematics achievement. This outcome obtained from the research is similar to the results of the researches in the relevant literature (Lent et al., 1991; Lent et al., 1996; Lopez & Lent, 1992).

Another finding of the research is, the positive or negative assessments of the students who participated in the research about their own mathematics achievement through vicarious experiences (for example following the achievement level of their peers) have positive or negative reflections on their following performances. Burcu and Derya compare their mathematics achievements with their classmates that they believe to be very successful in mathematics. Burcu interprets this as "I will never be as successful as he is", whereas Derya interprets it "… he is as successful as I am". This fact allowed Derya to put more efforts and get more successful. However, Burcu could not get the success that she desires.

Another finding of the research is, the positive social persuasion that the students who participated in the research receive from their surrounding makes them to put more efforts in accomplishing a mathematics task, thus increase their mathematics achievement. In the contrary case, it was observed that social persuasions are reflected negatively in mathematics achievement. For example, the positive responses that Derya gets from her peers (you are very successful, congratulations, bravo) enhance her mathematics self-efficacy beliefs for the following mathematics tasks and increase her performance. On the other hand, the negative responses that Burcu gets (very unsuccessful, got a low score from such a simple exam) reduce her motivation and make her think that she will fail in similar tasks. Hence, this fact is negatively reflected in her performance. Social persuasion is the positive or negative assessments that someone gets from his/her close surrounding (Pajares, 2002; Usher & Pajares, 2009). This result is supported by the researches showing that positive and encouraging assessments that students get from their close surrounding let them to put more efforts and increase their mathematics achievement (Stevens, Olivárez & Hamman, 2006; Usher & Pajares, 2006; Usher, 2009; Usher & Pajares, 2009).

Findings also show that the emotional state of the participant students during a mathematics task is positively or negatively reflected in their mathematics achievement. It was observed that the emotional states of the participant students during the math course and exams is reflected in their beliefs about succeeding, thus become a determining factor of their mathematics achievement. For example, the fear, thrill, and stress that Burcu experienced during math exam reduced her success. On the other hand, Derya controlled her feelings against negative emotional states, which increased her success. The review of the literature also supports this result. Research results show that emotional states have a negative relationship with mathematics achievement (Hampton, 1998; Hampton & Mason, 2003; Kvedere, 2014; Lent et al., 1991; Lopez & Lent, 1992; Phan & Walker, 2000).

As a result, the findings of this research show that mathematics self-efficacy beliefs and sources of self-efficacy of the participant students is an important determinant of their mathematics achievement. These results obtained from this research, as well as other researches, show that

mathematics self-efficacy is an important affective factor that should be emphasized to achieve the desired success in mathematics. On the other hand, the findings indicate the necessity of new studies that will be conducted at various grade levels and with the participation of more students in order to determine the role of mathematics self-efficacy beliefs on mathematics achievement in detail. In addition, Bandura (1994) underlines that the importance that the individual assigns to the sources of self-efficacy is also significant. For example, someone may ignore the assessments of his/her surrounding even though they are positive. Therefore, his/her self-efficacy may be low even though his/her achievement is high. From this point of view, it is important to examine the source of self-efficacy from the perspective of the students with high self-efficacy beliefs and low mathematics achievements, as well as the students with low self-efficacy beliefs and high mathematics achievements.

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How Digital Reading Differs from Traditional Reading: An Action Research

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Abstract

The purpose of this research is to examine the insights of preservice teachers' new literacies throughout online research and comprehension. The study is grounded in an online research and comprehension perspective. In the study, the action research design of qualitative approaches was selected as the method. The participants in the research were nine teacher candidates studying in the first year of the Classroom Teacher Education Programme at Erciyes University. The teacher candidates took part in two online research and comprehension tasks about children's literature and teaching materials lasting 28 hours in total. Following, the preservice teachers' perspectives regarding this process were elicited through semi-structured individual interviews. The findings reveal that the internet has resulted in certain changes in the nature of information and learning. During the online research and comprehension process, the preservice teachers employed strategies for information location, determining reliability, reading, and online information synthesising and content creation. Moreover, during this process the preservice teachers developed certain digital skills as well as their online research and technology competencies and awareness of reliable information. All these findings have contributed to the exploration of teacher candidates' new literacy skills, strategies, and dispositions.

Keywords: Teacher education, online research and comprehension, digital skills and dispositions.

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INTRODUCTION

From past to present, literacy has continued to be a constantly changing and transforming phenomenon (Leu, Kinzer, Coiro, Castek, & Henry, 2013; Leu, McVerry, O'Byrne, Kiili, & Zawilinski, 2011; Leu, Zawilinski, Forzani, & Timbrell, 2015; Leu, Everett-Cacopardo, Zawilinski, Mcverry, & O 'Byrne, 2012). Some of the factors affecting the transformation of literacy are democratisation, economic developments, information and communication technologies, and cultural changes (Leu, Kinzer, Coiro, & Cammack, 2004). Looking at the present day, it can be seen that with the spread of information and communication technologies, activities such as reading, research, writing, and watching videos on the internet and on computers have increased (Rideout, Foehr, & Roberts, 2010; TUİK, 2017). Currently, being literate means being able to use new technologies like Google Docs, Skype, iMovie, Contribute, Basecamp, Dropbox, Facebook, Google, Foursquare, Chrome, educational video games, or thousands of other applications and e-books (Leu et al., 2011; Leu et al., 2013). Reading and meaning construction are shifting directly from printed materials towards online reading and writing. Accordingly, the skills, strategies, and dispositions needed by individuals also change (Lankshear & Knobel, 2011; Leu et al., 2013). Despite all these developments, researchers reveal that teachers have not adequately integrated information and communication technologies into the teaching of reading and writing (Hutchison & Reinking, 2011; Pang, Reinking, Hutchison, & Ramey, 2015; Yamaç & Öztürk, 2018). For students to adapt to professional and societal life in today's world, they need both traditional reading and writing skills and the new literacy skills. Therefore, there is a need for research into the subject of exploring and developing the online research and comprehension skills of teacher candidates, the implementers of the future.

A Dual-Level Theory of New Literacies

Researchers attempting to explore the differences between reading printed matter and reading in online contexts have put forward various conceptualisations. Online research and comprehension (Leu et al., 2013), multiple source reading (Cho, Afflerbach, & Han, 2018), and digital reading (Salmerón, Strømsø, Kammerer, Stadtler & van den Broek, 2018) are some of these. These conceptualisations attempt to explain the reading and comprehension processes, skills, and strategies used in online contexts. Online research and comprehension is a specific research field examined by a dual-level theory of new literacies. The dual-level theory of new literacies is an approach, which attempts to bring together under one umbrella all the perspectives related to literacy appearing now. According to this theory, new literacy has two levels, namely lowercase (new literacies) and uppercase (New Literacies) (Leu et al., 2013; Leu et al., 2015). Lowercase new literacy explores a specific field of new literacy or a new technology such as the social communicative transactions that occur through text messaging and understanding what one reads online (Leu et al., 2013). Lowercase new literacy acknowledges many perspectives, technologies, and applications (Leu et al., 2015). Uppercase New Literacy, however, is formed from the common and consistent findings that emerge from studies conducted based on the lowercase new literacy perspectives.

One of the areas that lowercase new literacy examines is reading in online contexts. This theoretical viewpoint conceptualises reading as "online research and comprehension". According to researchers examining online reading, traditional reading skills are required for obtaining information and reading on the internet, yet they are insufficient alone (Cho et al., 2018; Salmerón et al., 2018; Zhang & Duke, 2008). Internet reading requires the reader to make strategic decisions, in line with his/her aim, as to what he/she will read and in which order he/she will read them (Cho & Afflerbach, 2015). Online reading is a process of self-directed text construction (Coiro & Dobler, 2007). In contrast with traditional reading, online research and comprehension regards reading as a problem-based inquiry process involving five steps (Leu et al. 2011; Leu et al., 2013; Leu et al., 2015). New skills, strategies, and dispositions are required for finding information on the internet, evaluating the reliability of the information, and for synthesising and communicating the information (Leu et al., 2004). This research is theoretically based on the perspective of online research and comprehension.

Previous Research

Various studies based on the theoretical framework of the new literacies have examined how the internet and other information and communication technologies can be integrated into literacy education (Hutchison, Beschorner, & Schmidt-Crawford, 2012; Hutchison & Woodward, 2014; Larson, 2010). The studies conducted suggest that through the integration of tablets and various digital applications into literacy lessons, students can develop both their traditional literacy and their new literacy skills together (Hutchison et al., 2012) and that digital reading tools develop the new literacy practices and enhance the relationship between reader and text (Larson, 2010).

Other studies carried out at primary, secondary, and high school levels and at university level related to online research and comprehension have attempted to discover the cognitive processes and strategies in reading (Afflerbach & Cho, 2009, 2010; Coiro & Dobler, 2007; Castek, 2008; Coiro, 2011; Coiro & Dobler, 2007; Dwyer, 2016; Esmer & Ulusoy, 2015; Schmar-Dobler, 2003). The studies conducted reveal that for online reading environments, in addition to the reading strategies used while reading traditional printed texts, readers use reading strategies for inquiry such as concept identification, information-seeking on the internet, and critical evaluation (Afflerbach & Cho, 2009; Coiro & Dobler, 2007; Coiro, Sekeres, Castek, & Guzniczak, 2014; Esmer & Ulusoy, 2015; Schmar-Dobler, 2003; Zang & Duke, 2008).

While studies related to the cognitive processes and strategies for online research and comprehension are frequently conducted, there are fewer studies regarding online dispositions and affective items (Coiro, 2008, 2009; O'Byrne & McVerry, 2009; Putman, 2014; Putman, Wang & Ki, 2015). In a study done by O'Byrne and McVerry (2009), an instrument for online reading comprehension dispositions was developed. In this instrument, five subdimensions related to online dispositions are found, namely critical stance, reflective thinking, persistence, flexibility, and cooperation. In another study conducted on reading dispositions, Putnam (2014) developed a tool for measuring online reading attitudes and behaviours. This measurement tool is composed of subdimensions of online reading dispositions named self-efficacy, motivation, anxiety, self-regulatory behaviours, and value. In other studies done about online reading dispositions, it is observed that there is a significant relationship between online reading disposition and online reading skill (Coiro, 2008) and that since students find the internet to be practical, valuable, and attractive, they are willing to endure the hardships of online reading (Coiro, 2009).

Research Aim

In today's world, literacy skills and strategies based on traditional printed materials are not sufficient to become fully literate. While teachers' roles in new literacy classrooms have changed, they have become even more important. Teacher training and teachers' professional development related to the new literacies should be given greater focus and more attention (Leu et al., 2013). Studies conducted reveal that preservice teachers are lacking in knowledge of online reading and comprehension strategies and that their online reading skills are not at a desired level (Ulusoy & Dedeoğlu, 2015; Esmer & Ulusoy, 2015). Teacher candidates' skills, dispositions, and strategies in the online research and comprehension process should be explored. There is a need for studies aimed at exploring students' processes for writing questions, locating information, passing the located information through a critical filter, synthesising the information, and creating content on the subject they are to investigate in the online comprehension and research process. Moreover, studies should be conducted regarding how preservice teachers can develop their online research and comprehension skills. The aim of this study is to explore the development of preservice teachers' new literacies. By means of the data obtained, clues can be gained regarding the new literacy skills, strategies, and dispositions of teacher candidates. By furthering the understanding of teacher candidates' new literacy skills, recommendations can be made related to programmes for educating future teachers and to primary school teaching programmes.

Research Question

In what ways nine preservice teachers develop their insights on new literacies during the course of online research and comprehension?

METHOD

Research Design

This study was conducted based on the action research design. "Action research is conducted by one or more individuals or groups for the purpose of solving a problem or obtaining information in order to inform local practice" (Fraenkel, Wallen & Hyun, 2012, p.589). "Educators reflect about these problems, collect and analyse data, and implement changes based on their findings" (Creswell, 2012, p.577). The information gained through action research is used to gain understanding about a problem, to develop a new practice, to bring positive changes around the school, or to improve student performance (Mills, 2014). In this study, preservice teachers' insights of new literacies during online research and comprehension have been explored. The aim has been to gain a thorough understanding about what preservice teachers' experiences are when conducting online research and comprehension in the internet environment, and how they experience these.

Participants

The study was conducted during the second semester of the 2017-2018 academic year with first-year students in Classroom Teacher Education at the Education Faculty of Erciyes University, within the scope of their Computers II course. The computer course is given to students who have not passed the multiple-choice exemption exam given in the first semester of the academic calendar. In this regard, 21 students attended the class. Some students preferred to attend the course without having taken the exemption exam, while others took the course because they had not passed the exemption exam. In the Computers I course, basic training related to Word, Excel, and PowerPoint, websites, e-mail management, and Google applications was given. In the Computers II course, education in online research and comprehension was given. Out of 21 students, 19 students participated in the implementations for the online research and comprehension training and submitted their assignments. Of these 19 students, semi-structured individual interviews were conducted with the nine students (five females and four males) who achieved the 70% pass mark or more from their assignments.

Online Research and Comprehension Training

The implementation was conducted in 28 lesson hours over a total of 7 weeks. During this period, the students were asked to conduct research into children's literature and teaching materials. The instructor modelled the online research process for the students and the students were asked to create content by using the online research and comprehension steps. Using the steps for forming important questions, locating information, evaluating information, synthesising information and creating content, and communicating information, the instructor modelled a sample of research in the field of reading difficulties for the students. The students were told that they firstly had to identify important questions related to the research topic. Basic questions, alternative questions, and concepts related to reading difficulties were written in a sample file. In the second step, methods of accessing documents such as articles, books, presentations, or research reports based on the questions identified (information location strategies) were taught. In the third step, reliable and unreliable information and documents were shown to the students. It was explained that information and documents like academic articles, reports of various organisations, and digital books on university databases should be trustworthy, otherwise none of the information on the internet could be used. In the fourth step, note taking, summarising, and synthesising the various data obtained from the reliable information and documents located, as well as creating content in their own words by synthesisation, were taught. In

the fifth step, the students were shown how to share the content created on platforms like blogs and social media. Based on all these steps, the students completed their first research projects on children's literature. Based on the five-step online research process, they created a research report in Microsoft Word. They submitted the first version of their assignments to the instructor on the digital learning platform Turnitin. Turnitin is a learning environment possessing features such as detecting plagiarism, commenting on assignments, and giving feedback. The instructor evaluated the assignments submitted by means of an analytic scaled grading key in the subdimensions of content, orthography and layout, originality, interestingness, and research process, and gave feedback. Based on this feedback, the students revised and resubmitted their assignments. All these steps were also implemented in the teaching materials research. The research related to children's literature was required as a Microsoft Word file, while the research related to materials development was required as both a Microsoft Word file and a multimodal composition. During this process, applications such as Google Chrome, Google Drive, Google Scholar, Google Drawings, Acrobat Reader, Google Search, Google Blogger, Movie Maker and Photo Story 3, University Databases, Microsoft Office Word, and YouTube were used.

Data Collection Techniques and Process

One of the most frequently used techniques for collecting data in action research is interviewing. The action researcher can formally interview students, parents, or colleagues to gain in-depth understanding. However, one of the important challenges of the interview is that the questions are expressed in such a way as to elicit the information to be accessed (Mills, 2014). To reveal the preservice teachers' online research and comprehension insights, a semi-structured interview form was used. After the draft interview form was prepared, three researchers reviewed it, two of whom were experts working in literacy education, and one was a language expert. After some alterations were made in the interview form, pilot interviews were conducted with two students. At the end of the implementation, individual interviews were conducted with the teacher candidates. These interviews lasted between 19 and 60 minutes.

Data Analysis

The data obtained was analysed by following the steps suggested by Creswell (2013): data managing, reading and memoing, describing/classifying/interpreting, and representing and visualizing. According to Creswell, in qualitative analysis, the points commonly emphasised by researchers are coding of data, identifying themes from the data, and presenting the data in a comprehensible manner. After the researchers had put the interviews with the preservice teachers in writing, they prepared them for analysis. Firstly, the written records were read from start to finish and small notes were made in the margins, after which the code list was created, and by bringing the codes together, the themes were identified. Finally, the codes and themes were interpreted by presenting.

FINDINGS

Online Research and Comprehension Insights

Following the semi-structured interviews conducted with the preservice teachers, the obtained data was reduced and presented in a conceptually understandable way (See Fig. 1). According to the obtained data, the preservice teachers' online research and comprehension insights were gathered under three main themes, namely the nature of the internet as a research and learning tool, the nature of online research and comprehension, and the nature of digital dispositions and skills.

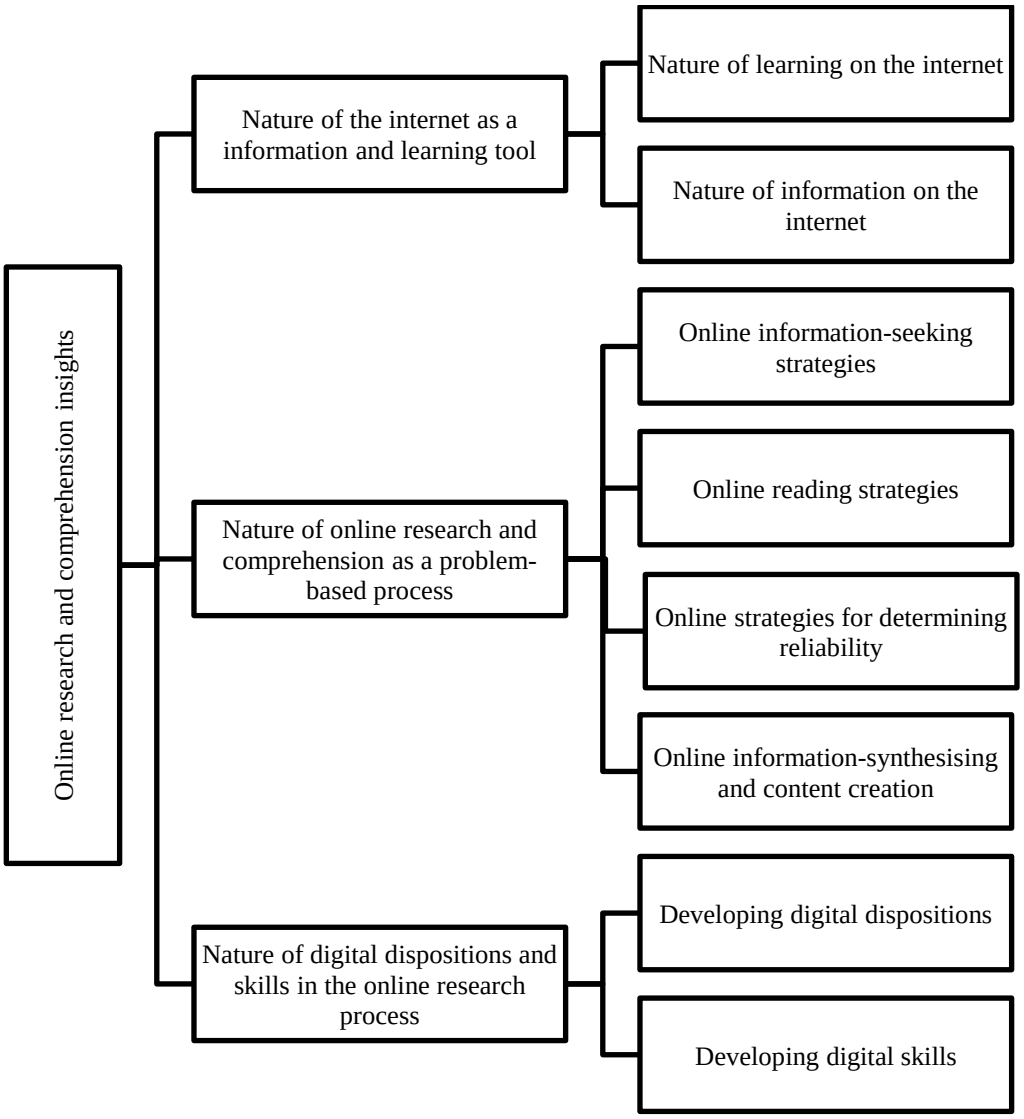

Fig. 1. Themes and Sub-themes Regarding Online Research and Comprehension Insights

Nature of the internet as an information and learning tool. With regard to teacher candidates' insights, on the internet and in a digital context there are certain differences in situations like the nature of information, ways of accessing information, reliability of information, internet information sources, skills required for accessing information, and the multiform nature of the internet when compared to research and learning in printed texts.

Nature of information on the internet. The insights gained by the teacher candidates in the research they conducted on teaching materials and children's literature provide some clues about the nature of information on the internet. Firstly, the teacher candidates stated that locating information on the internet was easy and fast. A large number of documents such as web pages, books, articles, and videos about the topic to be researched can be accessed rapidly and with little trouble. The teacher candidates reported that information on the internet takes on more of a multimodal nature than information in printed materials. While printed materials include more written texts and fewer visuals, information in the internet environment consists of more multimodal content like texts, pictures, sounds, and videos. However, the teacher candidates stated that although there are a large number of documents and content and that information can be rapidly located on the internet, it is difficult to locate reliable information from among this data. Another situation expressed by the teacher candidates regarding the nature of information is that although the internet facilitates knowledge

generation and sharing, it increases information pollution. Moreover, another finding related to the teacher candidates' insights is that the internet facilitates the storing of information through applications like Blogger, e-mail, and Google Drive. Below are some views of the preservice teachers regarding the nature of information on the internet:

> I'm in the groove (laughing). I say," Now you're doing something". This is a nice environment for sharing this. Others can see and comment on the research that we do. It's a nice environment where information can be shared. For example, those wishing to access information can find it. — Gökşin, teacher candidate

> But it's troublesome with regard to reliability. Until I used Google Scholar, I used to enter the first website that appeared when I wrote on the search engine and examine the information. But later I learned. I wasn't verifying it. —Burcu, teacher candidate

Nature of learning on the internet. According to teacher candidates' insights, the fact that accessing information on the internet is rapid and easy leads people towards laziness and copy-paste plagiarism. Indeed, this data that can be located and generated without effort causes serious problems related to reliability. An individual attempting to obtain and learn information on the internet must act in accordance with the online research and comprehension steps. This situation means that additional skills and strategies are needed to locate easy and reliable information and create content on the internet. Another situation arising from the teacher candidates' insights related to learning is the fact that the multimodal nature of the information on the internet makes it easy to learn, increases retention of learning, and catches the attention. Moreover, the fact that creation of content like texts, visuals, and videos with various applications and programmes increases the retention of learning is a situation that arises from the teacher candidates' insights. Below are some views of the preservice teachers regarding the nature of learning on the internet:

> The internet has eliminated the time taken for accessing information. You can locate data as soon as you write. This speed also leads to laziness. In terms of that variety, we are losing the retention of information because of the internet. In fact, since the internet includes a lot of necessary and unnecessary information, it has become difficult to separate it out. — Mutlu, teacher candidate

> There were articles, slides and books, but it was as if they were unfinished. I looked at a few parts of the books. I accessed a thesis. I located visuals as well. I accessed the visuals in the materials. There were videos, but how reliable were they? They explained the teaching materials. I had heard most of what was explained there from other materials. — Sevde, teacher candidate

Nature of online research and comprehension as a problem-based process. There are differences in the nature between online research and comprehension on the internet and reading processes based on traditional printed materials. According to the teacher candidates' insights, these differences are presented under the themes of online information-seeking strategies, online reading strategies, online strategies for determining reliability, and online information-synthesising and content creation.

Online information-seeking strategies. One of the differences between online research and comprehension and reading based on traditional printed materials is the process of searching for and accessing information. Due to differences like the types and number of documents in the digital environment, the means of accessing the information and the context where the information is found, different strategies are required for locating the information. According to their insights, the teacher candidates used different strategies from those used in traditional reading in order to access information in the studies that they carried out related to children's literature and teaching materials. First, the teacher candidates created research questions to limit and frame the information they were to locate. They then defined alternative questions and concepts related to these research questions. The

teacher candidates stated that these research questions and concepts served to limit and frame the information in the information-seeking process. The teacher candidates also stated that they consulted various databases in the university library in order to locate academic content such as e-books and articles. Moreover, another source that they consulted to access information were the Google Scholar application and Google's advanced search options. They stated that by means of an advanced search, they conducted searches based on file type, time, pages containing the exact word, or pages containing any of the words. According to the teacher candidates' insights, by limiting the information, the advanced search options made it easier to locate information related to the questions from among a large amount of data and documents. The teacher candidates also reported that in this process, they used YÖK (The Council of Higher Education) theses with their e-government passwords to access thesis-type documents. Below are some of the teacher candidates' statements regarding information seeking:

> We created questions about the subject we had identified. I tried to produce as many questions as I could. By forming questions, we conducted our research more easily. If we had done it the other way, it would have been a simple research study. — Metehan, teacher candidate

> The research questions made my work a lot easier. What type of questions I will look at, then what type of data I will obtain in the article. It has guided me as to which ones I will obtain and which ones I will not. I used Google Scholar. Hazar

> I made use of Google Scholar. Instead of using normal Google, I sought information there. I wrote in inverted commas. For example, I wrote, "What is children's literature". To obtain clearer data, I looked at the data on the university's database. — Sevde, teacher candidate.

Online reading strategies. According to the teacher candidates' insights, another theme that appears with regard to the differences between online research and comprehension and reading based on traditional printed materials is that of reading strategies. The teacher candidates stated that they used certain strategies to strengthen their comprehension while reading the web pages, articles, theses, or e-books they had accessed related to children's literature and teaching materials. The preservice teachers used the Adobe Acrobat Reader reading programme, especially while reading digital texts like articles, theses, or books. The features of Adobe Acrobat Reader, such as add text, take notes, and highlight made the reading process easier. The teacher candidates stated that they took notes on Adobe Acrobat Reader on the relevant section for whichever research question it was related. They stated that by synthesising the information this way, they made it more organised. The teacher candidates reported that documents like theses, books, and articles contained a great deal of information and that it was not possible to read all of it. They stated that in this case, to access the information that was relevant, they glanced at the headings and focused on the information in the relevant headings. Another strategy used by the teacher candidates in the reading process was summarising. The preservice teachers pointed out that they wrote the important sections by shortening them on Adobe Acrobat Reader with their own words. According to the teacher candidates, scanning information in digital texts makes the reading process easier. They stated that they located any concept or heading within a text by scanning it and that they had read only that section. This also enabled them to save time. Another strategy used by the teacher candidates in the reading process was highlighting the important information. The teacher candidates stated that they colour-highlighted the important information especially by using the colour-highlighting feature of Adobe Acrobat Reader. Below are some of the teacher candidates' statements regarding the strategies they used while reading:

> Also, for example, whatever subject or whatever concept I want to access from there, I write it directly. It appears before me. But for printed materials, I have to find it myself. I have to locate the information by leafing through the pages or reading through lots of pages. — Sevde, teacher candidate

> I read to find out how much it was related with my research topic. Its relevance is very important. I took small notes in the margin. So as to summarise what the sentence meant. In

> this way, I gained things that were beneficial for me. There is a lot of writing in an article. I took out the parts of the article that were important. I read a lot of articles. I acted according to the headings. I looked at them to see if there was anything in them related to my research assignment. I read into them and took out the important parts. — Hakan, teacher candidate

Online strategies for determining reliability. The teacher candidates' insights reveal that another theme that emerges related to the differences between online research and comprehension and reading based on traditional printed matter is that of strategies for determining reliability. The fact that it is easy to create content on the internet, that there are a large number of sources, and that there is information pollution makes it difficult to determine reliability in the online research and comprehension process. The teacher candidates stated that they passed information and documents like webpages, articles, reports, and books that they accessed for their research topics through a reliability filter. The preservice teachers also reported that data on the websites of government organisations like TUİK (Turkish Statistical Institute), TDK (Turkish Language Association), or universities and data obtained from documents like articles, theses, and e-books were more reliable. The teacher candidates stated that to determine whether any information they accessed on a web page was reliable or not, they checked the source of the information therein and verified the information by locating the original source. Moreover, the teacher candidates pointed out that they regarded the data they accessed from well-known international organisations like UNESCO and OECD as more reliable. Furthermore, the preservice teachers stated that they confirmed the information they accessed on the internet from several sources. Finally, they also indicated that the academic level of the author who wrote the information was an important criterion for determining reliability. They emphasised that all these strategies had to be passed through a filter for reliability of the data accessed in online reading. Below are some of the teacher candidates' views related to determining reliability:

> It is difficult to access reliable information. When we do it from reliable sites, we think that they are reliable. You cannot say that they are 100% reliable but if you look everywhere, when you write in the same way, that is how it is. You think it is reliable. You look at a number of reliable sites. If it says the same thing everywhere, that means it is correct. — Gökşin, teacher candidate

> I mostly tried to access the articles that I mentioned before. I gave more importance to these. Theses are also reliable data sources. Of course, these may be prepared in the form of a presentation. I have seen that there are reliable data in presentations, and I have looked at those as well. — Metehan, teacher candidate

Online information-synthesising and content creation. In contrast to traditional reading and writing skills, the online research and comprehension insights of the teacher candidates regarding the subjects of children's literature and teaching materials indicate certain changes in the nature of online information-synthesising and content creation. The teacher candidates stated that to synthesise information and create content online, they made use of a large number of records and documents such as articles, theses, e-books, web pages, and visuals and that they created a rich content. They reported that for synthesising information in particular, they took the research questions as the basis and that they created content according to the research questions by combining data from several sources. The teacher candidates indicated that for online research and comprehension, when they accessed information from various sources and wrote it in their own words, the content was more original and learning was more permanent. Moreover, the preservice teachers stated that due to the multimodal nature of the internet, in contrast to traditional printed content, the content they created online was made up of many forms, such as tables, graphs, visuals, sounds, and videos. The teacher candidates' insights related to online information-synthesising and content creation pointed out certain differences when compared to information-synthesising and content creation with traditional printed materials. Some of the teacher candidates' views related to online information-synthesising and content creation are as follows:

> You learn nothing by doing copy-paste. Sometimes you don't even read when you do copy-paste. But when you write by synthesising for yourself, you consider that this was written like this or like that from many sources and it becomes permanent. What kind of books are there in children's literature? What should their content be like, what should their covers be like? You learn about these subjects. — Hazar, teacher candidate

> For example, the process is boring and tiring until you create the video. I have created a video. I said, "Ah, is the content like this, you know, is it so pleasing to the eye? Or, would it be more appealing like this? It caught my attention more. When I read information on Word, it is possible for me to forget it, since it is theoretical information. But in video, since I am supported both visually and audially, it is more entertaining and sticks in the mind more. — İpek, teacher candidate

Digital skills and dispositions in the online research and comprehension process. From the viewpoint of digital skills, the teacher candidates stated that their skills in multimodal text creation had developed due to adding, deleting, and arranging multimedia items like sounds, music, and photographs in video creation programmes such as Photo Story and Movie Maker. The teacher candidates also stated that among other digital skills they had acquired in this process, their skills in creating content such as text, shapes and tables had developed by using word processing programmes like Microsoft Office. Moreover, the preservice teachers stressed that thanks to the Acrobat Reader programme, skills such as digital text reading, imaging, organising, and annotation had developed. In this process, the teacher candidates used applications such as Google advanced search, Scholar, Blogger, YouTube, Gmail, Groups, Google Drive, and Google Drawings. The teacher candidates indicated that by means of these applications, their digital literacy skills in online information-seeking, data storing, data sharing, and content creation with sound, script, video and visual file types had developed. Below are some of the teacher candidates' insights related to digital skills:

> Text, visuals, schemes and tables. There was one scheme for teaching and learning. I drew it on Word. I drew Dale's Cone of Experience. I formed the table. We created a multimodal text. — İpek, teacher candidate

> After creating my video, I uploaded the YouTube video via my own account. Of course, after uploading the video, I performed another check. Is there anything missing from the video? Is there anything unsuitable in my narration or is there a problem with the sound? I checked these as well. After doing this, I shared it on the blog I had opened for myself. Of course, on the one hand I published my research. Mostly so, that it would be a resource. I put both a video and pictures on it on the other hand. — Mutlu, teacher candidate

The preservice teachers asserted that before their online research, they had had no awareness regarding the reliability of the information they had accessed on the internet. They reported that previously, they had not passed any web page or document that they had accessed through a reliability filter and that they had used them as they were. However, they stated that the online research had developed an awareness regarding the reliability of the information on the internet and that they no longer considered using all the information on the internet as it was or without passing it through a reliability filter. Furthermore, the preservice teachers pointed out that during the online research and comprehension process, their self-belief in areas like accessing information, content creation, using various programmes, and doing research online had increased. Below are some of the teacher candidates' insights related to digital dispositions

> I did not previously use concepts such as whether the sites for the subjects I researched were reliable or not. I used to present any research I found as homework to the teacher. — Sevde, teacher candidate

My research skills have improved even more. I can do more advanced-level research. Until now, I did not believe that I would do this. After learning these, I have gained a lot of experience. I am a little more experienced with regard to research. — Mutlu, teacher candidate

DISCUSSION

The Internet as an Information and Learning Tool

The teacher candidates' insights showed that the nature of information and learning in printed materials and that of information and learning on the internet are different. Examining the nature of information on the internet shows that the internet provides a variety of sources and facilitates access to information and sharing and storing of information. However, due to information pollution on the internet, accessing reliable information is difficult. Moreover, since the information found on the internet contains more visuals, sounds, and videos than printed materials, it takes many forms. Considering the nature of learning on the internet, according to the insights of the teacher candidates, an individual who lacks online research and comprehension skills is pushed towards laziness and plagiarism because of the copy-paste feature. Therefore, for research and comprehension on the internet, readers must possess additional skills and strategies not required for printed materials.

The findings obtained in the present study are consistent with the principle in the uppercase New Literacies Theory that new literacies are multiple, multimodal, and multifaceted (Leu et al., 2013). In terms of text reading, the internet has enabled an increase in a great number of new and mixed information sources. This situation also increases the problems of accuracy and reliability of information. A successful reader in the online environment is able to decide what he/she will read, how he/she will synthesise the information, how he/she will access the information and how he/she will use the information sources (Bråten, Braasch & Salmerón, 2018; Cho et al., 2018). Empirical studies conducted on online reading and learning reveal that additional skills and strategies are required (Cho, 2014; Coiro & Dobler, 2007).

Moreover, compared to printed material, creating content like text, videos, and visuals on the internet makes learning easier. Another feature of the internet is the fact that its multimodal nature (text, sounds, visuals, and videos) develops learning and information. The internet has caused a series of changes in the nature of information and learning. While reading, writing, and communication in traditional written materials are in two dimensions consisting of text and visuals, in the online environment, they have many dimensions like script, visuals, sounds, music, and videos. The findings of the latest studies, which state that multimodality develops learning and motivation, support the findings of this research (Yamaç & Ulusoy, 2016; Öz & Memiş, 2018; Yeh, 2018).

The Nature of Online Research and Comprehension

The nature of online information-seeking is different from that of information-seeking in traditional texts. Some of the strategies used by the teacher candidates when seeking information in an online context are seeking information from university databases, seeking information on Google Scholar, using Google's advanced searches, seeking information by creating research questions, seeking information by defining concepts, varying the research questions, and seeking information from YÖK theses. Reading strategies used by the teacher candidates during the online research and comprehension process are scanning information and concepts, highlighting important information, note-taking, summarising, reading in line with the research questions, and glancing at headings. Another topic that emerges with regard to the nature of the online research and comprehension process is that of strategies for determining reliability. To access reliable data, the teacher candidates used strategies like seeking information on websites of government organisations, checking information sources, seeking information from articles, books and theses, seeking information from national and international organisations, verifying data from various sources, checking the academic level of the authors and accessing original sources. Another theme that appears with regard to the nature of the

online research and comprehension process is that of synthesising and creating content online. In online research and comprehension, synthesising of information from a large number of sources is carried out according to the research questions. In online research and comprehension, synthesising of information from a large number of sources ensures that the content created is original and that learning is permanent. Synthesisation and content creation in a digital environment are conducted in many forms with a large number of media tools such as visuals, sounds, texts, and videos.

The teacher candidates' insights indicate that online research and comprehension has certain differences when compared to reading and comprehension with traditional printed materials. The nature of online research and comprehension includes information-seeking strategies, reading strategies, strategies for determining reliability, and online synthesising and content creation. The cognitive processes and strategies necessary for structuring understanding of a single text with traditional comprehension strategies are not the same as the cognitive processes and strategies necessary for structuring and understanding information from multiple sources in a digital environment (Afflerbach & Cho, 2009; Cho et al., 2018; Leu et al., 2013; Salmerón et al., 2018). Although reading and comprehension strategies based on traditional printed matter are also important in an online context (Cho, 2014; Coiro & Dobler, 2007; Salmerón, García & Vidal-Abarca, 2018), additional reading strategies are required for locating information and structuring understanding in an online context (Afflerbach & Cho, 2009). The findings of the latest empirical studies conducted with primary, secondary, and high school students and university students related to online research and comprehension strategies support the findings of this study (Cho, 2014; Cho & Afflerbach, 2015; Goldman, Braasch, Wiley, Graesser & Brodowinska, 2012). The findings obtained in a recent study by Cho (2014), conducted with high school students, show similarity with this study. In the study, the students, while reading on the internet, reutilised the strategies used with traditional printed materials for establishing meaning, self-monitoring, and evaluating information by altering them to suit the internet. Moreover, in the same research, the students used text-finding strategies as a new strategy in the online context.

Digital Skills and Dispositions

The teacher candidates' insights reveal that certain digital skills and dispositions have developed in the online research and comprehension process. It was observed that during this process, the teacher candidates' skills in creating multimodal texts, using word processors, reading digital texts, and using various Google applications like YouTube, Blogger, Google Drive, and Google Drawings had developed. Online research and comprehension is not isomorphic with reading traditional printed materials (Coiro & Dobler, 2007; Leu et al., 2013). For online research and comprehension, new social applications and skills are required (Leu et al., 2013). This study reveals the importance of social applications like YouTube, Blogger, and Google Drive and the need for skills in using various digital applications and programmes for effective online research and comprehension.

Another topic that emerges related to the teacher candidates' insights in the online research and comprehension process is that of the new literacy dispositions. It can be seen that during this process, their beliefs related to online research online research and technological skills had increased. In online research and comprehension, besides cognitive dimensions like skills and strategies, affective factors such as self-efficacy, motivation, value, attitude, and anxiety play an important role (Coiro, 2009; Putman, 2014; Putman et al., 2015; O'Byrne & McVeryy, 2009). These dispositions are very important for successful online research and comprehension. Studies conducted show that students who have a high level of self-efficacy in online contexts have high levels of self-regulation skills and online success (Tsai & Tsai, 2003; Moos & Azevedo, 2009). Furthermore, they stated that in the online research and comprehension process, teacher candidates had developed an awareness regarding reliability of information. Reliability of information in the online context must be dealt with differently to reliability of information in printed matter, since in the digital environment, it is very easy to publish information and create content (Leu et al., 2013). For successful online research and comprehension, a critical disposition is required. From this aspect, this study contains valuable

findings related to both the online research and comprehension competencies and the development of awareness of reliable information of preservice teachers.

CONCLUSION AND RECOMMENDATIONS

The aim of this action research was to discover the development of preservice teachers' insights of new literacy in the online research and comprehension process. The study offers an insight into the skills, strategies, and dispositions of the teacher candidates in the online research and comprehension process. Although traditional literacy skills and strategies retain their importance in the online research and comprehension process, the internet environment gives rise to additional skills, strategies, and dispositions. The nature of information and learning on the internet is different from that of traditional printed materials. For effective online research and comprehension, the teacher candidates used information-seeking strategies, reading strategies, strategies for determining reliability, and online synthesising and content creation. During this process, they developed their digital skills by using various technological tools and applications. Moreover, while the teacher candidates had not previously approached the data on the internet with a critical attitude, by means of online research and comprehension they acquired an awareness of reliable information. Finally, their confidence regarding technology and online research skills increased.

All these findings bring forward some recommendations with regard to teaching and research in the new literacies in teacher training programmes. It is recommended that teacher candidates, who will be the teachers of the future, be given training in online research and comprehension. Teacher candidates' skills in using digital technology, the strategies they require for research and comprehension on the internet, and their online reading dispositions should be developed. Further qualitative and quantitative research should be carried out related to the online research and comprehension skills of preservice teachers. This study was conducted with students who had obtained grades of 70% and over for online research and comprehension. Studies may be conducted to compare successful and weak students with regard to online research and comprehension. In the studies, by means of data collection methods like think-aloud protocols, screen monitoring programmes, and observation, online research and comprehension can be examined more deeply. Moreover, there is a need for quantitative studies aimed at measuring and examining the research and comprehension skills, strategies, and dispositions of teacher candidates in larger population samples. This way, factors affecting the research and comprehension skills of preservice teachers can be further explained.

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