

# An examination of primary school teachers' opinions on environmental education and the activities they use to teach related issues\*<sup>1</sup>

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## Abstract

This research aims to examine the activities used by primary school teachers to create environmental awareness in students based on awareness, knowledge, attitude, skill, and participation, which are the aims of environmental education, according to teachers' opinions. In the research, an instrumental case study, one of the qualitative research models, was conducted to determine the opinions of primary school teachers on environmental education. The convenience sampling method was preferred in determining the study group. The study group of the research consists of 24 different primary school teachers working in primary education institutions affiliated with the Ministry of National Education. What activities and opinions of primary school teachers were used in the formation of environmental awareness in children and their opinions were taken using the semi-structured interview form developed by the researchers. The responses given to the interview form were analyzed using content analysis. The findings obtained from the opinions of primary school teachers about the activities they use in environmental education are classified based on the aims of environmental education and presented under categories. The prominent results of the research regarding the activities applied in environmental education, it is seen that the classroom teachers mostly implement in-class activities. According to the results of the research, it is recommended to give environmental education as a separate course to provide more effective environmental education.

## Keywords:

Environmental education, Environmental education activities, Primary school teachers.

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## INTRODUCTION

Environmental education is very important in the awareness of environmental problems that are increasing rapidly in the global world today. It is also of great importance in solving these problems, preserving and improving the environment, and transferring environmental awareness to future generations. Environmental education aims to develop the necessary theoretical knowledge, skills, values, and behaviours to protect the environment in which individuals live. This education is a process that enables individuals to assimilate them into environmentally friendly actions and is positively affected by the results of these behaviours (Erten, 2004). In another sense, environmental education is to train individuals who are responsible and sensitive to the environment by creating environmental awareness in individuals, teaching them how to live, and improving their thinking skills.

Environmental education is the condition of preserving the natural life in the world and leaving a liveable environmental heritage to the next generations. "The basic philosophy of environmental education is to create sensitivity and awareness to global environmental problems that arise with the development of science and technology through education, to eliminate these problems by creating solutions" (Kaşot, 2018). According to this philosophy, the main guide for the universal environmental education program and environmental policies was determined at the "Intergovernmental Conference on Environmental Education" organized in Tbilisi in 1977. In the conference report, the main objectives of environmental education were determined within the framework of the titles of "awareness, knowledge, attitude, skills and participation" and the change and development of the behaviour of the individual, then the group and society towards the environment has been emphasized (Karakaş, 2020).

In the Report of the Tbilisi Conference, the objectives of environmental education based on individuals and society are;

- To ensure that individuals and societies gain awareness and sensitivity about all the environment and its problems with the title of consciousness;
- To provide individuals and societies with basic knowledge and experience about the environment and its problems with the title of information;
- With the title of attitude, to ensure that individuals and societies gain certain value judgments and sensitivity for the environment, and the desire to actively participate in protecting and improving the environment;
- To provide individuals and societies with skills to identify and solve environmental problems with the title of skills;
- With the title of participation, to provide individuals and societies with the opportunity to actively participate in efforts to find solutions to environmental problems from all levels (Ünal & Dımışkı, 1999, p. 144).

When the objectives of environmental education are examined, environmental education should be considered as a process of providing not only theoretical education to individuals but also developing sensitivity to the environment, exhibiting environmental protection behaviour, taking responsibility for solving environmental problems and contributing to the solution. This process first begins in the family, and then systematically continues at school. There is no compulsory course called "Environmental Education" in primary school institutions and later levels in Turkey, but this course can be taken as an elective at the following levels. Environmental education subjects are given directly in the current course with an interdisciplinary approach in the curriculum of Life Sciences, Science, and Social Studies Courses at the primary school level. Environmental education issues were indirectly addressed through reading texts in the Turkish lesson or through physical activities in the physical education game lesson (Karakaş, 2020). Apart from these courses, human responsibilities towards the environment are given directly within the scope of the Human Rights, Citizenship, and Democracy course (Ministry of National Education [MoNE], 2018).

A school is a place where an individual learns new information about the environment and develops skills, attitudes, and behaviour. In short, it is the only environment in which an individual can prepare for the natural

environment. The people who organize this environment are the teachers. Teachers are the people that students meet for the first time in the school environment and benefit from throughout the education process. This benefit can be achieved through modeling. Students take as an example all the behaviours, rhetoric, attitudes, problem-solving methods, and perspectives of moral and cultural values that their teachers exhibit when realizing their educational goals through modeling. Therefore, teachers should not forget that they are exemplary role models (Aksu, 2009).

Environmental education is a subject that has been studied in different fields in our country. When the studies on the subject are examined, it has been seen that there are different studies on environmental education in which the opinions of teachers and teacher candidates are taken (Aydın, 2008; Buhan, 2006; Çetkin, 2019; Demirkıran, 2015; Derman & Hacıeminoğlu, 2017; Erbasan & Erkol, 2020; Gül, Çobanoğlu, Aydoğmuş & Türk, 2018; Karakoçan, 2016; Sever & Yalçınkaya, 2013; Özkan, 2017; Toprak, 2017; Yılmaz, 2014).

Considering the studies examining the attitudes and views of teacher candidates on the environment and environmental education; It has been concluded that they are sensitive to environmental problems and environmental education (Demirkıran, 2015; Kızılay & Hamalosmanoğlu, 2020; Sever & Yalçınkaya, 2013). In the studies conducted with preschool teachers, the environmental awareness and awareness levels of preschool teachers were trying to be determined while their views on the environment were discussed. (Buhan, 2006; Özkan, 2017).

Studies with primary school teachers mostly reflect on environmental issues, environmental awareness, literacy levels, attitudes towards the environment, and their perspectives on environmental problems (Derman & Hacıeminoğlu, 2017; Erbasan & Erkol, 2020; Gül, Çobanoğlu, Aydoğmuş & Türk, 2018; Karakoçan, 2016; Toprak, 2017).

According to the common results of the studies, it was determined that the primary school teachers' attitudes towards the environment were high. Despite the different studies mentioned above, only one study was found with primary school teachers on environmental education and the adequacy of the program (Yılmaz, 2014). In addition, no study has been found in which the activities used by primary school teachers in environmental education were examined in terms of their environmental education goals. For this reason, examining the activities used by primary school teachers according to the main objectives of environmental education in the Tbilisi Declaration will make this study unique.

When we think about basic education, primary school teachers are the first teachers that students encounter, so their importance in their educational lives is quite large. It is important that primary school teachers, who are the factors that bring, develop and change many attitudes towards the environment on students, can express the aims of the environmental education course, their views on the methods and techniques they use in the lesson, evaluate the educational process and offer suggestions. Therefore, this research aims to examine the views of primary school teachers on environmental education and the activities they carry out in line with the main objectives of environmental education determined in the Declaration of the Tbilisi Conference.

The problem of the research is what the opinions of primary school teachers about environmental education are. The sub-problems determined according to the research problem are;

1. What are the opinions of primary school teachers about the importance of environmental education?
2. What are the views of primary school teachers about the aims of environmental education?
3. What is the frequency of classroom activities used by primary school teachers in environmental education and what are the factors affecting this frequency?
4. What is the frequency of out-of-class activities used by primary school teachers in environmental education and what are the factors affecting this frequency?
5. What are the classroom activities implemented by the primary school teachers in line with the objectives of environmental education determined in the Tbilisi Declaration?
6. What are the out-of-class activities implemented by the primary school teachers in line with the objectives of environmental education determined in the Tbilisi Declaration?

7. What are the methods and techniques used by primary school teachers in environmental education?
8. How can environmental education be given more effectively according to primary school teachers?

## METHOD

### Research Design

This study, which deals with the views of classroom teachers on environmental education, was designed as a qualitative instrumental case study. An instrumental case study is used to meet the need to obtain information about a specific situation, problem, or subject (Ozan-Leymun, Odabaşı, & Kabakçı-Yurdakul, 2017). This study, in which the opinions of classroom teachers about environmental education and the activities they carry out for environmental education are determined, is designed according to the instrumental case study model since there is only one case studied and this situation is limited to a certain time and data collection tools such as observation and interview.

### Study group

The study group consists of 24 class teachers working in a primary school affiliated with the Ministry of National Education. Convenience sampling was used in the selection of the study group. In this method, the researcher chooses the situation that is close to reaching (Yıldırım & Şimşek, 2021). The demographic characteristics of the primary class teachers in the study group are shown in Table 1.

**Table 1.** Characteristics of the Study Group

Category	f	%
<b>Gender</b>		
Female	13	54,2
Male	11	45,8
<b>Duty Place</b>		
Province	9	37,5
District	7	29,1
Village	8	33,3
<b>Age</b>		
21-25	6	25
26-30	9	37,5
31-35	2	8,3
36-40	3	12,5
41+	4	16,6
<b>Educational Status</b>		
bachelor degree	18	75
master's degree	6	25
<b>Years of Seniority</b>		
1-5 years	13	54,1
6-10 years	3	12,5
11-15 years	4	16,6
16 years and over	4	16,6
<b>Total</b>	<b>24</b>	<b>100</b>

When Table 1 is examined; The rate of female teachers participating in the research is 54.2%, while the rate of male teachers is 45.8%. When the distribution of teachers by age is examined, it is seen that the majority of them are between the ages of 26-30 (37.5%), and according to education level, the majority of them are

undergraduates (75%), and when the years of seniority are examined, it is seen that those with professional experience between 1-5 years are more (54%, 1).

### **Data Collection Tools**

Data were collected using a semi-structured interview form prepared by the researchers. During the preparation phase of the semi-structured interview form, consisting of 8 questions were drafted. Then, the interview form was presented to the opinion of 3 experts experienced in qualitative research. As a result of the feedback from the experts, the interview form was reduced to 5 questions. Interviews with the participants were made either on the phone or through online meeting applications due to the pandemic. The interviews were recorded after obtaining the necessary permissions. They were transcribed and stored by giving codes such as "T1, T2, T3..., T24".

### **Analysis of Data**

The data collected in the research were analyzed by the content analysis method. The main purpose of content analysis is to reach concepts and relationships that can explain the collected data or to objectively or systematically classify the messages and meanings contained in oral, written, and other materials, convert them into numbers and make inferences (Yıldırım & Şimşek, 2018). Codes, categories, and themes were created by the content analysis. The generated code, categories, and themes were sent to a field expert, and reliability between coders was ensured. To ensure this reliability, the reliability calculation of Miles & Huberman's (1994) [Reliability = Consensus / (Consensus + Disagreement)] was applied after the researchers were coded separately. For qualitative studies, the result of this calculation is 70% or more means that the analysis is reliable. As a result of the calculation, an agreement of 84% was achieved, and in the coding where there was a difference of opinion, the researchers achieved a consensus by performing the coding together. In addition, the codes obtained are presented in the findings section with the frequency of repetition (frequency) in tables and with direct quotations.

### **Research Ethics**

The approval of the ethics committee regarding the compliance of the research with the ethical rules was obtained from the Sivas Cumhuriyet University Legal Consultancy Office with the decision dated 03/08/2021 and numbered 62017.

## **FINDINGS**

In this section, the data analyzed within the framework of the main problem and sub-problems of the research are presented in order under headings.

### **Findings Related to the First Sub-Problem**

To determine the opinions of the primary school teachers on the importance of environmental education, the participants were asked "Is environmental education important? Why?" and the answers obtained are presented in Table 2.

When Table 2 is examined, it is seen that according to the opinions of classroom teachers, the importance of environmental education is categorized into three dimensions Cognitive, Affective, and Psychomotor skills. The views of "recognizing the environment" (9) and "education at an early age" (5) have been repeated on the importance of environmental education as a cognitive skill. According to this category, teachers' opinions are mostly related to getting to know the environment and the sample statements of classroom teachers about it are as follows; "The better we know the environment, the better we make our life quality." (T10), "students should get to know the environment where humans and other living things live better..." (T1). The following are the sample statements of classroom teachers that environmental education is essential at an early age., "...because they grow from the core." (T9), "as the twig is bent, so grows the tree." (T22). The codes that stand out in the importance of environmental education as affective skills are as follows, respectively; "environmental awareness" (8), "human and environmental interaction" (4) are mostly included, while the least mentioned is "acquisition of environmental values" (1).

According to this category, examples of teachers' views on environmental awareness are as follows; "...environmental awareness should be gained for a clean environment..." (T21), "...to raise individuals with high awareness..." (T7), and an example expression regarding human and environment interaction is "Man and the environment are an inseparable whole." (T19). In the importance of environmental education as psychomotor skills, creating the most liveable environment (10) was emphasized. The sample opinions of the teachers regarding this code are as follows; "...to leave a liveable environment for our children..." (T6), "...the way to leave a liveable environment is through environmental education" (T16).

**Table 2.** Views of Primary School Teachers on the Importance of Environmental Education

Category	Codes	f
<b>Environmental Education as Cognitive Skills</b>	Skills Getting to Know The Environment	9
	Early Age Education	5
<b>Environmental Education as Affective Skills</b>	Environmental Awareness	8
	Human and Environmental Interaction	4
	Developing An Attitude	3
	Contributing to the Development of Personality	3
	Environmental Sensitivity	3
	The Vital Element	3
	Responsibility	2
	Acquisition of Environmental Values	1
<b>Environmental Education as Psychomotor Skills</b>	Creating a Liveable Environment	10
	To Be Able to Solve Environmental Problems	7
	Protecting the Environment	7
	Bequeathing the Environment	2

When the opinions of the primary school teachers on the importance of environmental education were examined, their expectations on environmental education were mostly aimed at creating a liveable environment. However, the second most mentioned situation was getting to know the environment.

### Findings Regarding the Second Sub-Problem

To determine the opinions of the primary school teachers about the aims of environmental education, the participants were asked "What are the aims of environmental education in your opinion?" was asked, and the answers obtained are presented in Table 3.

When Table 3 is examined, it is seen that according to the opinions of primary school teachers, the goals of environmental education are categorized into three dimensions Distant, General, and Specific goals in the form of environmental education. As distant goals, the goals of environmental education are focused on solving environmental problems (7) and creating a liveable environment (6). The sample statements of primary school teachers about these codes are as follows; "...creating solutions to environmental problems is the most basic goal of environmental education." (T1), "...to leave a liveable environment for future generations." (T22).

As general goals, the codes that stand out in the goals of environmental education focused on informing (9) and transmission to future generations (7), respectively, while the least mentioned was developing skills related to the environment (4). According to this category, the sample opinions of teachers about the goals of information in environmental education are as follows; "Providing information about the environment in environmental education ..." (T1), "... for an individual to know the environment in which he lives, he needs to know it." (T13); according to the goal of transferring environmental education to future generations, teacher statements are as follows;" Leaving a clean, beautiful and developed environment for our future generations"

(Jul 17); an example expression for developing environmental skills is as follows "...to acquire the necessary skills..." (T14).

As specific goals, the most frequently included code in the objectives of environmental education was to gain environmental awareness (11), while the least ones are to benefit from the environment correctly (1), to gain environmental volunteerism (1), and to adapt to the environment (1). According to this category, the sample opinions of teachers regarding the purpose of raising environmental awareness in environmental education are as follows; "First of all, it should be aimed to create environmental awareness in the child. "(T14), "Raising environmental awareness." (T19).

**Table 3.** Goals of Environmental Education According to the Opinions of Primary School Teachers

Category	Codes	f
<b>Distant Goals</b>	Finding Solutions to Environmental Problems	7
	Creating a Liveable Environment	6
	Protecting the Environment	5
	Building a Sustainable Environment	4
	Taking Precautions Against Environmental Problems	2
	Ensuring Efficient Use of Resources	1
	Increasing Environmental Production	1
<b>Total</b>		26
<b>General Goals</b>	Informing	9
	Transfer to Future Generations	7
	Playing an Active Role Towards the Environment	5
	Interacting with the Environment	5
	Developing Environmental Skills	4
<b>Total</b>		30
<b>Specific Goals</b>	Raising Environmental Awareness	11
	Being Sensitive to the Environment	6
	Popularizing the Environment	2
	Being Able to Take Advantage of the Environment Correctly	1
	Adapting to the Environment	1
	Gaining Environmental Volunteerism	1
<b>Total</b>		22

### Findings Related to the Third Sub-problem

To determine the opinions of primary school teachers about the frequency of in-class activities used in environmental education and the reasons affecting this frequency, participants were asked, "Do you do in-class activities on environmental education? How often do you practice these activities, why?" The answers obtained are presented in Table 4.

Looking at Table 4, the frequency of implementation of classroom activities according to the opinions of primary school teachers regarding the activities they implement for environmental education is as follows; very often (9), often (3), and rarely (12).

The example reasons for primary school teachers who practice activities very often are as follows; "I often make reminders for the formation of this consciousness in children ..." (T1), " I always do in-class activities at least 2-3 times a week, this is due to my love and sensitivity towards the environment, and also because it attracts children's attention." (T5).

**Table 4.** Classroom Activities, The Frequency of These Activities, and the Reasons that Affect This Frequency.

Category	Codes	f	Participants
classroom	Very often	9	T1, T2, T5, T6, T11, T13, T14, T17, T19
	often	3	T20, T21, T22
	rarely	12	T3, T4, T7, T8, T9, T10, T12, T15, T16, T18, T23, T24
	never	-	-

The example reasons of teachers regarding the frequent implementation of activities are as follows; "As an environmentally concerned teacher, I have tried to use it frequently in my lessons." (T20), "I'm trying to implement classroom activities are often of different courses." (T21).

The opinions of the primary school teachers about the seldom implementation of the activities are as follows; "...as I focus on other lessons, I don't have the opportunity for an environmental activity very often." (T4), "I practice one or two events a month. Because there is only time left from the curriculum." (T12).

#### Findings Regarding the Fourth Sub-Problem

To determine the opinions of primary school teachers about the frequency of out-of-class activities used in environmental education and the reasons affecting this frequency, participants were asked "Do you do out-of-class activities for environmental education? How often do you practice these activities, why?" The answers obtained are presented in Table 5.

**Table 5.** Out of Class Activities, Frequency of These Activities, and Reasons Affecting This Frequency.

Category	Codes	f	Participants
out-of-class	Very often	6	T2, T5, T6, T11, T17, T19
	Often	2	Ö20, Ö22
	Rarely	13	T1, T3, T8, T9, T10, T12, T13, T14, T15, T18, T21, T23, T24
	Never	3	T4, T7, T16

When Table 5 is examined, the frequency of application of out-of-class activities applied by primary school teachers for environmental education is stated as very frequent (6), frequent (2), rare (13), and never (3) by the classroom teachers participating in the study. The example reasons of the primary school teachers who frequently implement activities are as follows; "...we organize activities for environmental education whenever we have the opportunity." (T2), "...we produce and implement more applications with my students." (T11). Examples of teachers' reasons for the frequent implementation of activities are as follows; "...at the same time, the physical conditions of the school where I worked were suitable for this." (T20), "I frequently apply it to raise environmental awareness in students." (T22). Examples of classroom teachers' views on rarely implementing activities are as follows; "Since the last two years have passed with the pandemic process, I could not include events often." (T10), "I can't practice out-of-class activities often. I can't do them because the school and environment opportunities are limited and the permission process takes longer." (T13). The reasons why the teachers do not implement any activities are as follows; "Since we live in a harsh climate, I cannot do the activities outside the classroom." (S7), "I can't organize an event. Since the curriculum is intense, we allocate more time to theoretical training." (T16).



### Findings Related to the Fifth Sub-Problem

To determine the in-class activities used by the primary school teachers in environmental education, the participants were asked "What activities do you do in the classroom for environmental education?". The answers obtained are presented in Table 6.

**Table 6.** Investigation of Classroom Activities in Line with the Environmental Education Objectives Determined in the Tbilisi Declaration

Category	Codes	f
<b>Awareness</b>	To Notice the Environmental Pollution	3
	waste awareness	3
<b>Total</b>		<b>6</b>
<b>Knowledge</b>	Theoretical Knowledge Transfer	8
	Watching Video	6
	Reading Book	1
	Reading Periodicals	1
<b>Total</b>		<b>16</b>
<b>Attitude</b>	Using Recyclable Materials	8
	Creating a Waste Bin	5
	Empathy Activity	2
	Cleanest Classroom Project	1
<b>Total</b>		<b>16</b>
<b>Skill</b>	Growing Plants in Pots	6
	Plant Care	6
	Painting	4
	Using Web 2.0 Tools	2
	Story Completion Event	1
<b>Total</b>		<b>19</b>
<b>Participation</b>	Making a Music Event	3
	Doing a Contamination Experiment	2
	Carrying out a Garbage Collection Event	2
	Preparing a Poster	1
	Playing Educational Games	1
<b>Total</b>		<b>9</b>

When Table 6 is examined, it is seen that the opinions of the primary school teachers about the in-class activities they implement for environmental education are categorized into five dimensions. Considering the example statements of the classroom teachers about the activities used for consciousness, the waste awareness activity is as follows; "...when they waste a page every day, I make them see and think about how many trees are destroyed every day and our forests are being destroyed." (T24), Considering the example statements of the primary school teachers about the activities used for consciousness, the waste awareness activity is as follows; "...when they waste a page every day, I make them see and think about how many trees are destroyed every day and our forests are being destroyed." (T24), the efficiency of noticing environmental pollution is as follows; "Students used to check the pollution in the classroom at the end of the day, thinking how bad the pollution was, and cleaned the classroom, thus creating a sense of cleanliness." (T10).

When we look at the sample expressions about the activities used by the classroom teachers for knowledge, it is the Theoretical Knowledge Activity that is most used and the example expression for this activity is as follows; "Until now, I have given theoretical information on course gains whenever possible." (T18) is the least used "Reading Periodicals Activity" and the example statement about this activity is "We regularly read various children's magazines." (S11).

When we look at the sample expressions about the activities used by the primary school teachers for attitude, the most used activity is to use recyclable materials, and the example expression for this activity is as follows; the lighting tool from waste materials, bottles, and stones marakas, ballet bar from the paper roll..." (T6). The least used is the cleanest classroom project activity and the example statement for this activity is as follows: "The cleanest classroom application aims to encourage keeping the school environment and the environment clean, starting from the classroom environment." (T11).

When we look at the sample expressions about the activities used by the primary school teachers for skill, the most used are planting in pots and the example statement about this activity is as follows; "We planted various vegetables (lettuce, parsley, arugula, onions, dill, etc.) in pots." (T19). The least used story completion activity and the example statement for this activity are as follows: "I have story completion activities done." (T2). When we look at the sample expressions about the activities used by the classroom teachers for participation, it is the most used music activity and the example statement about this activity is as follows; "We learned the song Fidanlar Ağaca and sang it together" (T22).

When we look at the sample expressions about the activities used by the primary school teachers for participation, it is the most used music activity and the example statement about this activity is as follows; "We learned the song Fidanlar Ağaca and sang it together" (T22). It is the least used educational game-playing activity, and the sample expression for this activity is as follows: "We tried to explain the terms from the nature and environment category that we created with each other, with the "Tell us" game in face-to-face education and the Gartic i.o game in distance education." (T11).

### **Findings Regarding the Sixth Sub-Problem**

To determine the out-of-class activities used by the classroom teachers in environmental education, the participants were asked "What activities do you do outside of the classroom for environmental education?". The answers obtained are presented in Table 7.

When Table 7 is examined, it is seen that the opinions of the primary school teachers about the out-of-class activities they implement for environmental education are categorized into five dimensions.

When we look at the sample expressions about the activities used by the primary school teachers for awareness, the most used code is trip activity and the example statement about this activity is as follows; "We do field trips; to forested and natural environments in our region. These activities enable children to create environmental awareness." (T17).

eTwinning project activity code is the least used and the example expression for this activity is as follows; "We carried out an eTwinning project in my class so that students become aware of the problems arising from climate change as soon as possible and start protecting our world at a younger age." (T19).

When we look at the sample expressions about the activities used by the classroom teachers for knowledge purposes, the most used codebook reading activity is as follows; "In the book 'Ağaç Atlası' prepared by Fatih Dikmen, children get an idea about the trees in the world" (T11). The least used code is the environmental education activity for parents, and the exemplary expression for this activity is "Conscious Family, Conscious Child". (T11).

When we look at the sample expressions about the activities used by the primary school teachers for attitude, the most used code is the activity of participating in environmental projects, and the example expression for this activity is as follows; We continue to support street animals with the "One Cup of Water, One Cup of Food Project." (T11). It is the least used waste collection activity, and the sample expression for this activity is as follows: "We collected the waste materials they saw and then sorted them out as papers, glasses, plastics, and we were throwing it into our waste bins in the classroom." (T5).

When we look at the sample expressions about the activities used by the primary school teachers for skill, one of the most used activities is the plant care activity and the example expression for this activity is as follows; "While growing plants, watering, weeding, etc. We made transactions." (T20). One of the least used activities is scouting activities, and the sample expression for this activity is as follows: "... I was doing scouting training, I used it when there was a suitable environment for the lesson we will teach."

**Table 7.** Investigation of Out-of-Class Activities in Line with the Environmental Education Objectives Determined in the Tbilisi Declaration

Category	Codes	f
<b>Awareness</b>	A Trip to Raise Awareness	4
	Creating Awareness by Observing Nature	2
	Environmental Awareness Activity	2
	eTwinning Project	1
<b>Total</b>		<b>9</b>
<b>Knowledge</b>	Excursion for Informational Purposes	3
	Reading Book	3
	Environmental Education for Parents	1
	Attending an Environmental Seminar	1
	Informative Nature Observation	1
<b>Total</b>		<b>9</b>
<b>Attitude</b>	Participating in Environmental Projects	2
	Waste Collection	1
<b>Total</b>		<b>3</b>
<b>Skill</b>	Growing Plants	4
	Plant Care	4
	Scouting Activities	2
	Preparing a Bird's Nest	2
<b>Total</b>		<b>12</b>
<b>Participation</b>	Planting Seedlings	11
	Doing Nature Cleaning	10
	Feeding Animals	5
	Making a Painting Exhibition	2
	Theatrical Performance	1
<b>Total</b>		<b>29</b>

When we look at the sample expressions about the activities used by the primary school teachers for participation, the sapling planting activity is the most used code and the sample expression about this activity is as follows; "We planted 15-20 saplings in the garden of our school." (T8). It is the least used theatrical performance and the example expression for this event is as follows; "We put into practice Sadrettin Celal's 'Anı Çiçekleri' theatre play together with my students." (T11).

### Findings Related to the Seventh Sub-Problem

To determine the methods and techniques used by classroom teachers in environmental education, the participants were asked "Which teaching methods and techniques do you use when giving environmental education?". The answers obtained are presented in Table 8.

When Table 8 is examined, it is seen that the opinions of primary school teachers about the methods and techniques applied in environmental education are categorized in one dimension.

The most preferred methods and techniques of primary school teachers in environmental education are Expression (9), Demonstration (9), Observation (7), Excursion (7), and Question-Answer (7) techniques, respectively. The least preferred method and technique are the Station Technique (1).

Sample statements about the methods and techniques used by primary school teachers are as follows; "I use the expression technique for children to learn concepts such as the environment and nature." (T1), "...I was preparing my materials at the sapling planting events, the children were gathering around me, observing me, and then doing it themselves." (T5), "...I make people observe how the world has become." (T7), "We make environmental trips to woodlands and natural environments in our region." (T17), "It is very good to guide children by the answers we receive in the form of a question and answer..." (T5), "...instead of using a verbal expression, the station technique is for them to discover..." (T21).

**Table 8.** Methods and Techniques Used by Primary School Teachers in Environmental Education

Category	Codes	f
<b>Teaching Methods and Techniques</b>	Demonstration	9
	Expression	9
	Question-answer	7
	Observation	7
	Excursion	7
	Brainstorming	6
	Argument	5
	Performance	5
	Case study	4
	Experiment	3
	Creative drama	2
	Project	2
	Problem-solving	2
	Educational Game	2
	Drama	2
	Station Technique	1
	Six thinking hats	1

### Findings Related to the Eighth Sub-problem

To determine the suggestions of primary school teachers for environmental education, the participants were asked "How should environmental education be provided more effectively?". The answers obtained are presented in Table 9.

**Table 9.** Recommendations of Primary School Teachers for Environmental Education

Category	Codes	f
<b>Recommendations for Teachers</b>	Environmental Education Should Be Activity-Based	12
	Environmental Education Should Be Moved Out of the Classroom	4
	Teachers Should Be Provided with In-Service Environmental Education	3
<b>Recommendations for Pre-Service Teachers</b>	Practice-Based Environmental Education Should Be Given to Pre-Service Teachers	2
	Environmental Education Should Be Provided to Pre-Service Teachers by Disciplinary Method	1
<b>Recommendations for Parents</b>	Environmental Awareness Should Be Gained in the Family	3
<b>Recommendations for the Program</b>	Environmental Education Should Be a Separate Course	10
	Environmental Education Should Be Given By Experts In The Field	6
	Environmental Awareness Should be Raised in the Family	3
	Environmental Education Should Be Behaviour-Based	3
	School-Family-Teacher Collaboration should be in Environmental Education	2

<b>Recommendations for Educational Administrators</b>	Permit Procedures Should be Reduced in Environmental Education Practices	1
<b>Recommendations for Educational Policies</b>	Education Should Be Started at an Early Age	3
	Projects Related to Environmental Education Should be Supported	3

When Table 9 is examined, it is seen that the codes obtained from the opinions of primary school teachers on the more effective delivery of environmental education are categorized into six dimensions. The opinions of primary school teachers are most often as follows; environmental education should be activity-based (12), environmental education should be a separate course (10), and it should be taught by experts in the field of environmental education (6).

When the findings are examined, it is seen that the environmental education program is not qualified to meet the needs, therefore, the suggestions about the teacher's views on the program of the course come to the fore. The environmental education program should be rearranged to cover all educational elements.

### CONCLUSION, DISCUSSION AND RECOMMENDATIONS

The research findings were examined in line with the opinions of primary school teachers about environmental education and classified as the importance and aims of environmental education, the activities used in this education, the teaching methods and techniques applied, and the teachers' suggestions for more effective environmental education. This research has the quality to contribute to the field since there are very few studies on environmental education regarding the views of primary school teachers.

When we look at the opinions of the primary school teachers on the importance of environmental education, their expectations on environmental education are weighted toward creating a liveable environment. However, the second most mentioned issue was getting to know the environment. The main way to make nature and the environment liveable is to know the environment. The studies of Kızılay & Hamalosmanoğlu (2020), are similar to the opinion of the teacher candidates that education is very important and that the solution to environmental problems can be reduced by environmental education. In this context, environmental education is very important in terms of raising awareness about nature and creating a liveable environment.

In basic education, students spend a lot of time with their primary school teachers. Therefore, the awareness of the teachers about the importance of environmental education is valuable for the environment inherited from future generations. Primary school teachers see the aims of environmental education as raising environmental awareness, being sensitive to the environment, informing, transferring them to future generations, producing solutions to environmental problems, and creating a liveable environment. It has been determined that the views of primary school teachers on the objectives of environmental education are in line with the objectives of environmental education stated at the Tbilisi Conference. In another study conducted with primary class teachers, it was seen that teachers used similar expressions such as "knowledge, awareness, attitude and active participation" when describing the objectives of environmental education (Karakoçan, 2016).

Regarding the activities applied in environmental education, it is seen that the primary school teachers mostly apply in-class activities. In parallel with the result of this study; In the research of Karakoçan (2016), it was seen that classroom teachers mostly included in-class experiences in environmental education. According to the results of the research, it is thought that the reasons such as the fact that the classroom is more reliable compared to the out-of-class environments, providing instant control, and being economical in terms of time and effort lead teachers to practice more in the classroom.

Primary school teachers listed the reasons for choosing non-classroom activities less in environmental education as the intensity of the gains, however, the lack of time and facilities, and the need for formal procedures. In the studies of Aydın & Ersoy (2013), primary school teachers also stated the reasons for not being able to conduct a trip-observation activity as an out-of-class activity as "the process of obtaining

permission is long, there is a lack of time and opportunities". When the answers of the teachers are evaluated, the insufficiency of the given time despite the intensity of the current teaching programs, and the length of the leave processes are important obstacles for the primary school teachers to carry out these activities. In this context, resolving some of the obstacles will encourage primary school teachers to engage in extracurricular activities and increase the frequency of teachers doing these activities.

In this study, it was concluded that primary school teachers applied different in-class and out-of-class activities in environmental education. In classroom activities, the most common activities are using recyclable materials, transferring theoretical knowledge, watching videos, and growing and maintaining plants in pots. This result is also in Karakoçan's (2016) research as the activities used by teachers in the classroom; collecting materials to be evaluated in recycling, watching movies, and growing flowers. In extracurricular activities, planting saplings, cleaning nature, growing plants, and taking care of them were the most prominent.

This result was again listed in Karakoçan's (2016) research as planting trees, cleaning the environment, and caring for and protecting trees as activities that teachers use outside of the classroom.

Despite the different study groups whose opinions were collected in two separate studies, the reason for the result that similar activities were used can be shown as the primary school teaching program provided teachers with a common perspective. Although primary school teachers have high attitudes towards environmental education, it is observed that they are weak in using different activities while applying this education to practice. Participation in the objectives of environmental education prioritizes the protection and development of nature and the creation of a sustainable environment and society. When teachers' opinions are examined, it is seen that out-of-class activities are more likely to ensure the participation of students. Therefore, out-of-class activities have a very important place in the realization of environmental education goals. It is seen that the activities carried out by the primary school teachers are aimed at realizing the environmental education objectives set in the Tbilisi Declaration, and besides, they mostly include activities in the classroom that are suitable for knowledge, attitude, and skill objectives.

According to the opinions about the teaching methods and techniques applied in environmental education, it is seen that most the teachers apply the demonstration and excursion technique to ensure that the students learn by doing and experiencing, in addition to the lecture, question, and answer technique in this lesson. In the study of Karakoçan (2016), it was stated that one of the techniques most used by primary school teachers in environmental education is the question-answer technique. In addition, it has been revealed that teachers apply different methods and techniques to make environmental education more enjoyable, attract students' attention, have long-lasting learning experiences, and gain awareness. This result differs from the conclusion that Yılmaz (2014) put forward in his study that environmental education is generally provided by transferring theoretical knowledge without being practical at the primary school level.

Primary school teachers are expected to be willing to apply different methods and techniques to be competent in the field of environmental education and to provide a more effective and permanent education. The suggestions of primary school teachers on how to give environmental education more effectively are as follows; environmental education should be activity-based, environmental education should be a separate course, and it should be given by experts in the field of environmental education. According to these results, the finding that environmental education should be activity-based is in line with Tayfur's (2008) view that environment-related activities should be increased. The finding that environmental education should be a separate course is in parallel with the result of Kimaryo (2011) that environmental education should be an independent course according to teachers. Although the environment is the only element in the world, it has been determined that it is a disadvantage that it is not presented to future generations as a separate discipline in our country and in many different countries.

The following recommendations are presented following the results of the study.

1. The purpose, importance of environmental education, and the activities used in the courses are revealed in this study. According to the results of the research, it is recommended that environmental education should be taught as a separate course.
2. Considering the importance of providing environmental education at an early age, a study unit on environmental education should be added to the primary science curriculum.
3. In the education of primary school teacher candidates, it can be suggested that the education related to environmental education should be designed in an interdisciplinary way, and presented to learners through student-centered approaches.
4. It is recommended that the primary class teachers who provide environmental education need in-service training provided by experts in the field to increase their environmental awareness, display up-to-date approaches to environmental education, and produce active solutions to environmental problems.
5. It may be suggested to attach importance to teacher-parent-school cooperation to provide environmental education efficiently and effectively.
6. Considering that the environment is a vital element, environmental education cannot be limited to the classroom but can be provided with activities to be carried out in nature and real life.

### Statement of the Researcher(s)

In this section, you are expected to declare information on the following topics.

#### Statement of the contribution rate of the researchers:

The researchers contributed equally to the research and concluded the study.

**Conflict statement:** There was no conflict between the researchers.

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