

## PAPER DETAILS

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## Ecological Citizen According to Pre-service Teachers<sup>1</sup>

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**Abstract:** An ecological citizen is a person who protects the rights of nature as well as his rights and takes responsibility. Increasing pollution and population in the last century have seriously damaged the environment and affected nature more negatively than ever. Raising ecological citizens is essential in minimizing this damage through the responsibilities they assume. The knowledge and perceptions of teacher candidates who will educate our future on this subject will directly serve the education of ecological citizens. In this context, the primary purpose of the research is to determine the meanings that prospective teachers attribute to the concept of ecological citizenship. In this context, the study was conducted with the phenomenology pattern, one of the qualitative research designs. The research participants comprised 15 teacher candidates studying at a university in Istanbul. Participants were determined using the easily accessible sampling method. Data were collected using a semi-structured interview form prepared by the researchers and analyzed with content analysis. According to the findings, the statements of the prospective teachers were explained within the framework of four themes. These themes include "Who is an ecological citizen?" "The characteristics of an ecological citizen, the values that an ecological citizen should have, and the skills that an ecological citizen should have."

### Key Words:

Environmental education,  
Nature education  
Values,  
Skills

### Öğretmen Adaylarına Göre Ekolojik Vatandaş

**Öz:** Ekolojik vatandaş kendi haklarını koruduğu gibi doğanın haklarını da koruyan ve sorumluluk alan kişidir. Son yüzyılda artan kirlilik ve nüfus çevreye ciddi oranda zarar vermiş ve doğayı hiç olmadığı kadar olumsuz etkilemiştir. Ekolojik vatandaşların yetiştirilmesi üstlendikleri sorumluluklarla bu zararın en aza indirme adına önemlidir. Geleceğimizi yetiştirecek öğretmen adayların bu konu hakkında bilgileri ve algıları ise ekolojik vatandaşların yetişmesine doğrudan hizmet edecektir. Bu bağlamda araştırmanın temel amacı öğretmen adaylarının ekolojik vatandaşlık kavramına yükledikleri anlamların belirlenmesidir. Bu kapsamda çalışma nitel araştırma desenlerinden fenomenoloji deseni ile yürütülmüştür. Araştırmanın katılımcılarını, İstanbul'da bir üniversitede öğrenim gören 15 öğretmen adayı oluşturmaktadır. Katılımcılar kolay ulaşılabilir örneklem belirleme metodu kullanılarak belirlenmiştir. Veriler araştırmacılar tarafından hazırlanan yarı yapılandırılmış görüşme formuyla toplanmış ve içerik analizi ile analiz edilmiştir. Elde edilen bulgulara göre öğretmen adaylarının ifadeleri dört tema çerçevesinde açıklanmıştır. Bu temalar, "ekolojik vatandaş kimdir? ekolojik vatandaşın özellikleri, ekolojik vatandaşta bulunması gereken değerler ve ekolojik vatandaşta bulunması gereken beceriler" olarak ifade edilmiştir.

### Anahtar Kelimeler:

Çevre eğitimi,  
Doğa eğitimi,  
Değerler,  
Beceriler

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## INTRODUCTION

The French Revolution's understanding of the nation-state and the nationalist movement increased the significance of citizenship. Each nation has uniquely experienced this. For instance, while citizenship based on ethnic origin is prevalent in Germany, citizenship that accords equal rights to all members of society regardless of language, religion, or race has taken hold in France (Tuğcu, 2019). In other words, citizenship has gained prominence as a way to describe the state of being a citizen and the fact that someone who lives within the boundaries of a nation has obligations beyond the private communities to which he belongs (Ünsal, 1998). In this context, citizenship has been defined as a public concept that includes various forms of belonging, position, and sensitivity and has emerged from the state model's legal and political context (Üstel, 2004).

Globalization has recently made communication simpler across borders, and human interaction has increased. There are now new definitions and interpretations of citizenship due to this circumstance. The concept of citizenship has been ensured to cover citizens' issues and behaviors (Uysal, 2018). In particular, society has been based on the citizen's will since the second half of the 20th century. Citizenship education, which, according to Dobson (2003), teaches only the individual's obligations to the institutions and organizations in his society, initially brought about a change. It has been predicted that citizens have some responsibilities towards the environment and environmental issues, in addition to some ecological concerns that surfaced after the Industrial Revolution. Ecological citizenship, which addresses environmental rights and some responsibilities in the individual and public spheres and integrates it with citizenship identity, must be revealed in this context.

### Ecological Citizenship

Since the beginning, people have interacted with one another and their surroundings. Over time, because of this interaction, various environmental issues have arisen. Environmental issues have become more urgent due to increased urban populations, industrialization, and resource consumption. Environmental issues have started to lower living things' quality of life as environmental catastrophes multiply. Environmental catastrophes, in Spannring (2019) opinion, have compelled scientists to conduct more research on ecology, leading to the concept of ecological citizenship's emergence and growth in this field of study. When the literature is examined, researchers assert that the consumption-based economic system disconnects people from nature and their roots, which they believe to be one of the causes of ecological disasters. The only option for this issue's resolution is to abandon this continuous consumption-focused citizenship stance. Environmental catastrophes can be avoided with the emergence of a new ecological citizenry (Carson, 2011). For a more livable world, reducing environmental issues and cultivating environmentally conscious citizens are necessary (Gough & Scott, 2005; Kelly & Abel, 2010). Huckle contends that educating people about environmental citizenship is crucial for the future of our planet (Huckle, 2014). In this context, he defined ecological citizenship as environmental citizenship that emerged with technological advancements and economic growth in our world, along with the rights and obligations that ensure people's well-being and the requirement for security (Flynn et al., 2008).

The definition of ecological citizenship given in the literature is as follows: "Knowing their own rights, knowing the rights of nature, encouraging people to take responsibility for environmental issues, exhibiting participatory behavior towards environmental problems, observing justice, supporting environmental institutions and organizations, reducing carbon footprint, and protecting the world for future generations." According to various definitions, it is "citizens who provide sustainability and are conscious of the need to use resources equally all over the world" (Agyeman & Evans, 2005; Dobson, 2003; Karatekin ve Uysal, 2018; Nash & Lewis, 2005; Jagers & Matti, 2010). Put another way, "Ecological citizenship" can be viewed as a reason to protect the environment (Güldoğan, 2007).

Individuals' attitudes and actions impact the environment, and for this impact to be positive, every person living on the planet needs to be aware of its effects, work together, and adopt an ecological mindset (Özden & Öztürk, 2019). Ecological citizens can exercise or forego some rights (Szczepanski, 2005). Ecological citizenship is a form of citizenship that seeks solutions to specific environmental issues (Latta & Garside, 2005). The goals of environmental education should coincide with the definitions of ecological citizenship for the process of finding solutions to environmental problems to have the desired impact (Uysal, 2018). The Sustainable Development Research Network (SDRN) has listed the following characteristics that an ecological citizen should possess (Uysal, 2018);

1. It believes that sustainable environmental development meets modernization. Based on this belief, people have an alternative environmental understanding that also considers the food sources of animals and other living things in nature.
2. The ecological citizen believes that environmental improvement for the benefit of the environment is combined with joint modernization and strives to maintain it. Considering all the living species in the environment, it proposes solutions against climate change and environmental issues that may pose a risk.
3. The ecological citizen believes acting ethically is essential for demonstrating eco-behaviors.
4. Environmental citizens believe in understanding justice that covers their local environment and the world globally.
5. An ecological citizen differs from other citizens in specific actions.
6. While the individual's duties towards other individuals and their environment will be revealed in the conventional citizenship understanding, the rights, responsibilities, and participation towards all living species in nature will be revealed in the ecological citizenship understanding that will emerge. Ecological citizenship is discussed in the relevant literature with the dimensions of participation, responsibility, sustainability, rights, and justice. Brief literature on these concepts is presented below.

The responsibility dimension's foundation is people reaping the benefits of the resources that nature provides for them (Skill, 2012). In other words, people who conserve energy daily and act responsibly by emphasizing recycling work to protect the environment (Dobson, 2003). Sustainability: Ecological citizens actively ensure environmental sustainability by reining their unsustainable consumption patterns and displaying attitudes that aim to improve the environment (Evans, 2011). Participation: According to Mengsi and Zhengke (2018), an ecological citizen actively engages in environmental protection initiatives and is environmentally conscious to improve the state of nature. In addition to his duties and responsibilities related to the environment, he is also a proactive participant in pinpointing the underlying causes of environmental issues. He eagerly works on these issues to advance his skills (Hadjichambis & Reis, 2020). Right and Justice: According to Wolf (2007), right and justice refer to the growth of a strong sense of justice toward other people, living things, and the environment. Justice is the first moral quality an ecological citizen should possess in this situation (Hayward, 2006; Kennedy, 2011).

### **Purpose of the Study**

Teachers in educational institutions have a big job teaching kids about ecological citizenship. Finding out the views of those who will be teachers in the future on ecological citizenship is crucial in this context. The current objective of the study is to ascertain the ecological citizenship levels of pre-service teachers from various branches enrolled in the faculty of education.

## **METHOD**

### **Model of the Research**

Phenomenology, one of the qualitative research designs, was used to determine the ecological citizenship perceptions of teacher candidates. In social sciences, phenomenology collects data about our daily experiences and explains concepts, events, and situations (Merriam, 2009; Sönmez ve Alacapınar, 2016).

### **Participants and Scope of the Study**

This study's participants are pre-service teachers enrolled at a university's education faculty in Istanbul and selected using an easily accessible sampling method. Detailed data on study participants are shown in Table 1.

**Table 1***Demographic Information on Participants*

Participant Code	Age	Gender	Grade Level	Department of Education
PTC-1	19	Male	1	Primary School Teacher
PTC-2	19	Female	1	Pre-School Teacher
PTC-3	21	Female	2	Social Studies Teacher
PTC-4	21	Female	3	Primary School Teacher
PTC-5	22	Male	3	Primary School Teacher
PTC-6	19	Female	1	Primary School Teacher
PTC-7	22	Male	3	Science Teacher
PTC-8	23	Male	4	Primary School Teacher
PTC-9	20	Female	2	Social Studies Teacher
PTC-10	22	Female	4	Social Studies Teacher
PTC-11	20	Male	2	Science Teacher
PTC-12	23	Female	4	Primary School Teacher
PTC-13	20	Female	2	Science Teacher
PTC-14	21	Male	3	Social Studies Teacher
PTC-15	22	Female	4	Pre-School Teacher

**Data Collection Tool**

*Semi-Structured Interview Form:* For data collection in the study, we utilized a semi-structured interview form. The semi-structured interview is a technique in which the researcher asks predetermined questions and can ask various probe questions during data collection (Merriam, 2009; Patton, 2015). During the development of the interview form, relevant literature was also examined. During the literature review, our attention was directed towards the contextual aspects of environment, ecology, and citizenship. The current analysis prioritized the examination of both domestic and international academic literature about ecological citizenship. As a result of our research, eleven interview questions were prepared. Expert opinion was also taken for the questions we prepared. A collective of eight professionals was selected to provide their professional opinions. The specialists were chosen based on their doctorates in science education and social studies education and their professional experience in ecology and environmental education. Professionals in other disciplines, including ecology and citizenship, were also actively engaged in their respective domains. In addition, a pilot application was conducted with three teacher candidates to evaluate the interview questions' clarity, comprehensibility, and suitability. As a result of the feedback, we received from experts and pilot practices, the interview form was finalized. In the final version of the form, there are seven open-ended questions, such as "Can you explain what qualities an ecological citizen should possess?"

**Data Collection Process**

The study's data was collected through semi-structured interview forms prepared by the researchers (Sönmez ve Alacapınar, 2016). The individuals being interviewed can ask and respond to questions during the interview. In addition, this technique provides the researcher with various options for asking relevant questions during the interview. By the nature of the research, we also added probe questions to increase the variety of data collected during the interview and to elucidate the participants' perspectives. Probes are designed to elicit more information about the subject's specifics, elicit a more thorough explanation of the topic, or elicit relevant examples (Merriam, 2009). For the research, face-to-face interviews with the participants were conducted in suitable, noise-free environments. Interview data were recorded with a voice recorder with the participants' permission. The average duration of participant interviews was 21 minutes. The interviews were conducted independently. No third parties were involved in the research.

**Analysis of Data**

The data collected throughout the research process was analyzed using descriptive content analysis. Content analysis is expressed as scanning qualitative texts by repetitive words and themes, as well as reducing and interpreting qualitative data to qualitative data to determine their meaning by reducing the volume of qualitative material (Patton, 2015). In this context, data analysis was carried out in three stages. In the first stage, all the data was read by the researchers. Data coding processes and the themes created through these codes were determined in the second stage. During the coding process, the codes determined by the researchers were checked by three experts. In the third and final stage, the findings obtained in the context of

the data were reported. Additionally, using Miles and Huberman's (1994) formula, it was determined that the inter-coder agreement regarding the themes we discussed was 0.79.

The identities of the research participants were not disclosed to ensure participant safety. Participants' identities are presented in the context of the "PTC" code. The PTC code was created with the abbreviation "participating teacher candidates." For example, "PTC-1" represents the first participant and..... "PTC-15" represents the fifteenth participant.

### Reliability and Validity

To ensure the validity and reliability of the research, procedures such as long-term interaction, diversification, expert review, detailed explanation, having each stage of the research examined by an experienced expert, and recording the data using a voice recorder were applied. Additionally, triangulation of data sources and researchers was used to ensure the validity of participant data (Stake, 2010). Thanks to triangulation, all researchers could examine the data in depth. The study also paid attention to evidence of reliability, such as the researcher stating his or her bias (the researchers served as a tool in collecting and analyzing the data) and the fact that the study data was checked by a different researcher (consensus).

## FINDINGS

Pre-service teachers' perspectives on ecological citizenship are presented within four themes. These include "Who is an environmental citizen? The characteristics of the ecological citizen, the values and skills that should be present in the ecological citizen.

### Ecological Citizen

This theme was created within the scope of the answers given by the teacher candidates to one of the interview questions (Who is an ecological citizen in your opinion? Can you explain?). The theme created in line with the opinions of teacher candidates is explained in Table 2.

**Table 2**

*Ecological Citizens According to Pre-service Teachers*

Theme	Codes	f
Who is an Ecological Citizen?	The individual who understands the rights and responsibilities of nature.	9
	Is a person who works actively for nature.	9
	Is a person who is sensitive to the environment.	8
	Is a person who feels a connection to nature.	8
	Is a person who preserves nature for future generations.	7
	Is a person with environmental awareness?	7
	Is a person sensitive to the assets in the environment?	7
	He is a person who loves nature.	6
	Is a person who is a conscientious consumer.	6
	Is a person who is aware of the rights of nature.	5
	He/She is the person who supports environmentally friendly campaigns	5
	Shoppers who favor environmentally conscious products.	4
	A person is aware of the harm he causes to nature because of his actions.	4
	A person who can cultivate a healthy relationship with nature.	3
	The individual who purchases recyclable products.	2
	The individual who shops according to his requirements.	1
	The individual who ensures sustainability.	1
	A person capable of cooperating with stakeholders when.	1
	The individual who understands the rights and responsibilities of nature.	1

Pre-service teachers provided various responses to the question, "Who is an ecological citizen?" These answers are "the person who knows his rights and responsibilities, the person who is environmentally conscious, the person who feels connected to nature, the person who actively works for the environment, the person who protects the environment for future generations, the person who is environmentally conscious, the person who is sensitive to the environmental assets, the person who loves nature, and the conscious consumer." A person who knows the rights of nature, who supports environmentally friendly campaigns, who prefers environmentally friendly products in his shopping, who takes responsibility for protecting the

environment, who is concerned about environmental issues, who is aware of the damage he causes to nature while consuming, who purchases organic foods, who purchases recyclable products, and who shops according to the principles of sustainability. According to Table 3, most responses to the question "Who is an ecological citizen?" express the codes of nature-aware and rights-aware citizens. The most accurate explanation in the literature is the PTC-3 statement that "*ecological citizens are individuals who understand their rights and responsibilities as well as the rights and responsibilities of nature*" as an example. The following statements from pre-service teachers support these conclusions:

*PTC-9: "Ecological citizen is a person who loves nature and does not unconsciously use nature's resources. It does not compromise to meet its own needs, but it also considers the needs of future generations".*

*PTC-1 "Ecological citizens are individuals who are environmentally literate and sensitive to their environment."*

*PTC-12: "He is a person who questions his every behavior and thinks about the result of his actions. If I do this, who will be harmed in nature? What should I do? What should I not do? It is a citizen who is concerned about issues related to nature."*

According to pre-service teachers' views, who is an ecological citizen? We responded to the question and explained it in the context of the topic. What characteristics define an ecological citizen? Following is an explanation of the question's answer in the context of pre-service teachers' perspectives.

### Characteristics of Ecological Citizen

This theme is "What are the characteristics that an ecological citizen should have, according to teacher candidates?" It was created in the context of the question. Detailed information about this theme is explained in Table 3.

**Table 3**

*Characteristics of Ecological Citizens According to Pre-service Teachers*

Theme	Codes	f
What are the Characteristics of the Ecological Citizen?	Loves nature	10
	He is aware of his environment	7
	Treats its environment with respect	6
	Understand the language of the environment	6
	He is fair to his environment	6
	Realizes natural and artificial beauty	6
	Has problem-solving skills	5
	Is scientifically literate	5
	Observes environmental ethics	4
	Does not act according to its interests	4
	Is environmentally literate	4
	Can empathize	3
	He knows the consequences of his actions	3
	Understands the concept of sustainability	3
	Water literate (conserves and uses water efficiently)	2
	Recycling is literate	2
	Does not see nature as a rival	2
	It is aware of its responsibilities	1
	Has self-control and judgment capacity	1
	Has environmental concerns	1
	It is environmentally friendly	1
	Supports eco projects	1
	Connects with Nature	1
	Protects nature for future generations	1
	It is aware that it needs nature	1

Pre-service teachers stated that there are some qualities that an ecological citizen should have. Pre-service teachers stated that individuals who perceive themselves as ecological citizens should know about nature and the environment and reflect this knowledge in their behaviors. Ecological citizens, according to pre-service teachers, "love nature, are aware of their environment, treat their environment with respect, understand the language of the environment, is fair to their environment, recognize natural and artificial beauty, have problem-solving skills, is scientifically literate, observes environmental ethics, does not act in their interests, is environmentally literate, can empathize, knows the language of the environment, knows the language of the environment, knows the language. Some pre-service teachers' statements that support these judgments are as follows:

*PTC-3: "The most important quality that an ecological citizen should have is to realize that he needs nature and learn to live with nature instead of fighting it."*

*PTC-14 "Loves nature and respects what nature gives. It also ensures sustainability in the context of their own and future generations' needs".*

*PTC-4 "understands the importance of water and regulates its behavior knowing that our country is not a water-rich country but a water-poor country."*

The preceding section lists the characteristics that ecological citizens should possess in the context of pre-service teachers' opinions. Values that should be found in ecological citizens according to pre-service teachers are presented below.

### Values to be Found in Ecological Citizens

Pre-service teachers stated that individuals who describe themselves as ecological citizens should have some values. Detailed information about these values is presented in Table 4.

**Table 4**

*Values Required in Ecological Citizens According to Pre-service Teachers*

Theme	Codes	Sample Evidence	f
Values to be found in Ecological Citizens	• Responsibility	<i>... is aware of its responsibilities (PTC-12)</i>	5
	• Love	<i>... everything starts with loving (PTC-8)</i>	5
	• Sensitivity	<i>... more sensitive to the environment (PTC-1)</i>	5
	• Respect	<i>... respects nature (PTC-4)</i>	4
	• Being Fair	<i>... treats equally in the use of resources (PTC-6)</i>	4
	• Self-Judgment	<i>... looks back at what we do to the world (PTC-10)</i>	4
	• Patriotic	<i>... to love the country, to love the land ... (PTC-11)</i>	4
	• Helpful	<i>... helps nature heal itself (PTC-2)</i>	3
	• Sharing	<i>... advocates equitable use of natural resources (PTC-14)</i>	2
	• Be Loyal	<i>... gives room for what nature gives (PTC-15)</i>	2
	• Be Patient	<i>... behaves stably (PTC-4)</i>	2
	• Tolerance	<i>... has understanding (PTC-1)</i>	2
	• Friendship	<i>... be friendly with nature (PTC-5)</i>	1
	• Sincerity	<i>... acts friendly (PTC-6)</i>	1
	• Trust	<i>... relies on nature (PTC-12)</i>	1
	• Saving	<i>... saves money (PTC-9)</i>	1
	• Solidarity	<i>... works in solidarity (PTC-7)</i>	1
	• Mercy	<i>... treats living things with compassion (PTC-14)</i>	1
	• Aesthetic	<i>... is aware of aesthetics in nature (PTC-5)</i>	1
	• Optimism	<i>... trusts better things to come for the future (PTC-2)</i>	1

Teachers-to-be asserted that ecological citizens should have specific values. These values include "responsibility, love, sensitivity, respect, fairness, self-judgment, patriotism, helpfulness, sharing, loyalty, patience, tolerance, friendship, sincerity, trust, frugality, solidarity, compassion, aesthetics, and optimism." According to pre-service teachers, an individual who identifies as an ecological citizen should possess these values. For example, PTC-7 states, "If a person really says he is an ecological citizen, he should love nature, respect nature's rights, and give something in return for what he received from nature. In other words, it should



have environmental values" that support this situation. The following statements from pre-service teachers support these conclusions:

PTC-11 "Ecological citizens should help living things in nature. He should treat living things with compassion and respect that they have the right to life. He must not only hear but act and do his best to protect them".

PTC-15: "We should be friendly with nature. We should love the trees, the birds, everything, animate or inanimate. Because nature gives us everything, and we should organize our lives by being aware of this".

PTC-6: "Everyone has a purpose for creation. Our aim is not to fight nature. We get everything that happens in nature by patiently waiting. If we are truly sincere, nature will do its best to mother us against nature".

In the section above, we discussed the values that ecological citizens should possess in the context of pre-service teachers' perspectives. The knowledge and abilities that eco-citizens should possess are described below.

### Skills Required in Ecological Citizens

According to pre-service teachers, eco-citizens should possess the following competencies. According to pre-service teachers, these skills are essential for comprehending nature and environmental issues, raising awareness, and motivating individuals to act. These skills are described in Table 5.

**Table 5**

*Skills Required in Ecological Citizens According to Pre-service Teachers*

Theme	Codes	Sample Evidence	f
Skills Required for Ecological Citizens	•Empathy	... empathizes (PTC-6)	8
	•Problem-Solving	... problem solver (PTC-1)	7
	•Critical Thinking	... is critical (PTC-1)	5
	•Ability to Think Analytically	... solve big problems little by little (PTC-9)	3
	•Environmental Literacy	... understands the language of the environment (PTC-10)	3
	•Observation	... monitors environmental degradation (PTC-7)	3
	•Nature Conservation	... protect nature (PTC-1)	3
	•Self-Knowledge	... recognizes itself (PTC-8)	2
	•Be Aware of Your Rights	... knows their rights (PTC-14)	2
	•Recognizing the Rights of Nature	... respects the rights of nature (PTC-12)	2
	•Partnership	... collaborates with stakeholders (PTC-8)	2
	•Sustainability	... ensures sustainability (PTC-3)	1
	•Be Conscious	... is conscious (PTC-4)	1
	•Innovative Thinking	... innovative and environmental thinker (PTC-15)	1
	•Obeying the Rules	... a fire does not burn where it should not (PTC-5)	1
	•Perceiving Change and Continuity	... changes in nature (PTC-11)	1
	•Efficient Use of Resources	... uses natural resources efficiently (PTC-2)	1
	•Ability to Do Research	... conducts research for environmental improvement (PTC-13)	1
	•Communication	... communicates (PTC-4)	1

According to pre-service teachers, individuals who self-identify as eco-citizens must possess specific skills. These abilities include empathy, problem-solving, critical thinking, analytical thinking, environmental literacy, observation, nature protection, self-awareness, awareness of rights, recognition of the rights of nature, cooperation, perception of sustainability, consciousness, innovative thinking, and adherence to the rules. They include perceiving change and continuity, utilizing resources effectively, and conducting research. Table 5 indicates empathy and problem-solving are the two most essential skills for an ecological citizen. According to pre-service teachers, ecological citizens should be individuals who can generate solutions to the natural and environmental problems they encounter and can empathize by placing themselves in the position of nature's beings. The PTC-13 statement, "It is necessary to use resources efficiently, conserve energy, and

conduct research on how to do these things," is essential for demonstrating the skills ecological citizens should possess. Some pre-service teachers' statements that support these judgments are as follows:

*PTC-1: "The ecological citizen should be able to solve the problems he encounters. He should know that the resources of the world are limited, and he should be able to criticize himself. No life on another planet, at least still not found. We have one world, nothing is regulated by individual effort, we must act as a community".*

*PTC-7 "Ecological citizen protects nature as well as his family. Just as it keeps your house clean, it does not pollute the nature and ensures sustainability".*

*PTC-12: "Put yourself in the shoes of nature. Let him not say that he is an ecological citizen who does not feel sorry for the trees in forest fires and who does not feel sorry for the quinces".*

## RESULT AND DISCUSSION

This study aimed to ascertain pre-service teachers' perceptions of ecological citizenship. In this context, the data collected are explained in terms of four themes about pre-service teachers' viewpoints. The pre-service teachers responded to the question, "Who are ecological citizens, who know the rights and responsibilities of nature, who are sensitive to the environment, who feel like they belong to nature, who work actively for nature, who protect nature so that it can be passed down to future generations, who are environmentally conscious, who are sensitive to the beings in the environment, who love nature, who are conscious" by the data that was collected. A consumer who understands the rights of nature supports environmentally friendly campaigns, favors environmentally friendly products when shopping, takes responsibility for preserving the environment, is concerned about environmental issues, is aware of the harm their actions cause to nature, can build a healthy relationship with nature, and purchases recyclable goods. "People who shop based on their needs, ensure sustainability, and cooperate with stakeholders, when necessary," was how they described their answers. When these expressions are examined, some expressions from the literature coincide with them. For instance, Martinsson and Lundqvist (2010) defined the term "ecological citizenship" as a type of citizenship that recognizes an individual's obligations to future generations and their own. According to Saiz (2005), ecological citizenship outlines the obligations of citizens to maintain both the viability of society and the existence of conscious ecological life.

Similarly, Skill (2012) defined ecological citizenship as citizenship that strives for a sustainable way of life on a global scale, can solve ecological issues, and takes the initiative to put those solutions into practice. These definitions support some of the statements that we discovered in our study. The study's findings and the literature are comparable in this regard.

The study's other finding is that pre-service teachers value nature, are conscious of their surroundings, treat them with respect, comprehend their language, and treat them fairly. They also possess problem-solving abilities, are scientifically literate, adhere to environmental ethics, and pursue their interests. Does not behave in a way that reflects environmental literacy, is empathetic, is aware of the effects of his actions, understands the concept of sustainability, is water literate (uses water efficiently), is recycling literate, is aware of his responsibilities, has self-control and judgment, and is concerned about the environment. They care about the environment, support environmental initiatives, build relationships with nature, preserve it for future generations, and recognize their dependence on it. When the literature is examined, certain traits of ecological citizens become apparent. Dobson (2003), for instance, claims that ecological citizens have a duty to future generations. Ecological citizenship has been defined as a citizenship model that incorporates individuals' responsibilities to future generations on a global scale, much like Martinsson and Lundqvist (2010). According to Bookchin (1996), an ecological citizen's primary responsibility is to work toward creating a more livable and sustainable world. In other words, ecological citizens are aware of the steps that must be taken to lessen their ecological impact. These results validate the outcomes of our research.

Pre-service teachers stated that ecological citizens should have some values, another research finding. These values are listed as "responsibility, love, sensitivity, respect, fairness, self-judgment, patriotism, helpful, sharing, loyalty, patience, tolerance, friendship, sincerity, trust, savings, solidarity, compassion, aesthetics, optimism" by pre-service teachers. It has been determined from a review of the pertinent literature that ecological citizens ought to hold specific values. For instance, ecological citizens are accountable to all living things -plants and animals alike- that make up ecology in addition to themselves and others. A fair citizen who can carry out all these duties is ecological (Dobson, 2003). Dobson (2003) also assumes that the motivations

behind ecological citizens are compassion, care, and social justice. Like this, Horton (2006) argued that social justice must be upheld to ensure everyone can benefit from the world's resources. The results of this study support the findings of our study.

Another study finding was that pre-service teachers believed they should have some knowledge of being good ecological citizens. Empathy, problem-solving, critical thinking, analytical thinking, environmental literacy, observation, nature protection, self-awareness, awareness of nature's rights, cooperation, sustainability, being conscious, innovative thinking, obeying rules, perceiving continuity, efficient resource use, being able to do research, and communication are some of these skills. When the literature is examined, it becomes clear that some research findings support these conclusions. In their study, Bülbül and Yılmaz (2019), for instance, listed the traits of environmental citizens as being aware and protecting the environment. In contrast, Kızılay (2015) defined good citizens of secondary school students as people who are environmentally aware, do not harm the environment, and protect the environment. Contrarily, those who support ecology believe they are a part of nature and would prefer to address any issues by doing their best to preserve it (Barr, 2003; Thompson & Barton, 1994). According to Roth (1992), environmental literacy refers to a person's capacity to practice environmental knowledge. The action component of ecological citizens is included in this definition. In other words, eco-citizens are knowledgeable about the environment. These assertions support the conclusions of our study.

### Recommendations

People who are expected to be ecological citizens are aware that they are a part of nature and are expected to love and protect nature, according to both the study's findings and the literature that has been reviewed. According to the study's findings, responsibility, love, and sensitivity were given more weight among the qualities that should be present in an ecological citizen than among pre-service teachers. Value-based education should be prioritized so pre-service teachers can learn natural values. The study led pre-service teachers to emphasize empathy skills necessary for ecological citizens. Therefore, a variety of creative drama activities can be carried out to help pre-service teachers develop an empathy for the natural world and the creatures that inhabit it. Many studies have noted the value of drama techniques in the growth of empathy skills when the literature is examined (Corsa, 2020). Activities in nature become more significant in developing environmental literacy skills. Activities such as planting trees or plants can be planned in nature to help develop this skill. Doing projects for developing ecological citizenship attitudes of pre-service teachers, especially those studying at universities, and encouraging them to choose elective courses related to the environment, considering the study conducted, the importance of ecology for healthily sustaining life, and the increasing ecological problems. Another idea is to motivate them to sign up for and participate in their clubs.

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**Authors' contributions:** All authors contributed equally to the study.

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