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Opinions of Preschool Teachers on Climate Change

Okul Öncesi Öğretmenlerinin İklim Değişikliğine İlişkin Görüşleri

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ABSTRACT

Climate change is defined as alterations in climate that degrade the environment on a global scale due to human activities, in addition to natural climate changes that occur over similar time periods. Since the consequences of global climate change are being felt more and more each day, this research aims to determine the opinions of pre-school education teachers working at the first stage of education regarding climate change. The research was conducted as a case study, one of the qualitative research methods that allows in-depth description and examination of a limited system. Semi-structured interviews were conducted with six preschool teachers. In the interview form, under the title 'Climate Change,' there are sections for causes, precautions, and comments on a related movie. As a result, teachers generally touched upon global warming and human activities regarding the cause and outcome of climate change and the precautions that can be taken. They emphasized that climate change awareness should be fostered during the preschool years.. In line with these results, suggestions have been made about what can be done in the preschool period in order to increase awareness about climate change.

Keywords: Climate change, preschool teachers, global warming

ÖZ

İklim değişikliği, karşılaştırabilir zaman dilimlerinde oluşan doğal iklim değişikliğine ek olarak, doğrudan veya dolaylı bir şekilde küresel atmosferin oluşumunun bozulduğu, insan aktivitelerinin sonucuyla iklimde oluşan değişiklikler olarak tanımlanmaktadır. Küresel iklim değişikliğinin sonuçları gün geçtikçe daha fazla hissedildiği için bu araştırmada iklim değişikliğiyle ilgili, eğitimin ilk kademesinde görev yapan okul öncesi eğitim öğretmenlerinin görüşlerinin belirlenmesi amaçlanmıştır. Araştırma sınırlandırılmış bir sistemin derinlemesine betimlenmesine ve incelenmesine olanak veren, nitel araştırma yöntemlerinden durum çalışması şeklinde yürütülmüştür. Altı okul öncesi öğretmeniyle yarı yapılandırılmış görüşmeler yapılmıştır. Görüşme formu iklim değişikliği üst başlığı altında; nedenleri, önlemler, ilgili bir filmin yorumlanması gibi başlıkları içermektedir. Sonuç olarak öğretmenler iklim değişikliğinin nedeni, sonucu ve alınabilecek önlemlerle ilgili genellikle küresel ısınma ve insan faaliyetlerine değinmişler, iklim değişikliği bilincinin okul öncesi dönemde kazandırılması gerektiğini belirtmişlerdir. Bu sonuçlar doğrultusunda iklim değişikliği konusunda bilinci artırabilmek için okul öncesi dönemde yapılabilecekleri içeren öneriler getirilmiştir.

Anahtar Kelimeler: İklim değişikliği, okul öncesi öğretmenleri, küresel ısınma

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Introduction

Climate change is a concept that takes place on many different platforms. It is important to raise public awareness about the effects of climate change, as the data indicating that it does not occur within natural limits highlights the impact of human factors. Climate change is defined as alterations in climate that degrade the environment on a global scale due to human activities, in addition to natural climate changes that occur over similar time periods (United Nations-UN, 1992). The conditions occurring as a result of the effects of global climate change are being felt gradually more and more one of the main factors that are responsible for this result is human activities. These effects have gone beyond surface-level issues and caused negative outcomes in the entire ecosystem by affecting air, water, and living organisms (Akbulut & Kaya, 2020). There are various facts proving these effects. Some of them are presented below:

- Global warming, which has reached the level of 1.5°C within a short period, will cause inevitable increases in multiple climatic risks and pose risks for ecosystems and humans (IPCC, 2022).
- The glaciers melting and gathering towards the poles, as well as the reduction of ice and snow cover on mountain peaks.
- The migration of tropical plants and fish, which prefer warm air and water, toward the poles.
- Increasing climate-related migrations and refugee issues.
- Decreases in bird species that are sensitive to air pollution.
- An increase in the growth rate of tree rings, which represent their ages (Akbulut, 2019)

Considering the growing concern about climate change, education has been identified as the target method for addressing the problem (UNEP, 2006). The United Nations Framework Convention on Climate Change, in Article 6, encourages climate change education that is based on education and community awareness, aiming to raise awareness among individuals (UN, 1992). UNESCO (2009) also advocates for the integration of climate education with local and scientific knowledge to adapt to and mitigate climate change.

Besides teaching individuals about the functioning of the environment, climate change education aims also to educate them on how they can ensure the sustainability of the ecosystem (Anderson, 2010). Although it has been acknowledged that education is very important in the fight against climate change, this instrument is not made use of at its full potential (UNESCO, 2015). Gürsoy (2022) stated that countries started to include climate change in their education programs upon the call of UNESCO. He also stated that adaptation to changes that have occurred and may occur due to climate change is also the subject of education. In order to emphasize the importance of early education on climate change, Cengizoğlu (2013) aimed to examine how preschool children perceive the human-environment relationship through an education program on sustainable development. The 4-week research carried out with 60-66-month-old children in an eco-school in Ankara revealed that the children's perceptions of deforestation, biodiversity, and climate change have changed.

Our innate abilities and individual skills begin to develop and take shape during the preschool period, which is considered the earliest years of life. It is also a time of rapid development and children learn fast and have high learning capabilities in this period (Gülay, 2011). Therefore, starting climate change education in early childhood, during the preschool years, is crucial because the knowledge and skills acquired during this period would probably stay with individuals for a lifetime (Demircioğlu, 2019). Early education on climate change can instill a sense of responsibility in individuals and contribute to their awareness of climate change-related risks in the future. Educating individuals having a high level of awareness facilitates efforts during critical moments and helps fight potential climate change dangers in the following years. At this point, teachers have important responsibilities. The higher the awareness of teachers regarding climate change, the easier it is for them to transmit their knowledge and experience to children (Akbulut, 2019). A research conducted on this topic examined the environmental awareness of preschool teachers, the initiatives taken in schools for environmental education, and the extent to which teachers incorporate environmental concepts into their activities. In this research, which involved 300 teachers, it was determined that preschool teachers had insufficient environmental awareness and did not have sufficient ideas regarding environmental protection (Buhan, 2006).

Examining the studies involving preschool teachers and teachers from other grades and different fields (such as natural sciences, social sciences, elementary school, chemistry, and geography) and examining their opinions regarding climate change, it was noted that the number of those studies is very limited. However, it was also observed that the number of studies has started to increase as of the year 2020. Among the relevant studies conducted to date, those that specifically include preschool teachers (Duran, 2023; Karabulut, 2023; Saraç et al., 2022; Seguido &

Moreno, 2023; Siron et al. 2021) reveal that teachers perceive themselves as having knowledge gaps and misconceptions about climate change. They are aware of the problems and potential solutions, consider it important to educate children on this topic, and score lower on climate change-related concepts compared to teachers from other disciplines.".

Considering the limited number of studies in the literature, the present research aims to determine the opinions of preschool teachers regarding climate change and the communicability of climate change to preschool children. During the data collection process, it was aimed to ensure that teachers provided detailed opinions, as well as evaluating the preschool education program they implement in terms of raising awareness about climate change. In conjunction with existing studies in the field, this research can provide insights for future investigations, suggest various activities for children, and develop educational content and materials related to climate change, thereby contributing to the ongoing discourse on this topic.

Methods

A qualitative research method known as a case study was employed in the present research. A case study involves an in-depth examination of a bounded system, and it is preferred due to the need for understanding, exploring, and interpreting. In this process, the focus is on a specific event, program, or phenomenon, and a rich and intensive description is provided in order to help the reader understand that phenomenon better (Merriam, 2013). In this research, researchers conducted interviews with preschool teachers using interview questions prepared by the researchers it was aimed to determine their views on climate change. In addition to interview questions, preschool teachers were shown a short film about climate change, and their opinions about the film were also collected.

Research Group

The participants in this research consisted of preschool teachers, who were willing to participate. From this aspect, the selection of participants falls within the category of easily accessible sampling. The participants were working as preschool teachers in Ankara, Aydın, Batman, Diyarbakır, and Mardin provinces. Five of the teachers are female, and one is male. Their professional experience ranges from 3 to 15 years.

Data Collection

Data was collected by using a semi-structured interview form prepared within the scope of this research. In the preparation of the interview form, the literature was first reviewed, and draft questions were prepared. These questions were then sent to two experts, one in the field of natural sciences and one in the field of education sciences, who had previously worked on climate change, to obtain their opinions. Based on the feedback from the experts, the questions were finalized and made ready for use in the research. At this point, ethical approval was obtained from Aydın Adnan Menderes University's Ethics Committee for Educational Research (Date: 14.10.2022, Decision No. 2022/10-1). Consent was obtained from the participants.

Through the semi-structured interview form, teachers were directed to answer questions related to the causes and consequences of climate change, how to mitigate climate change, and the role of preschool education in raising awareness of climate change. Moreover, a short film "Climate Change" about climate change, produced by an institution (Alegria Activity S. L., n.d.) that had previously worked on climate change in collaboration with UNICEF, was shown to the teachers, and their opinions about the film were also obtained. The film addresses themes such as "energy waste, overconsumption, environmental pollution, industrialization, urbanization, melting of glaciers, and scarcity". Since the participants were living in different cities, the interviews were conducted online. The responses of the teachers were recorded and later transcribed for analysis.

Data Analysis

Descriptive analysis was used in data analysis. Descriptive analysis is a type of qualitative data analysis that involves examining and interpreting data collected through various means according to specific themes (Özdemir, 2010). After the data was collected and transcribed, it was observed that the teachers provided responses incorporating general concepts related to climate change found in the literature. Therefore, the descriptive analysis technique was deemed appropriate. In this context, both the main topics of the questions prepared by the researchers and the concepts within the overarching topic of climate change in the literature (IPCC, 2014; IPCC, 2022;UN, 1992; UNESCO, 2009) were utilized.

Results

The findings of the present research examining the preschool teachers' opinions on climate change are presented in Table 1. Table 1 presents code examples and

quotations from interviews related to the first theme, "Definition of Climate Change".

Table 1.
Preschool Teacher Opinions on What Climate Change is

Theme	Code Examples	Quotations from Interviews
Definition of Climate Change	greenhouse gases seasonal changes temperature increases global warming weather changes	*"..I think greenhouse gases have an effect."* *"Because although we are in a country that experiences all four seasons clearly, we experience all seasons at extreme extremes compared to the past."* *"Climate change is the change of weather and natural events."*

When examining Table 1, it can be seen that preschool teachers primarily focus on concepts such as greenhouse gases, seasonal changes, temperature increases, global warming, and weather changes when defining climate change. Consequently, the teachers' opinions on climate change closely align with the actual definition.

Table 2 provides code examples and quotations from interviews related to the second theme, "Causes of Climate Change".

Table 2.
Preschool Teachers' Opinions on the Causes of Climate Change

Theme	Code Examples	Quotations from Interviews
Causes of Climate Change	chemical use global warming human factors environmental pollution greenhouse gases	*"The reason is global warming."* *"I think it is generally caused by human factors."* *"Air pollution, toxic wastes, chemical wastes..."* *"..the first thing that comes to my mind, as I said in the other question, is the effect of greenhouse gases."*

When examining Table 2, teachers identified the causes of climate change as chemical use, global warming, human factors, environmental pollution, and greenhouse gases. Participants mentioned both individual waste and industrial chemical waste regarding the category of chemical use. Therefore, it was observed that teachers generally attributed the cause of climate change to the consequences of human activities.

Table 3 provides code examples and quotations from interviews related to the third theme, "Prevention of Climate Change".

Table 3.
Preschool Teacher Views on Preventing Climate Change

Theme	Code Examples	Quotations from Interviews
Prevention of Climate Change	keeping the environment clean paying importance to recycling saving energy controlling factories/dams using natural energy sources education using natural products	*"...recycling is important."* *"If it's a short distance, I walk or bike."* *""It could be increased controls on factories, hydroelectric power plants and dams."* *"..I have students that I can educate, and I am doing something for climate change through them.."* *"...I prefer to use natural products."*

When examining Table 3, it shows that teachers expressed statements related to what can be done to prevent climate change, such as keeping the environment clean, paying importance to recycling, saving energy, controlling factories/dams, using natural energy sources, education, and using natural products. As seen in Table 3, which presents what can be done to prevent climate change and the practices of teachers to prevent climate change together, it can be seen that teachers use similar expressions for what can be done and what they do.

Table 4 provides code examples and quotations from interviews related to the fourth theme, "Who is Responsible for Preventing Climate Change".

Table 4.
Teacher Views on Who is Responsible for Preventing Climate Change

Theme	Code Examples	Quotations from Interviews
Who is Responsible for Preventing Climate Change	people	*"Everyone has a responsibility to prevent climate change."*
	politicians	*"Political leaders of countries should make policies on this issue."*

As seen in Table 4, preschool teachers agreed on the answer "All people" to the question, "In your opinion, who is responsible for preventing climate change?" In this research, some preschool teachers also pointed out politicians, emphasizing the need for legal regulations.

Table 5 presents themes, code examples, and quotations from interviews resulting from discussions with teachers after watching a short film about climate change.

Table 5 contains teachers' views on the short film shown during the interviews. All teachers stated that their views were in line with what was presented in the short film. When asked from which aspects their views aligned, teachers mentioned energy waste, deforestation/urbanization, unconscious use of natural resources, excessive consumption, and the consequences of climate change (melting glaciers, animals becoming displaced from their homes, decrease in the Earth's lifespan).

Table 5.
Teacher Views on the Short Film on Climate Change

Theme	Code Examples	Quotations from Interviews
Agreeing with the themes of the short film	energy waste	*"…waste of water and energy."*
	deforestation/urbanization	*"I think it explains very well what the unconsciousness of human factors may cause in the future.."*
	unconscious use of natural resources	*"We must use our natural resources carefully. We must reduce energy consumption. In this respect, it is compatible with my views."*
	excessive consumption	*"Children may say; "Oh, so our world is becoming like this because adults do these things."*
	the consequences of climate change	*"I think it will of course have an impact on children because it is like animation."*
Gaining awareness/aged period	acquire/gain knowledge	*"It can be integrated with activities such as art and drama."*
	art activities	*"It can be integrated with activities such as Turkish language and science."*
	drama activities	*"I think the experiment about melting glaciers will attract the attention of children."*
Integrability of the short film with activities	Turkish language activities	*"It may be related to observation and learning by experimenting."*
	science activities	*"It can be paired with the achievements of remembering what you perceive, explaining what you watch, and expressing yourself."*
	mathematics activities	
The achievements that can be associated with the short film	cognitive development	
	language development	
	socio-emotional development	

When asked how they evaluated the preschool children's potential to gain awareness of climate change after watching the short film, there was unanimous agreement that "Yes, they can acquire/gain knowledge." Teachers mentioned that the short film would attract attention since it is animation and that children could understand the cause-and-effect relationships from the film.

Regarding the achievements that can be associated with the short film, teachers mentioned that the film could be associated with cognitive development (K3, K5, K8, K19), language development (K7, K8), and socio-emotional development (K3, K10). However, it is remarkable that teachers did not mention the relevant achievement (K17: Establish cause-and-effect relationships) in the cognitive development field, despite their justification for why there should be cause-and-effect relationships in the short film.

Table 6.

Preschool Teachers' Opinions on the Share of Climate Change in the Preschool Education Program (PEEP)

Theme	Code Examples	Quotations from Interviews
Achievements	cognitive development	*"Generates solutions to problems and offers solution suggestions."*
	language development	*"Frankly, I could not see anything related to this in the* achievements *and indicators."*
	socio-emotional development	*"It can be discussed within the scope of science activities. Because environmental issues are already discussed in science activities. Therefore, it may be related to science activities."*
Activity types	Turkish language activities	
	science activities	
	mathematics activities	
	art activities	
	drama activities	

When examining Table 6, it can be seen that teachers believe that some of the achievements under cognitive development (K17, K19), language development (K6), and socio-emotional development (K6, K10, K16) in the Ministry of Education's 2013 preschool education program (PEEP) can be associated with climate change, despite stating that none of the achievements in the program are directly related to climate change. It is noteworthy that all teachers, in their opinions, include cognitive development and science activities as common elements.

Discussion

In this research, which aims to examine the opinions of preschool teachers on climate change, semi-structured interviews were conducted with 6 preschool teachers, who voluntarily participated in the research, from different cities. The interviews with the teachers were transcribed and analyzed within the framework of themes that were identified. As a result of these analyses, it was observed that teachers cited concepts such as greenhouse gases, seasonal changes, temperature increase, global warming, and climate change in their definitions of climate change. Given the definition of "climate change" by the United Nations (1992), it is seen that this definition includes observed natural changes, changes in the composition of the atmosphere, and the relationship between these changes and human activities. Therefore, the teachers' opinions on climate change were seen to closely align with the actual definition. In a research carried out with university students, climate change was most commonly defined as "changes of seasons" (Gülsoy, 2018). In a research carried out by Oluk and Oluk (2007) on university students' views on climate change, it was determined that most students associated climate change with global warming, and some tried to explain climate change by comparing current weather conditions to those of previous years. In another research carried out by Ay and Erik (2020) with university students, students were asked to define climate change with a single concept; most of them described it as the disruption of the natural balance. In this research, participants also referred to similar concepts commonly associated with climate change in previous research.

In response to the question of what the causes of climate change are, teachers mentioned concepts such as chemical use, global warming, human factors, environmental pollution, and greenhouse gases. It should be noted that

only one teacher mentioned global warming as a response. It was observed that teachers generally attributed the cause of climate change to the consequences of human activities. Similarly, in a research carried out by Atik and Doğan (2019) on high school students' views on climate change, most students cited environmental pollution as a cause, some pointed to the unconscious behavior of individuals, and a few mentioned global warming and greenhouse effects. As reported in another research, university students cited the causes of climate change as air pollution, deforestation, and ozone layer depletion, among others (Ay and Erik, 2020). In a research by Tetik and Acun (2015), university students stated that climate change was most affected by air pollution, the increase in fossil fuel use, and deforestation, followed by an increase in greenhouse gases, and migration and unplanned urbanization had the least impact. Gülsoy's research (2018) with university students also found that students primarily attributed climate change to human activities and some considered it a natural process. In this research, it is noteworthy that one participant regarded global warming as the sole cause of climate change.

When asked about "What should be done to prevent climate change?" and "What are you doing to prevent climate change?", teachers responded with answers such as keeping the environment clean, paying importance to recycling, saving energy, controlling factories/dams, using natural energy sources, education, and using natural products instead of chemical products. Teachers emphasized that everyone has a responsibility to prevent climate change, and besides that, politicians and governments should also take responsibility. As seen in findings, which presents what can be done to prevent climate change and the practices of teachers to prevent climate change together, it can be seen that teachers use similar expressions for what can be done and what they do. Therefore, it can be considered that teachers act consistently with their views. Based on this finding, it can be assumed that teachers provide recommendations based on their own practices to prevent climate change. In addition, it can also be seen that some preschool teachers draw attention to education at this point. The view of teachers aligns with Atik and Doğan's (2019) statement in their research with high school students that "Education plays an important role in increasing individuals' knowledge and awareness of climate change." One teacher responded to the question about what can be done to prevent climate change by saying, "Or we can develop systems that work with solar energy instead of electronic products we use. I think we should develop technology in this direction," drawing attention to technology. This is thought to be due to the frequent technological developments in various fields in the century we live in. Similarly, Albayrak and Atasayan (2017) found in their research that participants relied on technology as a solution to climate change. Oluk and Özalp (2007) stated in their research that 7th-grade students emphasized the need for people to be conscious and to use technology in solving this problem.

As seen in findings, preschool teachers agreed on the answer "All people" to the question, "In your opinion, who is responsible for preventing climate change?" In a research carried out by Atik and Doğan's (2019), participants believed that the most important reasons for global climate change were environmental pollution and unconscious behaviors of individuals. In this research, some preschool teachers also pointed out politicians, emphasizing the need for legal regulations. Similarly, in a research on climate change, the majority of participants stated that the government was the most effective actor in implementing climate change policies at the local level (Albayrak & Atasayan, 2017).

During the interviews, teachers were asked to watch a short film that was prepared to draw attention to climate change, which had received awards, and provide their opinions on whether it aligned with their views, the potential contributions of children from this film, and the types of activities and outcomes that could be integrated with the short film. Teachers generally reported that the short film aligned with their views and could be effective in raising awareness among children about climate change. The teachers stated that the short film watched to them would attract attention because it was in the form of animation and that children would be able to infer cause and effect from the movie. Cartoons are the content that interests' children the most and influences them (Gençer, 2018). In this parallel, in a research examining the effect of technology support in environmental education, it was found that preschool children showed more interest in technology-supported environmental education and, therefore, their learning was more permanent (Altınsoy, 2018).

They mentioned art, drama, Turkish language, science, and mathematics activities as types of activities that could be combined with the short film, and cognitive development, language development, and social-emotional development as potential outcomes. In their views on the integrability of the short film with activities, teachers associated the film with art, drama, Turkish language, science, and mathematics activities. The reason why teachers mentioned science, drama, Turkish language, art, and mathematics activities primarily is thought to be the themes in the short film.

Finally, regarding the types of activities and outcomes related to climate change that teachers perceived, they mentioned Turkish language, science, mathematics, art, and drama activities. Besides that, although there were no direct outcomes related to climate change, they stated that some of the outcomes in the cognitive, language, and social-emotional development areas could be related. In this research, teachers' inclusion of cognitive development and science activities aligns with the results reported by Gezgin and Kılıç (2015), who stated in their research on preschool teachers' evaluation of science activities that teachers aimed to enhance cognitive skills more in science activities, thus preferring achievements related to cognitive skills.

According to teachers' views, Turkish, science, mathematics, art, and drama activities among the activity types in the Ministry of Education's 2013 preschool education program (PEEP) are suitable for the contents related to climate change. These views are supported by Aydın and Aykaç's (2016) research, which examined the effect of creative drama activities on children's environmental awareness. It was observed in their research that environmental education provided through drama activities positively affected children's awareness. In a research examining teachers' views on the effect of science and nature activities on children's environmental awareness in the preschool period, it was reported that teachers most frequently resorted to science and nature activities to instill environmental consciousness in children, and they believed that science activities were more effective in raising environmental awareness (Yağlıkara, 2006). Teachers stated that these types of activities are suitable, emphasizing that preschool children learn by doing and experiencing. To ensure productive and lasting learning in the preschool period, experiential learning should be encouraged (Aydın and Aykaç, 2016). In addition, regarding the science activities, one teacher mentioned that science activities already address environmental issues. Similarly, in a research carried out by Özkan (2017), a teacher stated that environmental education is generally integrated into science activities. An interesting point here is that the participating teachers did not express any opinions about games. Güzelyurt and Özkan (2017) found in their studies that game-based education played an effective role in environmental awareness. In the present research, it was observed that participating teachers did not explicitly refer to game activities, and this is considered to be an interesting finding.

Conclusion, and Suggestions

In this research, it can be said that the participating teachers generally addressed concepts related to climate change, believed that the issue involved both individual and social responsibilities, thought that individuals could be made aware of this issue starting from the preschool period, and held the opinion that the preschool education program could influence children's awareness of climate change through various associations and adaptations.

Given the results achieved in the present research, the following suggestions can be given:

- Since teachers mentioned that there are no direct outcomes related to climate change within the learning objectives, it is considered that including relevant exemplary outcomes or indicators in the preschool education program can guide teachers.
- Moreover, it is considered that the ways of conveying the topic to the relevant age group can be examined and observed through the preparation and observation of activities that teachers will develop within the scope of climate change.
- Considering teachers' opinions about whether the film is suitable for children and outlining the general concept of climate change, it is thought that such animation films and technological content suitable for children can be prepared and integrated into school activities in order to help children understand climate change.

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Genişletilmiş Özet

Giriş

Iklim değişikliği pek çok farklı platformda karşımıza çıkan bir kavramdır. Doğal sınırlar içerisinde gerçekleşmediğine ilişkin veriler, insan faktörünün etkisini ortaya koyduğu için, insanların iklim değişikliği üzerine etkileri ile ilgili farkındalıklarının artması önemlidir. Nitekim farklı kurumlar tarafından yapılan iklim değişikliği tanımlarında insan faktörü yer almaktadır. Birleşmiş Milletler (BM) tarafından yapılan tanımda iklim değişikliği, karşılaştırabilir zaman dilimlerinde oluşan doğal iklim değişikliğine ek olarak, doğrudan veya dolaylı bir şekilde küresel atmosferin yapısının bozulduğu, insan aktivitelerinin sonucuyla iklimde oluşan değişiklikler olarak yer almaktadır (BM, 1992) ve bu sorunun çözümü için hedeflenen yöntemlerden birisi de eğitim olarak belirlenmiştir (UNEP, 2006). Ancak eğitim bu konuda yeterli seviyede kullanılmamaktadır (UNESCO, 2015).

Okul öncesi dönemde, bütün yaşamımızca bizimle olacak yeteneklerimiz ve bireysel becerilerimiz oturmaya başlar ve çocukların öğrenmeleri hızlı ve öğrenme becerileri yüksektir (Gülay, 2011). Bu nedenle iklim değişikliği eğitiminin bireylere erken yaşlarda verilmeye başlanmasıyla edindiğimiz kazanımlar belki de hayat boyu bizimle olacakları için önem arz etmektedir (Demircioğlu, 2019). Bu noktada eğitimi verecek olan öğretmenlere büyük sorumluluk düşmektedir. Öğretmenlerin iklim değişikliği ile ilgili bilinçleri ne kadar yüksek olursa bilgi ve deneyimlerini çocuklara aktarmaları o derece kolay olmaktadır (Akbulut, 2019).

Hem okul öncesi eğitim kademesi öğretmenlerinin hem de diğer bazı kademelerde ve farklı branşlardaki (fen bilimleri, sosyal bilgiler, sınıf öğretmenliği, kimya, coğrafya) öğretmenlerin katılımcı oldukları, iklim değişikliğine ilişkin görüşleri kapsamında yapılan çalışmalara bakıldığında, ilgili çalışma sayısının oldukça sınırlı kaldığı görülmekle birlikte, 2020 itibariyle artışa başladığı tespit edilmiştir. İlgili çalışmalardan okul öncesi öğretmenlerini kapsayacak şekilde yürütülmüş olanları incelendiğinde (Duran, 2023; Karabulut, 2023; Saraç ve ark., 2022; Seguido & Moreno, 2023; Siron ve ark., 2021) öğretmenlerin kendilerinde iklim değişikliği konusunda bilgi eksiklikleri ve kavram yanılgıları olduğunu belirttikleri; sorunları ve neler yapabileceklerini takip ettikleri ve çocukları bu konuda bilgilendirmeyi önemli gördükleri; diğer branşlarla karşılaştırıldıklarında iklim değişikliğiyle ilişkili kavramlarda daha düşük puanlar aldıkları şeklinde sonuçlar elde edilmiştir.

Bu araştırmada, alan yazındaki sınırlı çalışma sayısı da göz önünde bulundurularak; okul öncesi öğretmenlerinin iklim değişikliğiyle ve iklim değişikliğinin okul öncesi dönem çocuklarına anlatılabilirliği ile ilgili görüşlerinin belirlenmesi amaçlanmıştır ve daha sonra yapılabilecek olan araştırmalara, çocuklara yönelik hazırlanabilecek etkinliklere, eğitici içeriklere, materyallere fikir verilebileceği, böylece konu kapsamındaki çalışmaların devamlılığına bir katkıda bulunulabileceği düşünülmektedir.

Yöntem

Araştırma nitel araştırma yöntemlerinden durum çalışması deseninde gerçekleştirilmiştir. Durum çalışması, sınırları bulunan bir sistemin detaylarıyla incelenmesidir ve kavrama, keşfetme ve yorumlama ihtiyacından dolayı tercih edilir. Bu süreçte belli bir olay, program ya da olguya odaklanılıp zengin ve yoğun şekilde betimlemesinin yapılmasıyla okuyucunun o olguyu daha iyi anlaması (Merriam, 2013) sağlanmaya çalışılır. Bu doğrultuda bu araştırmada araştırmacılar tarafından hazırlanan görüşme soruları aracılığıyla okul öncesi öğretmenleri ile görüşmeler gerçekleştirilmiş ve iklim değişikliğine ilişkin görüşleri belirlenmeye çalışılmıştır. Bu görüşme soruların yanı sıra iklim değişikliği ile ilgili bir kısa film öğretmenlere izletilerek bu film ile ilgili görüşleri de alınmıştır.

Çalışma Grubu: Çalışmanın katılımcıları araştırmacılar tarafından ulaşılabilen ve çalışmaya katılmaya gönüllü olan altı okul öncesi öğretmeninden oluşmaktadır. Bu yönüyle katılımcıların belirlenmesi, kolay ulaşılabilir örneklem kapsamına girmektedir.

Verilerin Toplanması: Veriler araştırma kapsamında hazırlanan yarı yapılandırılmış görüşme formu ile toplanmıştır. Görüşme formunun hazırlanmasında ilk olarak literatür taranmış ve taslak sorular hazırlanarak biri fen bilimleri alanında biri eğitim bilimleri alanında olmak üzere daha önce iklim değişikliği konusunda çalışmaları bulunan iki uzmana gönderilerek görüşleri alınmıştır. Uzman görüşlerinden gelen dönütlere göre sorulara son şekli verilip uygulamada kullanılmaya hazır hale getirilmiştir. Bu aşamada Aydın Adnan Menderes Üniversitesi Eğitim Araştırmaları Etik Kurulu'ndan etik kurul izni alınmıştır (2022/10-I nolu karar).

Verilerin Analizi: Verilerin analizinde çeşitli yollarla toplanan verilerin belirli temalara göre incelenip yorumlanmasını gerektiren betimsel analiz kullanılmıştır (Özdemir, 2010). Analizlerde, araştırmacılar tarafından hazırlanan sorulardan ve literatürde iklim değişikliği üst başlığı içinde yer alan kavramlardan (BM, 1992; IPCC, 2014; IPCC, 2022; UNESCO, 2009) yararlanılmıştır.

Bulgular

Okul öncesi öğretmenlerinin iklim değişikliğine ilişkinin görüşlerinin incelendiği çalışmanın verileri analiz edildiğinde İklim Değişikliğinin Tanımı, İklim Değişikliğinin Sebepleri, İklim Değişikliğinin Önlemesi, İklim Değişikliğinin Önüne Geçmede Sorumluluk Sahipleri, Kısa Film Hakkında Görüşler, Okul Öncesi Eğitim Programında (OÖEP) İklim Değişikliğinin Yeri temaları oluşmuştur.

Sonuç ve Öneriler

Öğretmenlerin iklim değişikliğinin tanımında sera gazları, mevsim değişikliği, sıcaklıkların artışı, küresel ısınma, hava değişimi kavramlarına değindikleri; iklim değişikliğinin sebepleri olarak kimyasal kullanma, küresel ısınma, beşeri faktörler, çevre kirliliği ve sera gazları kavramlarını belirttikleri görülmüştür. İklim değişikliğinin önüne geçebilmek için ise çevreyi temiz tutmak, geri dönüşüme önem vermek, enerji tasarrufu yapmak, fabrika/barajların kontrol edilmesi, doğal enerji kaynakları kullanmak, eğitim, kimyasal ürünler yerine doğal içerikli ürünler kullanmak cevaplarını vermişlerdir. Öğretmenler iklim değişikliğini önlemede tüm insanlara sorumluluk düştüğünü bunun haricinde politikacılar ve hükümetlerin sorumluluk alması gerektiğini belirtmişlerdir. Öğretmenler görüşme esnasında izlemeleri istenen "İklim Değişikliği" isimli, ödüllü film hakkında ise genel olarak görüşleriyle uyuştuğunu ve çocukların iklim değişikliği ile ilgili bilinçlenmelerinde etkili olabileceğini belirtmişlerdir. Okul Öncesi Eğitim Programı açısından ise iklim değişikliği konusuyla Türkçe, fen matematik, sanat ve drama etkinliklerinin ilişkilendirilebileceğini belirtmişlerdir. Kazanımlar içerisinde doğrudan iklim değişikliği ilgili kazanım bulunmuyor olmasının yanı sıra bilişsel, dil ve sosyal duygusal gelişim alanlarındaki kazanımlardan bazılarının ilişkilendirilebileceği görüşünde oldukları belirlenmiştir.

Çalışmanın sonuçlarına göre; okul öncesi eğitim programında ilgili örnek kazanımlara veya göstergelere yer verilmesinin öğretmenlere rehberlik edebileceği düşünülmektedir. Ayrıca öğretmenlerin iklim değişikliği kapsamında hazırlayacakları etkinliklerin incelenmesi ve gözlemlenmesi aracılığıyla konuyu ilgili yaş grubuna aktarma şekillerinin incelenebileceği düşünülmektedir. Son olarak, çocuklara uygun animasyon filmlerinin ve teknolojik içeriklerin hazırlanabileceği ve çocukların iklim değişikliğini kavramaları amacıyla okulda yapılan etkinliklere entegre edilebilecekleri düşünülmektedir.