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THE EXAMINATION OF PRE-SCHOOL TEACHERS' PERSPECTIVES ON EDUCATION IN NATURE

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ABSTRACT

Nature-oriented education helps children get to know the natural environment in which they live, strengthen their ties with nature, take responsibility for possible environmental problems and produce solutions for environmental problems. This study aims to examine the perspectives of pre-school teachers on education in nature. The research is a descriptive study designed according to the qualitative research approach. The study sample consists of 20 pre-school teachers working in three kindergartens affiliated with the Ministry of National Education in the city center of Aksaray. The 'Demographic Information Form' and 'Semi-Structured Interview Form' prepared by the researchers were used to collect the data. The collected data were analyzed using the content analysis technique. As a result of the research, all the teachers in the study group stated that education should be given in nature. They defined education in nature as "learning in nature, making observations, learning by doing, being curious, using natural materials, doing research and producing products". In addition, teachers reported the materials necessary for education in nature as "everything in nature" and "materials suitable for age and development". Teachers participating in the research stated that education in nature has a positive effect on many developmental areas of children. According to another important finding of the study, the participating teachers stated that the most important risks for education in nature are "safety, weather conditions and lack of knowledge of the educators". In addition, they mentioned the "physical and environmental problems, lack of knowledge of parents and readiness of the child" to be the negative factors affecting education in nature. In line with these findings, suggestions for future studies are given.

Keywords: Education in nature, pre-school, teacher opinions

INTRODUCTION

The pre-school period, which includes the first six years of life, is critical for children's acquisition of skills in the areas of physical, cognitive, language and socio-emotional development. Pre-school education is defined as the education level during the pre-school period aiming at physical, mental and emotional development of children, acquiring good habits and preparation for primary education in formal education institutions (Baran, Yılmaz, & Yıldırım, 2007). There are studies showing that young children who participate in high-quality early learning programs are more successful academically and socially (Espinosa 2002; Mashburn, et al., 2008). In this direction, there are many types of activities that aim at the holistic development of children in the pre-school education program. These activities are mathematics, drama, preparation for literacy, art, language (Turkish), games, music, movement, field trips and science activities (MEB, 2013).

Within the scope of the science activity, many achievements are aimed at environmental and nature education that support children's observation of living and non-living things in nature. Studies highlight the importance of nature and environmental education in raising children's love of nature and environmental awareness (Gülay Ogelman, 2012; Karahan-Aydin, 2019; Öztürk & Erten, 2020; Temiz & Karaarslan Semiz, 2019; Wilson, 1996; Yeşilyurt, Özdemir Balakoğlu & Erol, 2020; Yoleri, 2012). Nature-oriented education helps children get to know the natural environment in which they live, strengthen their ties with nature, take responsibility for possible environmental problems and produce solutions for environmental problems (Avcı & Dere, 2002; Collado, Staats & Corraliza, 2013). In addition, using learning materials in open space activities in a natural environment without any teacher restrictions contributes to the development of creativity in children (Studer, 1998).

At this point, it is of great importance to plan and implement educational activities to develop environmental awareness in children. As a matter of fact, the nature-related acquisitions in the curriculum of developed countries aim for children to make observations and research (Jeronen, Jeronen, & Raustia, 2009; Wilson, 2000). In a study conducted by Özkan and Tuğluk (2020), the achievements and indicators related to environmental education in the Ministry of National Education Pre-school Education Program (2013) were examined. It has been determined that the pre-school education program did not include acquisitions and indicators for environmental education in the areas of motor and language development while it incorporated environmental education acquisitions and indicators in the areas of social-emotional development, cognitive development and self-care.

Nature-based schools established in Scandinavia and Germany are now widespread in England and Wales and they have recently gained popularity in the United States. Although the nature-based schools are given different names such as nature kindergarten and forest kindergarten, the common theme of all these schools is that nature shapes their educational philosophies (Cordiano et al., 2019).

A nature kindergarten program emphasizes high-quality practices of both early childhood education (developmentally appropriate practices) and environmental education. In other words, the nature-based pre-school education program supports both child development (in all cognitive, physical, social, emotional, aesthetic

and spiritual areas) and the development of environmental ethics (Natural Start Alliance, 2014). From this point of view, this research has been based on a common literature on "education in nature" and "environmental education".

The biggest advantage of incorporating experiences related to nature into pre-school curriculum and daily routine is that children gain new experiences that contribute to their physical, social-emotional and intellectual development (Handler & Epstein, 2010). According to the advocates of nature-based pre-school education institutions, kindergartens with an outdoor learning component provide opportunities for the development of children's scientific inquiry and reasoning skills (McClain & Vandermaas-Peeler, 2016). In addition, time spent in nature has more advantages over traditional playground equipment for children's motor coordination and balance (Fjørtoft, 2001).

Studies on environmental education in recent years have given birth to the idea of being environmentally literate. The concept of environmental literacy includes being aware of environmental problems, worrying about environmental issues and working to solve them (Okyay et al., 2021). As a matter of fact, “environmental literacy” was emphasized as one of the main objectives of environmental education at the UNESCO-UNEP Congress (1989) (Cutter -Mackenzie & Smith, 2003).

In a nature-based kindergarten that embraces the benefits of nature to encourage children's environmental literacy, "nature" is at the center of the curriculum. Learning opportunities provided to children are unique experiences that emerge from their interactions with the natural world (North American Association for Environmental Education, 2019). Therefore, in nature-based kindergartens, teachers involve nature in their activities by collecting leaves, keeping pets in the classroom, or growing flowers from seeds. In addition, classroom activities such as story time, music and movement, and art can also be part of a nature kindergarten. Even indoor activities in these kindergartens often use nature themes and are often handled around children's outdoor explorations (Finch & Bailie, 2015).

Outdoor activities in nature provide children with basic scientific skills such as problem solving, cause-effect relationship, reasoning, estimation, observation, measurement, comparison, grouping, classification and evaluation (Dubosarsky 2011; Handler & Epstein, 2010; Murray, 2019). According to Finch and Bailie (2015), scientific thinking emerges as children observe the natural world, sort the objects they find and collect, perform simple experiments such as observing sticks floating in a puddle, and see the results of their actions clearly. It also supports language development by asking questions about what they have discovered in nature with their skills, learning and using new words to describe their discoveries (Finch & Bailie, 2015). In addition, outdoor activities have a positive effect on children's creativity and imagination (Kiewra & Veselack, 2016).

The nature-based school initiative has increased the popularity of increasing children's connection with nature and using nature as a way to support their development (Cordiano et al., 2019). Pre-school teachers take an active role especially in planning nature-based activities, providing appropriate materials for the activities, and

implementing them (Chakravarthi, 2009; Niklasson & Sandberg, 2010; Perry, 2001; Storli & Hagen, 2010). The following applications are among the opportunities provided by nature-based pre-school education programs:

1. *Teachers introduce children to the plants, animals and natural features and events around them,*
2. Teachers support and encourage children's play and research with natural materials,
3. Classroom activities cross the boundaries between indoor and outdoor learning environments and different types of outdoor environments,
4. Teachers encourage learning from season to season, supporting children's understanding of the changing patterns and changes throughout the seasons,
6. Human communities are considered part of and dependent on the natural environment,
7. It is ensured that *children are engaged in environmentally friendly practices* (NAEEE, 2019).

Excursions and applied activities in nature education contribute to the association of children's knowledge with real life (Balkan-Kıyıcı, Atabek-Yiğit, & Darçın, 2014). For example, while children collect stones of different colors, surface textures and different sizes during a nature trip, their curiosity about these differences increase and they can make hypotheses about possible causes. This can be effective in helping children test their hypotheses, in other words, to reason about possible solutions and to acquire a positive attitude towards learning science.

Children learn attitudes and behaviors towards the environment by observing their role models (Timur, Timur, & Yılmaz, 2012). Therefore, it is significant to include environmental education in the education and training process, and especially to include environmental issues in teacher training programs. A compulsory course called "Early Childhood Environmental Education" has been incorporated in the Pre-school Education Undergraduate Program updated by the Turkish Council of Higher Education (YÖK) in 2018. Such developments reflect the increasing importance given to environmental education in Turkey (Özkan & Tuğluk, 2020).

When the studies on nature and environmental education in the pre-school period are examined, it is seen that they are mostly related to increasing the ecological and environmental awareness of pre-school children at a basic level, but there are limited studies (Ahi & Alisinanoğlu, 2016; Aini & Laily, 2010; Kahriman-Pamuk, Elmas & Pamuk, 2020; Okyay et al., 2021; Ünlü, 2021). Increased scientific attention needs to be given to examining the perspectives of pre-school teachers, who are the practitioners of the formal education program, regarding education in nature since the studies show that the educational content prepared by teachers with high environmental awareness for children produces more effective results (Emiralioğlu, 2017). Therefore, this study aims to obtain detailed information on teachers' perspectives on education in nature and the points they pay attention to in planning educational activities. In this way, this research aspires to support not only young children but also teachers by determining their needs for education in nature, creating data that can be used in planning future in-service trainings and projects. It is thought that teachers who are aware of the necessity of education in nature and give enough space to nature in education will contribute both to their students and colleagues to gain a positive perspective on this subject. As a matter of fact, many studies show that environmentally-friendly teachers with high environmental awareness will be effective in providing information

on the environment (Haktanır, 2007; Phenice & Griffore, 2003). In addition, studies show that pre-school teachers have difficulties in conducting activities in these environments due to the lack of knowledge and experience in organizing nature-based activities and out-of-school learning environments and thus, they do not include such activities in education (Temiz & Karaarslan Semiz, 2019; Uludağ, 2021; Yıldız, 2021). It is important to examine the views of preschool teachers, who are practitioners of activities, on educational activities in nature that contribute to children's acquisition of skills such as problem solving, creativity, establishing cause-effect relationships and cooperation. because the views of the teachers will also give an idea about their practices towards educational activities in nature. From this point on, the aim of this study is to examine the perspectives of pre-school teachers on education in nature.

Purpose of the research

The aim of the research is to examine the perspectives of pre-school teachers on education in nature. In line with this purpose, answers were sought for the following sub-objectives:

- What are the views of pre-school teachers on what education in nature is?
- What are the views of pre-school teachers on the necessity of providing education in nature?
- What are the views of pre-school teachers on what should be considered when planning activities in nature?
- What are the views of pre-school teachers on the materials necessary for education in nature?
- What are the views of pre-school teachers on which skills education in nature develops?
- What are the views of pre-school teachers on the risks of education in nature?
- What are the views of pre-school teachers on cooperation with families for education in nature?
- What are the views of pre-school teachers on the negative factors affecting education in nature?

METHOD

Research Design

This research is a descriptive study designed according to the qualitative research approach, which provides the opportunity to make an in-depth description and comparison of the existing situation. Qualitative research is an approach to discover and understand the meanings attributed to social or human problems by individuals or groups (Creswell, 2017). Qualitative research uses observation, interviews and/or document reviews for data collection, and a qualitative process is followed to reveal perceptions and events in a natural environment in a realistic and holistic way (Yıldırım & Şimşek, 2016).

Participants

This research used convenience sampling, which aims to give the researcher(s) speed and practicality by choosing a situation that is close and easy to access (Patton, 1987). This sampling method aims to prevent loss of time, money and labor (Büyüköztürk et al., 2013). The sample of the research consists of 20 pre-school teachers

working in three kindergartens affiliated with the Ministry of National Education in the city center of Aksaray (in TURKEY). Demographic information on the participants is given in Table 1.

Table 1. Demographic Information of the Participants

Gender	**Frequency (f)**	**Percentage (%)**
Female	18	90
Male	2	10
Total	**20**	**100**
Educational Status	**Frequency (f)**	**Percentage (%)**
Undergraduate	13	65
Master's	7	35
Total	**20**	**100**
Type of School Served	**Frequency (f)**	**Percentage (%)**
Kindergarten	20	**100**
Years or Work Experience	**Frequency (f)**	**Percentage (%)**
1-5 years	1	5
6-10 years	3	15
11-15 years	11	55
16 years and above	5	25
Total	**20**	**100**

According to Table 1, 18 (90%) of the teachers in the study sample are female and two (20%) are male. Considering the educational status of the teachers, 13 (65%) teachers have undergraduate degrees and seven (35%) teachers have master's degrees. All of the participants (100%) work in kindergartens affiliated with the Ministry of National Education. When the professional seniority of the participants is examined, one teacher (5%) has work experience of 1-5 years, three teachers (15%) of 6-10 years, 11 teachers (55%) of 11-15 years, and five teachers (25%) of 16 years and above.

Data Collection

The *Demographic Information Form* and *Interview Form* prepared by the researchers were used to collect the data.

Demographic Information Form: The form consists of 4 questions regarding the demographic information of the participants (gender, educational status, type of school and professional seniority).

Interview Form: The interview form consists of 11 open-ended questions. In the preparation of the semi-structured interview form, a literature review on education in nature and environmental education was conducted as the initial step (Ahi, 2017; Basile, 2000; Davies, 1996; Engin, 2019; Köşker, 2019; Kahriman-Pamuk, Elmas, & Pamuk, 2020). Secondly, items suitable for the purpose of the study were created. Third, in order to ensure the content validity of the questions, expert opinions on the interview questions were obtained from three faculty members who are experts in the field of pre-school education. The form was designed and finalized in line with the opinions and the feedback from the experts.

Data Analysis

Content analysis technique was used in order to examine the perspectives of pre-school teachers towards education in nature. Content analysis is the indirect discovery of human behaviors and tendencies, and the systematic presentation of written research documents through coding (Fraenkel, Wallen & Hyun, 2012). The interviews with the teachers were recorded in writing by the first author. In order to get a general idea about the coding of the data, the interview transcripts were examined separately by the two authors. Then, for each sub-purpose, categories were created.

According to Miles and Huberman (1994), researchers need to bring together the data they encoded in different time periods, then compare the data and finally reach an agreement. Accordingly, codes used for the same data by different coders can be examined. Miles and Huberman (1994) state that the percentage of agreement should be more than 80%. In this context, both researchers coded the data separately, and then the codings were compared. As a result of the comparison, the consensus among the coders was determined to be of 87%. Then, in order to reach agreement on different codes, the recorded data were re-examined by the researchers and an agreement was reached on the coding based on the discussions. Data are presented in tables after consensus was reached.

FINDINGS

Depending on the research questions, the findings obtained are given below.

Table 2. Pre-School Teachers' Views on the Definition of Education in Nature

Categories	Frequency (f)	Percentage (%)
Learning in nature	18	52,9
Making observations	5	14,8
Learning by doing	5	14,8
Being curious	2	5,8
Using natural materials	2	5,8
Doing research	1	2,9
Producing products	1	2,9
Total	**34**	**100**

Table 2 provides the views of pre-school teachers on the definition of education in nature. Based on the answers of the teachers, categories were created. Accordingly, teachers defined education in nature under the following categories: learning in nature (52.9%), making observations (14.8%), learning by doing (14.8%), being curious (5.8%), using natural materials (5.8%), doing research (2.9%) and producing products (2.9%). Sample statements regarding the findings are given below:

“Education in nature is education by contacting the environment, learning by doing, and making use of all the opportunities of nature.” (Teacher 3)

"Education in nature is education acquired outdoors, in parks, gardens, forests, and so on, by using natural materials." (Teacher 12)

"It is the whole of the activities of the individual to observe the unstructured natural environment, internalize it, produce products, understand and make sense of it". (Teacher 8)

"It is education that enables children to connect with their environment, realize the developments in nature and adjust their own lives according to the differences in nature." (Teacher 4)

Table 3. Pre-school Teachers' Views on the Necessity of Providing Education in Nature

Categories	Frequency (f)	Percentage (%)
Yes (Necessary)	20	100
No (Unnecessary)	0	0
Total	**20**	**100**

Table 3 includes the opinions of pre-school teachers on the necessity of providing education in nature. Based on the findings of the research, all teachers (100%) who participated in the research stated that education should be given in nature. Sample statements regarding the findings are given below:

"Yes… Creativity can be developed using materials in nature. Stress levels in children can be reduced. It can help kids explore." (Teacher 1)

"It should definitely be included... (Due to) The limited opportunities in the classroom environment, it will reflect positively in children's thinking, acting and socializing." (Teacher 5)

"Yes, for our children to be more creative and explore." (Teacher 7)

"I think it will be positive in terms of helping children build an adequate level of knowledge and perception about basic relationships in nature." (Teacher 15)

Table 4. Pre-school Teachers' Views on What to Consider in Planning Educational Activities in Nature

Categories	Frequency (f)	Percentage (%)
Health and safety precautions should be provided	14	31,8
It should be supported with materials	7	15,9
Children's readiness should be taken into account	7	15,9
Appropriate space must be provided	4	9,09
Weather conditions must be taken into account	3	6,8
It should be fun	3	6,8
It should arouse curiosity	3	6,8
Observation and exploration should be included	2	4,5
It should support creativity	1	2,7
Total	**44**	**100**

Table 4 presents the views of pre-school teachers on what to consider in planning educational activities in nature. Categories were created based on the teachers' responses. Accordingly, teachers' views on what should be considered in the preparation of educational activities in nature are grouped under the following categories: "health and safety precautions" (31.8%), "materials" (15.9%), "children's readiness" (15.9%), "appropriate space" (9.09%), "weather conditions" (6.8%), "creating fun" (6.8%), "arousing curiosity" (6.8%), "encouraging observation and discovery" (4.5%), and "supporting creativity" (2.7%). Sample statements regarding the findings are given as follows:

"In nature activity plans, one should be cautious against the risks that may occur in nature. For example, insect bites, poisonous plants, and so on. Children should be made aware of these issues." (Teacher 14)

"Children's level (of development) should be taken into consideration. One must be careful against accidents. The activities should be planned according to the physical conditions of the area." (Teacher 10)

"It should be a planned but flexible education that allows children to explore themselves and their environment." (Teacher 4)

"Activities suitable for children's ages should be planned by making them fun and playful." (Teacher 13)

Table 5. Pre-school Teachers' Views on the Materials Required for Education in Nature

Categories	**Frequency (f)**	**Percentage (%)**
Everything in nature (tree branches, soil, leaves…)	14	73,7
Materials for studying nature (magnifying glass, magnet, binoculars…)	3	15,8
Appropriate materials for age and development	2	10,5
Total	**19**	**100**

Table 5 presents the opinions of pre-school teachers on the materials necessary for education in nature. Accordingly, 14 teachers (73.7%) stated that "everything in nature" can be used as materials. Three teachers (15.8%) indicated that "materials for examining nature" and two teachers (10.5%) suggested that "age and development appropriate" materials are necessary for education in nature. Sample statements regarding the findings are provided below:

"It is adequate to give the main materials (rope, hammer, wire, rubber, paint, wood, and so on) by being guided by the clues that the child can use in nature, with the clues that he/she needs to produce." (Teacher 5)

"First, nature (soil, water, flower, tree, insect), then various magnifiers, picks, shovels, rakes can be used." (Teacher 11)

"Tree branches, soil, leaves, magnifying glass, containers of different sizes..." (Teacher 16)

"Shadows, rain protection, water resistant solid…" (Teacher 17).

Table 6. Pre-school Teachers' Views on the Skill Sets Developed by Education in Nature

Categories	Frequency (f)	Percentage (%)
Cognitive domain	17	34
Social-emotional domain	15	30
Psychomotor domain	12	24
Self-care domain	4	8
Language domain	2	4
Total	**50**	**100**

Table 6 includes the views of pre-school teachers on which skills education in nature develops. Categories were created based on the responses of the teachers. Accordingly, 17 teachers (34%) mentioned skills in the "cognitive domain", 15 teachers (30%) in the "social emotional domain", 12 teachers (24%) in the "psychomotor domain", 4 teachers (8%) in the "self-care domain" and two teachers (4%) in the "language domain". Sample statements regarding the findings are given below:

“Using resources efficiently, respecting and loving the habitats of living things.” (Teacher 16)

“Easier to hold their attention, they have reduced anxiety, increased creativity, stronger physical structure as they will adapt physically to the natural environment.” (Teacher 1)

“I think it will contribute positively to all developmental areas of children. Since activities are done by seeing, touching and feeling, the activities are very useful and participation is high.” (Teacher 3)

“They understand that nature is a place of living not only for humans, but for all living things. With a great admiration for nature, they realize that protecting nature is their main responsibility.” (Teacher 15)

“It supports research, improves problem-solving skills, improves socialization and cooperation. Attention increases focus. It contributes to all physical, cognitive, self-care and social areas.” (Teacher 17)

Table 7. Pre-school Teachers' Views on the Risks of Education in Nature

Categories	Frequency (f)	Percentage (%)
Security	14	70
Weather conditions	3	15
Educators’ lack of knowledge	3	15
Total	**20**	**100**

Table 7 presents the views of pre-school teachers on the risks of education in nature. Accordingly, 14 teachers (70%) reported "safety”, 3 teachers (15%) "weather conditions", and 3 teachers (15%) “educators’ lack of knowledge" to pose a risk for education in nature. Sample statements regarding the findings are provided as follows:

“Adverse weather conditions can pose a risk from time to time. There may be poisonous insects and plants in the natural environment. There may also be a risk of falling or tripping.” (Teacher 1)

"The risk of education in nature, in my opinion, is teachers who are not adequate and well-equipped to carry out education in nature." (Teacher 20)

"Precautions should be taken due to accidents and the young age of children. Poisoning, insect bites, and so on." (Teacher 10)

Table 8. Pre-school Teachers' Views on Cooperation with Families while Providing Education in Nature

Categories	Frequency (f)	Percentage (%)
Involving parents in activities	11	52,3
Organizing parent trainings	6	28,5
Organizing nature camps	1	4,8
Sending newsletters	1	4,8
Families should not attend	2	9,5
Total	**21**	**100**

Table 8 provides the views of pre-school teachers on ways of cooperation with families while providing education in nature. Accordingly, 11 teachers (52.3%) mentioned "involving parents in activities", six teachers (28.5%) said "organizing parent trainings", one teacher (4.8%) suggested "organizing nature camps", and one teacher (%4.8) recommended sending newsletters. Sample statements regarding the findings are given below:

"I think they can join their games. They can help with planting trees and flowers." (Teacher 16)

"There may be parent participation on a voluntary basis. Collaboration may be requested in material preparation. Activities can also be done at home." (Teacher 17)

"Parents should be comforted and informed in detail in nature education." (Teacher 2)

In addition, according to the table, two teachers (9.5%) stated that parents should not participate in activities while providing education in nature. The answers to this finding are as follows:

"The parents should not participate at all. The parents (may) only take care of their children and take pictures. The teacher can manage the classroom." (Teacher 9)

"Since the children will be affected by the parents, there may be problems with distraction and classroom management." (Teacher 10)

Table 9. Pre-School Teachers' Views on the Negative Factors Affecting Education in Nature

Categories	Frequency (f)	Percentage (%)
Physical and environmental issues	14	73,7
Parents' lack of knowledge	3	15,8
Children's readiness	2	10,5
Total	**19**	**100**

In Table 9, the views of pre-school teachers on the negative factors affecting education in nature are given. Accordingly, 14 teachers (73.7%) stated "physical and environmental problems", three teachers (15.8%) indicated to "parents' lack of knowledge", and two teachers (10.5%) mentioned "children's readiness". Sample statements regarding the findings are given as follows:

"Transportation difficulties, crowded classrooms, appropriate space difficulties, security vulnerabilities, insufficient motivation of children…" (Teacher 6)

"The fact that pre-school children are not able to protect themselves from accidents and dangers due to their young age… Negativities may occur due to the lack of materials, adverse weather conditions, and so on. In such outdoor activities, it is difficult for the teacher alone to control the children." (Teacher 13)

"Education in nature should be started with activities that will prepare children for nature education in advance. Otherwise, in risky situations that children may encounter; negative incidences may occur that will leave a trace in their life in nature." (Teacher 5)

"Parents who do not know the importance of education in nature (such as those who worry that their child will get sick, and so on.), living in urban areas that are located away from the nature, injuries and accidents during the adaptation period of children to the natural environment can negatively affect them." (Teacher 1)

CONCLUSION and DISCUSSION

All the teachers who participated in the study stated that education should be given in nature. They defined education in nature as "learning in nature, making observations, learning by doing, being curious, using natural materials, doing research and producing products". In a similar study conducted by Güzelyurt and Özkan (2018), pre-school teachers stated that they do activities such as "growing plants, studying nature and organizing trips, reusing waste materials and feeding animals" within the scope of environmental education. In another study conducted by Köşker (2020), it was determined that teacher candidates often define nature education through "the function of developing ecological awareness and conservation understanding". According to Finch and Bailie (2015), nature schools should provide children with the time, tools and materials they need to explore nature. In another study by Câmpan and Bocoș (2019), teachers believe that outdoor educational activities are characterized by creativity, freedom and leisure time. The results of the study by Waite (2011) reveal that teachers associate the outdoor learning experience with values such as freedom, joy and independence, and they also describe these experiences with examples from experimental pedagogy. Cordiano et al. (2019) found that teachers evaluate outdoor activities as enjoyable, entertaining, stress-relieving, happy, having a good time, being active, and getting fresh air.

The findings of this research indicate that, in planning educational activities in nature, pre-school teachers may pay attention to "the health and safety precautions, appropriate materials and space, the readiness level of children, weather conditions, arousing curiosity, encouraging observation, creativity and discovery." According

to Alat, Akgümüş, and Cavali (2012), children's innate desire and tendency to take risks should not be blunted but supported provided that necessary safety precautions are taken. In the same study, it was determined that pre-school teachers could not give enough space to outdoor activities due to insufficient physical conditions, crowded classrooms, safety concerns, weather conditions and negative reactions of parents. When the results of the two studies are evaluated together, it can be assumed that teachers' consideration of the abovementioned points while preparing an educational activity in nature will increase the feasibility of the planned activity. In a similar study conducted by Akpınar & Kandır (2022), it was determined that teachers' inclusion of outdoor play activities in their plans and practices is affected by weather conditions, parent attitudes, physical conditions of the institution, and their views and attitudes towards these activities.

Considering the perspectives of pre-school teachers on the materials required for education in nature, they stated that "everything in nature (referring to rope, hammer, wire, wood, earth, water, wood, and so on) can be used as educational material" and "materials appropriate for age and development can be used". According to White and Stoecklin (1998), the natural elements in the open space can be provided by unstructured, open-ended games that emphasize creative exploration with various materials. Interaction with nature can stimulate children's exploration of plants, dramatic play and imagination. When the situation of outdoor activities in pre-school education in Turkey is examined, it has been determined that there are similar materials (swings, climbing sticks and so on.) in the outdoor spaces of pre-school education institutions, mostly consisting of traditional playgrounds, and these areas do not even support the physical development of children sufficiently (Yılmaz, 2016). As a matter of fact, in the study conducted by Alat, Akgümüş, and Cavali (2012), pre-school teachers stated that the absence of a separate playground in their schools, the absence of materials such as swings, slides, climbing ladders, and sandboxes are an obstacle to doing outdoor activities.

Teachers participating in the research stated that education in nature has a positive effect on many developmental areas of children. Teachers stated that education in nature mostly contributes to children's cognitive development such as "attention, creativity, motivation for learning, learning by discovery and problem-solving skills". In addition, they said that it greatly improves children's social-emotional skills such as "gaining environmental awareness, expressing themselves more accurately, using resources efficiently, respecting and loving the living spaces and living things". In addition, they said that education in nature contributes to the

psychomotor, self-care and language skills of children. In a similar study, Uludağ (2021) indicated that out-of-school learning environments benefit children in terms of developmental, cognitive and social-emotional aspects. Another study conducted by Akpınar and Kandır (2022), most of the teachers who participated in the study stated that the activities have effects on "social-emotional", "physical" and "cognitive development". Köşker (2013) expressed that education in nature creates significant opportunities for children to get to know nature and to gain awareness of nature. As a matter of fact, research shows that outdoor activities carried out regularly in pre-school education institutions have benefits for children's motivation to get to know the nature closely and their willingness to protect the nature (Alat, Akgümüş, & Cavalı, 2012; Engin, 2019; Köşker, 2020). It

has been stated that education in nature allows children to release their excess energy and get fresh air, which is effective in children's learning (Polat Topdemir, 2016). In consideration of all the research data, well-planned and quality nature-based activities will support the holistic development of children.

According to another important finding of the study, the teachers who participated in the study stated that the most important risks of education in nature are “safety, weather conditions and the lack of knowledge of the educators”. Similar results were obtained in the study conducted by Uludağ (2021). In a similar study conducted by Akpınar and Kandır (2022) on pre-school teachers' views on outdoor play activities, pre-school teachers preferred outdoor play activities when "the temperature is high and there is no rain”. It has been determined that the reasons for not including these activities or giving less space in the program are "weather conditions", "parental attitudes" and "physical conditions". Similarly, Thigpen (2007) suggested that the biggest obstacles to outdoor activities are traffic, safety problems, injuries, diseases, environmental pollution and parental concerns. When all these results are evaluated together, it is thought that safety and weather conditions should be taken into account when planning outdoor activities, and that teachers’ level of knowledge about education in nature should be increased.

According to another striking result of the research, while the majority of teachers said that the families should be included in nature education activities by "involving parents in the activities, organizing parent trainings, organizing nature camps and sending newsletters", only two teachers stated that families should not participate in this process due to parents' inability to deal with the process sufficiently and the potential difficulties in classroom management.

Teachers listed "physical and environmental problems, lack of parents’ knowledge and children’s readiness" among the negative factors affecting pre-school teachers' education in nature. Teachers mostly related to physical environment and environmental problems. They mentioned reasons such as transportation difficulties, crowded classrooms, appropriate space difficulties, security issues, accident risks, adverse weather conditions. They also said that parents' lack of knowledge about education in nature creates a problem in allowing their children and encouraging them. In addition, they emphasized that informing children about educational activities in nature in advance will contribute to the children's exposure to less risk, interest in the activity and motivation. In a similar study, Cordiano et al. (2009) determined that teachers are generally active and observant in outdoor activities, and they pay more attention to the "safety" element during the planning and implementation stages of the activities.

When all these results are evaluated together, it can be said that the pre-school teachers participating in the study have limited knowledge about education in nature. Considering the great contribution of the inclusion of nature education into the pre-school curriculum and daily routine, it is thought that it is necessary for teachers to receive informative and practical training on the philosophy of education in nature.

RECOMMENDATIONS

Based on the results of this research, the following recommendations were made:

• It is possible to increase the number of projects aimed at both out-of-class practices regarding education in nature and methods that will improve/change the perspectives of pre-school teachers towards education in nature.

• Information about the process and operation can be shared by collaborating with administrators and teachers working in private institutions that provide education in nature and carry out this practice.

• Resources, documents and web sites with application examples that can guide pre-school teachers' perspectives on education in nature can be prepared.

• Pre-school teachers can be provided with practical in-service training on nature education, so they can gain experience in this field.

• Studies on the dissemination of education in nature can be planned by the Ministry of National Education. This can make a significant contribution to the upbringing of generations who are at peace with nature, protect their environment and live in harmony with nature.

• Studies can be planned by researchers to observe the educational activities in nature applied by pre-school teachers.

ETHICAL TEXT

In this article, journal writing rules, publication principles, research and publication ethics rules, journal ethics rules have been followed. Responsibility for any violations that may arise regarding the article belongs to the author(s). The approval of the research proposal was received with the decision of the Social Sciences Institute of the University of Aksaray with the decision dated 18.02.2022 and numbered 2022/09-48.

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