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Editor's message;

Dear researchers/ practitioners,

As Scientific Educational Studies Journal family, we are delighted to commemorate the eighth anniversary with your gracious support. Over the past eighth years, we have witnessed the publication of exceptional studies, affirming our commitment to fulfilling the vision of taking a leading role in scientific publications and achieving recognition in esteemed indexes. We appreciate and welcome the invaluable interests and contributions of our field editors, authors, referees and readers, all of whom have played a pivotal role in the success of our journal.

We look forward to your ongoing interest and contribution to SES and hope to meet in the next issue.

Prof. Dr. Mahmut SAĞIR
Editor

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THE EFFECT OF PROBLEM-BASED LEARNING ACTIVITIES ON SECONDARY SCHOOL STUDENTS' AWARENESS OF BIODIVERSITY*

Güzide DADLI, Evrim URAL*****

Abstract

Nowadays, with the increase in local and global environmental problems, it is seen that human activities mainly cause environmental problems. Undoubtedly, the most effective way to solve these problems is environmental education, which aims to raise people's awareness. Within the scope of the study, the aim was to raise students' awareness about biodiversity by using the PBL method. In the 7th grade "Human and Environmental Relations" unit, the case study design, one of the qualitative research designs, was used to determine the effect of problem-based learning activities on students' understanding of biodiversity and its importance. Ten 7th-grade students participated in the study. The data of the study were obtained from the answers given by the students to the semi-structured interview questions in the fourth and fifth sections of the Environmental Awareness Interview Form. Content analysis was used to analyze the research data. As a result of the research, it was observed that the students in the experimental group, in which problem-based learning activities were carried out, had a higher awareness of not only interspecies biodiversity but also intraspecies biodiversity compared to the control group. In addition, it was determined that the experimental group students could evaluate the effects of the decrease in species diversity from multiple perspectives. In contrast, the control group students' perspectives on the subject were more limited. According to these results, deeper learning occurred in the experimental group students than in the control group.

Keywords: Biodiversity, problem-based learning, environmental problems, environmental awareness.

* *It is based on the Master's thesis written by the first author under the supervision of the second author.*

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PROBLEME DAYALI ÖĞRENME AKTİVİTELERİNİN ORTAOKUL ÖĞRENCİLERİNİN BİYOÇEŞİTLİLİK KONUSUNDAKİ FARKINDALIKLARINA ETKİSİ

Özet

Yerel ve küresel çevre sorunlarının giderek arttığı günümüzde, çevre sorunlarının temelde insan faaliyetlerinden kaynaklandığı görülmektedir. Bu sorunların çözüme kavuşturulması için şüphesiz en etkili yol insanların bilinçlendirilmesinin hedeflendiği çevre eğitimidir. Çalışma kapsamında, probleme dayalı öğrenme yöntemi kullanılarak, öğrencilerin biyoçeşitlilik konusu ile ilgili farkındalık kazanmaları amaçlanmıştır. 7. sınıf "İnsan ve Çevre İlişkileri" ünitesinin öğretiminde probleme dayalı öğrenme etkinliklerinin; öğrencilerin biyoçeşitlilik konusundaki farkındalıkları üzerindeki etkisini belirlemek amacıyla, nitel araştırma desenlerinden durum çalışması deseni kullanılmıştır. Çalışmaya 7. sınıfa devam etmekte olan 10 öğrenci katılmıştır. Araştırmanın verileri Çevre Farkındalığı Görüşme Formu'nun 4. ve 5. bölümlerinde yer alan yarı yapılandırılmış görüşme sorularına öğrencilerin verdikleri cevaplardan elde edilmiştir. Araştırma verilerinin çözümlenmesinde içerik analizinden yararlanılmıştır. Araştırma sonucunda, probleme dayalı öğrenme etkinliklerinin gerçekleştirildiği deney grubu öğrencilerinin yalnızca türler arası biyoçeşitlilik değil aynı zamanda tür içi biyoçeşitlilik konusundaki farkındalıklarının kontrol grubuna göre daha fazla olduğu görülmüştür. Ayrıca, deney grubu öğrencileri tür çeşitliliğinin azalmasının etkilerini çoklu bir bakış açısıyla değerlendirebildikleri, buna karşılık kontrol grubu öğrencilerinin konu ile ilgili bakış açılarının daha sınırlı olduğu belirlenmiştir. Deney grubundaki öğrencilerin nesli tükenen ve tükenmekte olan canlılarla ilgili örnekleri sayı ve çeşitlilik bakımından kontrol grubuna göre daha fazladır. Bunu yanı sıra, deney grubu öğrencileri biyoçeşitliliğin önemine dair daha detaylı açıklamalar yapmışlardır. Bu sonuçlar doğrultusunda, deney grubu öğrencilerinde kontrol grubu öğrencilerine göre daha derin öğrenme gerçekleştiğini söylemek mümkündür.

Anahtar Kelimeler: Biyoçeşitlilik, probleme dayalı öğrenme, çevre problemleri, çevre farkındalığı.

INTRODUCTION

Nowadays, environmental problems are increasing rapidly. As the impact of environmental problems is felt more and more in daily life, social environmental awareness is becoming an increasingly important issue. Therefore, it is necessary to focus on educational activities focusing on environmental concepts (Yücel & Özkan, 2015). Individuals need to know the environment to develop environmental awareness. In this context, the importance of environmental education in schools has gradually increased. In the Tbilisi Declaration, the general purpose of environmental education was defined as "to develop a world society that is aware of and concerned about the environment and environmentally related problems, and who, with the knowledge, skills, attitudes, and motivation, works individually and collectively to solve existing problems and to prevent new problems that may arise" (UNESCO-UNEP, 1976; Cited in Darner, 2007).

One of the most critical issues within the scope of environmental education is the issue of biodiversity. Biodiversity is the variability among living organisms from all sources (Lindemann-Matthies, 2009). Many of humanity's needs are met by biodiversity. Today, the world faces a severe biodiversity crisis. Every day, the number of beings from many species are decreasing to critical levels, and many species are becoming extinct (Hooper et al., 2005; Trombulak et al., 2004; Vié et al., 2008). The rapid increase in human population, urbanization and industrialization, and non-ecological agricultural applications rapidly reduce biodiversity (Çepel, 2008; Dobson, 2005; Görmez, 2007). Understanding biodiversity and the relationship between living things and realizing how vital each living species is in the ecosystem is essential in preventing many environmental problems. Therefore, teaching the concept of biodiversity is important. When the literature is examined, it is seen that various methods are used in teaching biodiversity-related subjects. For example, Gas and her friends (2021) stated that Bioblitz events, which provide students with experiential learning experience, increased students' learning and provided a learning opportunity outside of the traditional classroom. Okur-Berberoğlu, Yalçın-Özdilek & Sönmez (2014) aimed to determine the effect of the theatre method on students' learning about sea turtles. The results showed that the theatre method is effective for learning about sea turtles and is more successful than the traditional lecturing model. Paula et al. (2018) conducted a qualitative survey to investigate what kind of teaching methods have been used to promote biodiversity education and how the methods support student learning. Their survey displayed that the most effective methods in biodiversity education are the ones in which students actively participate.

One of the methods that can be used to study biodiversity is problem-based learning (PBL). Heard (2016) stated that PBL is an effective method to help students explore fundamental concepts, collect data, and synthesize this data. The goal of PBL was to develop students' professional practice skills by encountering real problems (Pease & Kuhn, 2010). Researchers (Dochy et al., 2003; Hmelo-Silver, 2004; Jones et al., 2013) state that PBL positively affects students' motivation and increases their permanent learning. PBL supports active learning and helps students develop life-long learning skills (Tessier, 2004). PBL helps develop skills that are very important in daily life. Anwar & Rahmayanti (2021), who studied the effect of problem-based learning, stated that it positively affects students' scientific argumentation abilities. Their findings displayed that problem-based learning significantly influences the ability of scientific argumentation. Similarly, Ismail et al. (2018) displayed that problem-based learning develops students' critical thinking skills.

Although there are differences in how the PBL is applied, it starts from the same point. In this method, the starting point of the learning process is scenarios related to real life (Dahlgren & Öberg, 2001). In the literature, expressions such as “problem” and “case” are also used instead of the word “scenario.” In the PBL, students reveal the problem in the scenario given to them and do research to solve it. At the end of the problem-solving process, students are expected to achieve their learning goals regarding the subject. Students working collaboratively to solve the problem are expected to analyze the problem and develop creative solutions to the problem. Although there are minor differences in practice, the student is at the center of PBL, and there are many stimuli during the learning process (Gorghiu et al., 2014). The problems used in the learning process are directly related to real life (Dahlgren & Öberg, 2001). Therefore, the learning process motivates the student and helps to achieve effective learning.

The study's goal was to use PBL to place students at the center of the learning process. This approach could facilitate effective learning. The complex structures of ecological problems necessitate not only knowledge about the subject but also various cognitive skills (Lewinsohn et al., 2015). Due to the multidimensional nature of the biodiversity issue, research and establishment of cause-effect relationships during the learning process are necessary. PBL is a method in which students use these skills, including research-questioning and analytical thinking skills. Given this, it was hypothesized that the PBL method would be effective in the context of teaching biodiversity. The study aimed to examine the effect of PBL activities on students' awareness of biodiversity and

its importance. The problem scenarios were designed to be relevant to both the subject and daily life.

The Aim of the Study

The study aims to examine the effect of PBL activities on students' awareness of biodiversity and its importance.

METHOD

The research model

This research used PBL activities to teach the 7th grade "Human and Environmental Relations" unit. The case study design, one of the qualitative research designs, was used to determine the effect on students' understanding of biodiversity and its importance.

Samples

The study group research consists of 10 students from two 7th-grade classes studying at a public secondary school in the Türkoğlu district of Kahramanmaraş province in the 2015-2016 academic year. In line with the purpose of the study, two classes whose levels were closest to each other were determined to carry out the applications, taking into account the class achievement averages and the opinions of the course teachers. The classroom experimental group, where PBL activities were implemented, was determined by impartial assignment as the classroom control group, where the activities in the textbook were followed. There are 30 students in each classroom where the applications are carried out. In this study's qualitative data collection process, the criterion sampling method, one of the purposeful sampling methods, was used to determine the sample (Creswell & Plano Clark, 2020). The students' academic achievement levels were considered a criterion in the selection of the students. In the application part of the study, five students from each of the experimental group and control group with similar academic achievement levels were selected by the researchers as participants in the collection of qualitative data.

Data Collection Tool

The data regarding the study were obtained from the short answers given by the students to the semi-structured interview questions in two sections of the Environmental Awareness Interview Form (EAIF). Some changes were made to the interview questions in the EAIF developed by Solmaz (2010) to be compatible with the environmental conditions of the region where the study was conducted. New questions were added considering that changing local and

global problems are a factor affecting the environment. EAIF includes 6 research topics that serve the learning gains of the 7th Grade "Human and Environment" unit and a total of 28 interview questions related to this research topic. For the purpose of this study, sections 4 and 5 of the edited version of EAIF were used as the data collection tool. Section 4 of EAIF consists of 5 questions related to the importance of biodiversity for natural life and section 5 consists of 6 questions related to the examples of plants and animals that are extinct or in danger of extinction in our country and in the world.

Preparation of Activities and Materials Used in the Research

In the research, scenarios were prepared for problem-based learning activities that address real-life issues and problems related to the achievements of the 7th Grade "Human and Environmental Relations" unit of the Science Curriculum. Textbooks, auxiliary resources, scientific publications, current events, and reference people were used to create scenario texts. In this process, the necessary corrections were made by benefiting from the opinions of two science teachers who are experts in their fields and two academicians, one of whom is an associate professor and the other a professor, and the original problem scenarios were given their final shape.

In line with the purposes of the research, four problem scenarios related to biodiversity and its importance were prepared. The prepared problems are related to biodiversity and its importance. The scenarios were prepared based on the learning gains in the human and environmental relations unit according to the Science Class Curriculum (MEB, 2013). Scenarios include situations that students are familiar with from daily life that attract their attention and interest, as well as problems involving social problems. The selected problem situations are expressed using clear and straightforward language so students can easily understand them. Below the scenarios, there were a few questions to help students find the problem, and with the help of these questions, the students could find the details for the detection and solution of the problem themselves. Problem scenarios and related topics/concepts are given in Table 1.

Table 1. Problem scenarios and related topics and concepts

Scenario title	Related topics/concepts
sahlep	biodiversity, local and global environmental problems, endangered species, unconscious hunting, species conservation
museum trip	biodiversity, local and global environmental problems, endangered creatures, species protection

which choice is good for us?	biodiversity, local and global environmental problems, species protection
nature massacre: look at what comes out of the stomachs of dead albatrosses!	biodiversity, local and global environmental problems, endangered creatures, species protection

Application process

The applications were carried out for four weeks, four lesson hours per week. The first week is "Sahlep", the second week is "Museum trip", the third week is "Which choice is good for us?" and week four "Nature massacre: Look at what comes out of the stomachs of dead albatrosses!" PBL applications were made with the scenarios titled. After the application, the students in the experimental and control groups were asked the questions in the fourth and fifth parts of the EAIF.

The application process in the control group

In the control group, the lessons were taught with the traditional lecture method according to the current curriculum. The applications were carried out for 4 weeks, 4 lesson hours per week. The applications in the control group were based on the science curriculum. For this purpose, the student textbook was used. The activities suggested in the specified source have been carried out, and the evaluation questions and exercises have been solved. Lessons in the control group, where the traditional lecture method was applied, were held in classroom and laboratory environments.

The application process in the experimental group

To familiarize the experimental group students with the PBL method, PBL applications were carried out as a pilot study in the previous unit before the main application. Students were divided into five groups of 5-6 people. While forming the groups, students' course achievements were taken into account, as was the case during the pilot study, to ensure that the groups were heterogeneous within themselves and homogeneous among the groups. Each group was asked to choose its president, scribe, and spokesperson and to find a group name. A sample scenario was worked on with the groups, and information was given about how the lessons would be conducted. Detailed information was given to the students on topics such as the steps of solving the current problem in the given scenario, choosing the source to benefit from, researching, preparing a report, and doing group work. In the experimental group, the steps of the PBL method were followed. The steps are given below:

- A separate problem scenario was prepared for each session, and the students read the scenarios at the beginning. In addition, a few questions were included under the scenarios to help students find the problem. These questions were intended to help the students find the details and sub-problems to detect and solve the problem themselves.
- In the first hour, student groups were given time to discuss and exchange ideas within the group to determine the problem or problems in the scenarios.
- At the end of the given time, the groups explained their ideas, and as a result of discussions within and between the groups, the problems in the scenarios were identified. Then, the students sought answers to the following questions about the problem:

  What do I know?
  What are my predictions?
  What should I research?
  What did I learn?
- To determine the students' existing knowledge, they are asked, "What do I know?" about the problem in the scenario. In addition, students listed their predictions under "What are my predictions." In the following lesson, the students were asked what information they needed to solve the problem, and they were expected to create sub-problems related to the problem they determined. In other words, students asked themselves, "What should I research?" Students were asked to research with their group friends on the problems, sub-problems, and topics they had determined. In this process, students benefited from different resources. At this stage, students were able to bring resources to the classroom and benefit from them, as well as to conduct research on the internet with the interactive whiteboard.
- Students were asked to find a solution to the problem based on the information they acquired through their research on the sub-problems and topics they created by discussing them as a group.
- Students accessed the materials they needed until the next lesson, shared the information they gathered before the lesson, and then prepared a report and product to solve the problem. They presented the report and product they prepared to their classmates. Students were allowed to discuss among themselves in the classroom environment, and the solution suggestions they obtained to solve the problem in groups were shared among the groups.

- In order to ensure permanent learning and to complete the missing information, if any, the auxiliary questions in the scenarios were asked to the students one last time, and all students answered the questions through discussion. Any incorrect or missing parts of the prepared report were corrected. In other words, the subject was summarized, and the problem was solved under the guidance of the researcher.
- Depending on the researcher's application plan, worksheets were distributed to the students in the middle and at the end of the application in order to reinforce their academic knowledge and review what they had learned.

An example of the scenarios and worksheets used in the PBL application is included in the appendix. In the PBL, students take responsibility for their learning as they reach knowledge by researching, questioning, and discussing among themselves. In this process, the teacher's guidance for the students helps them access information and realize learning. For this reason, the researcher guided the students throughout the application by asking questions, tried to prevent the students from deviating from the topic by making the necessary interventions, and provided supportive guidance in eliminating the deficiencies.

Validity and Reliability

In order to ensure the internal validity of the study, the opinions of one science education faculty member and one expert science teacher were received before the application of the interview form prepared by the researchers. Two science teachers not involved in the study were asked to read the form and evaluate the questions regarding readability and understandability. In line with the feedback from expert opinions, the researchers re-examined the form and made the necessary corrections. Before the interviews, participants were given explanations about how the interview would take place. During the interviews with the participants, the answers given by the participants to each question were repeated, the participants were expected to confirm, and any misunderstood parts were corrected immediately. The interviews lasted approximately 15-20 minutes. Considering the interviews were conducted with secondary school students, this period is suitable for long-term interaction. The answers from the participants are given verbatim as quotes in the findings section.

To ensure external validity, the research model, study group, data collection tools, data collection, data analysis, and how the findings were organized are

explained in detail. The study participants were determined by purposeful sampling and consisted of suitable individuals who would contribute to the purpose of the study.

For internal reliability, all research findings were presented without comment, and all data were transcribed to prevent data loss. In addition, the data were read separately by two researchers, and codes were created independently of each other. The researchers reached a consensus in creating themes based on the codes.

For external reliability, the data are appropriately discussed in the results section. In addition, the researchers evaluated the consistency of the results and findings sections, and a consensus was reached.

Analysis of data

The students' answers to the questions in the 4th and 5th sections of the EAIF in the experimental and control groups were transcribed and analyzed using content analysis. In determining the categories used for evaluation during the analysis, in addition to scientific sources, the analyses made by Solmaz (2010), who prepared the EAIF, were also used. Also, the created codes were examined by a science education associate professor, a science education professor and a science teacher who is an expert in her field. In calculating the reliability of the determined codes, Miles & Huberman's (1994) reliability formula (Reliability = [Agreement/ (Agreement 4 Disagreement)] x 100) was used and inter-rater agreement level was calculated as 86 %. Reliability calculations above 70 % are considered reliable for the research (Miles & Huberman, 1994). While questions 4a and 4b in section 4 of EAIF were evaluated separately, questions 4c, 4d, and 4e were evaluated together because they question the roles of living things in the ecosystem. Interview questions 5a, 5b, 5c, and 5d, which question the creatures that are extinct or under threat of extinction in the world and our country, were evaluated together in the 5th section of EAIF. Interview questions 5e and 5f of the fifth section, which question the reasons for the extinction of living things, were evaluated together.

FINDINGS

To examine the effect of the PBL on the students' awareness of biodiversity and its importance, five students from both the experimental and control groups were asked semi-structured interview questions in the EAIF Sections 4 and 5 after the application. The experimental group students are S1, S2, S3, S4, S5; the control group students were coded and named S6, S7, S8, S9, S10. The short

answers given by the students were analyzed using the content analysis method.

Findings from the answers to the questions in EAIF Section 4

Questions 4a, 4b, 4c, 4d, and 4e in Section 4 of the data collection tool are related to biodiversity and its importance. Below is the analysis of the answers given by the experimental and control group students to these questions.

Answers to the interview question 4a: "What comes to your mind when you think of biodiversity? Please explain this concept."

The students' answers to interview question 4a, which asked them to reveal their knowledge about the concept of "biodiversity," were examined in two separate categories, and their answers are presented in Table 2.

Table 2. Answers given by experimental and control group students to the question 4a

Category	Codes	Experimental group students		Control group students	
		n	%	n	%
species diversity	-various animals -various plants -multiple living species -living diversity	5	100	5	100
intraspecific diversity	-diversity of organisms of the same species	5	100	4	80

When the answers given by the experimental group students regarding the concept of "biodiversity" are examined, it is seen that all of the students (100%) answered in both the species diversity category and the intra-species diversity category. An example of student responses is given below:

S3: *" Bio is a separate word; diversity is another word. Bio means living like animals and plants. Biodiversity means the diversity of living things. "There is also diversity within its species, such as the brown bear and the polar bear*."

When the answers given by the control group students regarding the concept of "biodiversity" were examined, 80 % of the students gave answers in both the species diversity and the intra-species diversity categories. S10 answered,

"What is biodiversity?" by referring to "various animals." This answer only fits the category of species diversity. An example of student responses is given below:

S6: "Living *diversity. I mean living things. Plants and animals are coming to my mind. Desert foxes, arctic foxes, various creatures living in rainforests, for example."*

Answers to the interview question 4b: "While there are 25 species in a marine ecosystem, if the number of species decreases to 10, what consequences will this cause in that ecosystem?"

The students' answers to interview question 4b were examined in three separate categories, and their answers are presented in Table 3.

Tablo 3. Answers given by experimental and control group students to the question 4b

Category	**Codes**	**Experimental group students**		**Control group students**	
		n	%	n	%
level 1 it evaluates the decline in an ecosystem only in terms of species disappearing.	(no answer)	0	0	0	0
level 2 it also evaluates the decrease in species diversity in an ecosystem in terms of creatures that feed on extinct species.	-creatures that feed on endangered fish are negatively affected -those who feed on extinct creatures from outside are negatively affected -they become extinct	5	100	5	100
level 3 it evaluates the decrease in species diversity in an ecosystem in terms of all living things in that ecosystem.	-all living things begin to become extinct. -the balance of the ecosystem is disrupted	5	100	3	60

When the answers of the experimental group students regarding the importance of biodiversity were examined, it was seen that 100 % of them gave answers at the second and third levels. Examples of student responses are given below:

S3: *"The creatures that feed on them, as we have just given an example, if a mouse eats a grasshopper, it is affected by the mouse, just like if some eat that fish and feed on these creatures, like a bird, they cannot eat those creatures, they turn to other things and eat traps just like albatross birds. It may end up happening to them. There will be a decrease in their numbers, and the balance of that ecosystem will be disrupted."*

S5: "For *example, if they become extinct, the creatures that feed on them will also be in danger of extinction. Creatures that feed on it are affected, as they become extinct because there is no breeding, and other creatures are affected by this because nutrition decreases. The ecosystem is negatively affected."*

When the answers given by the control group students regarding the importance of biodiversity were examined, 100 % of them gave level 2 answers, and 60 % of them gave answers at the 3rd level. Examples of student responses are given below:

S6: *"The food chain is broken, and they feed on each other. They are negatively affected."*

S7: *"The number of fish decreases. If the species of fish it eats are extinct, the fish there may starve. They, too, may become extinct, disrupting the order in this ecosystem."*

Interview questions 4c, 4d, and 4e of the fourth section, which are related to the roles of living things in the ecosystem, were evaluated together.

Answers to the interview question 4c "In your opinion, is there any living thing in nature that has no role or benefit? If so, which creature is this? Why?, 4d "What is the role of the worms that live in our garden and scare some of our friends? Do they have any benefits for nature?", 4e "What might happen if we think they disappear from their environment?":

The students' answers to interview question 4c, 4d, and 4e were examined in three separate categories, and their answers are presented in Table 4.

Table 4. Answers given by experimental and control group students to questions 4c, 4d, and 4e

Category	Codes	Experimental group students		Control group students	
		n	%	n	%
level 1 he thinks that there are living things that do not benefit nature or have any function in nature. he believes that creatures that are disliked and seen as harmful by humans are also harmful to nature.	(no answer)	0	0	0	0
level 2 he knows that all living things benefit nature and have a duty in nature. but he cannot explain this with scientific reasons.	- every living being has a mission	5	100	5	100
level 3 he knows that all living things are beneficial to nature and have a function in nature, and he bases this on scientific grounds.	-its extinction will negatively affect other living things -other creatures may starve -its duty in nature remains incomplete -natural balance is disrupted	5	100	5	100

When the answers given by the experimental group students to the questions related to the roles of living things in the ecosystem were examined, it was seen that 100 % of the students gave answers at the second and third levels. They expressed the opinion that all living things in nature have a function. Examples of student responses are given below:

S2: "No, *sir, every living thing in nature was created for a reason." (4c)*

"Yes, there are. Their role is to aerate the soil, so plants grow better, and water can easily go to the bottom of the plant." (4d)
"The consequences of airless soil can be severe, leading to a decrease in productivity and negatively impacting other living organisms." (4e)

S5: *"Every living thing has a role in nature… every living thing impacts nature." (4c)*
-"Worms aerate the soil. They are connected to the environment and the soil, and they help plants grow by aerating the soil." (4d)
-"So, his task remains incomplete. Natural balance is disrupted." (4e)

When the answers given by the control group students to the questions about the roles of living things in the ecosystem were examined, it was seen that 100 % of the students gave answers at the second and third levels. They expressed the opinion that all living things in nature have a function. Examples of student responses are given below:

S6: *"No. "Every living thing has a duty." (4c)*
"They mix the soil so that the plant can take root more easily." (4d)
"Plants may have a harder time taking root. Therefore, it may have a negative impact." (4e)

S7: *"No. They all have benefits." (4c)*
"They open the air by piercing the soil, and water can easily enter the roots of the crops through the holes they make. I think it is beneficial." (4d)
"When crops cannot grow well, they are deprived of air, and their water fails to reach the bottom, to their roots." (4e)

Findings from the answers to the questions in EAIF Section 5

The first four questions of the fifth section, 5a, 5b, 5c, and 5d, related to the creatures that are extinct or under threat of extinction in the world and our country, were evaluated together.

Answers to the interview questions 5a "Are there any endangered creatures in our country? Can you give an example?", 5b "Are there any extinct creatures in the world? Can you give an example?", 5c "Are there any creatures in danger of extinction in our country? Can you give an example?", 5d "Are there any creatures in danger of extinction in the world? Can you give an example?":

Table 5 shows the answers of the experimental group students to the interview questions related to the creatures that are extinct or under threat of extinction.

Table 5. Answers given by experimental group students to the questions 5a, 5b, 5c, and 5d

Questions	Codes	n	%
are there any extinct creatures in our country?	-anatolian lion	3	60
	-caspian tiger	5	100
	-asian tiger	3	60
	-anatolian cheetah	2	40
	-anatolian leopard	1	20
	-asian elephant	2	40
	-forest rooster	1	20
are there any extinct creatures in the world?	-dodo bird	5	100
	-dinosaur	5	100
	-mammoth	5	100
	-moa	4	80
	-tasmanian devil	1	20
	-snake neck	1	20
	-caucasian bison	1	20
are there any creatures in danger of extinction in our country?	- bald ibis	4	80
	-grey mullet	1	20
	-grizzly bear	1	20
	-lynx	2	40
	-lycian orchid	5	100
	-snow flower	1	20
	-crocus	3	60
	-iris	2	40
	-daffodil	3	60
	-roe	1	20
	-swamp owl	1	20
	-mediterranean monk	1	20
	-red deer	1	20
	-sea turtle	1	20
are there any creatures in danger of extinction in the world?	-glass frog	3	60
	-polar bear	5	100
	-jade flower	1	20
	-raflesia flower	1	20
	-venus flower trap	1	20
	-panda	4	80
	-penguin	3	60
	-tiger of the bengal	1	20
	-white whales	1	20
	-sturge catfish	2	40
	-koala	1	20
	-javan rhino	1	20

When the answers in Table 5 were examined, it was seen that all of the students in the experimental group were aware of the existence of extinct creatures in

our country and could give at least three examples of these creatures. All students responded by using species names instead of the more general genus names when providing examples of these creatures. Some students responded using specific species names instead of common general names known in daily life. Students in the experimental group gave at least three examples each, knowing extinct creatures worldwide and using their species names. In addition, the experimental group students, aware of the existence of creatures in danger of extinction in our country, gave at least four examples of the names of these creatures and expressed these creatures with the names of their species. For the creatures in danger of extinction worldwide, all of the students in the experimental group gave at least three examples and expressed the mentioned creatures using their species names.

Table 6 shows the answers of the control group students to the interview questions related to the creatures that are extinct or under threat of extinction.

Table 6. Answers given by control group students to the questions 5a, 5b, 5c, and 5d

Questions	Codes	n	%
are there any extinct creatures in our country?	-there is none	3	60
	-there is but I don't	1	20
are there any extinct creatures in the world?	-asian elephant	1	20
	-asian lion	1	20
	-asian tiger	2	40
	-taurus frog	1	20
	-Dodo bird	4	80
	-dinosaur	5	100
	-mammoth	2	40
	-moa	1	20
are there any creatures in danger of extinction in our country?	there is but i don't know	1	20
	-lycian orchid	2	40
	-bald ibis	2	40
	-grizzly bear	1	20
	-cyclanum	1	20
	-red deer	1	20
	-sea turtle	1	20
are there any creatures in danger of extinction in the world?	-panda	4	80
	-penguin	1	20
	-short beaked dolphin	1	20
	-tiger of the bengal	1	20
	-polar bear	1	20

When the answers in Table 6 are examined, it is seen that after the application, 60 % of the control group students stated that there are no endangered

creatures in our country. A student stated that there are extinct creatures but could not give an example. Two students were able to give two examples each. All the students in the control group were aware of the existence of extinct creatures worldwide and gave two examples of each of the mentioned creatures. 80 % of the control group students were aware of the endangered creatures in our country and could give examples of these creatures using their species names.

Interview questions 5e and 5f of the fifth section, related to the reasons for the extinction of living things, were evaluated together.

Answers to the interview questions 5e "What could have contributed to endangered creatures reaching this state?", 5f "Do humans have a role in endangered creatures reaching this state? Please explain."

The students' answers to questions related to the reasons for the extinction of living things were examined at two levels, and the answers of the students in the experimental group are given in Table 7.

Table 7. Answers given by experimental group students to questions 5e and 5f

Category	**Codes**		**n**	**%**
level 1 recognizes the direct effects humans have on endangered species.	(no answer)		0	0
level 2 he/she recognizes the direct effects that humans cause, as well as the indirect effects that humans cause, in causing creatures that are in danger of extinction to reach this state.	direct effect -killing for fashion and accessories -hunting sport -urbanization -population growth -killing for trade -highway accidents -scientific experiments -zoos -deforestation -narrowing the living spaces of living things -using violence -unconscious hunting	indirect effect along with direct effects: -environmental pollution -global warming -climate change -depletion of the ozone layer	5	100

When the answers in Table 7 are examined, 100 % of the students in the experimental group gave answers at the 2nd level, considering the direct and indirect factors caused by humans in bringing the creatures that are extinct and

in danger of extinction to this state. Examples of student responses are given below:

S1-*"Global warming, highway accidents, unplanned urbanization, population growth, use for fashion accessories." (5e)*
-"Yes. Highway accidents… Even though there are signs, people do not pay any attention. Creatures such as crocodiles, lions, and leopards are hunted for trade. Creatures are being killed for fashion accessories such as bags, necklaces and bracelets. Zoos are established by removing animals from their natural habitats for trade. "There is bad treatment in circuses." (5f)

S3: - "*Human influence and natural factors… More human influence, sir. "(5e)*
-"People narrow down the habitats of animals, and when they narrow them down, when animals no longer live there, for example, when pandas and bamboo areas decrease, those animals decrease. Forests are being cut down. There is much biodiversity in forests. When trees are cut down, the creatures that feed on them and the creatures that live there become fewer and fewer. Gases that pollute the air, such as gases coming out of factory chimneys. The climate is changing due to pollution; for example, while some birds migrate due to climate change, animals do not know where it is, hot or cold, and their balance is disrupted as if winter and summer have changed places. Due to global warming, the poles are melting, and concreting is effective. Trees and plants are damaged due to floods, earthquakes, storms, and avalanches." (5f)
"Unconscious hunting is taking place, as the number of zoos increases, animals are moving away from their natural habitats, creatures that have no food left go to cities and are killed by people there." (5f)

The answers of the control group students to questions 5e and 5f are given in Table 8.

Table 8. Answers given by control group students to questions 5e and 5f

Category	Codes		n	%
level 1 recognizes the direct effects humans have on endangered species.	-killing for fashion and accessories -hunting sport -urbanization -deforestation -narrowing the living spaces of living things -using violence -unconscious hunting		4	80
level 2 he/she recognizes the direct effects that humans cause, as well as the indirect effects that humans cause, in causing creatures that are in danger	direct effect -killing for skin and fur -hunting sport -industrialization -deforestation	indirect effect -environmental pollution -climate changes	1	20

of extinction to reach this state.	-narrowing the living spaces of living things

When Table 8 is examined, 80 % of the control group students gave level 1 answers after the application on "the reasons why extinct and endangered creatures are in this situation." In comparison, 20 % of the students gave level 2 answers, including direct and indirect effects. Most of the students in the control group think that direct human factors are more effective in bringing extinct and endangered creatures to this state. They did not think about the direct effects caused by humans, indirect effects, and natural factors together and gave answers in this direction. Examples of student responses are given below:

S6: - *"People hunt them for their meat, fur, oil, etc. They also sometimes throw garbage into the sea, which affects the fish." (5e)*
"I think it has a share in it; they destroy natural habitats. They cut down trees, destroy their food…" (5f)

S10: -*"The mammoth could not survive in the ice age. In other words, climate characteristics are effective (climate changes)." (5e)*
- *"Unconscious hunting, unconscious urbanization, deforestation."(5f)*

RESULTS AND DISCUSSION

Within the scope of the study, the effect of problem-based learning activities on students' awareness of biodiversity was examined. The answers given by the experimental and control group students to the questions were analyzed. When the students' answers regarding the concept of "biodiversity" were examined, it was seen that 100 % of the experimental group students and 80 % of the control group students gave answers that included both species diversity and intraspecific diversity. This reveals that all students in the experimental group can evaluate species diversity and intraspecific diversity together in the concept of biodiversity. But there are students in the control group who need help comprehending the issue of intraspecific diversity.

When the students' answers to question, which questions the consequences of the decrease in the number of species in an ecosystem regarding the importance of biodiversity, are examined, it can be seen that all of the students in the experimental group can give answers from a holistic perspective regarding the importance of biodiversity and that the decrease in biodiversity in an ecosystem can be seen both in terms of extinct species and in terms of extinction. It has

been observed that they can evaluate the species in terms of the species that feed on them and all living things in that ecosystem. While all control group students associated the decrease in species diversity with disappearing species, only 60 % of this group could evaluate it from a holistic perspective. The experimental group students thought more about the species' decrease in the ecosystem and evaluated more variables than the control group.

When the answers given by the students to the questions questioning the roles of living things in the ecosystem were examined, it was seen that all the students in both the experimental group and the control group gave answers at the second and third levels. All students know that all living things have a function in nature and can base this on scientific facts. Both the experimental and control group students answered that all living things in nature have a function and that other living things will be affected by the extinction of a living creature in nature. However, when the answers given by the experimental group students were compared with the answers given by the control group students, the subject of "the importance of biodiversity" was explained in a broader context in the answers of the experimental group students, and there were statements that all living things would be affected by the extinction of one living thing from nature and the natural balance would be disrupted.

When the answers given by the students regarding extinct or endangered creatures were examined, it was seen that there were differences between the students in the experimental and control groups. All of the experimental group students were aware of extinct creatures in our country and could give at least three examples of these creatures. On the other hand, 60 % of the control group students stated that there are no extinct creatures in our country, and one student said that there are extinct creatures but could not give an example. The number and variety of examples given by the experimental group students are greater than those given by the control group. The experimental group and the control group students could give examples of extinct creatures worldwide. However, the examples the experimental group students gave was considerably higher in both number and variety than the control group students. Both the experimental group and the control group students were aware of the creatures in danger of extinction in our country and could give examples of these creatures. However, while all of the students in the experimental group could give examples, one student in the control group could not give any examples. The number and variety of examples in the experimental group are much higher than in the control group. A similar situation also applies to examples of creatures in danger of extinction. While both the experimental and control group students can give examples of creatures that are in danger of extinction

in the world, the number and variety of examples of the experimental group students are much higher than the control group.

When the answers given by the students to the questions about what caused the extinction of living things were examined, it was seen that the students in the experimental group were able to evaluate the indirect effects together with the direct effects caused by humans. Experimental group students were able to give many examples of the direct and indirect effects of people. In contrast, 80 % of the control group students focused on the direct effects of people and gave examples based on this. Only one student could express direct and indirect effects and give examples for both groups.

As a result, it was observed that the students in the experimental group, where problem-based learning activities were carried out, were more aware of inter-species biodiversity and intra-species biodiversity than the control group. In addition, it was determined that the experimental group students could evaluate the effects of decreasing species diversity from multiple perspectives, whereas the control group students had more limited perspectives on the subject. The students in the experimental group had more examples of extinct and endangered creatures than the control group in terms of number and diversity. In addition, the experimental group students made more detailed explanations about the importance of biodiversity. Experimental group students carried out applications in four problem scenarios within the scope of the study. They did research to answer the questions in the problem scenarios and developed solution suggestions at the end of the research processes. Students took responsibility for their learning processes. The research process enables students to access more information and develop different perspectives. In the control group, the activities in the textbook were followed. It was observed that the PBL activities carried out in the experimental group not only increased the students' knowledge and awareness of the subject but also broadened their perspectives. As a result, problems created in daily life positively affect students' learning and various skills. Similarly, Souse (2014) searched for the effect of problem-based learning methods while teaching the origins of biodiversity and continents and oceans, and the results of the study revealed that problem-based learning is very effective. Additionally, in their study, Ramadoss & Poyya Moli (2011) aimed to develop biodiversity consciousness among students and developed an action-oriented biodiversity education program. In this program, they developed active classroom sections, hands-on training activities, and field exposure. Their results showed that their program increased the students' knowledge, interest, and skills to protect and conserve local natural resources and biodiversity.

In the literature, there are various studies in which PBL applications are carried out in environmental education (Mittelstaedt et al.,1999; Waliczek & Zajicek, 1999; Palmberg & Kuru, 2000; Kadji-Beltran et al., 2001; Bögeholz, 2002; Korhonen & Lappalainen, 2004; Kaplowitz & Levine, 2005; Bolin et al., 2005; DiEnno & Hilton, 2005; Uzun & Sağlam, 2007; Barbas et al., 2007; Akça & Ata, 2009; Carrier, 2009; Bektaş & Horzum, 2010; Ajiboye & Olatundun, 2010; Erdoğan, 2011; Güven, 2012; Kızıl, 2012; Koçyiğit & Zembat, 2013; Acaray, 2014; Erentay, 2013; Dursun et al.,2015), it is stated that the practices have a positive impact on students' environmental attitudes and awareness. The results of this study and the referenced research above also reveal that the PBL method effectively teaches more specific concepts, such as biodiversity and general concepts in environmental education.

SUGGESTIONS

The results of the study revealed that the problem-based learning method affected the students' awareness of biodiversity and its importance in a positive way. The students' answers to the questions showed that it supported them to think within a broader perspective on a multidimensional and complex issue such as biodiversity. The aim of environmental education is to raise individuals who are aware of environmental problems and can propose solutions to these problems. Considering the complexity of the problems, the importance of being able to look at problems from different perspectives cannot be denied. Students had to think multidimensionally in solving daily life problems in problem-based learning applications. Therefore, problem-based learning method can be utilized in teaching different subjects within the scope of environmental education. The results of the study show that problem-based learning enabled students to approach the interpretation of their knowledge with a broader perspective. The ability to use what is learned in daily life is an indicator of meaningful learning. It is seen that problem-based learning enables students to use what they have learned while solving problems. Therefore, it is an effective method that can be used to support meaningful learning and to use knowledge in daily life. In addition, in line with the aims of science education, it is important to raise individuals who can think, conduct research and apply the knowledge they have learned to daily life. Considering the positive contribution of problem-based learning to the awareness of biodiversity and its importance within the scope of the study, this method can be used in different subjects of the science course. To summarize, problem-based learning method can be utilized in many subjects in both environmental education and science education. Problem-based learning is a method that can be used at all levels of education. Therefore, the application of the method can be realized with

problem scenarios suitable for the developmental levels of students at different educational levels.

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Genişletilmiş Özet

Giriş

Günümüzde hızla artan çevre problemleri günlük yaşamı günden güne daha çok etkilemektedir. Bundan dolayı insanların çevre farkındalığı kazanmaları giderek daha önemli bir konu haline gelmektedir. Bireylerin çevre konusunda bilgi sahibi olması, çevre farkındalığı geliştirmede oldukça önemlidir. Çevre sorunlarının farklı disiplinleri ilgilendiren karmaşık yapısı nedeniyle, çevre eğitiminin konu kapsamı da oldukça geniştir. Canlıların birbiri ile ilişkisinin anlaşılması, her bir canlı türünün ekosistemde ne kadar önemli olduğunun fark edilmesini içeren biyoçeşitlilik konusu bunlardan biridir ve pek çok çevre sorununun önlenmesinde oldukça önemlidir. Bu nedenle, biyoçeşitlilik konusunun öğretiminde etkili öğretim yöntemlerinin kullanılması gerekmektedir. Biyoçeşitlililik konusunda kullanılabilecek yöntemlerden bir tanesi de probleme dayalı öğrenme yöntemidir. Çalışma kapsamında, probleme dayalı öğrenme yöntemi kullanılarak, öğrencilerin biyoçeşitlilik konusu ile ilgili farkındalık kazanmaları amaçlanmıştır. Bu bağlamda hazırlanan problem senaryoları da hem konu ile ilgili hem de günlük yaşam bağlamı düşünülerek hazırlanmıştır.

Yöntem

Bu çalışmada nitel araştırma desenlerinden durum çalışması deseni kullanılmıştır. Araştırma seviyeleri birbirine en yakın iki 7. sınıf ta uygulanmıştır. Sınıf "İnsan ve Çevre İlişkileri" ünitesinin öğretiminde PDÖ etkinliklerinin uygulandığı sınıf deney grubu, ders kitabındaki etkinliklerin takip edildiği sınıf kontrol grubu olarak tarafsız atama ile belirlenmiştir. Uygulamaların gerçekleştirildiği her bir sınıfta yaklaşık 30 öğrenci bulunmaktadır. Bu çalışmanın veri sürecinde örneklemin belirlenmesinde amaçlı örnekleme yöntemlerinden ölçüt örnekleme yöntemi ile akademik başarı düzeyleri bir ölçüt olarak kullanılarak deney ve kontrol grubundan düzeyleri benzer olan beşer öğrenci katılımcı olarak seçilmiştir. Yani araştırmanın çalışma grubu, bir devlet ortaokulunda 7. Sınıfta öğrenim gören 10 öğrenciden oluşmaktadır.

Araştırmaya ilişkin veriler, öğrencilerin "Çevresel Farkındalık Görüşme Formu" nun (ÇFGF) iki bölümünde yer alan yarı yapılandırılmış görüşme sorularına verdikleri kısa yanıtlardan elde edilmiştir. ÇFGF 'in 4. bölümü biyoçeşitliliğin doğal yaşam için önemine ilişkin 5 sorudan, 5. bölümü ise ülkemizde ve dünyada nesli tükenen veya yok olma tehlikesiyle karşı karşıya olan bitki ve hayvan örneklerine ilişkin 6 sorudan oluşmaktadır. Öğrencilerin verdikleri cevaplar yazıya geçirilmiş ve içerik analizi ile incelenmiştir.

Sonuçlar ve Tartışma

Öğrencilerin "biyoçeşitlilik" kavramı (soru 4a) ile ilgili cevapları incelendiğinde deney grubu öğrencilerinin %100' ü, kontrol grubu öğrencilerinin ise % 80'inin hem tür çeşitliliğini hem de tür içi çeşitliliği bir arada bulunduran cevaplar verdikleri görülmüştür. Bu durum deney grubu öğrencilerin tamamının biyoçeşitlilik kavramında tür çeşitliliği ve tür içi çeşitliliği bir arada değerlendirebildiğini, kontrol grubu öğrencilerinde ise tür içi çeşitlilik konusunu kavrayamayan öğrencilerin olduğunu ortaya koymaktadır.

Öğrencilerin, biyoçeşitliliğin önemine yönelik olarak, bir ekosistemde tür sayısının azalmasının sonuçlarını sorgulayan soruya (4b) verilen cevaplar incelendiğinde, deney grubu öğrencilerinin tamamının biyoçeşitliliğin önemi ile ilgili bütüncül bir bakış açısıyla cevaplar verebildiği ve bir ekosistemdeki biyoçeşitliliğin azalmasını hem yok olan türler açısından hem yok olan türlerle beslenen türler açısından, hem de o ekosistemdeki tüm canlılar açısından değerlendirebildikleri görülmüştür. Kontrol grubu öğrencilerinin ise tamamı tür çeşitliliğinin azalmasını yok olan türlerle ilişkilendirirken, bu gruptaki öğrencilerin sadece %60'ı bütüncül bir bakış açısıyla değerlendirebilmiştir. Deney grubu öğrencileri, ekosistemdeki tür sayısının azalması ile ilgili daha detaylı düşündükleri ve kontrol grubuna göre daha fazla değişkeni değerlendirdikleri söylenebilir.

Öğrencilerin, canlıların ekosistemdeki rollerini sorgulayan sorulara (4c, 4d, 4e) verdikleri cevaplar incelendiğinde hem deney grubundaki hem de kontrol grubundaki öğrencilerin tamamının ileri düzeyde cevaplar verdikleri görülmüştür. Öğrencilerin tamamı, tüm canlıların doğada bir görevi olduğunu bilmekte ve bunu bilimsel gerçeklere dayandırabilmektedirler. Doğada bulunan bütün canlıların bir görevinin olduğu ve bir canlının doğada yok olmasından başka canlıların etkileneceği yönünde cevaplar vermişlerdir. Ancak cevaplar karşılaştırıldığında deney grubu öğrencilerinin cevaplarında "Biyoçeşitliliğin önemi" konusu daha geniş çerçevede açıklanmış, bir canlının doğadan yok oluşundan bütün canlıların etkileneceği ve doğal dengenin bozulacağı yönünde ifadeler yer almıştır.

Öğrencilerin nesli tükenmiş veya tükenmekte olan canlılara ilişkin sorulara (5a, 5b, 5c, 5d) verdikleri cevaplar incelendiğinde, deney ve kontrol grubu öğrencileri arasında farklılıklar olduğu görülmüştür. Deney grubu öğrencilerinin tamamı ülkemizde nesli tükenen canlıların varlığından haberdar olarak bu canlılara en az 3' er örnek verebilmiştir. Buna karşılık kontrol grubu öğrencilerinin %60'ı ülkemizde nesli tükenen canlıların olmadığını ifade etmiş ve bir öğrenci de nesli tükenen canlıların var olduğunu söylemiş ancak örnek

verememiştir. Deney grubu öğrencilerinin verdikleri örneklerin sadece sayısı değil, çeşidi de kontrol grubuna göre fazladır. Hem deney grubu hem de kontrol grubu öğrencileri dünyada nesli tükenen canlılara örnekler verebilmişlerdir. Ancak deney grubu öğrencilerinin verdikleri örneklerin sayısı kontrol grubu öğrencilerine göre hem sayıca hem de çeşit olarak oldukça fazladır. Hem deney grubu hem de kontrol grubu öğrencileri ülkemizde nesli tükenme tehlikesi altında olan canlıların farkındadırlar ve bu canlılara örnekler verebilmişlerdir. Ancak deney grubu öğrencilerinin tamamı örnek verebilirken, kontrol grubunda bir öğrenci herhangi bir örnek verememiştir. Deney grubunda verilen örneklerin sayısı ve çeşidi kontrol grubundakilerden çok daha fazladır.

Öğrencilerin canlıların nesillerinin tükenmesine nelerin sebep olduğuna ilişkin yöneltilen soruya (5e-5f) verdikleri cevaplar incelendiğinde, deney grubu öğrencilerinin insanların sebep olduğu doğrudan etkilerle beraber dolaylı etkileri bir arada değerlendirebildikleri görülmüştür. Deney grubu öğrencileri, insanların doğrudan ve dolaylı etkilerine çok sayıda örnek verebilmişlerdir. Buna karşılık, kontrol grubu öğrencilerinin %80'i insanların doğrudan etkileri üzerine odaklanarak, buna dayalı örnekler vermişlerdir. Sadece bir öğrenci, doğrudan ve dolaylı etkileri bir arada ifade ederek, her iki gruba da örnekler verebilmiştir.

Literatürde çevre eğitiminde probleme dayalı öğrenme uygulamalarının gerçekleştirildiği çeşitli çalışmalarda (Bögeholz, 2002; Korhonen ve Lappalainen, 2004; Şahin ve ark., 2004; Kaplowitz ve Levine, 2005; Ajiboye ve Olatundun, 2010; Özdemir, 2010; Erdoğan, 2011; Güven, 2012; Kızıl, 2012; Koçyiğit ve Zembat, 2013; Acaray,2014; Erentay, 2013; Dursun ve ark.,2015), yapılan uygulamaların öğrencilerin çevre tutum ve farkındalıklarını olumlu yönde etkilediği belirtilmektedir. Bu çalışmanın sonuçları ve refere edilen çalışmaların sonuçları da biyoçeşitlilik gibi daha spesifik kavramların öğretilmesinde, probleme dayalı öğrenme yönteminin etkili olduğunu ortaya koymaktadır.

Öneriler

Çevre eğitiminde farklı konuların öğretiminde hem de fen bilgisi eğitiminde pek çok konuda probleme dayalı öğrenme yönteminden yararlanılabilir. Farklı eğitim seviyelerinde, öğrencilerin gelişim düzeylerine uygun problem senaryoları ile yöntemin uygulaması gerçekleştirilebilir.

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INVESTIGATION OF PRE-SERVICE TEACHERS' PERCEPTIONS ON THE CONCEPT OF "EDUCATION" THROUGH METAPHOR ANALYSIS*-**

Fatma SADIK***

Abstract

In this study, the perceptions of pre-service teachers about the concept of "education" were tried to be determined with the help of metaphors. In this study, the "phenomenology" approach, one of the qualitative research designs, was used. The study was carried out with 354 pre-service teachers who graduated from different faculties/departments and who continued pedagogical formation education at a state university. 128 of the participants had teaching experience as they had previously worked as a paid teacher in a private institution (teaching institution, study center) or within the National Education. In the data collection process, the Written Interview Form (WIF), consisting of two parts, was used. The first part of the form consists of questions about the personal information of pre-service teachers. In the second part, the question "In my opinion, education is like … Because …" was asked to the participants, and they were asked to explain the rationales by developing a metaphor about education. In the data analysis, the content analysis technique, one of the qualitative data analysis techniques, was used, and the related literature was used to create the themes. The results of the study showed that pre-service teachers developed positive and often concrete metaphors for the concept of "education." Metaphors developed with the inspiration by nature (water, trees, seeds, seedlings, plants, rain, sea, etc.) are mostly focused on the education developing the human beings and being a part of life, while in the metaphors related to materials (mirror, lantern, bus, candle, compass, ship, car, gold bracelet, lamp, etc.), the effects of education on the life of the individual and its power to direct are emphasized. Pre-service teachers developed a limited number of negative metaphors (skyscraper, card, factory, guard, broken wristwatch, etc.) regarding the concept of education. They explained the rationales for developing these metaphors through teaching practices based on information loading and memorization, the constant change of the education system, neglect of individual differences, and competitive exams.

Keywords: Concept of education, pre-service teacher, metaphor

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ÖĞRETMEN ADAYLARININ "EĞİTİM" KAVRAMINA İLİŞKİN ALGILARININ METAFOR ANALİZİ YOLUYLA İNCELENMESİ

Özet

Bu araştırma öğretmen adaylarının "eğitim" kavramına ilişkin algılarını metaforlar aracılığıyla inceleyen bir "olgu bilim" çalışmasıdır. Araştırma bir devlet üniversitesinde pedagojik formasyon eğitimine devam eden 354 öğretmen adayıyla gerçekleştirilmiştir. Katılımcıların 128'i daha önce özel bir eğitim kurumunda (dershane, etüt merkezi) ya da devlet okullarında ücretli öğretmen olarak çalışmış, öğretmenlik deneyimi olan kişilerdir. Veri toplama sürecinde Yazılı Görüş Alma Formu (YGF) kullanılmış, katılımcılardan "Bana göre eğitim … gibidir. Çünkü; …" cümlesini tamamlamaları istenmiştir. Verilerin analizinde nitel veri çözümleme tekniklerinden içerik analizi tekniği kullanılmış, temaların oluşturulmasında ilgili literatürden yararlanılmıştır. Araştırma sonuçları öğretmen adaylarının "eğitim" kavramına yönelik olumlu ve çoğunlukla somut metaforlar geliştirdiklerini göstermiştir. Doğadan esinlenerek geliştirilen metaforlarda (su, ağaç, tohum, fidan, bitki, yağmur, deniz vb.) daha çok eğitimin insanı geliştirmesi ve hayatın bir parçası olması üzerinde durulmuş; materyallerle ilgili olan metaforlarda ise (ayna, fener, otobüs, mum, pusula, gemi, araba, altın bilezik, lamba vb.) eğitimin bireyin hayatına yansımaları ve yön verme gücü vurgulanmıştır. Öğretmen adayları sınırlı sayıda olumsuz metafor geliştirmiş (gökdelen, papağan, fabrika, gardiyan, bozuk kol saati, dünya vb.), gerekçelerini ise genellikle ezbere ve bilgi yüklemeye dayalı öğretim uygulamaları, sistemde sürekli değişim yaşanması, bireysel farklılıkların ihmal edilmesi ve rekabete dayalı sınav sistemi olarak açıklamışlardır.

Anahtar kelimeler: Eğitim kavramı, öğretmen adayı, metafor

INTRODUCTION

Metaphors are a way of thinking about or conceptualizing the world. It is one of the most important tools for trying to grasp our emotions, experiences, spiritual consciousness, moral actions, and things we cannot fully grasp (Lakoff & Johnson, 1980). A metaphor is the indirect expression of a concept, situation, or object using another concept or object rather than the object itself (Deant-Reed & Szokolszky, 1993). It is a situation, event, or entity that is associated with what is intended to be explained when describing a phenomenon, a situation, or a thought (Demir & Karakaş Yıldırım, 2019). Metaphors enable us to understand and interpret a subject according to another subject (Lakoff & Johnson, 2015). It facilitates individuals to express themselves with sub-meanings in language without limiting themselves. It helps to convey the intended meaning with fewer words and a stronger emphasis (Tompkins & Lawley, 2002). According to Lowery (2013, 12), the metaphors we use and the way we use metaphors show how we perceive our environment and how we are affected by it. Since metaphors are shaped by people's perceptions and thoughts, it is inevitable to use metaphors while sharing feelings and life experiences (Lakoff & Johnson, 1980).

Metaphors have been fulfilling various pedagogical functions in education for many years. Two of the basic teaching principles are to reach from the known to the unknown in the learning-teaching process and to move from the concrete to the abstract (Demirel, 2007). Metaphors are also tools used to explain an abstract concept by establishing connections between concrete and observable concepts and an abstract concept (Peculea, 2017). The semantic integrity of metaphor, which always moves from the concrete to the abstract, supports these basic principles of pedagogy. Metaphor in teaching is important in terms of creating a basis for initiating and sustaining the learning process, developing a common language between teachers and students, and helping students develop their thinking skills (Oğuz, 2005). Especially in the processes of understanding scientific knowledge, metaphor is used to clarify an unknown situation from a known reality, facilitates teaching, makes learning meaningful (Arslan & Bayrakçı, 2006, 103), and enables students to structure knowledge (Wegner & Nückles, 2015, 96). Therefore, it can be said that metaphorical expression is the oldest and most economical teaching method used by pedagogy (Saban et al, 2006). According to the research results, metaphors; It increases the quality of the learning process (Arslan & Bayrakcı, 2006), supports students in developing insight and new perspectives on the subject (Zheng & Song, 2010), encourages students by transforming learning into a puzzle form (Osborn, 1997), and is more effective than traditional methods in learning

idioms in a second language and concepts in mathematics (Kömür & Çimen, 2009; Rahmani & Hashemian, 2012; Uysal, 2016).

In recent years, the number of studies based on metaphor analysis in the field of education has been increasing. Moser (2000) explains the power of metaphor analysis as accessing implicit knowledge. Bullough and Gitlin (1995) state that metaphor analysis provides insight into the assumptions that both "characterize a concept and guide action." In this case, the basic basis behind this methodology may be that the metaphors people use to describe their experiences and beliefs reflect the hidden meanings behind what they say directly and consciously. In a sense, metaphors allow a person to more easily reflect what they think in their subjective world and to make assumptions that are not otherwise expressed reliably clear (Zheng & Song, 2010). Metaphor analysis, which provides a very solid and rich picture of the phenomenon, event or situation (Yıldırım & Şimşek, 2011), contributes to a better understanding of the hidden motives affecting the world of education (Fábián, 2006).

Teachers are one of the most important inputs of the education system, which is a social and open system, and the leading actor in the teaching process. Teachers are not just people who help students learn and develop new skills in addition to their existing skills. They are a valuable source of personal development that allows students to analyze their educational experiences, ideas, evaluate their own progress, and improve their future efforts (Peculea, 2017). Quality education largely depends on the quality education of teachers. Constantly questioning all components of the teacher training system is important and necessary in order to train teachers with the qualifications required by today and the future. For this reason, it is seen that the views of pre-service teachers and teachers on the education system and its components are frequently the subject of research. While some of these studies address the education system in general (Kart, 2016; Kasapoğlu, 2016; Keser Özmantar & Yalçın Arslan, 2019; Örücü, 2014; Peculea, 2017; Saylık et al.2021; Öztürk Çalıkoğlu & Başar, 2019), some of them examine the inputs of the system as teachers (Atabek-Yiğit, E., & Balkan-Kıyıcı, 2019; Başaran Uğur & Baysal, 2017; Çevik Kılıç, 2016; Dilekçi et al. 2021; Duran, 2022; Kıral, 2015; Özdemir, 2018; Sarıkaya, 2018; Sökmen et al.2020; Teksöz, 2022; Uçar & Rakap, 2021); student (Çırak, 2014; Sezgin et al., 2017; Yakşi, 2023), school (Arslan, 2020; Gencer, 2021; Mazlum & Balcı, 2018; Nalçacı & Bektaş, 2012), school principal (Öztürk & Öztürk, 2022; Akan et al., 2014; Aslan et al. 2018; Korkmaz & Çevik, 2018), teaching and training program (Akınoğlu, 2017; Çırak Kurt, 2017; Danışman &Tosuntaş, 2020; Örten & Erginer, 2016; Özdemir, 2012; Yıldız & Sevilay, 2018)

were examined separately. It has been observed that the number of studies examining the "teacher" (Çocuk et al. 2015; Kara, 2020; Kart, 2016; Özdemir & Erol, 2015) and "education perception" of pre-service teachers who graduated from different faculties and received pedagogical formation training is limited (Akbaba Altun & Apaydın, 2013; Kara & Akcan, 2021; Turan et al. 2016).

Education is a philosophical, economic, psychological, political, social and moral initiative that deeply affects people's development. Therefore, it is a very broad and comprehensive term. The activities carried out to realize learning, the institutions, places, rules, programs, etc. where these processes take place, determine the characteristics of education. Because education can take place in many different forms (courses, workshops, studies, seminars, institutes, political/religious meetings, etc.). Schools are only one of them. As Botha (2009) stated, each of these forms of education does not have to be similar to the education provided in schools; however, when it comes to the relationship between education and training, it is important to emphasize schools and programs. Metaphors are one of the most effective methods for understanding worldviews and philosophical assumptions, while also forming the basis of educational theories. For these reasons, this study aimed to examine pre-service teachers' perceptions of "education" through metaphors. The reason for working with pre-service teachers who received pedagogical formation training in the study is that it is necessary to know the perceptions of these individuals who graduated from different faculties about education in order to increase the efficiency of pedagogical formation training. Because it is often a matter of debate whether pre-service teachers who are not graduates of education faculties can be made competent teachers by providing pedagogical formation (Çocuk et al. 2015; Ekiz & Koçyiğit, 2013). Individuals who participate in this program to become teachers participate in this program together with all their student experiences to date. When the power of perceptions to guide behaviors is taken into consideration, research results may provide clues for creating teacher training programs, designing and implementing educational action. Therefore, the metaphors of these pre-service teachers who participate in formation training regarding education are important in terms of seeing and understanding what they know, believe and think about education, and shedding light on how education is known/perceived in society. The study specifically looks for answers to the following questions:

1. Which metaphors do pre-service teachers produce for the concept of “education”?
2. How do pre-service teachers explain the rationales for the metaphors they produced?

METHOD

Research Model

This study, which aims to determine the perceptions of pre-service teachers regarding the concept of "education" with the help of metaphors, is a "phenomenology" research from qualitative research designs. Phenomenology research is research that deals with lived experiences and aims to reveal individuals' perceptions of a phenomenon and the meanings they attribute to them (Merriam, 2013). The phenomenon examined in this research is the concept of "education", which is related to every aspect of social life and is frequently the subject of debate with its principles, strategies and practices.

Participants

The study group of the research consists of 354 pre-service teachers who graduated from different faculties (faculties of science and literature, theology, fine arts, physical education-sports and health sciences) and participated in pedagogical formation training at a state university in the spring semester of the 2017–2018 academic year. Maximum diversity was used in the sampling techniques within the qualitative research tradition to determine the students who participated in the research. Since there were more than one group of graduates of the faculties of science and literature and theology, two groups were randomly selected, and in the faculties/departments with a single group (fine arts, physical education-sports and health sciences), all groups were included in the study group. The data collection tool was delivered to the students who were present in the classrooms on the day and time of the application, and participation was based on voluntariness. 354 pre-service teachers participated in the research voluntarily, but the forms of 337 pre-service teachers (220 females, 117 male) were evaluated. 17 forms that were left blank, only explained, and had a certain metaphor but no justification were excluded from the analysis. Table 1 shows the demographic characteristics of the participants.

Table 1. Demographic characteristics of the participants

Gender	**f**	**%**	**Marital status**	**f**	**%**
Female	220	65.3	Single	273	81.0
Male	117	34.7	Married	64	19.0
Type of high school graduated from			**Having teaching experience**		
General high school	263	78.0	Yes	128	38.0
Vocational high school	74	22.3	No	209	62.0
Age			**Length of teaching experience**		

20-25 years old	224	66.5	Less than 1 year	48	37.5
26-30 years old	62	18.4	1-3 years	58	45.3
31-35 years old	28	8.3	4-6 years	13	10.1
36-40 years old	23	6.8	7 years and above	9	7.1

Faculty from which graduated			**Institution where teaching takes place**		
Science and literature	176	52.2	Public School	29	22.6
Theology	48	14.2	Cram school	20	15.6
Fine Arts	33	9.8	Study center	7	5.6
Health Sciences	36	10.7	Private lessons (home environment)	62	48.4
Physical Education and Sports	44	13.1	Public Education Center	10	7.8

As seen in Table 1, 65.3% of the participants were female, 66.5% were between the ages of 20-25, and 81.0% were single. 78.0% of the participants graduated from general high school, 52.2% from the faculty of arts and sciences, and 38.0% had teaching experience. The students gained their teaching experience mostly by giving private lessons (48.4%) and by working as paid teachers in public schools (22.6%). 45.3% of the participants have been teaching for 1-3 years.

Data collection tool

In the study, the Written Interview Form (WIF), which was developed by the researcher and consists of two parts, was used as a data collection tool. The first part of the form consists of questions aimed at obtaining personal information of pre-service teachers. In the second part, in order to reveal the metaphors that pre-service teachers have regarding the concept of "education", the sentence "To me, education is like … Because; …." was given and they were asked to develop a metaphor and explain their reasons. The reason for examining the perceptions of pre-service teachers regarding the concept of education through metaphors is that metaphors allow the person to more easily reflect what they think in their subjective world.

Data collection

Data were collected during the spring semester of the 2017-2018 academic year. The research data were collected during the class hours with the permission and assistance of the instructors who attended the class in these groups. First, the purpose of the research was explained to the pre-service teachers. Then, the forms were distributed to the volunteer pre-service teachers and they were asked to complete the sentence given in the form (produce metaphors and write rationales explanations). The application was completed within one class hour (40 minutes). The role of the researcher in this study is to know the topic under

investigation in detail, to be close to the sources of information, and to benefit from his field experience in the analysis of the data.

Data Analysis

The content analysis method was used in the analysis of the data, and the metaphors and explanations regarding their justifications were analyzed in four explanations regarding their justifications were transferred to the computer and raw data texts were obtained. In the coding stage, the raw data texts were read and evaluated several times, and then the metaphors with similar characteristics were brought together under themes. While creating themes related to metaphors, the source of the metaphor was taken into consideration, and in creating themes related to justifications, the explanations made by the pre-service teachers and the relevant literature were taken into consideration. Finally, in order to ensure comparison of themes or categories (Yıldırım & Şimşek: 2011, 242), the data were organized and described in tables. In order to ensure internal validity, attention was paid to being descriptive while presenting the findings, and direct quotes were made from the statements of the pre-service teachers. In order to ensure external consistency, the theme and code lists were presented to two faculty members working in the qualitative field. The average agreement rate between the researchers and experts was calculated as 92%. In addition, the method of the research was explained in detail, and the findings were supported by the relevant literature (Miles & Huberman, 1994). Ethical rules were followed in the research, first of all, legal permissions were obtained to conduct the research. The identities of the pre-service teachers were hidden, and codes consisting of numbers and letters were used when quoting the views of the pre-service teachers (PT2: Pre-service teacher 2). The findings were presented in an unbiased manner.

FINDINGS

1. Metaphors Produced Regarding the Concept of Education

As a result of the analysis of the research data, it was determined that the pre-service teachers produced a total of 221 metaphors, 161 concrete and 60 abstract, for the concept of "education". Detailed explanations about these metaphors are given below.

1.1. Concrete Metaphors Produced Regarding the Concept of Education

161 concrete metaphors produced by 219 pre-service teachers were collected in seven categories according to their sources. Table 2 shows the categories and the frequencies of the metaphors in these categories.

Table 2. Concrete metaphors

Categories	Metaphors
Nature/geography	Water (f:16), tree (f:7), sea (f:6), world (f:2), forest (f:2), seed (f:2), sapling (f:2), ocean (f:2), snowball, tree that needs water, water that the body needs, branches of a tree, flower, a valuable mineral source, rain, sun, a single flower left in the world, a seed planted in the soil, ecosystem, river, mine, a country with information, a flowing water, a plant that cannot live without water, water that is indispensable for us, a sapling planted in the soil, water placed in a container, sunrise, plant, road, rough diamond, crop garden, a deep well, air, soil, tree root, iceberg, tree holding on to the soil, garden, tree holding on to the soil, universe, pearls in the sea, a growing tree *Number of metaphors: 43, Number of participants: 74*
Action/process	Eating and drinking (f:3), growing flowers (f:3), growing saplings (f:2), gardening (f:2), breathing (f:2), breaking one's strings, agriculture, carving an uncarved pearl, the work of a sculptor, writing on stone, growing trees, driving a car, agriculture, discovering planets with a telescope, searching for water in the desert, raising children, a healthy pregnancy period, filling an empty container, running race, growing a sapling, never being found while playing hide-and-seek, eating , football, basketball, seeing a tree from a seed, journey, filling an empty pool, growing, multiplying, the art of solving the unknown, traffic, making a child play dough, cooking, lavender, sculpture art, baby growing, raising children, growing a seed, reading a philosopher's novel that teaches quality living *Number of metaphors: 39, Number of participants: 46*
Material/tools	Light (f:4), mirror (f:2), lantern (f:2), medicine (f:2), plaster (f:2), compass (f:2), bus (f:2), candle that sheds light around, lantern that illuminates the environment, mirror reflecting life, work machine, mirror that guides, knife, a dusty vase that is cleaned, lighthouse, child's toy, train, technology, arrow, gold bracelet on the arm, broken wristwatch, tablecloth, wheels of a car, a puzzle that is broken into pieces, user manual, ladder, lamp, chain, book, lego, oil lamp, play dough, gold, a ship with a purpose and goal, a table full of food, the compass of life, car, computer program, a door to other worlds, directed light *Number of metaphors: 39, Number of participants: 48*
Structure/space	Factory (f:4), family (f:3), building (f:2), foundation of a building, state, a systematic school, a person's house, skyscraper, a filled pool, brain, roof of a house, a newly constructed building, bridge, walls that limit people, living space, development center, a house where love and respect are instilled, a place where love is instilled *Number of metaphors: 18, Number of participants: 24*
Person	Child (f:4), a newborn baby (f:2), baby, guard, artist, artist, the mother who gave birth to us, a hungry person, a farmer with a field, fingerprint *Number of metaphors: 10, Number of participants: 14*
	Bread (f:2), stuffed/wrapped foods, yoghurt, dessert, fruit cake, unripe

Food	fruit, food *Number of metaphors: 7, Number of participants: 8*
Animal	A fish out of the sea, a camel, a bee, a parrot, a trained horse that I saw on the beach *Number of metaphors: 5, Number of participants: 3*

When Table 2 is examined, it is seen that the pre-service teachers mostly produced metaphors inspired by nature/geography (f:43), followed by action/process (f:39), material/tools-equipment (f:39), structure/space (f:18), human (f:10), food (f:7) and animal (f:5) metaphors, respectively. In the nature/geography category, water (f:16), tree (f:7) and sea (f:6) were the metaphors with higher frequencies, while in the action/process category, eating-drinking (f:3) and growing flowers (f:3); in the material/tools-equipment category, light (f:4) and mirror (f:2); in the structure/space category, factory (f:4) and family (f:3) were the recurring metaphors. In the human category, education was more likened to a child (f:4); and in the food category, it was likened to bread (f:2).

1.2. Abstract Metaphors Produced Regarding the Concept of Education

A total of 60 abstract metaphors developed by 118 pre-service teachers regarding education are summarized in Table 3 under four categories: process, action, structure/system and emotion.

Table 3. Abstract metaphors

Categories	**Metaphors**
Period	Need (f:4), a part of life (f:2), art (f:2), civilization, an endless road, time, risk, mental health, psychiatric case, personality disorder, a vast and limitless place, something infinite, water of life, the cornerstone of life, existence, the truth itself, the indispensable of contemporary life, what makes a person human, personal development, the beginning of every work, the basic source, a movie that lasts a lifetime, a lifelong accumulation, the road from the cradle to the grave, the individual development of a child, a series of infinite steps of a ladder, future, development, an equation with two unknowns, the necessity of life, a constantly changing life, a long road *Number of metaphors: 32, Number of participants: 37*
Action	Life (f:27), living (f:20), breath (f:3), renewal (f:3), philosophy of life (f:2), lifespan, self-discovery, investment, change, offering choices to swimming fish, reaching from dream to reality, struggle for survival, way of life, lifestyle, building civilization, dynamic reform, adding humanity to people, a necessary event, necessity, *Number of metaphors: 19, Number of participants: 69*
Structure/system	Mathematics (3), discipline (f:2), human nature, outer space, universe, religion, infinity, discipline system *Number of metaphors: 8, Number of participants: 11*

Feeling	*Mutual love* *Number of metaphors: 1, Number of participants: 1*

As seen in Table 3, the abstract metaphors produced by the pre-service teachers are generally grouped under the categories of process (f: 32) and action (f: 19). However, it is seen that most of the pre-service teachers (N = 69) perceive education as an action.

2. Metaphors and Their Rationales

The metaphors produced by the pre-service teachers are explained in detail below under two main headings as positive and negative, depending on their rationales.

2.1. Positive Metaphors and Their Rationales

The explanations given by the participants regarding the rationales for the 206 positive metaphors they produced were grouped under eight categories: development/ shaping, indispensability/necessity, requiring effort/labor, continuity/unlimitedness, giving direction to life, creating change/social development, being comprehensiveness and period. Table 4 shows the conceptual categories of the metaphors according to their rationales.

Table 4. Conceptual categories of positive metaphors according to the rationales for their development

Category	Metaphors
Development / shaping	Light (f:4), renewal (f:2), water (f:2), growing flowers (f:2), life, candle that sheds light around, adding humanity to a person, work machine, snow ball, flower, carving an uncarved pearl, the work of a sculptor, the beginning of every work, reading a philosopher's novel that teaches quality living, driving a car, what makes a person human, a dusty vase cleaned, individual development of a child, river, lighthouse, discovering planets with a telescope, reaching from dream to reality, mathematics, forest, a country with information, civilization, plaster, development center, a flowing water, building, mental health, a series of endless steps of a ladder, investment, computer program, baby, gardening, rough diamond, crop garden, tree, the mother who gave birth to us, basketball, the door that opens to other worlds, growing a seed, lamp, outer space, farmer with a field, filling an empty pool, personal development, trained horse, book, multiplying, the art of solving the unknown, play dough, a dough game for a child play, philosophy of life, lavender color, garden, sculpture art, baby's growth, growing a sapling *Number of participants: 66*

Indispensability/ necessity	Water (f:10), breath (f:3), need (f:3), food and drink (f:3), bread (f:2), mathematics (f:2), breathing (f:2), rain, sun, life, water of life, searching for water in the desert, struggle to survive, discipline, a plant that cannot live without water, a gold bracelet on its arm, water that is indispensable for us, eating , necessity of life, renewal, a necessary event, air, a hungry person, dessert, tree root, life, tree holding on to the soil, tree holding on to the soil, religion, a table full of food, art, life, water that the body needs, food *Number of participants: 52*
Requiring effort/labor	Tree (f:3), seed (f:2), child (f:2), sapling, gardening, a newborn baby, a tree that needs water, state, the foundation of a building, mutual love, writing on a stone, a valuable mineral resource, growing a tree, growing a sapling, a single flower left in the world, a seed planted in the ground, agriculture, mine, growing flowers, raising a child, child, raising a sapling, bee, psychiatric case, tablecloth, stuffed/wrapped, a sapling planted in the ground, plant, road, agriculture, art, football, risk, artist, soil, sea, water, fruit cake, oil lamp, grow, cooking, building, family, pearls in the sea, a growing tree, fingerprint *Number of participants: 50*
Continuity/ unlimitedness	Life (f:11), living (f:10), basic source, family, a movie that lasts a lifetime, accumulation that continues throughout a lifetime, road from cradle to grave, water, eternity, nature, seeing the tree from the seed, time, something infinite, universe, need, life, a long road, philosophy of life, a road without end *Number of participants: 38*
Giving direction to life	Life (f:4), mirror (f:2), lantern (f:2), compass (f:2), bus (f:2), life (f:2), lantern that illuminates the environment, mirror reflecting life, mirror that guides the way, a person's house, offering choices to a swimming fish, car, discovering ourselves, train, medicine, discipline, the cornerstone of life, lifestyle, arrow, user manual, ladder, bridge, factory, directed light, gold, a ship with a purpose and goal, lifestyle, compass of life, lantern that illuminates the environment *Number of participants: 37*
Creating change/ Social development	Factory (f:2), breaking the bonds of man, a house where love and respect are instilled, a place where love is instilled, building civilization, dynamic reform, tree, a healthy pregnancy period, forest, technology, family, discipline system, light, a full pool, water poured into a container, plaster, sunrise, brain, wheels of a car, change, ever-changing life, a newborn baby, yoghurt, future, indispensable for modern life, water, medicine, unripe fruit, sapling *Number of participants: 31*
Comprehen siveness	Life (f:8), living (f:4), ocean (f:2), sea (f:3), roof of the house, a deep well, world, universe, iceberg, traffic, living space, child, a vast and limitless place *Number of participants: 26*
Period	Life (f:4), life (f:2), tree (f:2), a part of life (f:2), branches of a tree, a systematic school, filling an empty container, never being found while playing hide and seek, an endless series of steps of a staircase, artist, sea, a newly constructed building, a puzzle divided into pieces, journey, chain, equation with two unknowns *Number of participants: 22*

Total	Number of Metaphors: 206, Number of Participants: 322

When Table 4 is examined, it is seen that the rationales why the produced metaphors are likened to education are mostly gathered under the categories of development/shaping, indispensability/necessity and labor/effort. All categories are explained in detail below with quotation examples from the participants' statements.

Category-1: Development/shaping

In the justifications gathered under this category, pre-service teachers generally emphasized their contributions to individual development, and stated that people develop with education, get to know themselves, develop a perspective on life, and discover new worlds. Examples from pre-service teachers' statements are given below:

> Education is like a door that opens to other worlds… Every time you learn something new, you discover new worlds, new perspectives, new emotions, and this is one of the purposes of human beings to live in this world. First of all, education is needed for this, you need to learn how to learn. PT291
>
> Education is like a book because all academic information is here. The basis of development is knowledge. A person cannot exhibit the right behavior if they do not know. A person who cannot learn the right information will not exhibit the right behavior. PT334
>
> A candle is a tool that sheds light around it and illuminates the darkness. Education is also a tool that allows us to be enlightened and to develop ourselves. PT4
>
> Just as a child can distinguish the difference between stars and darkness when looking at the sky, I think education also shows the child the difference between darkness and light. The teacher determines which telescope to look through, and which planet and star to look at. PT122
>
> As a person receives education, they discover themselves and get to know themselves better in many ways, including developing their perspective in life. PT124

Category-2: Indispensability/necessity

In their justifications gathered under this theme, pre-service teachers focused on the vital/vital importance and value of education and emphasized that education is a basic necessity. The indispensability of education for the individual is generally explained as understanding oneself and the world, finding one's identity, being successful in life, solving one's problems, building one's future, adapting to society, etc., while its indispensability for society is stated as providing and preserving order. Some quotation examples are given below.

> Just as water is indispensable for life, so is education... Education is essential for our lives to go on their way, or rather to live in this world. Water regulates the metabolism of humans, meets the necessary needs of the body, and even proves that it is indispensable by constituting approximately 2/3 of it. Education is indispensable for order in society, just like water. PT195

> Education is like the root of a tree. Science is a necessity of our age. Because the more solid it is, the more it holds the soil and stands strong against the winds, storms and extraordinary events that will come. Scientifically, education is a necessity of our age. It is not possible for society to exist without science. PT324
>
> If we cannot breathe, we cannot continue our lives. If there is no education, we cannot join the society... We cannot be successful in life. We cannot overcome the difficulties we encounter. PT133
>
> Education is like eating and drinking, just as a person needs to eat and drink water to live, the human brain also needs to be educated. PT9

Category-3: Requiring effort/labor

The pre-service teachers, who emphasized that education is an activity that requires effort/labor in the metaphors they produced, emphasized in their explanations that the quality of the process and the product will increase depending on the effort shown. Excerpts from the statements of the pre-service teachers are as follows:

> The better we look after the sapling and the more care we give, the stronger and more rooted a tree we will grow. Students are like that too, the better education we give them, the stronger the foundation we will have. PT8
>
> Education is like writing on a stone. Writing on a stone requires effort, patience and time. It is difficult to correct when written incorrectly. However, it is permanent when written correctly. PT70
>
> It is like a tablecloth, when you cover it neatly, everything looks more organized and you make it more beautiful by adding a beautiful vase on it. When you leave it messy, it creates a mismatched image on the table it is on. PT202
>
> You carefully choose the foods you will use when cooking. If you know how to add (cook) the products you choose, you will have a very enjoyable cooking skill. PT173

Category-4: Continuity/unlimited

In the reasons collected under this category, the participants emphasized that education is not limited to place, time and space and is intertwined with life. It was also stated that education begins the moment we are born and development continues throughout life. Examples of quotes from the pre-service teacher's explanations are given below:

> Education is like a movie that lasts a lifetime, not only at school, but also at home, on the street, in the park, everywhere, all the time. We have no living space or time without education.PT82
>
> Education is eternity. Because as the constantly changing living conditions, age, and technology change, the level and order of education also change. New situations require new learning. This process continues in this way. Forever. PT218
>
> Just as life is inevitable for us from the moment we come to this world until we die, so is education. Education, like life, ends when we die. PT95
>
> Education is a lifelong accumulation. A person starts learning things about life from the moment they are born. First education starts in the family and then in school and more generally, education develops further with the experiences they have. PT84

Category-5: Giving direction to life/providing quality life

When the reasons of the pre-service teachers under this category are examined, it is seen that they mostly perceive education as a tool to reach the goal/success.

Examples from the explanations of the participants who emphasize the power of receiving a good education to give direction to life and the reflections of the skills gained through education on life are as follows:

> Education is like a lantern that illuminates the environment. Without education, it becomes difficult for people to see their surroundings. In other words, education illuminates people's worlds and guides them. It allows people to see their future throughout their lives. PT16
>
> Education is like a car. As humans, our purpose in coming to this world is to live a successful life in the light of universal human values, and this is achieved through education. Education is a means for us to achieve this goal. PT106
>
> Just as a sick person returns to life when given the right medicine, a person will return to life with the right education. A wrong education will affect a person negatively. PT146
>
> Education is a bridge. A well-educated person becomes an individual who can look at life from multiple perspectives and use their opportunities. PT303

Category-6: Creating change/social development

In their justifications, pre-service teachers who emphasized that education shows what is good and right and affects the individual on the path to becoming a good person stated that values are instilled through education, civilization is built with educated people and society becomes modern through education.

In other words, in the justifications under this category, education is mostly emphasized as the basic tool of social development and progress. Sample quotes are as follows:

> Just as rules and care are necessary during pregnancy for the birth of a healthy creature, education is necessary in a healthy, developed, civilized society.PT144
>
> Education is a light. Social values are formed with education. People gain personality. Social values affect social change. Society becomes free and independent with education. PT160
>
> Education is like a full pool. The fuller the pool is, the more the country progresses. If the pool's drains are opened and its contents are emptied, we will turn into an emptied system and society like today. PT171
>
> Sunrise gives people happiness, refreshes and relaxes. A society where education is good will be prosperous, happy and respectful. PT214
>
> The brain has structural and functional duties. Its structural duty is constantly working. It is a necessary organ of the body and has a function... Education is like that, each educational system has its own functionality and contributes to the functioning of the social structure. PT222

Category-7: Being comprehensive

In the justifications under this category, it was emphasized that education is a very broad concept in terms of depth and richness in terms of the knowledge and skills to be learned and in terms of addressing the individual differences of the students, and it was stated that anything can happen at any time. The following are some of the statements of the participants:

It is a vast and limitless place. Because I think that knowledge has no end, there are millions of pieces of information in the world, where two different pieces of information meet, other information emerges, that's why I argue that it is endless. PT221

Like traffic, you never know what kind of people (students) you will encounter. They can have all kinds of moods and levels of knowledge. PT255

Like an iceberg, the visible part is much less than the invisible part. Education is a branch of science that needs to be focused on and is open to research and development. PT243

A deep well, because it is full of continuous and deep knowledge. PT257

It is like the roof of a house. A house has many rooms. Like a bedroom, living room, kitchen. Education also covers many things. PT217

Category-8: Process

The pre-service teachers, who stated in the justifications of the metaphors they produced that the change aimed at through education did not happen all at once, but occurred step by step and over time, also emphasized that each experience and learning affected and developed the other. Sample statements are given below:

Education is a series of endless steps on a ladder. This ladder, which we take our first step with being born, covers all our steps between life and death. Life itself is a field of learning and applying what we have learned. Every new piece of information we learn takes us to higher steps on the ladder. PT196

Education is like never being found while playing hide and seek, it is realizing that you never were while saying "I am" throughout your life. PT178

Like a puzzle divided into pieces, it brings us closer to self-realization by completing each piece. PT284

It consists of rings like a chain and forms a whole. When each piece comes together and fits, education becomes productive and successful. PT314

2.2. Negative Metaphors and Their Rationales

The 15 negative metaphors produced by pre-service teachers and their rationales are summarized in Table 4.

Table 4. Conceptual categories of negative metaphors according to the rationales for their development

Metaphors	**Rationales**
Fish out of the sea, child's toy, broken wristwatch, mathematics	Constant change in the system
The sea, the walls that limit people, the running race,	Competitive examination system
Knife, guard, personality disorder	Oppressive and coercive practices
Skyscraper, parrot	Teaching practices based on memorization and information loading
The camel I saw on the beach	Inconsistent practices
Factory	Raising a single type of person/ Neglecting individual differences

World	Unfairness

As seen in Table 4, the reason for the limited number of negative metaphors was mostly the constant change in the system (f:5), followed by the competitive exam system (f:3), oppressive and coercive (f:3) and teaching practices based on memorization/information loading (f:2). Examples from the explanations of the pre-service teachers are given below.

> Education is like a broken wristwatch because it should work properly but cannot be put into order. Therefore, it is a system that always puts people in a difficult situation. PT194
>
> Education is like a personality disorder in psychology. Because in every lesson, teachers try to direct the student according to their own character, tastes, and interests, and if the product does not come out in line with their tastes, the student fails or is given a lower grade than they deserve. PT09
>
> Education is like walls that limit people because in our education system, it condemns people to exams with unnecessary and stupid questions rather than helping the individual get to know themselves, develop, and gain social and cultural characteristics. PT319
>
> Education is like a factory, where everyone is expected to do the same thing, trying to raise a single type of person. PT220
>
> Education is like a camel I saw on the beach. There are so many ridiculous applications that are not related to each other, they are always trying to give applications together. PT25

DISCUSSION and CONCLUSION

As a result of the research, it was determined that the pre-service teachers produced a total of 221 different metaphors for the concept of "education". A metaphor is not the phenomenon itself, but only a symbol. Metaphors are selective; they do not represent the whole phenomenon they are trying to define, but only a part of it (Weade & Ernst, 1990, p. 133). A complex and multidimensional concept such as education requires a large number of metaphors to be explained as a whole. Therefore, the production of a large number of different metaphors in the research is important in terms of providing participants with multi-faceted perspectives on the phenomenon of education. According to the results obtained, the pre-service teachers used concrete analogies more and abstract metaphors less in expressing their own mental images related to education. Metaphorical expressions arose from the need to make abstract information or concepts visible. In metaphor, the source area is described more concretely and more clearly, while the target area is more abstract and less clearly described than the source area (Kövecses, 2010, 17- 27). In other words, the essence of metaphor is the use of a concrete image to understand/explain abstract concepts or relationships (Draaisma, 2014). In this

case, it can be said that this result, which is similar to the relevant literature (Akbaba Altun & Apaydın, 2013; Turan et al. 2016), is an expected result.

The 161 concrete metaphors produced by the pre-service teachers were mostly collected in the nature/geography category in terms of source area, followed by action/process, material/tools-equipment, structure/space, human, food and animal categories. In the category of metaphors whose source is nature, plant names such as tree, seed, sapling, flower, forest etc. and water metaphor were frequently repeated. According to Chudinov's (2004) classification, plant metaphors are used as section names (root, trunk, branch, seed, fruit etc.), life cycle (growing, bearing fruit, human participation in this cycle (planting plants, harvesting products etc.) and growing areas (garden, soil, greenhouse, forest etc.). Indeed, in the action process category of the current study, it was observed that human actions towards the life cycle of plants such as growing flowers, growing saplings and gardening were prominent. Water, one of the foundations of life, plays a decisive role in the formation of structures larger than itself, so it is addressed with various concepts such as sea, lake, stream, foam, wave, river, creek, stream, etc. depending on the situation (Sazak, 2021, 233). In this study, the sea and ocean were among the frequently repeated metaphors. Buildings, machines-tools-equipment and food are also shown among other commonly used source areas (Kövecses, 2010). When the relevant literature is examined, it is seen that metaphors containing plant elements such as root, branch, fruit, sapling, flower, seed etc. are used in the field of politics (Chudinov, 2004), in expressing family relationships (Düzünli, 2016), and in defining people, objects, colors and abstract concepts (Garbuio, 2017). In works written in every field of Turkish literature, the water metaphor is encountered for many different concepts (word, resurrection, lifeblood, knowledge, etc.) (Eker, 2021; Ögel, 2010). In the field of education, among the metaphors related to the education system and its inputs (teacher, student, program, etc.), nature metaphors such as plant, water and plant cultivation; material metaphors such as mirror, compass, lantern, dictionary, book, lamp; structure and space metaphors such as building, building foundation, factory, family are frequently used (Akbaba Altun & Apaydın, 2013; Capcıoğlu, 2023; Kara & Akcan, 2021; Peculea, 2017; Öztürk Çalıkoğlu, & Başar, 2019; Turan et al. 2016). In this case, it can be said that the research findings overlap. The source of abstract metaphors was mostly action and process, and only one teacher candidate associated education with emotion with the metaphor of love. In the study conducted by Tüzel-İşeri and Akın (2019), the sense of belonging ranked first among school-related metaphors, while the category of shaping ranked first and the category of dedication ranked third among teacher metaphors. In the study conducted by Akbaba Altun and Apaydın (2013), only two students used the metaphor of love related to the concept of education. It can be considered a remarkable

result that pre-service teachers' dates did not associate emotions with education.

As a result of the research, it was determined that 206 metaphors produced by pre-service teachers defined positive characteristics related to education, and 15 metaphors defined negative characteristics. Positive metaphors were mostly collected in the "development/shaping" category, where the contributions of education to individual development were emphasized in terms of the reasons for their comparison. In this category, light, renewal, water, growing flowers were frequently used metaphors, followed by growing seeds, tree, garden, and crop garden metaphors. Plant metaphors, which are very powerful imaginative narrative tools, characterize people in many ways (physical, cognitive, behavioral, moral, etc.) and include positive/negative evaluations (Güneş, 2018). In the current study, plant metaphors were used for this purpose, and the participants touched on the power of education to develop people's thoughts and behaviors. Similar results were obtained in the studies conducted by Akbaba Altun and Apaydın (2013) with pre-service teachers from different departments, and by Şahin and Sabancı (2018) and Kara and Akcan (2021) with pedagogical formation students, and it was observed that the metaphors used for the concept of education were mostly gathered in the category of "source of change and development". However, in the study conducted by Peculea (2017) with pre-service teachers, education was perceived more as a "source of knowledge", and in the study conducted by Çapçıoğlu (2023) with senior students of the faculty of theology, education was described as "a training and production activity". Perceptions and beliefs regarding education develop based on many factors such as student experiences, fields of education, personal values, beliefs and philosophies, etc. In this case, it can be said that these differences between the results are due to the individual preferences of the participants or their education/graduation in different faculties and programs.

The second category where the metaphors produced by the pre-service teachers are most collected is indispensability/necessity. In this category, the water metaphor was repeated a lot, followed by metaphors such as breath, need, food and drink, bread, breathing, sun, rain, etc. In the cultural world, water indicates life, eternity, abundance and sanctity (Çatak, 2015), and is explained as a source of vitality and growth (Gürkan, 2009, p. 442). In the current study, pre-service teachers emphasized the vital value of education in terms of individual development and social order by using the basic physiological needs of people as a metaphor. The individual function of education is to help the individual discover and develop his/her own potential; its social function is to help the

human being, who is a biological being when he/she is born, to become a social being. Creating healthy individuals and a social structure is one of the general goals of education (Hoşgörür & Taştan, 2012; Ünsal & Korkmaz, 2018). Because the progress and development of countries and the healthy existence of society, in other words, can only be possible if education fulfills its functions. In this case, it can be said that the majority of the metaphors produced by pre-service teachers for the concept of education are related to the basic purposes and functions of education.

Another characteristic that the participants clearly stated about education is that education is an activity that requires effort and hard work. In this category, the metaphors of trees, seeds and children were frequently used, and other metaphors frequently included plants (saplings, trees, flowers) and raising/raising children. The growth and development of a sapling, tree or baby/child takes time, requires careful care and patience. Because development occurs gradually and gradually. In this case, it can be said that the participants emphasized the quality of the process for the quality of the product and emphasized the responsibilities of the teacher in the process. According to Özden (2018), metaphors are closely related to the experiences of individuals on that subject. Therefore, the metaphors developed by pedagogical formation certificate program students in this category may also be related to the problems they encountered in their own education processes. Other categories in which positive metaphors produced regarding the concept of education are collected are continuity/being limitless, giving direction to life, creating change/social development, being comprehensive and process. In the category of continuity/boundlessness; it is stated that education is always and everywhere with life and life metaphors, and that it changes/should change with changing living conditions. The age we are in is an age of rapid changes due to the impact of technology. Every being in the universe is within the scope of change (Faryal, 2011). Therefore, the most important agenda item of today's societies is change and how to adapt to change. As Tuncel (2011) stated, the future of societies depends on their ability to lead and adapt to very fast changes. Pre-service teachers also described education as the key to achieving goals in the category of "directing life" and the key to social development and progress in the category of "creating change/developing society". This result is important in terms of the participants being aware that individual and social development is possible with education that changes according to living conditions and leads change.

The last two categories where the positive metaphors produced by the pre-service teachers are collected are “being comprehensive” and “process”. Due to

the abundance and depth of the information that needs to be learned in terms of content and individual differences in terms of students, education is perceived as a very comprehensive concept. The focal point in the justifications of the metaphors in the process category is continuous learning effort, self-realization, putting what they have learned into practice, etc. This result is valuable in terms of the pre-service teachers touching on the role of the student in their own learning process in education and giving the student a more active role. The fact that there are relatively fewer metaphors in these two categories may be related to which quality of the educational phenomenon the participants aim to reveal. Because it is not possible to reveal all the qualities related to the phenomenon with a single metaphor (Morgan, 1998). Although limited in number, negative metaphors were also produced in this study for the concept of education. The justifications of the negative metaphors (skyscraper, parrot, factory, guard, broken wristwatch, world, etc.) are as follows; constant change in the system, competitive exam system, rote-based teaching, ignoring individual differences, etc. have been related to the education system. In the relevant literature, it has been stated that there are many studies that determine that the views of teachers and pre-service teachers on the education system are more negative than the concepts of education, school, teacher individually (Kara &Akcan, 2021; Kasapoğlu, 2016; Örücü, 2014; Öztürk Çalıkoğlu, & Başar, 2019). In these studies, participants criticized the inadequacy of meeting the needs of individuals, the constant changes, and competitive exams with metaphors such as horse racing, blinkers, closed box, turtle, chameleon.

CONCLUSION and RECOMMENDATIONS

This study revealed that pre-service teachers' perceptions of the concept of education were positive, however, some negative metaphors were produced. Education was described as an indispensable action that provides individual and social development, requires effort and care, and directs life, and as a tool for change. The vast majority of metaphors produced for the concept of "education" are similar to the findings of studies conducted using metaphors related to education itself and its inputs. Although there are differences in naming, the categories obtained from the study overlap with the findings of relevant studies in terms of content and meaning. Negative metaphors are not related to education itself as a concept, but to the functioning of the education system. Pre-service teachers did not use emotions as a source area in metaphors related to the concept of education. These results are limited to the metaphors produced by pre-service teachers' dates who graduated from different faculties and participated in pedagogical formation training at a state university in the 2017-2018 academic year. Therefore;

- In order to eliminate the limitations of a single metaphor and achieve multiple vision, it may be suggested that participants develop more than one metaphor in similar studies,
- Examine the views of pre-service teachers on the levels of realization of the functions of education,
- Pay attention to studies on the place and importance of emotions in the learning-teaching process in pre-service education,
- Repeat the same study in different sample groups,
- Examine perceptions of the concept of education more deeply with mixed research methods where quantitative and qualitative methods are used together.

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Genişletilmiş Özet

Giriş

Öğretmenler eğitim sisteminin en önemli girdilerinden biri ve öğretim sürecinin baş aktörüdür. Öğrencilerin eğitim programı ve öğrenme ortamıyla etkileşime girmesini sağlayanlardır. Onlar sadece öğrencilerin yeni beceriler öğrenmesine ve geliştirmesine yardımcı olan kişiler değil, aynı zamanda değerli bir kişisel gelişim kaynağıdır. Nitelikli eğitim büyük ölçüde öğretmenlerin nitelikli eğitimine bağlıdır. Bu nedenle öğretmenlerin mesleki ve kişilik özellikleri eğitim araştırmalarında ve eğitimde kalite arayışında en önemli konulardan biridir. Metafor, bir kavramın, durumun veya nesnenin doğrudan nesnenin kendisi yerine başka bir kavram veya nesne kullanılarak dolaylı olarak ifade edilmesidir. Metaforların günlük yaşamda ve akademik çalışmalarda kullanılması, gizli anlamların incelenmesi ve anlaşılması açısından önemlidir. Bu nedenlerden dolayı metaforlar eğitim araştırmalarında sıklıkla kullanılmaktadır. Bu çalışmaların bazıları genel olarak eğitim sistemine yönelik algıları incelerken bir kısmı sistemin girdilerini (öğretmen, öğrenci, okul, eğitim programı vb.) tek tek incelemektedir. Bununla birlikte öğretmen adaylarının "eğitim algısını" inceleyen araştırmaların çok sınırlı sayıda olduğu görülmektedir. Bu nedenle araştırma öğretmen adaylarının eğitim hakkında nelere inandıklarını, düşündüklerini ve eğitimin toplumda nasıl tanındığı hakkında bilgi vermesi açısından önemlidir.

Yöntem

Bu çalışma nitel araştırma desenlerinden bir "fenomenoloji" çalışmasıdır. Araştırmada incelenen olgu/kavram toplumsal yaşamın her alanını ilgilendiren "eğitim" kavramıdır. Araştırma bir devlet üniversitesinde pedagojik formasyon eğitimine devam eden, farklı fakülte/bölümlerden mezun 354 öğretmen adayı ile gerçekleştirilmiştir. Çalışma grubunun oluşturulmasında maksimum çeşitlilik yöntemi kullanılmıştır. Veri toplama sürecinde iki bölümden oluşan Yazılı Görüşme Formu (YGF) kullanılmıştır. Formun ilk bölümü öğretmen adaylarının kişisel bilgilerine ilişkin sorulardan oluşmaktadır. İkinci bölümde katılımcılara "Bana göre eğitim … gibidir, çünkü …" sorusu yöneltilmiş, eğitime ilişkin bir metafor geliştirmeleri ve mantıksal gerekçesini açıklamaları istenmiştir. Geçerli metafor üreten 337 öğretmen adayının (220 kadın, 117 erkek) metaforları içerik analizi tekniğiyle analiz edilmiştir. Daha sonra elde edilen tema ve kod listeleri nitel alanda çalışma yapan iki öğretim üyesine sunulmuş, araştırmacı ve uzman görüşleri arasındaki uyum oranı ortalaması %92 olarak hesaplanmıştır.

Bulgular

Öğretmen adayları "eğitim" kavramına ilişkin 161'i somut, 60'ı soyut olmak üzere toplam 221 metafor üretmişlerdir. Mantıksal gerekçelerine göre bu metaforların 206'sı pozitif, 15'i negatiftir. Katılımcıların çoğu doğa/coğrafyadan esinlenerek metafor üretmiş, bunu sırasıyla eylem/süreç, malzeme/araç-gereç, yapı/mekan, insan, yiyecek ve hayvan metaforları izlemiştir. Kaynağı doğa olan metaforlar arasında en sık tekrarlanan metaforlar su, ağaç, tohum, fidan, bitki, yağmur ve denizdir. Soyut metaforlar ise süreç, eylem, yapı/sistem ve duygu olmak üzere dört tema altında toplanmıştır. Eğitim genel olarak bireysel ve toplumsal gelişimi sağlayan, çaba ve özen gerektiren, hayata yön veren bir değişim aracı ve vazgeçilmez bir eylem olarak algılanmıştır. Sınırlı sayıda olan olumsuz metaforların (gökdelen, papağan, fabrika, bekçi, kırık kol saati vb.) gerekçesi öğretmen adayları tarafından ezbere ve bilgi yüklemeye dayalı öğretim uygulamaları, sistemin sürekli değişmesi, bireysel farklılıkların göz ardı edilmesi ve rekabetçi sınav sistemi olarak açıklanmıştır.

Tartışma ve Sonuç

Eğitim gibi karmaşık ve çok boyutlu bir kavramın bütün olarak anlaşılabilmesi için çok sayıda metafora ihtiyaç vardır. Bu nedenle araştırma sonucunda çok sayıda ve birbirinden farklı metaforun elde edilmesi, eğitim olgusuna ilişkin çok boyutlu bakış açıları sunması açısından önemlidir. Metaforik anlatımlar, soyut bilgi veya kavramları görünür kılma ihtiyacından doğmuştur. Özünde, soyut bir kavramı veya ilişkileri göstermek/açıklamak için somut bir imgenin kullanılması söz konusudur. Bu nedenle geliştirilen metaforların çoğunlukla somut metaforlar olması doğal bir sonuç olarak yorumlanabilir. Araştırma sonucunda "eğitim" kavramı için geliştirilen metaforlar, ilgili literatürde eğitim sistemi ve eğitimin girdileriyle (öğretmen, öğrenci, okul vb.) ilgili metafor analiziyle yapılan araştırmaların bulgularına benzer olmuştur. Temaların, isimleri farklılıklar gösterse de içerik ve anlam açısından ilgili literatürle örtüşmektedir. Metaforlar, ulusal ve kültürel özellikler taşıyan, duygusal ve değerlendirici öğeler barındıran etkili bir anlatım aracıdır. Başka bir deyişle metaforlar kültürel bir temelde ortaya çıkar ve o kültürde yaşayan insanların anlama davranışlarını belirler. Bu durumda aynı kültürde yaşayan öğretmen adaylarının metafor geliştirme sürecinde benzer bir kod sistemi kullandıkları söylenebilir. Eğitimin yaşamı yönlendiren bir eylem, bireysel gelişim ve toplumsal değişim için bir araç olarak algılanması çok önemlidir. İçinde yaşadığımız çağ hızlı ve sürekli değişimin yaşandığı bir çağdır. Toplumların geleceği değişime uyum sağlama yeteneklerine bağlıdır. Dolayısıyla bu sonuçlar, öğretmen adaylarının bireysel ve toplumsal gelişimin yaşam koşullarına göre değişen ve değişime yol açan eğitimle mümkün olduğunun farkında oldukları şeklinde yorumlanabilir.

Öneriler

Araştırma sonuçları, 2017-2018 eğitim öğretim yılında bir devlet üniversitesinde pedagojik formasyon eğitimine katılan ve farklı fakültelerden mezun olan öğretmen adaylarının geliştirdikleri metaforlarla sınırlıdır. Aynı araştırmanın farklı örneklem gruplarında tekrarlanması ve nicel ve nitel veri toplama yöntemlerinin bir arada kullanıldığı karma araştırma yöntemi ile "eğitim" kavramına yönelik algıların daha derinlemesine incelenmesi önerilebilir. Metaforlar seçicidir; olgunun tamamını değil, yalnızca bir kısmını temsil eder. Tek bir metaforun sınırlılığını ortadan kaldırmak ve çoklu vizyonlar elde etmek için benzer çalışmalardaki katılımcılardan birden fazla metafor geliştirmeleri istenebilir. Araştırma sonuçları, öğretmen adaylarının ürettikleri metaforların çoğunlukla eğitimin genel amacı ve işlevlerine vurgu yaptığını göstermektedir. Başka bir çalışmada, öğretmen adaylarının Türk Milli Eğitim Sisteminin genel amaçlarının gerçekleşme düzeyi ile ilgili görüşleri incelenebilir. Bu çalışmada katılımcılar eğitim kavramını duygularla örtüştürmemişlerdir. Hizmet öncesi öğretmen eğitiminde öğrenme sürecinde duyguların önemine ilişkin çalışmaların yapılması önerilmektedir.

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COMPARISON OF SOCIAL-EMOTIONAL COMPETENCE AND PLAY BEHAVIORS OF PRESCHOOL CHILDREN WHO HAVE AND HAVE NOT EXPERIENCED AN EARTHQUAKE

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Abstract

It was aimed to compare the social-emotional competence and play behaviors of preschool children who did and did not experience the 6 February 2023 Kahramanmaraş Earthquakes in this study. There are two study groups in the research. The first study group consists of 114 children aged 5-6 years who witnessed the 6 February Kahramanmaraş earthquake, who reside in Adıyaman province, who attend preschool education, and who lack any special education diagnosis. The second study group consists of 87 children aged 5-6 years who have never witnessed an earthquake, who reside in Sinop province, attend preschool education, and who lack any special education diagnosis. According to the research findings, empathy, emotion recognition/emotion expression, self-regulation, social competence, and social play score averages of five- and six-year-old children who have and don't have an earthquake experience show a significant difference in favor of children who don't have an earthquake experience. On the other hand, concerning the earthquake experience of children, while there is a difference between groups in one of the five play types (social play), there is no difference in the remaining four play types (solitary passive play, reticent play, solitary active play, and rough play).

Key words: Earthquake, preschool period, social-emotional competence, play behaviors

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DEPREM YAŞAYAN VE YAŞAMAYAN OKUL ÖNCESİ ÇOCUKLARIN SOSYAL-DUYGUSAL YETERLİLİKLERİNİN VE OYUN DAVRANIŞLARININ KARŞILAŞTIRILMASI

Özet

Bu çalışmada, 6 Şubat 2023 Kahramanmaraş Depremi'ni yaşayan ve yaşamayan okul öncesi çocuklarının sosyal-duygusal yeterlilik ve oyun davranışlarının karşılaştırılması amaçlanmıştır. Araştırmada iki çalışma grubu bulunmaktadır. Birinci çalışma grubunu, 6 Şubat Kahramanmaraş depremine tanıklık eden, Adıyaman ilinde ikamet eden, okul öncesi eğitime devam eden ve herhangi bir özel eğitim tanısı almayan 5-6 yaş grubu 114 çocuk oluşturmaktadır. İkinci çalışma grubunu ise hiç depreme tanıklık etmemiş, Sinop ilinde ikamet eden, okul öncesi eğitime devam eden ve herhangi bir özel eğitim tanısı almayan 5-6 yaş grubu 87 çocuk oluşturmaktadır. Araştırma bulgularına göre, deprem deneyimi olan ve olmayan beş ve altı yaş çocuklarının empati, duygu tanıma/duygu ifade etme, öz düzenleme, sosyal yeterlilik ve sosyal oyun puan ortalamaları, deprem deneyimi olmayan çocuklar lehine anlamlı bir farklılık göstermektedir. Öte yandan çocukların deprem deneyimleri ile ilgili olarak, beş oyun türünden birinde (sosyal oyun) gruplar arasında fark varken, kalan dört oyun türünde (yalnız pasif oyun, sessiz oyun, yalnız aktif oyun ve itiş kakış oyun) gruplar arasında fark bulunmamaktadır.

Anahtar Kelimeler: Deprem, okul öncesi dönem, sosyal duygusal yeterlilik, oyun davranışları

INTRODUCTION

The social-emotional competence, psychological resilience, and play behaviors of preschool children who witnessed the 6 February 2023 Kahramanmaraş earthquake and those who did not experience an earthquake were compared. The first earthquake during the 6 February 2023 Kahramanmaraş earthquakes occurred at 04:17. The magnitude of the earthquake, the epicentre of which was determined as Pazarcık district, was announced as 7.7 kilometers and the focal depth was 8.6 kilometers. The largest earthquake that occurred in Turkey after the 17 August 1999 earthquake caused destruction not only in Kahramanmaraş but also in at least 10 provinces along the fault line, including Syria. Among these provinces Diyarbakır, Kilis, Osmaniye, Hatay, Gaziantep, Şanlıurfa, Adıyaman, Malatya and Adana faced severe damage. While the earthquake victims were in fear and panic, a 7.5 magnitude earthquake occurred in the region 9 hours after the first earthquake. Dozens of buildings damaged in the first earthquake collapsed together with the second earthquake (TR Euro News, 2023). It was stated in the official statement that 53 thousand 537 people died and 107 thousand 213 people were injured as a result of the earthquakes (Abatay, 2024). The 6 February Kahramanmaraş earthquakes were recorded as the world's biggest disaster in 2023. The 7.7 magnitude earthquake that occurred in Kahramanmaraş Pazarcık at night on 6 February was recorded as the second largest earthquake of the last century, and the 7.6 magnitude earthquake that occurred in Kahramanmaraş Elbistan at noon on the same day was recorded as the third largest earthquake of the last century (Dünya Gazetesi, 2023). The number of citizens of the Republic of Turkey registered in the provinces affected by the 6 February, 2023 Kahramanmaraş earthquakes is 14,013,196. In proportional terms, this number corresponds to 16.43% of Turkey's population concerning that period. With respect to this amount, it is stated that one out of every six Turkish citizens is directly affected by the earthquake (Sağıroğlu, Ünsal & Özenci, 2023). It is evident that the Kahramanmaraş earthquakes are a major natural disaster that will have long-term effects. Natural disasters such as earthquakes have various direct and indirect effects on people. The effects of the earthquake on young children were discussed comparatively in the context of this research. Earthquakes can cause various direct and indirect effects on children (Shrestha & Gopal, 2021). Various negative effects on the mental health of children and adolescents can be listed among the direct effects of the earthquake (Yılancıoğlu & Özbaran, 2023). Similarly, Şalcıoğlu and Başoğlu (2008) underlined in their study that earthquakes can cause high levels of post-traumatic stress disorder (PTSD), depression and earthquake-related fears in children and adolescents. Separation anxiety may become common among children and adolescents after an

earthquake. Depression may occur as a result of post-traumatic stress reactions and deterioration in living conditions, which are common after major earthquakes. Ongoing behavioral changes and physical health problems may occur, which may affect student functionality and school performance. Children and adolescents may no longer feel confident about the safety of the world and adults' capability to protect them (NCTSN, n.d.). It is crucial to discuss the effects of the trauma on children and adolescents. Many individuals experiencing post-traumatic stress disorder (PTSD) symptoms following the earthquake may have been previously exposed to traumatic events. Such events may include displacement, domestic violence, or other types of personal trauma. Acknowledging the possibility of pre-existing traumatic experiences may provide a more comprehensive understanding of children's vulnerability and resilience following an earthquake (Khan, Khan & Alabdulla, 2023). The indirect effects of an earthquake on children can be via their parents and teachers. When an earthquake affects parents and other adults (e.g., teachers), children's care, protection, and support systems may be damaged, which are examples of indirect effects on children (Kousky, 2016). Earthquake is an important factor that can negatively affect the social and emotional development of children aged 0-6. This traumatic experience can lead to problems among children, such as social isolation, fear of separation, a decline in social skills, an increase in aggressive behavior, Post-Traumatic Stress Disorder, intense fear and anxiety, and difficulty in emotional regulation. Therefore, it should not be forgotten that immediate and long-term psychosocial interventions are vital to support the emotional and social development of children affected by the earthquake (Doostgharin, 2009; Norris, & Wind, 2009).

Social-emotional competence and play behaviors, along with earthquake experience, have been discussed in this research. Social and emotional competence is a concept that includes the necessity of advancing successfully in society and being successful in the coming years. Social competence involves the combination of skills that support effective social interaction between a person and others (Lillvist, Sandberg, Bjorck-Akesson & Granlund, 2009). Social-emotional skills are substantial resources children utilize in their everyday interactions and activities, particularly in the socially rich environments of preschool educational institutions. Social-emotional skills allow children to interact and engage with others and build social-emotional competence (McLaughlin, Aspden & Clarke, 2017). Social-emotional skills (and therefore social-emotional competence) begin to develop in the first years of life and are associated with cognitive, social, and health outcomes in later years (Zins, Bloodworth, Weissberg & Walberg, 2007). It is widely recognized that

self-awareness, social awareness, relationship skills, responsible decision-making, and self-management are the fundamental personal and interpersonal skills that come together under the umbrella of social-emotional competence (Martinsone et al., 2022). High levels of social-emotional competence are associated with reduced behavioral and emotional problems. Children with social-emotional competence are described by teachers as having better behavior management skills and better self-regulation, as well as being more engaged in activities. Similarly, low social-emotional competence is considered to be associated with the presence of problematic behavior and emotional difficulties, as well as relationship problems (Sklad, Diekstra, De Ritter, Ben & Gravesteijn, 2012). Therefore, it can be said that diversifying studies on social-emotional competence during a preschool period can provide important information to examine children's emotional and social development in detail.

One other variable in this research is play behaviours. Play can generally be defined as an activity that starts and continues on the child/children's own initiative, where the process is more important than the result, flexibility (objects are put in new combinations or roles are played in new ways) and positive mood (children often smile, laugh and say they enjoy it) (Smith & Pellegrini, 2023). Play is a concept that has defining characteristics of child behaviour. Classifications related to play vary. Specific subtypes of play exist from infancy to childhood, including sensory-motor or exploratory play, functional play, constructive play, pretend play and rough play. Play can also be categorized according to the social aspects of interaction. Thus, with this respect, it varies between solitary play and cooperative play with friends (Fehr, Boog & Leraas, 2020). In addition to improving children's critical thinking skills, play also supports the development of social and emotional skills. While children play, their imagination and creativity develop, their social development and general skill acquisition are supported. Play is an important concept in that it supports all developmental areas of children simultaneously. Children both have fun and learn through games. With this respect, as a learning tool, play has a crucial role in children’s lives (Frost, 2010; Hartwell-Walker, 2016). It is evident that during the preschool period, the concepts of social-emotional competence and play can affect development in multiple dimensions through their short and long-term effects. In this study, it was aimed to compare the social-emotional competence and play behaviors of preschool children who have and have not experienced the 6 February 2023 Kahramanmaraş Earthquakes. The sub-purposes of the research are:

1. Is there a significant difference between the emotional knowledge levels of preschool children who have and those who have not witnessed the earthquake?
2. Is there a significant difference between the empathy levels of preschool children who have and those who have not witnessed the earthquake?
3. Is there a significant difference between the self-regulation levels of preschool children who have and those who have not witnessed the earthquake?
4. Is there a significant difference between the social competence levels of preschool children who have and those who have not witnessed the earthquake?
5. Is there a significant difference between the social play levels of preschool children who have and those who have not witnessed the earthquake?
6. Is there a significant difference between the rough play levels of preschool children who have and those who have not witnessed the earthquake?
7. Is there a significant difference between the solitary active play levels of preschool children who have and those who have not witnessed the earthquake?
8. Is there a significant difference between the solitary passive play levels of preschool children who have and those who have not witnessed the earthquake?
9. Is there a significant difference between the reticent play levels of preschool children who have and those who have not witnessed the earthquake?

METHOD

The relational screening method was used in this study, which aims to compare social-emotional competence and play behaviors of preschool children who have and have not experienced an earthquake.

Participants

There are two study groups in the research. The first study group consists of 114 children aged 5-6 years, who have witnessed the 6 February Kahramanmaraş earthquake, who reside in Adıyaman province, attend preschool education and who lack any special education diagnosis. 58 (50.9%) of the children are female and 56 (49.1%) are male. 69 (60.5%) of the children who witnessed the Kahramanmaraş earthquake attend a kindergarten affiliated with a primary/secondary school, and 45 (39.5%) attend an independent

kindergarten. Children who experienced the Kahramanmaraş earthquake did not encounter any loss of organs or loss of family members such as parents or siblings. All of the children's homes suffered various damages, but there was no child whose home was destroyed. However, as a result of the damages, all of the children live in the same district but continue their lives in a different house. Also, 87 of these children were children who did not attend preschool during the earthquake but started preschool for the first time during the 2023-2024 academic year; 27 of these children were children who started preschool for the first time during the earthquake and who also continued preschool during the 2023-2024 academic year.

The second study group consists of 87 children aged 5-6 years, who have never witnessed an earthquake who resides in Sinop province, attend preschool education and who lack any special education diagnosis. 41 (47.1%) of the children are female and 46 (52.9%) are male. 29 (33.3%) of the children who haven't witnessed an earthquake attend a kindergarten affiliated with a primary/secondary school, and 58 (66.7%) attend an independent kindergarten. All of the children in the second study group live with their parents.

In the sample selection, study groups from Adıyaman and Sinop provinces were determined based on the convenience sampling method. Secondly, according to measurement control methods, children who met the criteria of having experienced the Kahramanmaraş earthquake and having no earthquake experience were selected.

Data Collection Methods

The three measurement tools, Personal Information Form, Preschool Social Emotional Skills and Psychological Resilience Scale, and Preschool Play Behaviour Scale, were used in the research.

Personal Information Form: The form developed for the research includes various questions concerning demographic information such as the children's gender, age, and the type of school they attend.

Preschool Social Emotional Skills and Psychological Resilience Scale: It was developed by Ravitch (2013) to evaluate the positive social-emotional characteristics of preschool period children. The Turkish adaptation study of the scale was conducted by Gülay Ogelman, Saraç, Önder, Abanoz, and Akay (2021). There are twenty-two items on the scale. For every item, teachers evaluate the child in question on a 4-point Likert scale. The scale has 4 sub-dimensions: Empathy, Emotion Recognition/Emotion Expression, Self-

Regulation, and Social Competence. The internal consistency coefficients of the scale adapted into Turkish were calculated as .90, .91, .84, and .85, respectively (Gülay Ogelman et al., 2021). According to the study, the internal consistency coefficient of the total scale was calculated as .93, .93 for the Emotion Recognition/Emotion Expression sub-scale, .94 for the Empathy sub-scale, .87 for the Self-Regulation sub-scale and .93 for the social competence sub-scale.

Preschool Play Behaviours Scale: The scale was developed by Coplan and Rubin (1998) so as to evaluate individual behaviors displayed by preschool children during games with respect to teacher opinions. The validity and reliability of the scale for the Turkish sample were conducted by Gülay Ogelman (2012). The scale consists of 18 items. It has 5 sub-scales. The reticent-behavior subscale (4 items) consists of items based on aimlessly watching the surroundings. The solitary-active behavior scale (2 items) includes items about games where the child runs alone, plays a role, plays a musical instrument, etc. The solitary-passive behavior sub-scale (4 items) includes games where the child plays alone and which are based on exploring and building things. The social play scale (6 items) consists of items about group games and social-dramatic games. The rough scale (2 items) includes items about games based on scuffling, pretending to fight etc. For each item, the child is given a frequency assessment on a 5-point Likert scale (never, rarely, sometimes, often, always). The child gets a score for each sub-scale. There is no total score. The Cronbach's Alpha coefficients regarding the scales were; .88 for Social play, .90 for Solitary-passive play, .86 for Rough play, .86 for Reticent play and .72 for Solitary-active play (Gülay Ogelman, 2012). The internal consistency coefficients regarding the scales were; .86 for Social play, .79 for Solitary-passive play, .83 for Rough play, .61 for Reticent play and .82 for Solitary-active play.

Data Collection Process

Necessary permissions were obtained for the research. Ethics approval of the study was obtained from the Science Research and Publication Ethic Committee of Near East University, dated 04.07.2023 and numbered YDÜ/EB/2023/1013. The data collection process took place during the fall term of the 2023-2024 academic year. After about 5 months of observation, the preschool teachers completed the measurement tools regarding the children. For children who experienced the Kahramanmaraş earthquake, 13 teachers, 10 females and 3 males, in 13 preschool education classes, filled out the forms for each child. For children who didn't experience the Kahramanmaraş earthquake, 11 teachers, 10 female, and 1 male, in 11 preschool education classes, filled out the forms for each child.

Data Analysis

Research findings were analyzed through the SPSS 21.0 statistical program. Normal distributions of the data were examined in terms of kurtosis and skewness levels. George and Malley (2019, pp.114-115) state that while kurtosis and skewness values falling between ±1.0 are accepted as "excellent" for most psychometric applications, in many instances, values falling between ±2.0 are also considered "acceptable" for normal distribution. In this study, George and Malley (2019) were taken as a basis when examining kurtosis and skewness values. The data meet the normal distribution criteria since values acquired in all sub-scales of the two scales varied in the reference range. The kurtosis and skewness values regarding the sub-scales are as follows: it was examined that, with respect to the Preschool Social Emotional Skills and Psychological Resilience Scale, the values are (-.805, -.536) for the Emotion Recognition/Emotion Expression sub-scale, (-1.114, -.217) for the Empathy sub-scale, (-.713, -.290) for the Self-Regulation sub-scale, (-.950, -.357) for the Social Competence sub-scale; with respect to the Preschool Play Behaviours Scale, (-.246, -.470) for the Social play sub-scale, (-.657, .044) for the Solitary-Passive play sub-scale, (-.409, .915) for the Rough play sub-scale, (1.156, 1.001) for the Reticent behavior sub-scale and (-.657, -.229) for the Solitary-active sub-scale. Because of the normal distribution of the data, parametric techniques were executed in the data analysis. Tabachnick and Fidell (2007) state that analysis of variance (ANOVA) is used to compare two or more means to determine if there are statistically significant differences among them. The One-Way ANOVA technique was used to compare social-emotional competence and play behaviors of children who have and have not experienced an earthquake.

RESULTS

Table 1. Descriptive statistics concerning the study groups

Variables	N	Min.	Max.	Mean	Std. Dev.
Emotion recognition/emotion expression					
Children who witnessed an earthquake	114	10.00	24.00	19.23	3.83
Children who haven't witnessed an earthquake	87	12.00	24.00	20.76	3.79
Empathy					
Children who witnessed an earthquake	114	6.00	20.00	14.23	3.51
Children who haven't witnessed an earthquake	87	6.00	20.00	16.36	4.02
Self-regulation					

Children who witnessed an earthquake	114	9.00	24.00	18.14	3.15
Children who haven't witnessed an earthquake	87	11.00	24.00	20.50	3.98
Social competence					
Children who witnessed an earthquake	114	9.00	20.00	15.77	2.87
Children who haven't witnessed an earthquake	87	10.00	20.00	17.56	3.29
Social play					
Children who witnessed an earthquake	114	12.00	30.00	23.54	3.80
Children who haven't witnessed an earthquake	87	12.00	30.00	25.46	4.28
Solitary passive play					
Children who witnessed an earthquake	114	8.00	20.00	13.61	2.82
Children who haven't witnessed an earthquake	87	5.00	20.00	12.58	4.57
Rough play					
Children who witnessed an earthquake	114	2.00	9.00	4.20	2.25
Children who haven't witnessed an earthquake	87	2.00	10.00	3.60	2.19
Reticent play					
Children who witnessed an earthquake	114	4.00	16.00	9.09	2.57
Children who haven't witnessed an earthquake	87	4.00	20.00	8.55	3.28
Solitary active play					
Children who witnessed an earthquake	114	3.00	10.00	6.68	1.53
Children who haven't witnessed an earthquake	87	2.00	10.00	6.74	2.74

Table 1 reveals descriptive statistics regarding play types and particular social-emotional competencies of children who have and haven't experienced the earthquake.

Table 2. ANOVA results concerning whether the variables have witnessed an earthquake or not

Variables		**Sum of squares**	**Sd.**	**Mean of squares**	***F***	**p**	**η^2**
Emotion recognition/emotion expression	Intergroup	115.126	1	115.126	7.885	.005*	.038
	Intra-group	2905.472	199	14.600			
	Total	3020.598	200				
Empathy	Intergroup	225.319	1	225.319	16.048	.000*	.075
	Intra-group	2794.075	199	14.041			

	Total	3019.394	200				
Self-regulation	Intergroup	275.617	1	275.617	22.015	.000*	.100
	Intra-group	2491.354	199	12.519			
	Total	2766.972	200				
Social competence	Intergroup	157.750	1	157.750	16.814	.000*	.078
	Intra-group	1867.034	199	9.382			
	Total	2024.785	200				
Social play	Intergroup	180.933	1	180.933	11.192	.001*	.053
	Intra-group	3217.100	199	16.166			
	Total	3398.033	200				
Solitary-passive play	Intergroup	52.300	1	52.300	3.858	.051	.019
	Intra-group	2697.861	199	13.557			
	Total	2750.161	200				
Rough play	Intergroup	17.760	1	17.760	3.578	.060	.018
	Intra-group	987.659	199	4.963			
	Total	1005.419	200				
Reticent play	Intergroup	14.414	1	14.414	1.716	.192	.009
	Intra-group	1671.937	199	8.402			
	Total	1686.351	200				
Solitary-active play	Intergroup	.212	1	.212	.046	.830	.000
	Intra-group	916.778	199	4.607			
	Total	916.990	200				

According to Table 2, the children's score averages of social-emotional competence (empathy, emotion recognition/emotion expression, self-regulation, social competence) and social play variables regarding experiencing an earthquake and not experiencing an earthquake criteria have a statistically significant difference. The emotion recognition/emotion expression ($F(1\text{-}199) = 7.885$, $p<.05$, $\eta^2=.038$), empathy ($F(1\text{-}199) = 16.048$, $p<.05$, $\eta^2=.075$), self-regulation ($F(1\text{-}199) = 22.015$, $p<.05$, $\eta^2=.100$), social competence ($F(1\text{-}199) = 16.814$, $p<.05$, $\eta^2=.078$), social play ($F(1\text{-}199) = 11.192$, $p<.05$, $\eta^2=.053$) levels show a significant difference in favor of children who have not experienced an earthquake. Table 1 indicates the average mean scores of children for each variable. Emotion recognition/emotion expression score averages ($\overline{X}= 20.76$) of children who haven't witnessed an earthquake are higher than those of children who have witnessed an earthquake ($\overline{X}= 19.23$). Empathy score averages ($\overline{X}= 16.36$) of children who haven't witnessed an earthquake are higher than the score averages of children who have witnessed an earthquake ($\overline{X}= 14.23$). Self-regulation score averages ($\overline{X}= 20.50$) of children who haven't witnessed an earthquake are higher than those of children who have witnessed an earthquake ($\overline{X}= 18.14$). Social competence score averages ($\overline{X}$=17,56) of children who haven't witnessed an earthquake are higher than those of children who have witnessed an earthquake ($\overline{X}$= 15,77). Social play score averages ($\overline{X}= 25.46$) of children who haven't witnessed an earthquake are higher than those of

children who have witnessed an earthquake ($\overline{X}$= 23,54). For the reticent play, solitary passive play, rough play, and solitary active play variables, there isn't a significant difference regarding the criterion of experiencing or not experiencing an earthquake (p>.05).

DISCUSSION AND CONCLUSION

According to the research findings, self-regulation, emotion recognition/emotion expression, empathy, social competence, and social play score averages of five- and six-year-old children who have and don't have an earthquake experience show a significant difference in favor of children who don't have an earthquake experience. Based on the results, it is evident that emotion recognition/emotion expression, empathy, self-regulation, social competence, and social play score averages of children who don't have an earthquake experience are higher than children who have an earthquake experience. At this point, it can be considered that the earthquake experience may have an impact on children's social and emotional development and their play experience with their peers. It is observed in the study that while there is a difference in one of the five play variables (social play), there is no difference in the remaining four (solitary passive play, reticent play, solitary active play, and rough play) variables. Findings suggest that earthquake experience may have a negative impact on preschool children's social competence and social play. However, it can be stated that the earthquake experience has no effect on various play types (solitary passive play, rough play, reticent play, and solitary active play). Therefore, regarding this study, it is evident that while the earthquake experience affects some developmental processes of children, it does not affect others. Traumatic events such as earthquakes can lead to negative outcomes for especially children aged between 0-6. Young children are one of the most vulnerable groups in society to disasters. Earthquakes can have long-lasting and permanent effects on the social and emotional development of young children who are in a critical developmental period. The effects of the most serious disasters and shocks to health and education on children's development can last for years, even into adulthood (Kousky, 2016). When similar studies in the literature are examined, it is evident that earthquake experience can have short and long-term effects on preschool children. For example, in their longitudinal study with children in preschool and primary school during the 2015 Kathmandu (Nepal) earthquake, Shrestha and Gopal (2021) underline that emotional problems such as behavioral problems, hyperactivity-carelessness, and friendship problems can be seen in children affected by the earthquake. Gomez and Yoshikawa (2017) emphasize that preschool children who experienced the 2010 Chile earthquake received lower

scores in some early language and pre-literacy assessments than those who did not experience the 2010 Chile earthquake. In the study conducted by Erkan (2014) on the comparison of preschool period children who experienced the Afyon Sultandağı (Turkey) earthquake and who didn't experience an earthquake, it is underlined that children in the earthquake region can display more problematic behaviors. Morales, Girard, Sawrikar, and MacBeth (2023) conducted a study on the children and their families who were affected by the 2010 Chile earthquake and stated that problems such as anxiety, emotional reactivity, sleep disorder, attention problems, and aggression may be at higher levels in children who experienced the earthquake than in children who did not experience the earthquake. According to the study conducted by Raccanello, Burro, and Hall (2017), it was determined that the earthquake experience did not have an effect on the skills of understanding and expressing emotions, and gender and class variables could affect skills related to emotions. For this reason, this finding contradicts with the finding in the study that the empathy variable differs according to earthquake experience. It is evident that some of the studies on the effects of an earthquake on the social and emotional development of preschool children contain findings that support the findings of this research. A study investigating the experiences of children who witnessed Kahramanmaraş Earthquakes on 6 February 2023 and the emotional reactions they encountered in their parents revealed the behavioral and emotional transformation and shift in children (Darga, 2023). The findings of the study revealed that children developed and displayed various emotional and behavioral reactions in the aftermath of the earthquake, including fear of death and earthquakes, questioning the earthquakes, intolerance, sleep disorders, bursts of rage, unwillingness to go home, and resistance to stay away from mother (Darga, 2023). Characteristics of destructive natural disasters like earthquakes make them not one-time- events that are over and passed; on the contrary, their impact continues to be felt tangibly in individuals' and particularly children's lives. Therefore, the aftermath of such trauma-eliciting incidents may push children to be in a state of emergency and alertness psychologically that may be accompanied by somatic symptoms, emotional overload, emotional dysregulation, hyperarousal or numbness, etc. When children subtly or visibly under the effect of extraordinary situations, it may be challenging for them to exhibit their emotions, self-regulation, and social competence skills compared to their peers who are not exposed to such destructive and traumatizing life events. Since preschool is the period in which skills including emotion recognition, empathy, social competence, and self-regulation were not fully developed yet, in the face of such devastating life events, young children, as the most vulnerable group, may be less likely to manage and practice those skills and deal with the challenges of such life

events. It may be one of the possible explanations for the difference in children's self-regulation, emotional understanding, empathy, and social competence skills between children who experienced and did not experience the Kahramanmaraş Earthquake in the current study.

It was observed in this study that four of the play behavior variables did not differ according to the variable of whether or not having an earthquake experience. This indicates that an earthquake experience may not affect every skill and behavior. Thus, Nagae and Nagano (2023) state that the post-earthquake behavioral problems and hyperactivity/attention levels of young children who were at home during the Kumamoto (Japan) earthquake remained below clinical limits and that the behavioral problems of children who were away from their families during the earthquake were at a higher level and underlined that the effects of the earthquake on children may continue in the long run. In the same research, it is asserted that the variable of whether children were with their families during the earthquake or not could be a variable that could determine the effect of the earthquake. In this research, it can be considered that different variables related to play behaviors (passive play alone, rough play, reticent play and active play alone), which do not differ depending on the earthquake variable, may determine the effect of the earthquake and/or there may be different variables that can affect these play behaviors. In some studies on the subject (Peek 2008; Peek & Stough, 2010), it is stated that the effects of natural disasters on children include the child's physical proximity to the disaster, how the disaster affects their home, minority status, family and the environment, disability, their socio-economic status, family functionality due to the disaster, psychopathological symptoms in the general population and post-earthquake stress in parents. Masten and Motti-Stefanidi (2020) state that various individual, domestic, school-related and social factors in children's lives can protect them against difficult situations such as natural disasters. For example, it has been stated that many factors, such as sensitive parents, close relationships, trust, commitment, positive habits, and routines, can be protective.

Many factors shape the various effects that natural disasters, such as earthquakes, can have on children. Therefore, it is important to define these factors in terms of their effects before, during, and after the disaster. While the severity of the disaster, the level of exposure to the disaster, and the current level of social support (especially from families and teachers) are among the protective factors, many factors, such as the child's age and individual developmental differences, can affect the consequences of the disaster (Wang et al., 2021). Korkmaz and Altınsoy (2023) underline that early intervention is

crucial in terms of the problems experienced by preschool children after the earthquake and emphasize the importance of children's psychological resilience. In addition, although there are studies in the literature on resilience and coping interventions after earthquakes, it is stated that these skills need to be developed before the earthquake (Korkmaz & Altınsoy, 2023). The preschool children in this study who experienced an earthquake were not included in any intervention program after the earthquake. Natural disasters (including earthquakes) can cause traumatic effects on children's psychological health and development. The literature demonstrates the effectiveness of interventions aimed at supporting children's social-emotional development. At the same time, these interventions are also important to ensure preparedness for possible future disasters by increasing children's knowledge about their social-emotional competencies (Raccanello, Vicentini, Rocca, Hall & Burro, 2024). Activities prepared for children aged 5-6 in 10 kindergartens in Tehran were implemented and it was emphasized that disaster education given to young children could be an important protective factor against disasters (Izadkhah & Heshmati, 2007).

To conclude, the current study may provide insight into the potential effects of earthquakes on young children's social-emotional skills and play behaviors regarding the Kahramanmaraş Earthquakes that took part on 6 February 2023 and struck southern and central Turkey. On the other hand, while evaluating the findings of the study, it is possible to address numerous constraints and limitations associated with this investigation. The data collection procedure constitutes one of the important constraints of the current study. The data collection tools used in the study require teachers to evaluate children in their classrooms based on the items listed in the measurement tools. At this point, while teachers who evaluated children in Adıyaman (earthquake zone) also experienced earthquakes, teachers who evaluated children's behavior in Sinop province of Turkey (outside of the earthquake zone) were not exposed to the earthquake. When this is the case, accounting for the potential effects of earthquakes on teachers' psychological well-being and judgment with regard to their reflections on their evaluation of children is necessary. In other words, those teachers' evaluations may be misleading and blurred by either their own experiences or possible biased opinions they formed for children in the shadow of the experienced earthquake. In this regard, additional and alternative forms of data collection, like direct observation of children in their classrooms or using measurement tools collecting the data directly from children, would provide a more objective evaluation of children's social-emotional skills and play behaviors and would verify the data collected by teachers. The study was conducted with children in two cities located in different regions of Turkey. In this regard, children's demographic background, characteristics of the area they

live (population, development level, social and environmental opportunities), family backgrounds, living conditions, SES, and their developmental and educational trajectories may be seen as important variables that may have interfered with the existing difference in their social-emotional skills including emotion recognition, empathy, self-regulation, and social competence. In this regard, paradoxically, one of the limitations of the study stems from the unpredictable nature of the disasters since it was impossible to measure and compare the pre-test scores of children before the earthquake to depict the actual short-term impact of the earthquake children experienced. Additionally, it is not that possible to standardize the experiences of children witnessing earthquakes and the magnitude of the Kahramanmaraş earthquake's impact on the children. In the current study, the group of children experiencing the Kahramanmaraş earthquake does not represent all the children, especially those who got moderate or severe damage from the earthquake during and aftermath of the incident since they did not take serious physical damage and did not encounter loss of family members or demolition of their building. In this regard, although the impact of a traumatic situation may vary from person to person, in the current study, the observable and tangible impact of the earthquake on children witnessing the Kahramanmaraş earthquake can be defined as mild compared to those who experienced worse conditions during and after the earthquake. Therefore, the study group is not representative of highly impacted children. Numerous factors define an incident's impact on individuals, including the nature and type of incident(s), individual personal attributes, developmental processes, sociocultural variables, and the interpretation of the trauma (Substance Abuse and Mental Health Services Administration, 2014). When this is the case, to unveil the impact of such natural disasters on young children, it would be essential to reflect on the experiences of children affected by such disasters in varying degrees and reflected on them.

RECOMMENDATIONS

In line with the findings of the research, it is crucial to draw attention to the importance of early psychological first aid for all children affected by the earthquake. Actions should be taken to ensure that children and adults who have experienced natural disasters such as earthquakes receive regular psychological support. Education policies should be developed and implemented to meet children's needs in earthquake zones. Due to the earthquake, many families migrate to different places outside the earthquake zone. Therefore, in the same way, all intervention processes, especially psychosocial support practices, should be carried out meticulously in schools

outside the earthquake zone for the children being exposed to the earthquake. In addition, preventive mental health services should be provided to reduce the impact of earthquakes on children's mental health. Also, educational programs should be prepared and disseminated to increase the awareness of society and young children about earthquakes. All individuals, especially children, need to be informed about the subject within the scope of preventive efforts against natural disasters, such as early warning systems, evacuation drills, and community preparedness programs. Since the preschool period is essential for both rapid development and its permanent effects, studies on educating young children, their teachers, and parents about natural disasters should be expanded.

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Genişletilmiş Özet

Giriş

6 Şubat Kahramanmaraş depremleri, 2023 yılında dünyadaki en büyük felaket olarak kayıtlara geçti. 17 Ağustos 1999 depreminden sonra Türkiye'de meydana gelen en büyük deprem, sadece Kahramanmaraş'ta değil, aynı zamanda fay hattı boyunca en az 10 ilde de yıkıma neden oldu. Depremler çocuklar üzerinde çeşitli doğrudan ve dolaylı etkilere neden olabilmektedir (Shrestha & Gopal, 2021). Okul öncesi dönemde sosyal-duygusal yeterliliklerin kazanımı ve oyun davranışları çocuğun gelişimini çok boyutlu etkileyebilmektedir. Bu kapsamda insan hayatında kısa ve uzun vadeli derin etkiler bırakma potansiyeli olan doğal afetlerin çocukların ilgili becerileri ve aktiviteleri üzerindeki yansımalarının tespiti önem arz etmektedir. Bu çalışmada, 6 Şubat 2023 Kahramanmaraş Depremini yaşayan ve yaşamayan okul öncesi çocukların sosyal-duygusal yeterlilik ve oyun davranışlarının karşılaştırılması amaçlanmıştır.

Yöntem

Deprem yaşayan ve yaşamayan okul öncesi çocukların sosyal-duygusal yeterliliklerini ve oyun davranışlarını karşılaştırmayı amaçlayan bu çalışmada ilişkisel tarama yöntemi kullanılmıştır. Araştırmada iki çalışma grubu bulunmaktadır. Birinci çalışma grubu, 6 Şubat Kahramanmaraş depremine tanıklık etmiş, Adıyaman ilinde ikamet eden, okul öncesi eğitime devam eden ve herhangi bir özel eğitim tanısı olmayan 5-6 yaş aralığındaki 114 çocuktan oluşmaktadır. İkinci çalışma grubu ise daha önce hiç depreme tanık olmamış, Sinop ilinde ikamet eden, okul öncesi eğitime devam eden ve herhangi bir özel eğitim tanısı olmayan 5-6 yaş aralığındaki 87 çocuktan oluşmaktadır. Araştırmada Kişisel Bilgi Formu, Okul Öncesi Sosyal Duygusal Beceriler ve Psikolojik Dayanıklılık Ölçeği ve Okul Öncesi Oyun Davranışı Ölçeği olmak üzere üç ölçme aracı kullanılmıştır. Verilerin normal dağılıma sahip olması nedeniyle veri analizinde parametrik teknikler kullanılmıştır. Araştırma bulguları SPSS 21.0 istatistik programı ile analiz edilmiştir. Analizler sonucunda verilerin normal dağılıma sahip olduğu tespit edilmiş ve bu nedenle veri analizinde parametrik tekniklere başvurulmuştur. Depreme maruz kalan ve kalmayan çocukların sosyal-duygusal yeterliliklerini ve oyun davranışlarını karşılaştırmak için Tek Yönlü Varyans Analizi (ANOVA) analiz tekniği kullanılmıştır.

Bulgular

Çocukların deprem yaşama ve deprem yaşamama kriterlerine göre sosyal-duygusal yeterlilik (empati, duygu tanıma/duygu ifadesi, öz düzenleme, sosyal

yeterlilik) ve sosyal oyun değişkenlerine ait puan ortalamaları istatistiksel olarak anlamlı düzeyde farklılaşmıştır. Duygu tanıma/duygu ifadesi ($F(1\text{-}199) = 7{,}885$, $p<.05$), empati ($F(1\text{-}199) = 16{,}048$, $p<.01$), öz düzenleme ($F(1\text{-}199) = 22{,}015$, $p<.01$), sosyal yeterlilik $F(1\text{-}199) = 16{,}814$, $p<.01$), sosyal oyun ($F(1\text{-}199) = 11{,}192$, $p<.01$) düzeyleri deprem yaşamamış çocuklar lehine anlamlı düzeyde farklılaşmıştır. Sessiz oyun, yalnız pasif oyun, itiş-kakış ve yalnız aktif oyun değişkenleri için deprem yaşama ve yaşamama ölçütü açısından anlamlı bir fark bulunmamıştır ($p>.05$).

Tartışma ve Sonuç

Çalışmada deprem deneyiminin çocukların bazı gelişim süreçleri üzerinde etkisi varken, bazıları üzerinde etkisi olmadığı ortaya çıkmaktadır. Sonuçlara göre deprem deneyimi yaşamayan çocukların duygu tanıma/duygu ifade etme, empati, öz düzenleme, sosyal yeterlilik ve sosyal oyun puan ortalamalarının deprem deneyimine sahip çocuklara göre daha yüksek olduğu görülmektedir. Bulgular, deprem deneyiminin söz konusu beceriler üzerinde olumsuz etkisi olabileceğini düşündürmektedir. Çalışmada beş oyun değişkeninden birinde (sosyal oyun) gruplar arasında fark varken, kalan dört değişkende (yalnız pasif oyun, sessiz oyun, yalnız aktif oyun ve itiş kakış oyun) gruplar arasında fark olmadığı görülmektedir. Bu noktada deprem deneyiminin çeşitli oyun türleri (yalnız pasif oyun, sessiz oyun, yalnız aktif oyun ve itiş kakış oyun) üzerinde etkisi olmadığı söylenebilir.

Alanyazındaki benzer çalışmalar incelendiğinde, deprem deneyiminin okul öncesi çocuklar üzerinde kısa ve uzun süreli etkileri olabileceği görülmektedir. Örneğin, Shrestha ve Gopal (2021), 2015 yılındaki Katmandu, Nepal depreminden etkilenen okul öncesi ve ilkokul çağındaki çocuklarla yaptıkları boylamsal çalışmada, depremden etkilenen çocuklarda davranış sorunları, hiperaktivite-dikkatsizlik ve arkadaşlık sorunları gibi duygusal sorunların görülebileceğini vurgulamaktadır. Morales ve diğerleri (2023), 2010 Şili depreminden etkilenen çocuklar ve aileleri üzerinde yaptıkları çalışmada, depremi yaşayan çocuklarda kaygı, duygusal tepki, uyku bozukluğu, dikkat sorunları ve saldırganlık gibi sorunların depremi yaşamayan çocuklara göre daha yüksek seviyelerde olabileceğini belirtmişlerdir. Okul öncesi dönem, duygu tanıma, empati, sosyal yeterlilik ve öz düzenleme gibi becerilerin henüz tam olarak gelişmediği dönem olduğundan, bu tür yıkıcı yaşam olayları karşısında en savunmasız grup olan küçük çocukların bu becerileri yönetme ve uygulama ve bu tür yaşam olaylarının zorluklarıyla başa çıkma olasılıkları daha düşük olabilir. Bu, mevcut çalışmada Kahramanmaraş Depremi'ni yaşayan ve yaşamayan çocuklar arasında sosyal oyun, öz düzenleme, duygu tanıma/ifade

etme, empati ve sosyal yeterlilik becerilerindeki farklılığın olası açıklamalarından biri olabilir.

Bu çalışmada oyun davranışı değişkenlerinden dördünün (yalnız pasif oyun, sessiz oyun, yalnız aktif oyun ve itiş kakış oyun) deprem deneyimi olup olmama değişkenine göre farklılık göstermediği gözlemlenmiştir. Bu, deprem deneyiminin her beceri ve davranışı etkilemeyebileceğini göstermektedir. Konuyla ilgili bazı çalışmalarda (Peek 2008; Peek & Stough, 2010), doğal afetlerin çocuklar üzerindeki etkilerinin; çocuğun afete fiziksel yakınlığı, afetin evini nasıl etkilediği, aile ve çevre, engellilik, sosyoekonomik durum, afet nedeniyle aile işlevselliği, genel nüfusta psikopatolojik semptomlar ve ebeveynlerde deprem sonrası stres gibi faktörlere bağlı olduğu belirtilmektedir. Bu araştırmada deprem değişkenine bağlı olarak farklılık göstermeyen oyun davranışlarıyla ilişkili farklı değişkenlerin depremin etkisini belirleyebileceği ve/veya bu oyun davranışlarını etkileyebilecek farklı değişkenlerin olabileceği düşünülebilir.

Öneriler

Deprem gibi doğal afetlerin çocuklar üzerinde yaratabileceği çeşitli etkileri şekillendiren birçok faktör vardır. Bu nedenle, bu faktörleri afet öncesi, sırası ve sonrası etkileri açısından tanımlamak önemlidir. Afetin şiddeti, afete maruz kalma düzeyi ve mevcut sosyal destek düzeyi (özellikle ailelerden ve öğretmenlerden) koruyucu faktörler arasında yer alırken, çocuğun yaşı ve bireysel gelişimsel farklılıkları gibi birçok faktör afetin sonuçlarını etkileyebilmektedir (Wang vd., 2021). Doğal afetler (depremler dahil) çocukların psikolojik sağlığı ve gelişimi üzerinde travmatik etkilere neden olabilir. Alanyazın, çocukların sosyal-duygusal gelişimini desteklemeyi amaçlayan müdahalelerin etkililiğini göstermektedir. Aynı zamanda, bu müdahaleler çocukların sosyal-duygusal yeterlilikleri hakkındaki bilgilerini artırarak gelecekteki olası afetlere karşı hazırlıklı olmayı sağlamak için de önemlidir (Raccanello vd., 2024). Okul öncesi dönem hem hızlı gelişim hem de kalıcı etkileri açısından elzem olduğundan, küçük çocukları, öğretmenlerini ve velilerini doğal afetler konusunda eğitmeye yönelik çalışmalar genişletilmelidir.

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ETHICAL DILEMMAS EXPERIENCED BY TEACHERS IN SCHOOLS*

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Abstract

The aim of this research is to determine the ethical dilemmas experienced by teachers working in Imam Khateeb Schools. This research was conducted using the phenomenological design, one of the qualitative research methods. The study group determined by purposive sampling in the research consists of 21 branch teachers working in Imam Khateeb high schools in Yozgat province in the 2023-2024 Academic Year. In order to collect the research data, data on the ethical dilemmas experienced by teachers and their solutions were collected with a semi-structured interview form. It consists of three open-ended questions prepared in accordance with the purpose. The content of the questions asked was to assess what ethical dilemmas are and teachers' views on ethical dilemmas by asking what types of ethical dilemmas they experience and how they behave when they encounter ethical dilemmas, and what they do to minimize them. The collected data was analysed with content analysis. As a result of the content analysis, 5 categories of dilemmas, 13 themes, and 7 categories of solutions emerged. The ethical dilemmas that teacher's experience the most are situations related to students, fairness, curriculum, school administration and rules, and relations their colleagues. According to the research results, it was concluded that teachers are familiar with the concept of ethics, but they have difficulty solving ethical dilemmas when they encounter them. Teachers stated that they mostly solve ethical dilemmas by taking into account the principles of utilitarian behaviour, equality, and justice.

Key words: Ethics, ethical dilemma, teacher, imam khateeb high school

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ÖĞRETMENLERİN OKULLARDA YAŞADIKLARI ETİK İKİLEMLER

Özet

Bu araştırmanın amacı, İmam Hatip Okulların'da görev yapan öğretmenlerin yaşadıkları etik ikilemleri belirlemektir. Etik kavramı, insanı iyiye ve doğruya ulaştırmayı hedefleyen çabalar bütünüdür. Eğitim ve öğretim faaliyetleri yerine getirilirken birçok etik ikilem durumları yaşanmaktadır. Bu araştırma nitel araştırma yöntemlerinden olgu bilimi deseninde yapılmıştır. Araştırmada amaçlı örnekleme yoluyla belirlenen çalışma grubunu Yozgat ilinde 2023-2024 Eğitim-Öğretim yılında İmam Hatip Liselerinde görev yapan 21 branş öğretmeni oluşturmaktadır. Araştırma verilerini toplamak amacıyla yarı yapılandırılmış görüşme formu ile öğretmenlerin yaşadıkları etik ikilemler ve çözümleri ile ilgili veriler toplanmıştır. Amaca uygun hazırlanmış olan üç açık uçlu sorudan oluşmaktadır. Sorulan soruların içeriğinde öğretmenlerin etik kavramı hakkındaki genel görüşleri, hangi tür etik ikilem yaşadıkları ve etik ikilemlerle karşılaştıklarında nasıl davrandıkları, en aza indirmek için neler yaptıkları sorularak etik ikilemlerin neler olduğu ve öğretmenlerin etik ikilem hakkında görüşleri değerlendirilmiştir. Toplanan veriler içerik analizi ile çözümlenmiştir. İçerik analizi sonucunda ikilemlere ait 5 kategori, 13 tema ve çözümlere ait ise 7 kategori ortaya çıkmıştır. Öğretmenlerin en çok yaşadıkları etik ikilemler; öğrencilerle ilgili durumlar, adil davranma, müfredat, okul yönetimi ve kurallar, meslektaş ilişkileridir. Araştırma sonuçlarına göre öğretmenlerin etik kavramına hâkim oldukları ancak etik ikilem durumlarıyla karşılaştıklarında çözüm için zorlandıkları sonucuna ulaşılmıştır. Yaşanan etik ikilemleri öğretmenler daha çok faydacı davranma, eşitlik ve adalet ilkelerini dikkate alarak çözdüklerini belirtmişlerdir.

Anahtar kelimeler: Etik, etik ikilem, öğretmen, imam hatip lisesi

INTRODUCTION

People are the only beings that need to be educated. Education and training constitute the positive part of education by subjecting the individual to the laws of humanity and forcing them to comply with them. Individuals need to be subjected to this education during childhood. Education has more than one meaning as a word. While educating, guiding, raising, training, implementing constitute the meanings of education, on the other hand, all of these are actually the processes that constitute education. In the nature of the education-training process lies an ethical effort that aims to lead people to goodness and truth.

"Education is the art of raising children and making them human" (J. J. Rousseau; akt. Çelikkaya, 1991). Ertürk (1988) defined education as aiming for individuals to acquire not only academic knowledge but also values, skills and attitudes. As a similar definition, Dirik (2015) stated that education is the process that helps individuals develop their knowledge, skills, values and attitudes. With education, a person can choose beneficial and harmful behaviors for themselves and apply positive behaviors towards their environment. In short, education is the process of change, development, acculturation and adaptation to society in social life. This process occurs through learning and experiences.

Some scientists associate education with morality, while others call it self-discipline. Haris al-Muhasibi (243/857) emphasized that education should be educated in a certain measure and balance between the heart, mind and soul, which form the dynamic structure of man and are the source of his positive and negative actions (Beken, 2022). Kant (2021) explained the importance of education as "human beings can only exist as humans through education", while Plato stated; "Education is the art of turning this power of the soul towards good and finding the easiest and cheapest way for this". Otherwise, it is not giving the soul the power to see; because the power is inherently in it; but it is turned towards evil. It looks towards the side that is not meant to be looked at. Education only directs it towards good (Erol & Erol, 2018). John Dewey (2023) It is a true belief that we need moral principles that can be effectively applied in education. Moral principles need to be brought to the basis by expressing them socially and psychologically. The most valuable part of education is the educator. The ethical effort of the educator during this education is important. Ethics is "a philosophical thought about moral problems, moral judgments and morality. In this sense, ethics is a state of consciousness that moral thinking gives us" (Poyraz, 2022). The word ethics is derived from the Greek word 'ethos', meaning 'character', 'custom', 'method' or

'tradition'. According to the Turkish Language Association (2023), ethics is defined as "the set of behaviors that parties must comply with or avoid among various professions". Ethics is the study of the basis of human behavior (Aydın, 2022). The history of the word ethics dates back to Aristotle. Aristotle contributed to the development of ethics by considering it as a discipline separate from moral philosophy. His ethical understanding emphasizes the importance of moral virtues in our practical lives. Ethics guides people in distinguishing good from bad in society. People decide which side of the road to follow. It is necessary to make an ethical decision when reaching the goal. This is where human will comes into play. Ethics is actually a voluntary action and imposes a conscientious responsibility on the person. Ethics, which deals with morality, refers to the action and practical aspect of human life (Cevizci, 2021). Aydın (2022) says, 'The most important thing that makes a person unique is the freedom to determine how to behave'. Ethics shows us the moral dimension of our actual behaviors. When a person incorporates the concept of ethics into his/her life, that is, when he/she implements the right actions into his/her life, he/she becomes free. Ethics can actually be said to be a whole of virtuous actions in itself. "Morality is about value. A moral choice is a decision made in the direction of a better alternative. Morality deals with behavior that is the result of a decision about attitudes exhibited between and in relation to conscious people" (Haynes, 2020).

Ethics is a subject that should be addressed first in education. Ethics is a process for us to question and discover the reasons for our behaviors and our purpose. Within the ethical understanding based on sociological foundations, professional ethics covers generally accepted approaches, rules, attitudes and behaviors that people should primarily consider and adopt when practicing any profession. This helps to create a common ground and understanding in business life and among employees (Özmen and Güngör, 2008).

Teaching is not limited to the transfer of knowledge; it is a profession that contributes to the formation of a common ground that instills values in young people. Teachers' adoption of values and professional ethics principles ensures that values are correctly transferred to students and contributes positively to their character development (Aydın, 2022: 94). Teachers may encounter inappropriate resource sharing, negative communication with students and families, and ethical problems with school stakeholders (Lishchinsky, 2011; cited in Uzun & Elma, 2012). Professional ethics emerge at this point, where the professional duties that individuals must fulfill in the face of problems and general ethical rules come together. Professional ethics emphasizes behaving in accordance with the standards of a particular profession and the responsibilities

of the profession to society. Core values such as honesty, reliability, respect, and justice help maintain healthy professional relationships. At the same time, it provides guidance for individuals to cope with ethical dilemmas they encounter. Professional ethics contribute to the establishment of trust in society by protecting the reputation of not only individuals but also professional groups (Mc Hugh, 1996, 11-12; cited in Aydın, 2022). Each individual has their own unique world of thought and ethical values. However, these personal ethical values may conflict with ethical values in the public sphere. In this process, teachers face ethical dilemmas. Teachers struggle with many problems due to the problem of not knowing what to do in order to make an independent judgment and make an ethical decision. It is vital for teachers to comply with professional ethical rules while performing their professional duties and to apply professional ethical principles for the safety of students and the sustainability of a well-intentioned learning environment.

There is always a risk that teachers will conflict with ethical principles and be dragged into unethical behaviors. Teachers primarily experience ethical dilemmas in the process of adopting ethically appropriate behaviors when they encounter such situations (Arslan, 2018).

An ethical dilemma situation is generally a situation where a person or institutions have to choose between two action situations, requiring a decision on the appropriate action, and a choice must be made. Ethical dilemmas are value conflicts that occur at a level beyond rationality, where right and wrong principles can conflict with each other at the same time. Ethical dilemmas arise in situations that are equally necessary but mutually exclusive (Roche, 1997; as cited in Erdoğan, 2018). Another important issue about dilemma situations is the basis on which the choice is made. What or who should an individual decide according to? Should they decide according to their own truths or according to the good generally accepted by everyone? This is where ethics comes into play (Çelik & Saban, 2020).

Schools are one of the places where ethical dilemmas are most clearly experienced. Since schools are outward-looking organizations and are in constant interaction and communication, it is inevitable to experience ethical dilemma confusion (Yücel & Tankutay, 2023). Research shows that the basis of ethical dilemmas is generally value conflicts. However, it is difficult to say that value conflicts are the only variable. In the daily life of the school, administrators and teachers have to respond to legal demands, organizational requirements, student needs and parental expectations (Pope, Green, Johnson & Mitchell, 2009; cited in Erdoğan, 2018).

In schools, teachers and administrators making decisions only with their own personal values can lead to different ethical confusions. Teachers have to make some decisions by evaluating their personal values, professional ethical principles and legal issues (Reeves & Jones, 1993, cited in Erdoğan, 2018). This can make the decision-making process more complicated when they encounter ethical dilemmas. Teachers are in contact with many people in schools, including students, parents, school administration, and school service class, and they encounter many behavioral, political, structural and systemic ethical dilemmas. It has been observed that teachers experience ethical dilemmas in terms of protecting their colleagues, protecting justice, protecting students, complying with the rules, curriculum, and being sensitive to student problems. When the ethical dilemmas experienced by teachers working in Imam Khateeb schools are examined, it can be said that they experience ethical dilemmas similar to those experienced by teachers working in other schools. Although ethical rules seem to be clearly stated, it is seen that teachers clearly have difficulties in this regard. This situation reveals that the issue of ethical dilemmas in education is an area that should be emphasized (Yücel & Tankutay, 2023). In order for teachers to resolve ethical dilemmas in a more consistent and healthy manner, ethical principles need to be determined and they need to receive more guidance and training on this issue. Ethical dilemmas harm all-round communication in schools. It is important to identify the ethical dilemmas experienced by teachers and to reveal how they resolve them. As stated, teachers are the first to encounter ethical dilemmas, as they communicate with many groups such as school administration, students, and parents. The way teachers resolve the ethical dilemmas they encounter will have a positive or negative impact on students who have not yet completed their development. (Tezcan & Güvenç, 2019). In order to minimize these harms, it is very important to emphasize the ethical dilemma problems experienced by teachers. The scarcity of comprehensive and up-to-date data on ethical dilemmas experienced by teachers in particular reveals the importance of this research. The fact that the ethical dilemmas experienced by teachers are not clearly known brings with it many problems. The research is of great importance in terms of contributing to this problem in the literature, better understanding the effects of ethical dilemmas experienced in ethical decision-making in the education and training process, increasing the quality of education and contributing to the shaping of the education system. In this context, the data to be obtained is important in terms of providing applicable suggestions. In this context, it is thought that determining what kind of ethical dilemmas teachers experience with school stakeholders in schools will contribute to practitioners and researchers in the ethical decision-making process.

The purpose of this study is to reveal the ethical dilemma situations experienced by teachers working in religious schools and what they do to minimize these ethical dilemmas by obtaining teachers' opinions. In line with this purpose, the following questions were sought to be answered.

1- What do you think is an ethical dilemma?
2- What kind of ethical dilemma do you experience?
3- What do you do when you encounter ethical dilemmas? How do you cope? What do you do to minimize ethical dilemmas?

Importance of the Research

Multiple factors in the education system and the expectations of stakeholders can often lead to ethical dilemmas. Incompatibilities between school administrators and teachers can make these ethical dilemmas even more complicated. Therefore, it is important to identify ethical dilemmas and offer solutions. In studies on ethical dilemma situations experienced in schools, it is seen that teachers have difficulty in making decisions. Teachers experience many dilemmas with all groups they are in contact with, including students, school administrators, other teachers and parents. At this point, it is important to identify ethical dilemma situations and eliminate or minimize them. It is hoped that the study will raise awareness for the identification and elimination of ethical dilemma situations experienced by teachers in schools and contribute to the development of dilemma management skills and the minimization of dilemma situations. This study is also important in terms of providing teachers with information on what path and method to follow in the event of any dilemma.

METHODOLOGY

Study Group

The study group of this qualitative study consists of 21 teachers working in different branches at Imam Khateeb High Schools in Yozgat province in the 2023-2024 academic year. The distribution of the study group in terms of demographic characteristics is as follows: 14 female and 7 male participants in terms of gender variable, 5-37 years in the service year variable; 19 married and 2 single in the marital status variable. Attention was paid to the selection of teachers from different branches when creating the study group. In this way, maximum diversity sampling was aimed.

Data Collection Tools

In qualitative studies, structured or unstructured interview methods are used to deeply examine the meanings that individuals attribute to their experiences and events. These methods allow participants to express their thoughts and feelings more freely, thus providing researchers with rich and detailed data. Qualitative research also contributes to the process of developing hypotheses and helps to better understand the individual's life contexts (Berg, 2007; Baltacı, 2019; Türnüklü, 2000; Karahan, Uca, & Gedük, 2022).

In this study, semi-structured interview technique was used. The interview consisted of asking three open-ended questions prepared by the researchers to 21 participant teachers, 14 female and 7 male, working at Imama Khateeb High School in Yozgat and the responses given by the participant teachers to these questions. The questions were prepared by reviewing the literature on the subject and taking expert opinions.

Data Collection and Analysis

The datas of the study was collected face to face using a semi-structured interview form, which was prepared in advance and finalized after receiving expert opinions, using Qualitative Data Collection Techniques. The interview form included three open-ended questions and these questions were asked to the participant teachers. The teachers were given the necessary and detailed explanations and were collected without any time limitation and given the opportunity to express their thoughts in detail at a place and time where they could comfortably express themselves. The participants answered the questions in writing, although audio recording was not allowed. The descriptive analysis technique was used in the analysis of the datas. A code was created for each of the participant teachers and the confidentiality of personal information was protected. In order for the data to be transformed into information, the obtained answers were classified and tables were created. During the analysis, results were drawn from the answers given by the participants and these results were then interpreted. While these steps were being carried out, the participant teachers were included with numerical expressions such as T1, T2, T3..... in accordance with the principle of confidentiality.

Validity and Reliability

Validity is the ability of a measurement tool to accurately measure the feature it targets. This concept expresses how well the measurement reflects the concept it aims to measure without being confused with other features. (Tekin, 1993; Erkuş, 2003; Baykul, 2000; Aiken, 2000; Turgut, 1995; Atılgan, Kan, & Doğan, 2007; cited in Baştürk, Dönmez, & Dicle, 2013). In qualitative research, validity means reflecting the feature to be measured in the most impartial and realistic

way possible (Kirk & Miller, 1986; cited in Baştürk, Dönmez, & Dicle, 2013). Baştürk, Dönmez and Dicle, 2013, in this context, the researcher needs to minimize his/her biases in the collection and interpretation of qualitative datas. Validity is of critical importance in qualitative research to understand in depth and accurately reflect the perspectives of participants. In this context, the context of the research, methods, and data analysis processes are factors that affect validity. Member checking requires asking participants whether the study findings accurately reflect their own thoughts (Baştürk, Dönmez, & Dicle, 2013). In this study, participant checking was used to increase credibility, and at the end of each interview, participants were asked to express their answers in their own words and whether they approved or not. Participants stated that they confirmed the statements they presented. This process was an important step in increasing the reliability and validity of the datas.

FINDINGS

Findings Related to the Question:

What do you think is an ethical dilemma for teachers? The question was asked and the teacher's opinions are shown in Table 1. It is also given.

Table 1. Teachers' views on the concept of ethical dilemma.

Codes	Teacher codes	Number(n)
being stuck between two values	T1,T2,T3,T12,T17,T19	6
being undecided about two moral issues	T4,T5,T6,T7,T11	5
being stuck between two possitive-negative situations	T9,T14,T18,T21	4
rules and practices conflict	T10,T15	2
choosing one of two positive processes	T13	1
being stuck between law and conformity with life	T8	1
interest-morality conflict	T16	1
approach-approach conflict	T20	1

When Table 1 is examined, the teachers who were interviewed expressed their opinions differently regarding the question “What is an ethical dilemma?”. The majority of the teachers defined the concept of ethical dilemma as “being stuck between two values” (n=6), “being undecided about two moral issues” (n=5), “being stuck between two positive-negative situations” (n=4). The results

regarding the definitions of ethical dilemma by a small number of teachers were as follows: "Rules and my practice are in conflict (n=1)", "choosing one of two positive processes (n=1)", "being stuck between law and compliance with life" (n=1), "choosing one of two positive processes" (n=1), "interest-moral conflict" (n=1) and "approach-approach conflict" (n=1). The direct answers given by some teachers regarding this question are as follows.

"In my opinion, ethical dilemma can be roughly defined as an individual being stuck between his/her conscience and what he/she should do in the face of any situation. "To be stuck between two values to be done" (T6).

"It is the process I go through to choose which one among two positive processes." (T18).

"It is the situation of being undecided about a moral issue. It is the situation of being faced with conscience while doing a duty" (T5).

"It is the conflict between the ethical rules that must be followed while performing the duty and some situations we encounter during the application" (T15).

"To choose one of two positive processes" (T13).

"Ethical dilemma is the conflict between interest and morality" (T16).

Findings on Ethical Dilemmas Experienced by Teachers in Schools

What kind of ethical dilemma do you experience? The teacher's opinions were asked and given in Table 2.

Table 2. Teachers' views on ethical dilemmas they experience in schools.

Codes	Teacher codes	Number(n)
dilemmas with students	T1,T3,T6,T7,T8,T9,T10T11,T19,T20,T21	10
curriculum	T3,T6,T7,T11,T12,T13,T18,T19	9
fair assessment	T4,T6,T11,T12,T13,T18,T19	8
school management and rules	T5,T6,T16,T17	4
colleague relationships	T2,T6	2

When Table 2 is examined, it is found that the most common (n=10) dilemmas experienced by the interviewed teachers to the question "What kind of ethical dilemma do you experience?" were related to students. The second highest response (n=9) was the ethical dilemma of curriculum. The third highest response (n=8) was the ethical dilemma of fair evaluation. The views of teachers on ethical dilemmas they experience are least frequently expressed as school administration and rules (n=4) and colleague relations (n=2). The direct responses of some teachers to this question are as follows.

"One day, during a meeting with a student, the student talked about the trouble he had with his family. I said that I thought it would be right to include the family in the solution. However, the student did not like this idea very much. This was a dilemma for me", T3.

"I am stuck between the administration and the student. For example; I came across a situation in which the student was warned harshly about a situation (violation of school rules) in society. I was angry with the principal. I usually prefer to look from the student's perspective. However, school rules are also important. I am experiencing an ethical dilemma in this regard. Should I side with the administrator who angrily warns the student or should I side with the student and explain the situation later?" T1.

"When I shared an issue that our student shared with us with the school guidance counselor, my student perceived it as if I had shared his secret, but the school guidance counselor also needed to know." T7.

"As a vocational course teacher, I may be faced with the principle of <<no performance grade below the written grade can be given>> if my students who have previously completed this training in the Quran course show serious weaknesses in their circle of friends, their relationships with their teachers, or their individual moral and stance approach." T10.

"I am experiencing a dilemma regarding the curriculum. I am experiencing a dilemma between completing the curriculum quickly or covering the subject in depth in order to reinforce it." T3.

"Emphasis should be placed on exams in 12th grades. The majority of students are students who see vocational courses as unimportant. However, one or two questions come out of our courses in the exam. No matter how deep I want to go, I have to be superficial when no one listens. I have a dilemma in this regard." T7.

"Although I know that it is not ethical in terms of the school administration's demands, in some cases I put forward my desperation and go for the event that will cause the least trouble. In other words, I keep quiet so that I don't have a headache. However, I am aware that this situation is not right." T16.

"Students who participate in the activities organized by the ministry disrupt their culture lessons. For example, in Imam Khateeb High Schools, there are Arabic competitions, Quran competitions, and sometimes theater competitions. In terms of our field, regardless of the branch the competition is from, the child disconnects from the lessons. When they cannot attend the lessons, they fall behind in the lesson, and I have a dilemma when giving such a student a performance grade. Should I give the student a performance according to their contribution to the school, the award they receive, or should I give them a low grade because they did not attend my own lesson." T20.

"I have worked with many teachers in my 37-year education career. I have been both an administrator and a teacher. There were many aspects that I saw and criticized in my teacher friends. But you can't say to his face that you did this, you're doing it wrong. You make him empathize by giving different examples. This situation makes me experience a conscience dilemma. To warn or not to warn? I try to stay in the middle." T2.

Teachers' Behaviors while Facing the Dilemmas and Solution Suggestions for Experiencing Less Ethical Dilemmas

What do you do when you encounter ethical dilemmas? How do you cope? What do you do to minimize ethical dilemmas? The question was asked and the teacher's opinions are given in Table 3.

When Table 3 is examined, the third question asked to the teachers is "What do you do when you encounter ethical dilemmas? How do you deal with them? What do you do to minimize ethical dilemmas?" and as a solution to the ethical dilemma experienced by the student regarding disciplinary problems, T8 stated that he solved it by *"…considering human interest…not taking the student's behavioral disorder into legal action…by persuading*". T9, who stated that he experienced a dilemma in treating students who did not listen to the lesson and those who did listen during the lesson, stated that he coped by *"taking care of those who listened to the lesson, informing those who did not listen…if it does not affect, informing the school administration and parents…"*

Table 3. Solution suggestions for ethical dilemmas experienced by

Codes	Teacher codes	Number(n)
finding the middle way	T6,T11,T12,T15	5
talking about ethical rules	T3,T4,T5,T8	4
choosing what is right in my opinion	T14,T17,T18,T20	4
being sensible	T2,T3,T16	3
choosing what does the least harm	T7,T9	2
making the student an activity	T13,T21	2
i accept the gift according to its condition	T11,T13	2
i never accept the gift	T2	1
being clear	T1	1
consulting	T1	1
creating level classes	T19	1

T10, stated that he experienced the ethical dilemma he experienced in giving performance grades as *"…applying professional-official procedure…"*. T11, explained the ethical dilemma he experienced in order to give a fair performance grade to students who were separated as those who knew and those who did not know in the Quran course by saying *"We divide the class into*

two groups and those who knew and those who did not know proceed at different speeds. We have to evaluate each group within itself and give grades." T12, stated that he had an ethical dilemma between the foreign students in his class and the curriculum, "*If the group I have a dilemma with is the majority, I do activities according to their deficiencies instead of the curriculum. I have them read short texts to establish a basis, and I try to develop their skills in expressing what they read*." T13, who had an ethical dilemma regarding the curriculum, said, "…*I try to reinforce it with homework. I increase retention by giving examples*." T18, stated that "*When I understand that the topics are reinforced according to the structure of the class over time, I move on to a new topic*."

In addition, the majority of teachers stated that they should "find the middle ground" (n=5) to minimize ethical dilemmas. The second most common opinion was expressed as "by talking about ethical rules" (n=4) and "by choosing the most correct one in my opinion" (n=4). Different from these views, the solution suggestions for ethical dilemmas were, respectively, "behaving with common sense (n=3), choosing the one that causes the least harm (n=2), having an activity (n=2), accepting the gift depending on the situation (n=2), never accepting the gift (n=1), being clear (n=1), consulting (n=1), creating level classes (n=1)." Some of the direct opinions received from teachers are as follows.

"It is difficult to keep the foreign students who do not know the language and the Turkish students in balance in the literature class, but I organize activities for them in classes where foreign students are the majority. The abundance of my class hours makes it easier for me to ensure that both parties participate in my class and reach both parties." T12.

"I try to be clear. In dilemmas, I try to act by considering both outcomes. If there is someone whose opinion I trust, I make decisions by consulting." T1.

"To minimize ethical dilemmas, I try not to encounter them or choose the one that causes the least harm." T7.

"In order to avoid ethical dilemmas, I help students solve problems by allowing them to come and ask questions, regardless of the subject, and explaining the solutions." T8.

DISCUSSION AND CONCLUSION

In this study, the general purpose of which is to reveal the ethical dilemmas experienced by teachers in schools, teachers were asked what an ethical dilemma is and what types of ethical dilemmas they experienced, and their general opinions were obtained on how they resolved these dilemmas. The teachers interviewed expressed their views on the question of what is an ethical dilemma in different ways. While the vast majority of teachers explained the concept of ethical dilemma as "being stuck between two values", they defined it as "being undecided about two moral issues" and "being stuck between two positive and negative situations" respectively. It was concluded that teachers

were knowledgeable about the concept of ethical dilemma, but they defined it with short and clear expressions where they could not go into too much detail. Ethical dilemmas are situations where two or more mutually exclusive moral principles that an individual or group encounters conflict. Such situations cause the individual to have difficulty in deciding which option to choose (Tosun, 2021). Ethical dilemmas usually occur due to the conflict between the rightness and wrongness of actions and the goodness and badness of the consequences of actions (Alıcı, Deran, & Korkmaz, 2022). Ethical dilemmas often arise in situations where individuals have difficulty distinguishing between right and wrong, or when both options have significant value. It is a basic ethical problem where people have to choose between right and wrong (Çalıkoğlu, 2022). It can be said that the views of the participating teachers on the concept of ethics are similar to the research findings and the concepts of ethical dilemmas in the literature. For example, a person's need to protect a friend against the principle of being honest is a typical example of a dilemma. Such dilemmas require deep thinking and evaluating different perspectives in decision-making processes. This process can cause the individual to question their values and priorities.

Some of the participating teachers defined the concept of ethical dilemma as "the contradiction between the rules and the application", "choosing one of two positive processes", "being stuck between the law and compliance with life", "choosing one of two positive processes", "interest-moral conflict" and "approach-approach conflict". This definition overlaps with the concept of ethical dilemma by Şallı and Levent (2019). Şallı and Levent (2019) explained the concept of ethical dilemma as the situation of being indecisive about making a choice regarding which of the existing alternatives will solve a problem.

Secondly, the teachers were asked the question "What type of ethical dilemma do you experience?" and it was found that teachers experience dilemmas related to students the most, these dilemmas are, respectively, dilemmas related to curriculum, fair evaluation, school administration and rules, and colleague relationships. The results regarding the dilemmas experienced by teachers with students are as follows.

According to the results of the research, teachers experience dilemmas regarding many different issues related to students. The ethical dilemmas they experience most with students are; performance grades for students, protecting students, whether to accept gifts, and whether to give homework to students. Participating teachers stated that they experience dilemmas when giving performance grades to students, teaching or evaluating students at different levels. This result of the research is similar to the study results of Yücel and

Tankutay (2023). The research results also show that teachers are in a dilemma about what kind of performance grade should be given to students who have low academic success but participate in competitions due to their success. Another ethical dilemma that teachers experience with students is the ethical principle of protecting students. The teachers who participated in the research stated that they experience a dilemma in protecting students. Teachers are sensitive to student problems, but in some cases, they experience a dilemma about sharing confidential information with the school counselor for the benefit of the student or talking to the student about a matter that should be reported to the administration and bringing them into society. The study results of Tezcan and Güvenç (2019), Yücel and Tankutay (2023) are similar to this study. According to the principle of teaching professional ethics, "The educator shall respect the confidentiality of the information obtained about the student, shall protect this confidential information except for legal obligations and emergencies, and shall not share it with anyone. The information about the student's private life shall not be disclosed to anyone other than the student's family." It has been concluded that teachers manage the ethical dilemma well within the framework of legal obligations.

Teachers also experience a dilemma about whether to accept a gift from a student. The dilemma experienced at this point is that if the gift is accepted, the student expects a good grade, and if the gift is not accepted, the student becomes upset. According to the results of the research, it was concluded that the majority of teachers think that the gift creates an expectation and that this situation is unethical, while others prefer to receive gifts for various reasons. Uzun and Elma (2012) stated in their research that gifts, regardless of whether they come from a parent or a student, create expectations, and in this respect, the findings of this study are parallel. "It has been determined that teachers use the "False requirements trap" approach while justifying and rationalizing these unethical decisions and behaviors. The first of the false requirements created by teachers is that the student will be upset if the gift is not received, that is, will be emotionally damaged. However, it is possible to say that accepting a gift so that the student does not become upset may lead to greater problems for the students" (Erdemli & Demir, 2018). As a result of all these findings and according to the principle of teacher professional ethics, "Except for gifts of symbolic nature that have no material value and are given on special days and weeks such as Teachers' Day, an educator shall not accept any gift that is likely to affect his/her professional judgment and impartiality." Accepting a gift may harm the fundamental principle of education and training, the principle of impartiality.

Another ethical dilemma that teachers experience regarding students is whether or not to give homework to students. It was found that the mathematics teacher, who had an ethical dilemma regarding whether or not to give homework to the students of Quran Memorization Programme in Imam Khateeb high school due to the intensity of their programs, ensured that the subject was fully understood in class and did not require repetition at home, and did not give homework upon the instructions of the ministry, thus no longer falling into a dilemma.

The results of the study revealed that the second issue that teachers experience the most dilemmas is the ethical dilemma of "curriculum". In the ethical dilemma of curriculum and time constraints, it was concluded that teachers sometimes flex their curriculum and thus solve the time problem. Teachers stated that they have difficulty in completing the curriculum and that they fall into the dilemma of whether to reinforce the subject or complete the curriculum. They emphasized that the obligation of teachers to comply with the curriculum due to their duties causes them to be torn between completing the curriculum and eliminating the deficiencies of the students, and that falling behind in the course subjects causes them to experience a dilemma. It was also concluded that teachers cannot complete the curriculum due to the inadequacy of Turkish of foreign students and the level differences between the students, the course is not understood unless some deficiencies in knowledge from previous years are eliminated, and the difficulties in implementing the curriculum prepared by the Ministry of National Education cause teachers to experience indecisiveness and dilemma. In Imam Khateeb high schools, especially in Arabic classes, due to reasons such as the reluctance of children, Arabic education for the first time, the heavy curriculum, and the concentration of grammar in the 9th grade, it is seen that teachers are in a dilemma about whether to complete the curriculum or to progress by reinforcing it. While there was no writing section in the Arabic book a few years ago, it was concluded that this year the ministry resolved this dilemma experienced by teachers by organizing books on this subject and that vocational course teachers were relieved of the dilemma of curriculum and time constraints. It was concluded that vocational course teachers stated that their students were not interested in religious courses because the course subjects were not included in the university exam, therefore they needed more time to attract the students' attention and wanted to stretch the curriculum, but they also experienced a dilemma in this regard. In the study of Nisani and Uğurlunun (2024) "Unethical behaviors, ethical dilemmas and solution suggestions in a vocational technical and Anatolian high school", the result that students did not care about culture courses in line with their goals and gave importance to vocational courses

differs from this study. Findings similar to the ethical dilemmas regarding the implementation of curriculum and curriculum programs and annual plans in the study have been stated in many studies (Yücel & Tankutay, 2023; Çelik & Saban, 2019; Nisani & Uğurlu, 2024). This situation emphasizes that curriculums should be flexible enough to allow changes to be made in practice by taking into account the immediate environmental conditions and the individual development characteristics of the students.

The third issue that teachers experience the most dilemmas is the "fair evaluation" dilemma. In the ethical dilemma of giving a performance grade to a student, it is seen that in addition to the student's determination and diligence, their attitudes and behaviors are also important, this is especially important in Quran lessons, and students' attitudes and behaviors should be compatible with the lesson they learn, and that apart from high course success, irrelevant and disrespectful behaviors mean that they cannot comprehend that lesson, and at this point, teachers experience a dilemma when giving performance grades. It has been concluded that the attitudes and behaviors of the students cause a dilemma between the positive contribution of a student with low academic success to the grading process and the negative return for a student with high academic success but who exhibits negative behavior. This situation also falls into the ethical dilemma of fair evaluation, and it has been concluded that a student who does not make an effort throughout the year but has high exam success and a student who does not know their responsibilities should be aware of this situation, pay attention to their attitudes and behaviors in and out of class, and establish a connection between their performances throughout the term. It has been concluded that the culture course teachers working in Imam Khateeb High Schools have a dilemma when giving performance grades to students who participate in competitions organized by the ministry such as Quran, Arabic competitions and sports competitions, because these students neglect their culture classes. However, they do not give low performance grades to these students since they bring success to the school. It is stated that the teacher, who cannot get rid of the contrast effect when giving performance grades to students, cannot get out of the dilemma because he thinks that he is not behaving fairly and that he is being unfair to some students. This situation will discourage the student and therefore put the teacher in an ethical dilemma. These results are similar to the principle of equality, that is, equality by acting differently, which is also included in the ethical principles expected in compliance with the MEB (2021) teaching professional ethics. Similar results regarding ethical dilemmas and fair evaluation dilemmas related to students from the research results are similar to the research results of Erdoğan et al. (2019), Tezcan et al. (2020), Yücel et al. (2023). In addition, Keskin and Keskin

(2023) reached similar results and concluded that the ethical dilemma of not evaluating fairly will create a negative situation in the student and may decrease motivation.

Another ethical dilemma that teachers face is the ethical dilemma regarding school administration and rules. It was concluded that teachers experience an ethical dilemma regarding the intervention of the school administration and that the school administration's desire to guide the solution of the problems causes their relationship with the school administration to wear out. It was stated that teachers fall into a dilemma confusion because the school administration's attempt to guide the teacher does not comply with ethical values. It was concluded that teachers are worn out intellectually and psychologically in the face of this issue and cause a loss of energy, causing their relationship with the school administration to wear out. In addition to being disturbed by this situation, teachers stated that they act conscientiously by evaluating both situations. The research findings are similar to the research findings of Karayaman (2021) on school administrators.

Another ethical dilemma that teachers face is the ethical dilemma of colleague relationships. In order to solve this dilemma, teachers try to report their colleagues' mistakes through examples, sometimes they have to warn them, and sometimes it is appropriate to get support from the administration to solve the problem. In addition, Uzun and Elma (2012) also found in their research titled "How Preschool Teachers Solve Professional Ethical Dilemmas" that teachers get support from school administrators to solve the unethical behavior of their colleagues. The circular published by the Ministry of National Education (MEB) (2015) includes the phrase "They cooperate with their colleagues to ensure that students receive quality education and training, and they share the problems they encounter during this process with the school administration". This phrase emphasizes the difficulties teachers have regarding how they should react when they encounter an unethical situation and how their decision-making processes should be. Acting through administrators can be a more systematic approach than acting individually and can reduce individual risks. However, some teachers may prefer to intervene directly, despite personal and negative consequences. For this reason, having clear, understandable, applicable ethical rules and codes that will enable teachers to act based on ethical rules will be an important tool to guide them when dealing with the problems they will encounter. Such guidance will draw a more consistent and safer path for teachers on how to behave against unethical situations.

The teachers were asked the following question: "What do you do when you encounter ethical dilemmas? How do you deal with them? What do you do to minimize ethical dilemmas?" The majority of the teachers stated that they "try to find a middle ground, talk about ethical rules, and choose what is right in my opinion." Some of the teachers stated that they "resolve ethical dilemmas by acting sensibly, choosing the one that does the least harm, being clear, consulting, and creating level classes" in order to resolve the ethical dilemmas they experience. As can be seen, teachers try to resolve the ethical dilemma by making their own choice for the dilemmas they experience or they try to minimize them. It was concluded that teachers try to do their best to eliminate the negative consequences of ethical dilemmas and make an effort to create a positive school environment. The results of this study are similar to Erdoğan's (2019) study and stated that it is possible to cope with ethical dilemmas and minimize their negative consequences and to create a healthy ethical culture in organizations. Teachers, when they have difficulty in making individual decisions and in the process of solving ethical dilemmas, evaluate different perspectives and obtain new information, and turn to consultation and exchange of ideas. In this process, they enrich their decision-making mechanisms by also giving importance to the opinions of reliable individuals. Participants evaluate different perspectives and obtain new information, and turn to consultation and exchange of ideas. In this process, they enrich their decision-making mechanisms by also giving importance to the opinions of reliable individuals. "The National Education Council emphasizes the importance of consultation and persuasion that guide Turkish education, and shows that this understanding continues to be valid today (Şen & Akbaba-Altun, 2022)". In this context, it is seen that teachers can manage ethical dilemmas with consultation. Among the measures that can be taken to manage and reduce ethical dilemmas, it is important to create a clear, applicable, and understandable legislation, determine ethical standards and convey them to all parties in the form of ethical training. In addition, it is recommended that strategic steps be taken in this regard, such as allocating a budget for ethical education in public and private educational institutions, conducting frequent and transparent inspections, granting necessary authorities to school administrators and teachers, and supporting them with professional development. Regardless of their branch, teachers should receive professional training and be directed to practice their professions in the best way possible within the framework of ethical rules and to implement professional ethics rules (Özkan & Çelikten, 2018). The findings in the ethics studies of Özkan and Çelikten (2018) are similar to this study. With such strategic steps, an approach aimed at preventing the occurrence of ethical dilemmas can help prevent negative consequences for both the organization and its employees. These

suggestions by Erdoğan (2019) reveal that a holistic approach should be adopted in terms of preventing ethical dilemmas. This, employees engaged in educational activities can be ensured to operate in a safer and more supportive environment within the framework of ethical rules. The suggestion that teachers can make decisions to solve ethical dilemmas as a result of their experiences, that more professional and effective solutions are needed to resolve the ethical dilemmas they experience, and that teachers should be provided with supportive training and a guidebook should be prepared in order to reach these solutions is similar to this study. Nisani and Uğurlu (2024) drew attention to the issue by emphasizing the instability of the regulations and the lack of disciplinary regulations.

In line with all these results, it was concluded that the ethical dilemmas experienced by teachers working in Imam Khateeb high schools are similar to the ethical dilemmas experienced by teachers working in other high schools.

RECOMMENDATIONS

In the context of the findings and results obtained from the research, the following suggestions can be made:

Ethical information activities can be carried out for school administrators, teachers and students. Awareness can be increased by organizing professional ethics training seminars and in-service trainings for teachers regarding ethical dilemmas. Environments can be created where high school teachers can share the ethical dilemmas they experience, and different studies can be conducted on how ethical dilemmas can be reduced. Mixed research can be conducted on the causes of ethical dilemmas. A clear and understandable legislation can be created. Ethical standards can be determined and the determined standards can be effectively conveyed to all relevant parties.

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Genişletilmiş Özet

Giriş

Etik toplumda iyi ve kötüyü ayırt etmede kişilere yön ve yol gösterir. Yolun hangi tarafından gidileceğine kişilerin kendisi karar verir. Amaca ulaşırken etik bir karar vermek gerekir. İnsan iradesi işte burada devreye girer. Etik aslında iradi bir eylemdir ve kişiye vicdani bir sorumluluk yükler. Ahlaklılığı konu edinen etik, insan yaşamının eylemsel ve pratik yönünü ifade eder (Cevizci, 2021). Eğitimde etik öncelikli olarak ele alınması gereken bir konudur. Öğretmenlik sadece bilgi aktarımıyla sınırlı değildir, gençlere değerleri aşılayan ortak bir paydanın oluşmasına katkı sağlayan bir meslektir. Öğretmenlerin değerlerini ve meslek etiği ilkelerini benimsemesi, öğrencilere değerlerin doğru bir şekilde aktarılmasını sağlar ve onların karakter gelişimine olumlu katkıda bulunur (Aydın, 2022: 94). Meslek etiği, tam bu noktada, bireylerin sorunlar karşısında gerçekleştirmeleri gereken mesleki görevleriyle genel etik kurallarının birleştiği noktada ortaya çıkmaktadır. Öğretmenlerin, mesleki görevlerini yerine getirirken mesleki etik kurallara uyum sağlamaları ve öğrencilerin güvenliği ve iyi niyetli bir öğrenme ortamının sürdürülebilirliği için mesleki etik ilkelerini uygulamaları hayati önem taşımaktadır. Öğretmenlerin etik ilkelerle sürtüşme ve etik dışı davranışlara sürüklenme riskleri her zaman vardır. Öğretmenler oncelikli olarak bu tarz durumlarla karşılaştıklarında etik açıdan uygun olan davranışları benimsemeleri sürecinde etik ikilemler yaşarlar (Arslan, 2018).

Etik ikilem durumları okullarda her yönlü iletişime zarar verir. Bu zararların aza indirilmesi konusunda öğretmenlerin yaşadıkları etik ikilem problemleri üzerine vurgu yapmak oldukça önemlidir. Özellikle öğretmenlerin yaşadıkları etik ikilemlere dair kapsamlı ve güncel verilerin azlığı, bu araştırmanın önemini ortaya koymaktadır. Öğretmenlerin yaşamış oldukları etik ikilemlerin açık olarak bilinmemesi birçok sorunu beraberinde getirmektedir. Çalısmanın, öğretmenlerin okullarda yaşadıkları etik ikilem durumlarının tespit edilmesi ve giderilmesi için farkındalık katacağı ve ikilem durumlarını yönetebilme becerisinin geliştirilmesine ve ikilem durumlarının ez az seviyeye indirgenmesine katkı sağlayacağı umulmaktadır. Herhangi bir ikilem durumunda öğretmenlerin nasıl bir yol ve yöntem izleyeceklerine dair bilgi sahibi olmaları açısından da bu çalışma önem arz etmektedir.

Bu çalışmanın amacı, imam hatip okullarında görev yapan öğretmenlerin okullarda yaşadıkları etik ikilem durumlarının ve bu etik ikilemleri en aza indirmek için neler yaptıklarını öğretmen görüşleri alınarak ortaya çıkarmaktır. Bu amaç doğrultusunda aşağıdaki sorulara cevap aranmıştır.

1-Sizce etik ikilem nedir?
2-Hangi tür etik ikilem yaşamaktasınız?
3-Etik ikilemlerle karşılaştığınızda neler yapıyorsunuz? Nasıl başa çıkıyorsunuz? Etik ikilemleri en aza indirmek için neler yapıyorsunuz?

Yöntem

Bu araştırma nitel araştırma yöntemlerinden olgubilimi deseninde yürütülmüştür. Nitel araştırma desenlerinden olgu bilim deseni, bireyin belli bir olguyu tecrübe etmesi ve deneyimlemesi sonucu oluşturduğu anlamlar üzerinde derinlemesine durduğu araştırdığı bir araştırmadır (Creswell, 2021; Tekindal, 2021; akt. Çapar & Ceylan, 2022). Bu araştırmada, yarı yapılandırılmış görüşme tekniği kullanılmıştır. Görüşme, daha önceden araştırmacılar tarafından hazırlanan üç tane açık uçlu sorunun Yozgat ilinde bulunan İmam Hatip Lisesinde görev yapan 14 kadın, 7 erkek toplam 21 katılımcı öğretmene sorulması ve katılımcı öğretmenler'in bu sorulara verdikleri cevaplardan oluşmaktadır. Sorular konu ile ilgili literatür taraması ve uzman görüşü alınarak hazırlanmıştır**.**

Bulgular

Araştırma bulgularına göre, görüşme yapılan öğretmenlerin Etik ikilem nedir? Sorusuna sekiz farklı görüş bildirmişlerdir. Etik ikilem kavramını öğretmenlerin çoğunluğu 'iki değer arasında kalma durumu', 'ahlaki iki hususta kararsız kalma', 'olumlu-olumsuz iki durum arasında kalma' olarak tanımlamışlardır. Öğretmenlerin az bir kısmının etik ikilem tanımlamalarına ilişkin sonuçlarda şu şekilde olmuştur; 'kurallarla uygulamanın ters düşmesi', 'iki olumlu süreçten birini seçmek', 'kanunla – yaşama uygunluk arasında kalma', 'iki olumlu süreçten birini seçmek', 'menfaat – ahlak çatışması' ve 'yaklaşma – yaklaşma çatışması' olarak tanımlanmıştır.

Görüşme yapılan öğretmenlerin "Hangi tür etik ikilem yaşamaktasınız?" Sorusuna en çok öğrencilerle ilgili ikilemler yaşadıkları bulgusuna ulaşılmıştır. İkinci en yüksek cevap müfredat etik ikilemi olmuştur. Üçüncü en yüksek cevap ise adil değerledirme etik ikilemi olurken, öğretmenlerin yaşadıkları etik ikilemlere ilişkin görüşlerinde en az okul yönetimi ve kurallar ve meslektaş ilişkileri görüşü belirtilmiştir.

Öğretmenlere üçüncü soru olarak "Etik ikilemlerle karşılaşınca neler yapıyorsunuz? Nasıl başa çıkıyorsunuz?" "Etik ikilemleri en aza indirmek için neler yapıyorsunuz?" sorusu sorulmuş ve etik ikilemleri en az seviyeye indirmek için "orta yolu bulmak" şeklinde görüş bildirmişlerdir. İkinci en çok görüş ise "etik kurallardan bahsederek" ve "kendimce en doğru olanı seçerek"

şeklinde ifade edilmiştir. Bu görüşlerden farklı olarak etik ikilemlere çözüm önerileri sırasıyla "aklı selim davranarak, en az zarar vereni tercih ederek, etkinlik yaptırma, hediyeyi duruma göre kabul etmek, hediyeyi asla kabul etmemek, net davranarak, istişare ederek, seviye sınıfları oluşturularak," şeklinde görüş bildirmişlerdir.

Tartışma ve Sonuç

Görüşme yapılan öğretmenlerin etik ikilem kavramına dair bilgi sahibi oldukları ancak çok fazla detaya giremedikleri kısa ve net ifadelerle tanımladıkları sonucuna ulaşılmıştır. Katılımcı öğretmenlerin etik kavramına ilişkin görüşleri ile araştırma bulguları ve literatürdeki etik ikilem kavramlarının benzeşmektedir.

Katılımcı öğretmenler öğrenciye performans notu verirken, farklı seviyedeki öğrencilere ders anlatırken alt seviyedeki öğrenciye göre ders anlattıkları, orta yolu bulmaya iki tarafı eşitlemeye çalıştıkları sonucuna ulaşılmıştır.

Öğretmenlerin büyük bir çoğunluğunun hediye almadıkları hediyenin not beklentisine sebep olduğu sonucuna ulaşılmıştır. Öğrencilerin paylaştıkları özel bilgileri şart ve duruma göre öğretmenlerin başkalarıyla paylaştıkları ve bunun önem arzettiği sonucuna ulaşılmıştır.

Müfredat ve zaman sıkıntısı etik ikileminde, öğretmenlerin zaman zaman öğretim programlarını esnettiği ve böylelikle zaman problemini çözdükleri sonucuna ulaşılmıştır.

Öğrenciyi adil değerlendirmek isteyen öğretmen ikilem yaşarken, çözümü; MEB'in (2021) öğretmenlik meslek etiğine uyulmasında beklenen etik ilkeler içerisinde de yer alan eşitlik yani farklı davranarak eşitlik (equity) ilkesi ile benzer davrandıkları sonucuna ulaşılmıştır.

Okul yönetiminin müdahalesi sonucu ikilem yaşayan öğretmenlerin iki koşulu da değerlendirerek vicdanlı hareket ettikleri sonucuna ulaşılmıştır. Araştırma bulguları Karayaman'ın (2021) okul yöneticileriyle ilgili yaptığı araştırma bulgularıyla benzeşmektedir.

Meslektaşlarıyla ilişkilerde ise çözümü okul yönetimiyle paylaşarak çözdükleri sonucuna ulaşılmıştır. Öğretmenlerin etik ikilemleri çözümleme ve en aza indirmek için istişare ettikleri, orta yolu bulmaya çalışarak hareket ettikleri sonucuna ulaşılmıştır. Milli eğitim şura'sının öneminin burada açıkça ortaya çıktığı görülmektedir.

Öneriler

Araştırmadan elde edilen bulgular ve sonuçlar bağlamında aşağıdaki öneriler sunulabilir:

Okul yöneticileri, öğretmenler ve öğrencilere etik bilgilendirme çalışmaları yapılabilir. Etik ikilem hususunda öğretmenlere eğitimde mesleki etik eğitim seminerleri, hizmet içi eğitimler düzenlenerek farkındalık arttırılabilir. Lisede görev yapan öğretmenlerin yaşadıkları etik ikilemleri paylaşacakları ortamlar oluşturulabilir ve etik ikilemleri nasıl daha aza indirilebilir bunun üzerinde farklı çalışmalar yapılabilir. Etik ikilem nedenleri ile ilgili karma araştırma yapılabilir. Açık ve anlaşılabilir bir mevzuat oluşturulabilir. Etik standartlar belirlenebilir ve belirlenen standartlar tüm ilgili taraflara etkili bir şekilde aktarılabilir.