



THE EFFECTS OF ENVIRONMENTAL EDUCATION GIVEN BY CREATIVE DRAMA METHOD ON ENVIRONMENTAL AWARENESS OF PRESCHOOL CHILDREN

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Abstract:

The aim of this study is to examine the effects of environmental education given by creative drama method on 5-6 year old children on environmental awareness of children. The study, which has a mixed model in which qualitative and quantitative methods are used, has a quasi-experimental design with a pre-test and post-test control group. The study was carried out with a total of 26 children. The data were collected by using "Environmental Scale for Children" and by drawing pictures. As a result of the analyses of t-test, a significant difference in favour of the experimental group was found between the two groups ($t = -7,676$, $p < .05$). It has been determined that environmental education given by drama method has a positive effect on children's environmental awareness. The content analysis method was used for the analysis of pictures drawn by children at the end of the sessions. It was found that children reflected the importance of trees/forests, living things relation, importance of air and water in their pictures.

Keywords: creative drama, drawing, environmental education, pre-school education

1. Introduction

The area surrounding living and non-living beings to which they are connected due to their basic vital needs and in which they interact is called the environment. This interaction affects all the elements of the environment directly or indirectly (Kukkonen et al., 2018). Therefore, the harmony of the environment within itself is very important (Dunlop & Rushton, 2022). However, after the industrial revolution, the balance in nature (Trott, 2020) began to deteriorate due to reasons such as the rapid consumption of natural resources in our natural environment and the need for raw materials caused by rapid population growth (Kopnina, 2020). As a result, negative environmental problems that

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affect our planet have emerged such as global warming, and the extinction of existing species (Stein et al., 2022). Providing information and awareness education to prevent the environmental destruction caused by human intervention on our planet is one of the intervention measures taken (Koçak Tümer, 2021a).

Environmental education has an important place in developing knowledge, positive attitudes, behaviour, and values toward the environment (Shulla et al., 2020), and provided in the preschool period development takes place the fastest (Del Rey et al., 2022), and new concepts are acquired most strongly, enables individuals to develop attitudes that continue in adulthood (Panos et al., 2022). Raising individuals who are sensitive and actively involved in solving environmental problems and who fulfil their responsibilities is one of the aims of environmental education (Stein et al., 2022).

According to Iozzi (1989), the key point of environmental education is to have an “emotional space”. Environmental education prepared within the frameworks of programs in which children will use their senses and develop empathy will be effective in the preschool period. For this reason, “creative drama” method is the most suitable education method for learning by doing (Kolovu & Kim, 2020). Using drama as a learning method in the preschool period helps effective and permanent learning to take place (İbiş, 2017). The respect that children, who can interact with themselves and their environment through drama activities (Dorion, 2009), transfer to other environments starting with their immediate environment helps them to develop respect for each other, and for other living beings (Pinciotti, 1993).

It is very important to measure environmental attitudes and pro-environmental behaviours in education. Because it will help to evaluate the effects of pedagogical studies in schools on transferring students' attitudes and behaviours towards sustainability to those that are more pro-environmental (Monus, 2022). Scales used for evaluation can cause difficulties for researchers in the application and evaluation stages. Also, children may be reluctant to respond to the scale for the evaluation of non-formal environmental education. As a result of this reluctance, not all children may show good performance (Cronin Jones, 2005). Different evaluations are carried out in order to find out the success of education given and whether they reach the goal, and also applied in drama activities.

One of these methods is drawing pictures made for evaluation at the end of the activity (Cainey, Humphrey & Bowker, 2017). According to Piaget (1953), children consider making pictures as a game and take great pleasure in making pictures. Since children who make pictures express themselves actively, it is possible to reach children's inner world by using this method because reflecting their inner world with pictures is easier than using words for children (Minkoff & Riley, 2011). For this reason, one of the best ways to know children and understand their emotions and thoughts is through pictures (Dai, 2017). Therefore, art is successful in helping researchers and practitioners reach their goals and provides an evaluation in measuring the outputs of environmental education programs (Inwood & Taylor, 2012; Myers, et al., 2004). Picture analysis helps us to understand children's knowledge, attitudes, and perceptions about wildlife and nature in a broad framework (Kidd & Kidd, 1995; Smith et al., 2005). There are also

studies in literature that evaluate children's individual perspectives on the needs of animals by picture analysis and interview method (Harwood, et al., 2010; Myers, et al., 2004). When the literature is examined, it can be seen that the picture analysis method is a preferred method by various researchers including environmental education (Dai, 2017; Madden & Liang, 2017; Malleus, et al., 2017; Mol, 2019; Stokas, et al., 2017; Tardif Williams & Bosacki, 2017).

It is very important to provide an environmental education, in which children participate and which supports their emphatic-affective areas, in the preschool period in terms of guiding children's perspectives on environmental problems. Based on the knowledge that using the creative drama method, which is an effective teaching method, in environmental education will make learning permanent, the aim of the present study is to research the environmental awareness of children receiving environmental education through the creative drama method.

With this purpose, answers were sought to the following questions:

- 1) Is there a significant difference between the pre-test and post-test scores of the experimental group that received environmental education with the creative drama method and the control group that did not receive this education?
- 2) Are elements related to the education given included in the pictures of the experimental group, which was applied environmental education through the creative drama method, drawn after drama practices?

2. Material and Methods

2.1 Research Model

The study, which has a mixed model with qualitative and quantitative methods, was designed in a quasi-experimental design with a pre-test and post-test control group. A quasi-experimental design is mostly used for determining causal relationships with a controlled evaluation of the data assumed by testing criteria determined through scientific methods by researchers. In addition, it is the organization created with dependent, independent, and control variables (Karasar, 2017). The most effective way to establish internal validity is to include a control group in many experimental studies (Johnson & Christensen, 2014). Pre-tests and post-tests allow for the interpretation of a situation determined before experiments and enable the provision of statistical controls. In addition, the differences between means are found with pre-test and post-test measurements (Büyüköztürk, et al., 2012).

Ankara Hacı Bayram Veli University ethics committee approval of the ethics committee, number e-11054618-302.08.01-62085 and dated 10.12.2021, was received for the research.

2.2 Study Group

The study group consists of children in 5-6 age group who were determined with convenience sampling method and who were attending Kızılay Şehit Ahmet Topçu

Kindergarten in Mamak District of Ankara. The class constituting the experimental group was chosen because it was the class of Yıldız Kaya, one of the researchers in the study, who was the teacher of the class and also the drama instructor. 14 (female = 5, male = 9) children in the experimental group and 12 (female = 6, male = 6) children in the control group from two different classes were included in the study group.

2.3 Data Collection Tools

In the study, “Environmental Scale for Children” and the drawing pictures by children were used as data collection tools in the study.

2.3.1 Environmental Scale for Children

The 23-item scale developed by Koçak Tümer and Temel (2021b), includes questions about the use of water and electricity, protecting animals, environmental cleaning, and recycling.

2.3.2 Pictures Drawn

The children in the experimental group were asked to draw pictures in line with the theme of the session for evaluation following each environmental education given through the drama method in the eight sessions. In order to understand the aims of children in pictures, what children tell in their pictures should be taken into consideration (Haney et al., 2004). So, at the end of the sessions, the children explained the pictures to the researcher. The children’s expressions were noted by the researcher.

2.4 Data Collection

During the 2021-2022 academic year “Environmental Scale for Children” was applied to children in the experimental and control group as pre-test face-to-face with each child by the researchers. Following this, the children in the experimental group were given environmental education two days a week for eight weeks through the drama method. At the beginning of the study, the teacher of the control group was told that she had to include activities related to environmental education in line with their curriculum.

At the end of each session, the children drew a picture of the session for evaluation. The instructions are given after each session:

- 1) Session, “Why are trees important, what are their uses?”
- 2) Session, “What are the habitats of animals? Where do animals live in nature?”
- 3) Session, “Let’s take pictures of animals we like in nature”.
- 4) Session, “What is the use of water, what is its importance for living beings?”.
- 5) Session, “Why is air important for living beings? What kind of harm will occur if the air is polluted?”
- 6) Session, “Let’s remember what clean energy sources are, and let’s draw a picture of them”.
- 7) Session, “Let’s draw a picture about recycling”.

8) Session, “How to keep our environment clean, what harm does a dirty environment do?”, questions asked the children, and let them draw a picture, they described the pictures they made to the researchers and the expressions of each child were noted.

After the 8-session education, the same scale was reapplied to all the children in the study group by the researchers in order to collect post-test data.

2.5 Data Analysis

In the analysis of qualitative data, a Chi-square test was conducted since the questions were categorical. Since the total score obtained from the scale was normally distributed numerical data, a t-test was used. Similarly, post-test questions were analyzed with Chi-square since they were categorical and numerical, and post-test total scores were analyzed with Mann Whitney-U test since they were not normally distributed.

In the eight sessions within the scope of the study, 84 pictures of 14 children in the experimental group were analyzed. The pictures were coded and solved with the content analysis method. In the analysis of the pictures correlations and concepts were found with the content analysis method (Yıldırım & Şimşek, 2018). In content analysis, which is a frequently used scientific approach in social sciences, verbal, written, and other materials are analyzed subjectively and systematically. The expressions were coded within a general framework at the sentence level. Following this, they were analyzed semantically, and the codes found for each session were noted (Creswell, 2003).

Processing the qualitative data of documents consists of four stages as coding the data and finding the themes (1), organizing codes and themes (2), defining the themes (3), and interpreting the themes (4) (Tavşancıl & Aslan, 2001).

The codes of each session were analyzed by making frequency calculations. After the coding stage, the data were organized; they were grouped within the framework of the codes, digitized, and tabulated. Finally, the results obtained were interpreted (Yukay Yüksel, et al., 2015). In addition, the children’s expressions about the pictures were written in the study text by making direct quotations.

3. Findings

Findings related to the qualitative and quantitative data obtained from the study are analyzed in this section.

3.1 Analyses of the Quantitative Data in The Study

The data on “Environmental Scale for Children” pre-test scores of experimental and control groups are shown in Tables 1-3.

Table 1: Findings regarding the pre-test scores of the experimental and control groups

Questions	Control (N=12) (correct/incorrect)	Experimental (N=14) (correct/incorrect)	P
1	1/11	1/13	1
2	2/10	0/14	.203
3	3/9	3/11	1
4	9/3	6/8	.130
5	5/7	6/8	1
6	6/6	4/10	.422
7	6/6	9/5	.692
8	10/2	12/2	.641
9	12/0	12/2	.483
10	4/8	5/9	1
11	11/1	13/1	1
12	10/2	11/3	1
13	8/4	7/7	.453
14	8/4	7/7	.453
15	2/10	0/14	.203
16	10/2	8/6	.216
17	4/8	2/12	.365
18	6/6	4/10	.422
19	0/12	0/14	-
20	11/1	10/4	.330
21	8/4	7/7	.453
22	2/10	0/14	.203
23	6/6	4/10	.422
Total	12±3.35	9.36±2.79	.914

Total pre-test scores were reported as *mean±standard deviation*. According to pre-test results, no statistically significant difference was found between the control and experimental group ($p<0.5$).

Table 2: Findings regarding the post-test scores of the experimental and control groups

Questions	Control (N=12) (correct/incorrect)	Experimental (N=14) (correct/incorrect)	P
1	6/6	12/6	.090
2	3/9	12/3	.003**
3	4/8	12/2	.014*
4	11/1	12/2	1
5	4/8	12/2	.014*
6	8/4	12/2	.365
7	4/8	12/2	.014*
8	11/1	14/0	.462
9	12/0	12/0	-
10	4/8	9/5	.238
11	12/0	13/1	1
12	12/0	14/0	-
13	8/4	14/0	.033*

14	8/4	14/0	.033*
15	2/10	7/7	.110
16	12/0	12/2	.483
17	4/8	10/4	.113
18	6/6	11/3	.218
19	1/11	8/6	.014*
20	11/1	14/0	.462
21	9/3	13/1	.306
22	2/10	10/4	.008**
23	7/5	14/0	.012*
Total	12(10-20)	21(15-23)	<.001**

Total post-test scores were reported as *median (minimum-maximum)* (* $p < .05$ ** $p < .01$).

Table 3: Experimental and control groups pre-test post-test means

	N	Mean	t
Experimental Group	14	10.28	-7.676
Control Group	12	1.41	-7.662

Pre-test and post-test difference means of the experimental and control groups were found as 10,28 and 1,41, respectively. Statistical difference was found between these two groups as a result of independent samples t-test. $t = -7,676$, $p < .05$. This difference was found to be in favour of the experimental group.

3.2 Analyses of The Qualitative Data in The Study

The content analysis method was used in the qualitative analysis of the data obtained in the study.

Table 4: Analysis of pictures made at the end of the first

Theme	Code	Participant	Total
Importance of trees/forests	Tree	2, 3, 4, 5, 9, 10, 12, 13	8
	Animals (snake, dog, cat, mouse, tiger, bee, rabbit, caterpillar, fox, bear)	3, 4, 5, 6, 10, 12, 13	7
	Axe/saw	4, 6, 9, 10, 13	5
	Those who cut down trees	2, 4, 6, 9, 10	5
	Those who try to protect trees	3, 4, 10, 13	4
	Cottage/house	3, 9	2
	Sun and clouds	4, 9	2
	World and astronaut	1	1

Note: Participants P7, P8, P11, and P14 did not participate in the first session.

Below are examples of the participants' explanations of their pictures.

"If masked men cut down young trees, we cannot breathe and we die." (P6)

"Animals don't want trees to be cut; they protect trees against masked men." (P10)

“Animals are walking in the forest.” (P13)

Figure 1: Pictures drawn by participants P13 and P9 in the first session



Table 5: Analysis of pictures made at the end of the second session

Theme	Code	Participant	Total
Animals and their habitats	Butterfly	2, 3, 4, 5, 6, 9, 11, 13	8
	Tree	4, 5, 11, 12	4
	Eagle, Turtle	3, 10	2
	Bee	11, 12	2
	Cloud	6, 9	2
	Owl, Cat, Ladybug, Flower	11	1
	Bear, Snake	3	1
	Caterpillar	12	1
	Octopus	13	1

Note: Participants P1, P7, P8, and P14 did not participate in the second session.

Below are examples of the participants' explanations of their pictures.

“The snake is protecting the forest.” (P3)

“The butterfly is going to pick up food for friends.” (P5)

“Animals are walking in the forest.” (P13)

Figure 2: Pictures drawn by participants P4 and P11 in the second session



Table 6: Analysis of pictures made at the end of the third session

Theme	Code	Participant	Total
Love of animals	Tree	3, 10, 11, 12, 13	5
	Cat	1, 11, 13	3
	Butterfly	2, 11, 13	3
	Bee	11, 12, 13	3
	Sun	3, 6, 11	3
	Snake	3, 10	2
	Rabbit	6, 12	2
	Flower	6, 11	2
	Caterpillar	11, 13	2
	Cloud	10, 11	2
	Grass	5, 11	2
	Deer	10	1
	Masked man, Bear	3	1
	Veterinary, Boy riding boat	2	1
	Hunter	6	1
	Crayons and Baby Animals	5	1
Blackberry	13	1	

Note: Participants P4, P7, P8, P9 and P14 did not participate in the third session.

Below are examples of the participants' explanations of their pictures.

"Veterinary heals animals." (P2)

"Snake and deer are walking in the forest." (P10)

"Turtle and rabbit are walking in the nature." (P12)

Figure 3: Pictures drawn by participants P10 and P12 in the third session



Table 7: Analysis of pictures made at the end of the fourth session

Theme	Code	Participant	Total
Our source of life water	Rain	3, 7, 9, 10, 11, 13	5
	Cloud	2, 3, 10, 11, 13	5
	Sun	2, 4, 6, 12, 13	5
	Trees	3, 11, 12, 13	4
	Grass	11, 12, 13	3
	Tap	5, 12	2
	Child	2, 7	2
	House	7, 12	2
	Car washed in rain	9, 10	2
	Child wasting water	4	1
	Child giving water	6	1
	Soil	7	1
	Flowers	11	1
	Rainbow	13	1

Note: Participants P1, P8, and P14 did not participate in the fourth session.

Below are examples of the participants' explanations of their pictures.

"Rain is washing the trees. People are playing." (P3)

"This child is wasting too much water. His mother is saying don't waste water." (P4)

"Rain is feeding the soil." (P7)

Figure 4: Pictures drawn by participants P7 and P9 in the fourth session



Table 8: Analysis of pictures made at the end of the fifth session

Theme	Code	Participant	Total
The importance of air for living beings	Child	1, 3, 4, 6, 9	5
	Factory chimney and smoke	1, 3, 8, 11, 12	5
	Sun	1, 5, 6, 13	4
	Dirty air	1, 3, 4, 6	4
	Stove smoke coming from house	9, 7, 11, 13	4
	Trashcan and trash	3, 4, 11	3
	Trees	5, 8, 7	3
	Cut trees	1, 8	2
	Smoking man	11, 13	2
	Car exhaust, bee and butterfly	2	1
	Superhero	3	1
	Cat	5	1
	Snowman	7	1
	Tractor polluting air	6	1
	Smoke	8	1
	Man polluting air	9	1
	Volcanic lava	13	1

Note: Participants P10 and P14 did not participate in the fifth session.

Below are examples of the participants' explanations of their pictures.

"Factory chimney smoke is polluting the air. They cut down trees." (P1)

"Tractor is polluting the air." (P6)

"Smoke coming from factory is polluting nature." (P12)

Figure 5: Pictures drawn by participants P8 and P11 in the fifth session

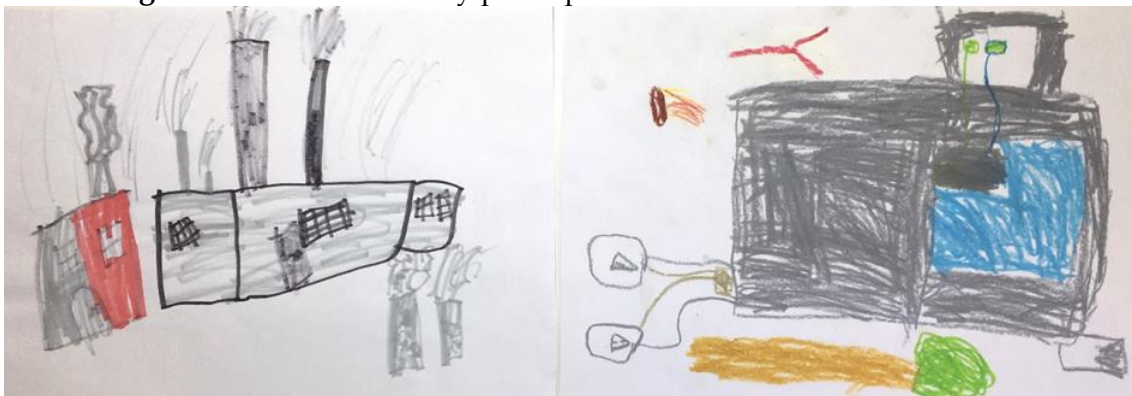


Table 9: Analysis of pictures made at the end of the sixth session

Theme	Code	Participant	Total
Energy sources	Cell phone	2, 4, 8	3
	Wind panel	5, 8, 10	3
	Boy turning off the TV	5, 6	2
	Washing machine	8, 10	2
	Dish washer	9, 12	2
	Boy turning off the light	10, 11	2
	Cloud, grass, door, sun, child	1	1
	Child washing hand	2	1
	Mine, coal, tube	3	1
	Camera	4	1
	Wind	5	1
	Green label refrigerator	10	1

Note: Participants P3, P7, and P14 did not participate in the sixth session.

Below are examples of the participants' explanations of their pictures.

"Tube, coal and mine are harmful energy sources." (P3)

"The child turns off the TV because his friend fell asleep in front of the TV." (P6)

"He puts the dishes in the dishwasher." (P12)

Figure 6: Pictures drawn by participants P10 and P12 in the sixth session



Table 10: Analysis of pictures made at the end of the seventh session

Theme	Code	Participant	Total
Recycling	Recycling boxes	3, 5, 6, 10, 11, 12, 14	7
	Trash	4, 10, 11	3
	Cat getting sick of trash	4, 10	2
	Clouds	4, 14	2
	Trash thrown in sea	2	1
	Computer, telephone	3	1
	Child throwing waste into recycling	6	1
	Recycling plant, Pieces of glass	8	1

Note: Participants P1, P7, and P9 did not participate in the seventh session.

Below are examples of the participants' explanations of their pictures.

"Trash is being thrown in the sea." (P2)

"Cat which could not find food in polluted nature and got sick." (P4)

"Child is throwing waste in recycling boxes." (P6)

Figure 7: Pictures drawn by participants P3 and P8 in the seventh session

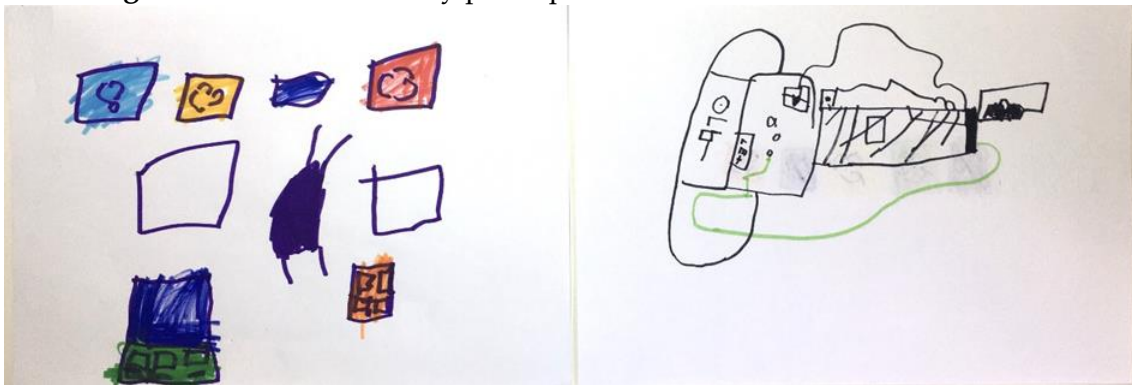


Table 11: Analysis of pictures made at the end of the eighth session

Theme	Code	Participant	Total
Environmental cleaning	Tree	2, 3, 4, 5, 6, 8, 10, 11, 12, 14	10
	Sun	2, 3, 4, 5, 6, 8, 11, 12, 14	9
	Grass	3, 4, 5, 8, 10, 11, 12	7
	Cloud	2, 4, 6, 8	4
	Child	10	1
	Flower	11	1

Note: Participants P1, P7, P9, and P13 did not participate in the eighth session.

Below are examples of the participants' explanations of their pictures.

"Turtle ate the apples." (P11)

"Turtle will eat the greenery." (P5)

"Turtle is walking in the forest near clean water." (P8)

Figure 8: Pictures drawn by participants P10 and P11 in the eighth session



3. Results and Discussion

When pre-test scores were examined, changes were found in the post-test scores of experimental and control groups ($p < 0.5$) which showed similar characteristics. Post-test scores of the experimental group were found to be significantly higher than those of the control group ($p < .05$). This result shows the efficacy of the environmental education program which was planned specifically for the study and in which drama method was used. These results and these studies result in parallel with the results of the study conducted by Trotts (2021) study. As a result of the study, it was found that environmental education program changed the children's thinks and attitudes about the environment. It was found that the children acquired stronger pro-environmental attitudes and a deeper respect for nature.

In the study, pictures drawn by children after eight-session education form the qualitative data of the study. To do this, a total of 84 pictures drawn by 14 children in the experimental group during the eight sessions were analyzed.

The figure most drawn at the end of the session on the theme "*the importance of trees/forests*" was "tree" figure. Tree figure was followed by mostly "animals (snake, dog, cat, mouse, tiger, bee, rabbit, caterpillar, fox, bear)". In addition, the fact that children stated that we cannot breathe when young trees are cut down and they did not want the trees on which animals took shelter and fed on showed that the children could reflect the importance of trees/forests which was the main theme in trees/forests session on their pictures. In their study, Madden and Liang (2017) showed evidence that children expressed the interaction between plants and animals in their depictions of nature. Various studies in which children used animals to depict nature (forests, etc.) frequently were also shown. This result is also in parallel with the results of the present study (Prokop & Tunnicliffe, 2008; Rybska, et al., 2017).

The figure most used in the pictures drawn at the end of the session on the theme "*animals and their habitats*" was animals and figures which expressed habitats such as forests and trees were also included. Pictures of children are a successful assessment tool in determining the bond between the child and the animal (Kidd & Kidd, 1995), so in their study, Tardif Williams and Bosacki (2017) stated that there is a physical bond

between children and animals. In the session with the theme *"love of animals"*, the most used figure was tree, which was followed by the figures of various animals. In their study, Villarroel et al., (2018) examined the data regarding the depiction of plant lives and animal species and stated that a great majority of children in the sample drew animals related to plant life and they described some plant and animal species in a related way. Villarroel et al.'s study results are similar to the results of this study.

It was found that in the session with the theme *"our source of life water"*, children included the figures rain, cloud, sun, tree the most, respectively. Expressions such as "car washed with rain, grass washed with tap water" were included in the drawings. In a study conducted on the analysis of drawings of children, Malleus et al., (2017) found that children drew clouds as rain clouds the most frequently. Their results are similar to this studies' results about the source of water. In a study on the effects of environmental education on young children's water-saving behaviors conducted by Ivasaki (2022), it was found that early childhood environmental education programs have the potential to foster long-term pro-environmental behaviours in young children.

In the session on the theme of *"the importance of air for living beings"*, children included the figures of a child, factory chimney and smoke, sun, polluted air, and stove smoke coming from the house. It was found that children used expressions such as the smoke from factories and tractors polluted air when they talked about their pictures. The results of the study are in parallel with the studies conducted in literature (Miller, 2007). According to Miller (2007), children draw things they see in their immediate environment the most children including figures such as factory and tractor, which are in their distant environment, can be associated with the environmental education given.

It was found that the objects most drawn were mobile phones and wind panels in the session with the theme *"energy sources"*. While talking about their pictures, children used energy-related expressions such as turning off the TV while sleeping and washing the dishes with the dishwasher. The concept of energy is mostly confusing and difficult to learn (Delegkos & Koliopoulos, 2020). While the concept of energy is considered as a prerequisite in understanding environmental issues, it requires abstract thinking (Delegkos & Koliopoulos, 2020; Rizaki & Kokkotas, 2013), so children had difficulty in specifying renewable energy sources (Çoker et al., 2010). Considering that the children in the study group are in pre-operational period, it can be thought that they cannot understand the concept of energy in detail. There are studies indicating that children have difficulties in understanding the concept of energy and they may not apply this concept in specific situations (Park & Liu, 2016). However, the concepts of energy and matter are important not only to support scientific literacy, but also in terms of organizing daily behaviors (Kukkonen, et al., 2018). Considering energy consumption and environmental problems, we should be more precautious about daily energy use and activate and use knowledge about saving energy (Babalola & Olawui, 2021; Treagust et al., 2016). Adapting appropriate attitudes and lifestyle behaviors is important in energy use education (Ntona, et al., 2015). Therefore, the fact that the pictures drawn after the

education stage include elements regarding the daily use of energy is in parallel with the literature.

The most seen figures in pictures made at the end of the session with the theme “recycling” were recycling boxes and trash. In their study, they examined the environmental perceptions of primary education students, Pınar and Yakişan (2018) found that the students used the concept “trash” most related to environmental pollution. This result is in parallel with the results of this study. It was found that in a study that used the expression of environmental cleaning to create positive perceptions, children mostly described a positive atmosphere that may be created for animals in a clean environment. The expression clean environment is also included in studies (Vesterinen & Ratinen, 2023).

4. Conclusion

As a result of the research, it has been determined that the environmental education given to preschool children by the drama method has an effect on the development of positive attitudes towards the environment. The picture analysis results are compatible with the literature.

Conflict of Interest Statement

The authors declare no conflicts of interest.

About the Author(s)

Dr. N. Bilge Koçak Tümer was a teacher at kindergarden school for 3 years after graduating with a license in education and then worked as a head teacher at Gazi University kindergarden for 4 years. Since 2012 working at Child Development and Care Department of Ankara Hacı Bayram Veli University in Türkiye. She achieved his PhD in early childhood education from Gazi University in Türkiye. Her primary interests are drama in education, environmental education in early childhood education, and sustainability at kindergarden. Some articles from authors: Development of Environmental Scale for Children, Analysis of Postgraduate Theses Prepared for The Preschool Period on “Environmental Education” Conducted between 2011 and 2020 in Turkey: A Content Analysis, Child Development Department of Vocational School Students' Opinions on Recycling, Preschool Teachers' Views on Recycling, Analysis of Postgraduate Theses Conducted on Creative Drama Between 2016-2020 in Turkey.

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