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Inspecting primary school students' environmental attitudes based on ecocentric and anthropocentric perspectives

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ABSTRACT This study aimed at (i) identifying primary school students' attitudes toward environmental issues based on the perspectives of ecocentrism and anthropocentrism and (ii) inspecting students' attitudes (i.e., ecocentric and anthropocentric) toward environmental issues in relation to gender and grade level. Data were gathered from 40 students through the administration of an interview questionnaire along with pictures concerning questions in the questionnaire. Results demonstrated that most of the participants who held positive attitudes reflected anthropocentric attitudes toward water, paper, and electricity consumption, reusing, and playground preferences whereas ecocentric attitudes toward plants, bugs, and other animals. Besides, half and slightly more than half of the participants with positive attitudes expressed ecocentric attitudes toward residence preferences and environmental pollution, respectively while nearly half of the participants with positive attitudes expressed anthropocentric attitudes toward the mentioned issues. It was also found that with the exception of one environmental issue, participants' attitudes toward environmental issues were not significantly associated with their gender. Additionally, no relation was found between participants' environmental attitudes and their grade level.

Keywords: *Anthropocentric attitude, Ecocentric attitude, Gender, Grade level, Primary school students*

İlkokul öğrencilerinin çevresel tutumlarının ekosentrik ve antroposentrik bakış açılarına göre incelenmesi

ÖZ Bu çalışma (i) ilkokul öğrencilerinin çevresel konulara yönelik tutumlarını ekosentrizm ve antroposentrizm bakış açılarına dayalı olarak belirlemeyi ve (ii) öğrencilerin çevresel konulara yönelik tutumlarını (yani, ekosentrik ve antroposentrik) cinsiyet ve sınıf düzeyine ilişkin olarak incelemeyi amaçlamıştır. Veriler, bir görüşme formu ve formda yer alan sorularla ilgili resimler uygulanarak 40 öğrenciden toplanmıştır. Sonuçlar, olumlu tutuma sahip katılımcıların çoğunun su, kağıt ve elektrik tüketimi, yeniden kullanım ve oyun alanı tercihlerine yönelik antroposentrik tutumları yansıtırken bitkiler, böcekler ve diğer hayvanlara yönelik ekosentrik tutumları yansıttığını göstermiştir. Bununla birlikte, olumlu tutum sergileyen katılımcıların yarısı ve yarısından biraz fazlası sırasıyla konut tercihleri ve çevre kirliliğine yönelik ekosentrik tutumlar açıklarken, olumlu tutum sergileyen katılımcıların yaklaşık yarısı, bahsedilen konulara karşı antroposentrik tutumlar ifade etmiştir. Ayrıca, bir çevresel konu dışında, katılımcıların çevresel konulara yönelik tutumlarının cinsiyetleriyle anlamlı olarak ilişkili olmadığı da bulunmuştur. İlaveten, katılımcıların çevresel tutumları ile sınıf düzeyleri arasında bir ilişki bulunmamıştır.

Anahtar Sözcükler: *Antroposentrik tutum, Cinsiyet, Ekosentrik tutum, İlkokul öğrencileri, Sınıf düzeyi*

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INTRODUCTION

In many environmental education programs, the main attention is on children's attitudes and developing attitudes sensitive to the environment when individuals are young is viewed as significant for their later behavior (Eagles & Demare, 1999). Accordingly, we believe that identifying students' environmental attitudes at an early age will be informative to take necessary steps for promoting pro-environmental attitudes, which in turn will contribute to development of pro-environmental behaviors. In their research, Thompson and Barton (1994) suggested that in addition to attitudes toward environmental issues, it is significant to figure out underlying motives and values of those attitudes. According to the authors, inspection of both attitudes and related motives can result in better comprehension of environmentally-relevant actions and new opinions about how to promote conservation. Thompson and Barton (1994) put forward two motives or values underlying environmental attitudes, that is, ecocentric and anthropocentric. Both ecocentric and anthropocentric persons hold positive environmental attitudes, however, they differ in their motives; ecocentric persons give importance to nature for the sake of nature whereas anthropocentrics regard nature as worth conserving due to benefits for human beings (Thompson & Barton, 1994). Considering these, this study focused on inspecting environmental attitudes based on the perspectives of ecocentrism and anthropocentrism. In line with Thompson and Barton's (1994) perspective, ecocentrism and anthropocentrism were handled as underlying motives for positive environmental attitudes in the current study.

In the literature, there are investigations that were conducted within perspectives of ecocentrism and anthropocentrism and these investigations were carried out with different samples. For instance, Simsar et al. (2021) worked with preschool Syrian refugee children and found that participants' attitudes with regard to environmental protection and recycling-reusing were mostly ecocentric whereas their attitudes about consumption patterns and daily life habits were largely anthropocentric. Besides, studying with sixth-, seventh-, and eighth-grade students, Onur et al. (2012) reported that participants were very concerned and expressed ecocentric attitudes and that anthropocentric attitudes were positively related with apathy toward the environment. There are also research studies that were conducted with pre-service science teachers. For example, Sahin et al. (2020) inspected science teacher candidates' pro-environmental behaviors with respect to psychological and cognitive variables and found that attitudinal motives (i.e., ecocentric or anthropocentric attitudes) were the main features which were related to teacher candidates' pro-environmental behaviors in comparison to other variables. More specifically, teacher candidates who appreciated the environment for the sake of the environment and gave less value to motives arising from human benefits demonstrated more pro-environmental behaviors. Working with a sample including Swedish and French pre-service and in-service teachers, Nyberg et al. (2020) demonstrated that both Swedish and French participants possessed mostly ecocentric attitudes. On the other side, in an attempt to inspect faculty members' environmental attitudes, Erdaş Kartal and Mesci (2022) revealed that the majority of the participants in general expressed an ecocentric attitude whereas some of them conveyed an anthropocentric attitude. Also, there exist studies with public people (e.g., Gustafson et al., 2022). More specifically, Gustafson et al. (2022) investigated pro-environmental motives of people from 11 countries and findings revealed that an anthropocentric motive was found as the most frequently specified motive in general and in some countries (e.g., United States) whereas ecocentric and altruistic motives were found more widespread in other countries (e.g., United Kingdom). Considering the aforementioned studies, it can be concluded that although there is an increasing number of research on ecocentric and anthropocentric attitudes, it is obviously needed to conduct research with primary school students. Accordingly, this research intended to detect primary school students' attitudes toward environmental issues based on the perspectives of ecocentrism and anthropocentrism. We believe that the present investigation contributes to the literature to better comprehend underlying motives of environmental attitudes and to make clear conclusions on the issue.

Attitude Toward Environmental Issues in Relation to Gender and Grade Level

In the literature, demographic characteristics such as gender and grade level which are thought to have an influence on environmental attitudes have been frequently inspected. Studies that examined gender

effect have found different results: Some research reported that females held more favorable attitudes (e.g., Alp et al., 2006) whereas others revealed that males had more favorable attitudes (e.g., Choe et al., 2020). There are also studies which concluded that there were not gender differences in environmental attitudes (e.g., Musser & Diamond, 1999). Supporting the abovementioned studies, the research conducted by Yilmaz et al. (2004) resulted in that there did not exist differences in environmental attitudes for males and females among elementary school students; however, differences were detected in favor of females among middle school students. Besides, in a study that examined a gender impact on secondary school students' environmental attitudes and pro-environmental behavior, Mónus (2022) failed to find noticeable differences; females scored significantly higher in only one measure (i.e., green consumer habit). On the other hand, there exist studies that extended the understanding on environmental attitudes by investigating the impact of gender on ecocentric and anthropocentric attitudes (e.g., Kahriman-Ozturk et al., 2012; Onur et al., 2012) but these studies are few. More specifically, the research by Kahriman-Ozturk et al. (2012) revealed that preschool children's ecocentric and anthropocentric attitudes toward environmental issues did not differ with respect to gender. Working with sixth-, seventh-, and eighth-grade students, Onur et al. (2012) reported that there were gender differences in favor of females in ecocentric attitudes whereas in favor of males in anthropocentric attitudes. Similar to the findings of Onur et al.'s (2012) study, studying Portuguese people, Domingues and Gonçalves (2020) found that women had significantly higher preservation attitude scores and lower utilisation attitude scores as compared to men. Preservation denotes the belief that protection of nature and diversity of species should be given precedence whereas utilisation refers to the belief that it is correct, proper, and required to utilize natural resources for the purposes of humans (Milfont & Duckitt, 2010; see also Domingues & Gonçalves, 2020). As a result, it can be deduced that most of the previous studies investigated whether there were gender differences in general attitudes toward environmental issues and these studies produced mixed results. Besides, investigations that examined gender impact on ecocentric and anthropocentric attitudes are not adequate to make clear conclusions on the issue. Considering the significance of uncovering underlying motives of environmental attitudes (i.e., ecocentric and anthropocentric) and investigating the gender impact on ecocentric and anthropocentric attitudes, this study was interested in whether primary school students' ecocentric and anthropocentric attitudes toward environmental issues differed with respect to their gender.

As far as the impact of grade level on attitudes toward the environment is considered, related studies have also indicated mixed findings. For instance, in their study, Yilmaz et al. (2004) concluded that fourth-, seventh-, and eighth-grade students held more favorable attitudes toward environmental issues than fifth- and sixth-grade participants. According to the authors, the mentioned finding might assert that as students have the chance to talk about or learn conceptions with regard to the environment in their science courses, their attitudes toward the environment turn out to be more favorable. The authors attributed the finding that fourth graders expressed more favorable attitudes than fifth and sixth graders to the first presentation of concepts regarding the environment to the students in their initial science lectures. Considering their findings, the authors recommended that conducting further quantitative or qualitative studies is required to explore underlying reasons more thoroughly. Besides, working with sixth-, eighth-, and 10th-grade students, Alp et al. (2006) indicated that as the grade level increased, students' favorable attitudes toward the environment reduced. According to the authors, this result might be related to the means subjects regarding the environment are presented. In an investigation with students from grades 1 to 3 in senior middle schools, Choe et al. (2020) found that participants in grade 3 held significantly more favorable environmental attitudes than participants in grades 1 and 2. Besides, participants in grade 2 expressed more favorable attitudes than participants in grade 1 but the difference was not significant. On the other hand, Tuncay Yüksel et al. (2015) investigated whether science teacher candidates' environmental moral reasoning patterns (ecocentric and anthropocentric moral reasoning are parallel to ecocentric and anthropocentric attitudes, respectively, in the present study) differed according to grade level. The authors revealed that participants' environmental moral reasoning patterns differed according to their grade level for local and global environmental problems. Besides, they found a significant grade level effect on participants' ecocentric and anthropocentric moral reasoning when environmental problems were considered in total. First-grade participants were found to demonstrate obviously less moral considerations with respect to almost all of the environmental problems. According to the authors, this finding may be due to first graders' lack of attention to issues on the environment as

well as due to that science teacher candidates in the participant university commonly take courses regarding the environment after their first year. In their research with Portuguese people, Domingues and Gonçalves (2020) indicated that older people (≥ 30 years old) had significantly higher preservation attitude scores and lower utilisation attitude scores as compared to younger ones (for preservation and utilisation, see above mentioned explanations). Consequently, it is clearly required to examine ecocentric and anthropocentric attitudes in relation to grade level. Thus, this study was also interested in whether primary school students' ecocentric and anthropocentric attitudes toward environmental issues differed with respect to their grade level.

In conclusion, we believe that investigation of primary school students' environmental attitudes along with underlying motives and the variables thought to be related to the motives will be helpful to take necessary steps in the primary school classrooms, curriculums, and textbooks in an attempt to promote pro-environmental behaviors. Accordingly, the present study aimed at (i) identifying primary school students' attitudes toward environmental issues based on the perspectives of ecocentrism and anthropocentrism and (ii) inspecting students' attitudes (i.e., ecocentric and anthropocentric) toward environmental issues in relation to gender and grade level. The research questions of this investigation were as follows:

1. What are primary school students' attitudes toward environmental issues (i.e., consumption patterns, environmental protection, reusing, and living habits) based on the perspectives of ecocentrism and anthropocentrism?
2. Are there any relationships between primary school students' attitudes (i.e., ecocentric and anthropocentric) toward environmental issues and their gender?
3. Are there any relationships between primary school students' attitudes (i.e., ecocentric and anthropocentric) toward environmental issues and their grade level?

METHOD

This research is a qualitative study. In order to gather data, interviews were conducted through an interview questionnaire and pictures associated with the questions. The transcribed interviews were analyzed in two steps: First, participants with positive environmental attitudes were identified. Then, participants' responses on underlying motives of positive environmental attitudes were coded as ecocentric or anthropocentric on the basis of Thompson and Barton's (1994) categorization.

Participants and the Study Setting

Participants of this research were 40 primary school students from a village school situated in the Southeastern Anatolia region of Türkiye. Participants' distribution according to their grade level and gender was as follows: 10 first graders (5 girls, 5 boys), 10 second graders (5 girls, 5 boys), 10 third graders (6 girls, 4 boys), and 10 fourth graders (7 girls, 3 boys). Participants' ages ranged from 6 to 11. The village school was specified based on convenience; the first author of the study was the teacher of third graders during the time of data collection. From the specified village school, getting the views of teachers, students who were thought to be able to express their ideas effectively were identified. After students' verbal consent and their parents' written consent were obtained, they were involved in the study as participants.

The village is located in the Southeastern Anatolia region of Türkiye. There exists a scattered settlement; most of the houses are far from each other. The school is situated in a distant part of the village. People in the village generally occupy in agriculture and animal husbandry; the most grown crops are pistachios and garlic whereas ovine breeding is generally popular. The village has very little green area. There is a general water shortage; hydrophores are used to provide delivery of water for growing crops and using in daily life.

Instrument

In order to identify primary school students' attitudes toward environmental issues, an interview questionnaire and pictures associated with the questions in the questionnaire were utilized. The interview questionnaire, which comprises 15 main questions and connected sub-questions, was adapted by Kahriman-Ozturk et al. (2012) from the Children's Attitudes Toward the Environment Scale-Preschool Version (CATES-PV; Musser & Diamond, 1999). Following Musser and Diamond's (1999) suggestion, Kahriman-Ozturk et al. (2012) formed a pair of pictures for each main question in order for the questions to be understood more easily by preschool children. The CATES-PV, on the other hand, was derived from the Children's Attitudes Toward the Environment Scale (Musser & Malkus, 1994), which was developed to gauge school-age children's environmental attitudes. Hence, this study employed the interview questionnaire and associated pictures to detect primary school students' attitudes toward environmental issues.

Kahriman-Ozturk et al. (2012) piloted the interview questions and associated pictures with 10 preschool children and as a consequence of the pilot research, the interview questionnaire was determined as comprising 12 main questions and connected sub-questions. However, all of 15 main questions and connected sub-questions were utilized to gather data in this study considering that they could provide valuable information when applied to the participants in this study. The gathered data showed that participants had insufficient knowledge about the subjects asked in four main questions; hunting (one question), recycling (two questions), and transportation preferences (one question). Thus, the four main questions and connected sub-questions were not included in the analysis. Accordingly, in the present study the dimensions and sub-dimensions were as follows: (1) Consumption patterns (Water consumption; Paper consumption; Electricity consumption), (2) Environmental protection (Plants, bugs, and other animals; Environmental pollution), (3) Reusing (Reusing), and (4) Living habits (Playground preferences; Residence preferences) (for more information about the dimensions and sub-dimensions in the questionnaire, see Kahriman-Öztürk, 2010; Kahriman-Ozturk et al., 2012).

During the interviews, participating students were presented with a pair of pictures representing two different behaviors associated with the main question. For instance, related to the question on paper consumption, two pictures were shown to the participants. In one of the pictures, a child is using both sides of a paper while drawing whereas in the other picture, the child is using one side of the paper. Then, participants were read descriptions of the behaviors. For the mentioned example, the description of the behaviors was: "Some children use both sides of a paper when they draw or write, but other children use only one side of the paper when they draw or write." And then, they were asked which of two groups of children they are most like. After participants' responses, the sub-question was asked. More specifically, participants were requested to clarify the reason for the behavior they selected. For instance, participants, who pointed out that they use both sides of the paper when they draw or write, were asked: "Why do you use both sides of the paper when you draw or write?".

Data Collection and Analysis

Data were gathered through interviews between December 2018 and March 2019. After obtaining approval from Aksaray University Human Research Ethics Committee (Date: 26.09.2018, Decision Number: 2018/188) and necessary permission from related Provincial Directorate of National Education, principal and teachers of the identified village school were contacted. Getting the views of teachers, students who were thought to be able to express their ideas effectively were determined. After identified students' verbal consent and their parents' written consent were obtained, they were involved in the study as participants. The participants were interviewed by the first author in the teachers' room and each interview took approximately 20-30 minutes. All of the interviews were audiotaped and transcribed.

The transcribed interviews were analyzed by the authors of this study. First, participating students with positive environmental attitudes were identified. Then, participants' responses on underlying motives

of positive environmental attitudes were analyzed through coding as ecocentric or anthropocentric based on Thompson and Barton's (1994) categorization. The analysis findings were compared and different findings were discussed until reaching an agreement between the coders. The frequencies of ecocentric and anthropocentric categories according to gender and grade level were calculated. In order to assess students' ecocentric and anthropocentric attitudes toward environmental issues in relation to gender, frequency distributions were utilized. Besides, chi-square tests for independence were performed. For five environmental issues, the assumption of chi-square test for independence that "at least 80 per cent of cells should have expected frequencies of 5 or more" (Pallant, 2007, p. 214) was violated. Hence, Fisher's exact probability test, which was given in the output of chi-square, was reported for these environmental issues. No statistics were computed to evaluate the relationships between gender and attitude toward three environmental issues since variable of environmental attitude for the mentioned environmental issues was a constant. On the other hand, in order to evaluate students' attitudes toward environmental issues in relation to grade level, only frequency distributions were employed since the abovementioned assumption of chi-square test for independence related to expected cell frequency was violated.

FINDINGS

The study findings are presented in the following sections. While specifying individual participants, 'G' and 'B' are used to refer to girl and boy, respectively and '1', '2', '3', and '4' are used to refer to grade level along with a serial number. For example, the participant indicated as G3.5 denotes a girl and a third grader, and a fifth female student from that grade level.

Consumption Patterns

Consumption patterns were inspected with regard to water consumption, paper consumption, and electricity consumption. It was found that a great majority of the participants held favorable attitudes toward water, paper, and electricity consumption (see Figure 1). More specifically, these participants stated that they were most like the children who turn the water off while brushing teeth (n=38), use both sides of the paper when they draw or write (n=35), and turn the lights off when they leave a room (n=39).

When underlying motives for positive attitudes were examined, most of the participants were found to have anthropocentric attitudes toward water (n=31), paper (n=29), and electricity (n=32) consumption.

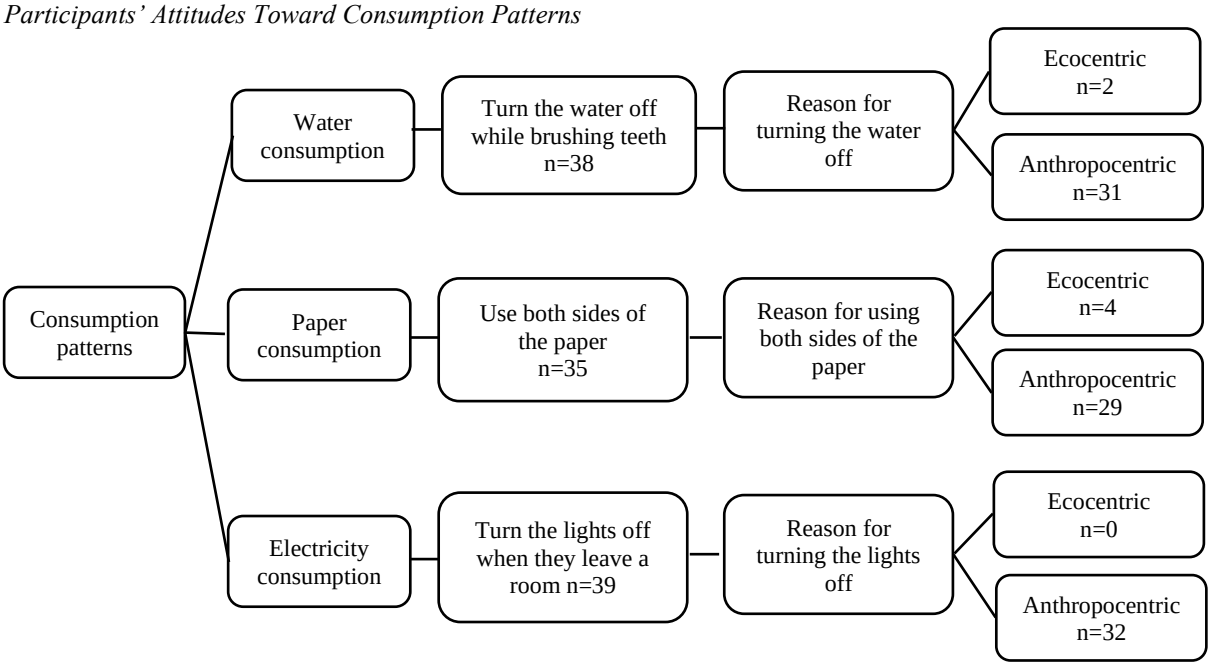
The following excerpts from the interviews illustrate participants' anthropocentric attitudes:

B2.1: "[If we do not turn off the water] water is wasted, we run out of money. We can't brush our teeth."

B1.4: "[If I use only one side of the paper] my notebook runs out."

G2.2: "If we don't turn off the light, our electricity will be wasted and our money will be wasted."

Figure 1.
Participants' Attitudes Toward Consumption Patterns



On the other hand, a few participants were found to hold ecocentric attitudes toward water (*n*=2) and paper (*n*=4) consumption. An example of participants' responses is provided below:

B2.3: I turn the water off while brushing my teeth.

Interviewer: Why do you turn the water off?

B2.3: To save on.

Interviewer: What does "save on" mean?

B2.3: Saving means protecting our nature.

With regard to underlying motives for positive attitudes, some participants' responses could not be categorized as ecocentric or anthropocentric attitudes and these responses were reported as "not identified"; attitudes toward water (*n*=5), paper (*n*=2), and electricity (*n*=7) consumption.

Tables 1 and 2 present frequency distributions of ecocentric and anthropocentric attitudes according to gender and grade level, respectively. As shown in Table 1, among participants with ecocentric or anthropocentric attitudes, anthropocentric attitudes were reflected by majority of the girls and the boys toward water and paper consumption and by all of the girls and the boys toward electricity consumption. Accordingly, it can be concluded that the distribution of ecocentric and anthropocentric attitudes seemed to be similar for girls and boys. That is, gender did not appear to be associated with attitudes toward water, paper, and electricity consumption. Supporting this finding, Fisher's exact probability test failed to result in significant relationships between gender and attitudes toward water and paper consumption (see Table 1). On the other hand, as evident in Table 2, among participants with ecocentric or anthropocentric attitudes, anthropocentric attitudes were held by all of the first, third, and fourth graders and majority of the second graders toward water consumption, by all of the first graders and majority of the second, third, and fourth graders toward paper consumption, and by all of the first, second, third, and fourth graders toward electricity consumption. Considering these findings, it can be deduced that the distribution of ecocentric and anthropocentric attitudes seemed to be similar for four grade levels. Namely, there appeared to be no clear linkages between grade level and attitudes toward water, paper,

and electricity consumption.

Table 1.
Frequency Distribution of Participants' Attitudes Toward Consumption Patterns According to Gender

Consumption patterns		Environmental attitude	Gender		*N*	*p*-value
			Girls	Boys		
Water consumption	Turning the water off while brushing teeth	Ecocentric	1	1	33	1.00[a]
		Anthropocentric	19	12		
Paper consumption	Using both sides of the paper	Ecocentric	3	1	33	.61[a]
		Anthropocentric	15	14		
Electricity consumption[b]	Turning the lights off when they leave a room	Ecocentric	0	0	32	
		Anthropocentric	20	12		

[a]The two-sided *p*-value from Fisher's Exact test was used
[b]No statistics were computed since variable related to "electricity consumption" was a constant

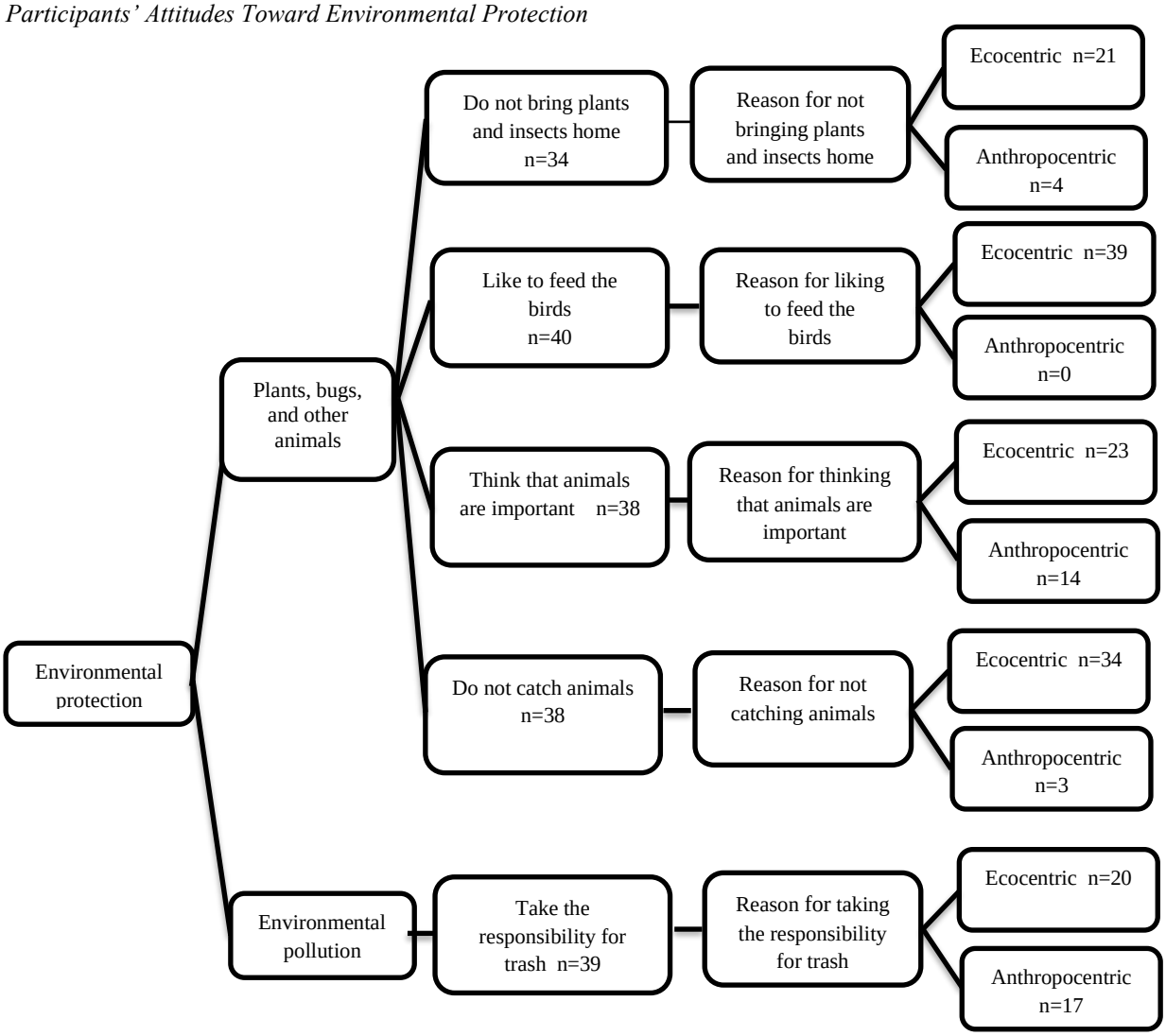
Table 2.
Frequency Distribution of Participants' Attitudes Toward Consumption Patterns According to Grade Level

Consumption patterns		Environmental attitude	Grades			
			1	2	3	4
Water consumption	Turning the water off while brushing teeth	Ecocentric	0	2	0	0
		Anthropocentric	9	5	9	8
Paper consumption	Using both sides of the paper	Ecocentric	0	1	1	2
		Anthropocentric	8	7	6	8
Electricity consumption	Turning the lights off when they leave a room	Ecocentric	0	0	0	0
		Anthropocentric	5	10	7	10

Environmental Protection

Environmental protection was inspected with respect to plants, bugs, and other animals and environmental pollution. According to the findings, a large majority or all of the participants possessed positive attitudes toward plants, bugs, and other animals (see Figure 2). More specifically, these participants stated that they were most like the children who like to look at plants and bugs outside but do not bring them home (*n*=34), like to feed the birds (*n*=40), think that animals are important (*n*=38), and do not catch animals they find outside (*n*=38). When underlying reasons for positive attitudes were inquired, most of the participants with positive attitudes were found to hold ecocentric attitudes toward plants, bugs, and other animals from the point of not bringing plants and insects home (*n*=21), liking to feed the birds (*n*=39), thinking that animals are important (*n*=23), and not catching animals (*n*=34). Similarly, a great majority of the participants were found to have positive attitudes toward environmental pollution (see Figure 2). Specifically, they stated that they were most like the children who pick up litter they see around them and throw it away in a litter bin (*n*=39). When underlying motives for positive attitudes were inspected, a considerable number of participants were found to hold ecocentric attitudes toward environmental pollution (*n*=20).

Figure 2.
Participants' Attitudes Toward Environmental Protection



The following excerpts from the interviews exemplify participants' ecocentric attitudes toward plants, bugs, and other animals and environmental pollution:

G1.4: "[I don't bring plants and insects home] because in order not to harm [them]."

G4.7: "They [birds] get hungry like human beings, they have the right to live like a human being."

G3.1: "[I don't catch animals]. They [animals] have a family and children."

B1.2: "[I pick up litter I see around me and throw it away in a litter bin] so that nature would not become dirty."

On the other hand, some participants were found to hold anthropocentric attitudes toward plants, bugs, and other animals with regard to not bringing plants and insects home (*n*=4), thinking that animals are important (*n*=14), and not catching animals (*n*=3) and toward environmental pollution (*n*=17). Instances of participants' responses are given below:

B4.1: "[If I bring plants and insects home], they can do something to us."

B2.4: "[Animals are important]. They [animals] can protect our house."

G3.2: "[Animals are important]; the bee makes honey for us, and the cow and goat give milk."

G1.4: "[If I catch animals], our hands get infected."

G1.2: "If our environment is dirty, if everywhere is dirty, we will step on the garbage. We cannot walk if we step on the garbage."

With regard to underlying reasons for positive attitudes, there were also responses which could not be categorized as ecocentric or anthropocentric attitudes. These responses were recorded as "not identified"; not bringing plants and insects home (n=9), liking to feed the birds (n=1), thinking that animals are important (n=1), not catching animals (n=1), and environmental pollution (n=2).

Tables 3 and 4 indicate frequency distributions of ecocentric and anthropocentric attitudes according to gender and grade level, respectively. As seen in Table 3, among participants with ecocentric or anthropocentric attitudes, ecocentric attitudes were found to be expressed by a majority of the girls and the boys with respect to not bringing plants and insects home and not catching animals and by all of the girls and the boys with respect to liking to feed the birds. On the other side, with respect to thinking that animals are important, majority of the girls were found to hold ecocentric attitudes whereas most of the boys were found to possess anthropocentric attitudes. Consequently, the distribution of ecocentric and anthropocentric attitudes appeared to be similar for girls and boys in terms of not bringing plants and insects home, liking to feed the birds, and not catching animals; but not similar in terms of thinking that animals are important. Supporting this finding, Fisher's exact probability test failed to demonstrate significant associations between gender and attitudes in terms of not bringing plants and insects home and not catching animals. However, Chi-square test for independence (with Yates Continuity Correction) resulted in a significant connection between gender and attitudes in terms of thinking that animals are important (see Table 3).

Table 3 also shows that among participants with ecocentric or anthropocentric attitudes, ecocentric attitudes toward environmental pollution were found to be held by about half of the girls and most of the boys. Accordingly, the distribution of ecocentric and anthropocentric attitudes seemed to be similar for girls and boys. That is, gender did not seem to be related to attitudes toward environmental pollution. Supporting this finding, Chi-square test for independence (with Yates Continuity Correction) failed to result in a significant relationship between gender and attitudes toward environmental pollution (see Table 3).

On the other hand, as evident in Table 4, among participants with ecocentric or anthropocentric attitudes, ecocentric attitudes were found to be possessed by majority of the first, second, and fourth graders and all of the third graders concerning not bringing plants and insects home, by all of the first, second, third, and fourth graders with respect to liking to feed the birds, by majority of the first and third graders, most of the second graders, and less than half of fourth graders for thinking that animals are important, and by majority of the first and second graders and all of the third and fourth graders with respect to not catching animals. Considering these findings, it can be inferred that the distribution of ecocentric and anthropocentric attitudes for fourth graders was somewhat different from that for first, second, and third graders with respect to thinking that animals are important; however, as the grade level increased or decreased, there were no substantial differences in the attitudes of participants. Namely, there did not exist clear associations between grade level and attitudes toward plants, bugs, and other animals. Besides, Table 4 also demonstrates that among participants with ecocentric or anthropocentric attitudes, ecocentric attitudes toward environmental pollution were found to be expressed by nearly half of the first graders, by most of the second and third graders, and half of the fourth graders. Accordingly, it can be said that the distribution of ecocentric and anthropocentric attitudes appear to be similar for four grade levels. That is, grade level did not seem to be linked with attitudes toward environmental pollution.

Table 3.
Frequency Distribution of Participants' Attitudes Toward Environmental Protection According to Gender

Environmental protection		Environmental attitude	Gender		*N*	*p*-value
			Girls	Boys		
Plants, bugs, and other animals	Not bringing plants and insects home	Ecocentric	13	8	25	1.00[a]
		Anthropocentric	2	2		
	Liking to feed the birds[c]	Ecocentric	23	16	39	
		Anthropocentric	0	0		
	Thinking that animals are important	Ecocentric	18	5	37	.03[b]
		Anthropocentric	5	9		
	Not catching animals	Ecocentric	19	15	37	1.00[a]
		Anthropocentric	2	1		
Environmental pollution	Taking the responsibility for trash	Ecocentric	11	9	37	.53[b]
		Anthropocentric	12	5		

[a]The two-sided *p*-value from Fisher's Exact test was used
[b]The two-sided *p*-value from Yates' Correction for Continuity was used
[c]No statistics were computed since variable related to "liking to feed the birds" was a constant

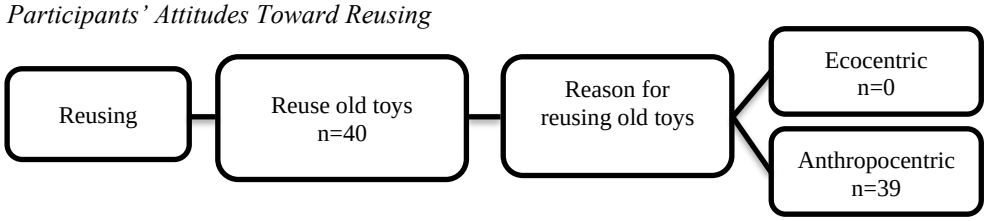
Table 4.
Frequency Distribution of Participants' Attitudes Toward Environmental Protection According to Grade Level

Environmental protection		Environmental attitude	Grades			
			1	2	3	4
Plants, bugs, and other animals	Not bringing plants and insects home	Ecocentric	4	5	4	8
		Anthropocentric	1	1	0	2
	Liking to feed the birds	Ecocentric	9	10	10	10
		Anthropocentric	0	0	0	0
	Thinking that animals are important	Ecocentric	6	6	7	4
		Anthropocentric	2	4	2	6
	Not catching animals	Ecocentric	8	8	9	9
		Anthropocentric	1	2	0	0
Environmental pollution	Taking the responsibility for trash	Ecocentric	4	6	5	5
		Anthropocentric	5	3	4	5

Reusing

Reusing was assessed with respect to reusing old toys. It was found that all of the participants possessed positive attitudes toward reusing (see Figure 3). Specifically, they pointed out that they were most like the children who give toys that they are bored of playing and no longer play with to their friends or save them to play again later (*n*=40). When underlying motives for positive attitudes were inspected, overwhelming majority of the participants were found to have anthropocentric attitudes (*n*=39).

Figure 3.
Participants' Attitudes Toward Reusing



The following excerpts from the interviews demonstrate participants' anthropocentric attitudes;

G2.1: "If we give them to our friend, s/he will play with us."

B2.1: "If we throw [them] away, I will be sorry, I will not find [them] again."

B2.2: "Because my friends are happy if I give them my toys. If I were small, I wouldn't. Since I am big,

there was no need for toys."

In relation to underlying motives for positive attitudes, one of the responses could not be categorized as ecocentric or anthropocentric attitude. Thus, this response was recorded as "not identified".

Tables 5 and 6 present frequency distributions of ecocentric and anthropocentric attitudes according to gender and grade level, respectively. As shown in Table 5, among participants with ecocentric or anthropocentric attitudes, all of the girls and boys held anthropocentric attitudes. Accordingly, it can be concluded that gender did not appear to be related to attitudes toward reusing. On the other hand, as evident in Table 6, among participants with ecocentric or anthropocentric attitudes, all of the students at all grade levels had anthropocentric attitudes. Hence, it can be deduced that there was no link between grade level and attitudes toward reusing.

Table 5.
Frequency Distribution of Participants' Attitudes Toward Reusing According to Gender

		Environmental attitude	Gender		*N*	*p*-value
			Girls	Boys		
Reusing	Reusing old toys[a]	Ecocentric	0	0	39	
		Anthropocentric	22	17		

[a]No statistics were computed since variable related to "reusing" was a constant

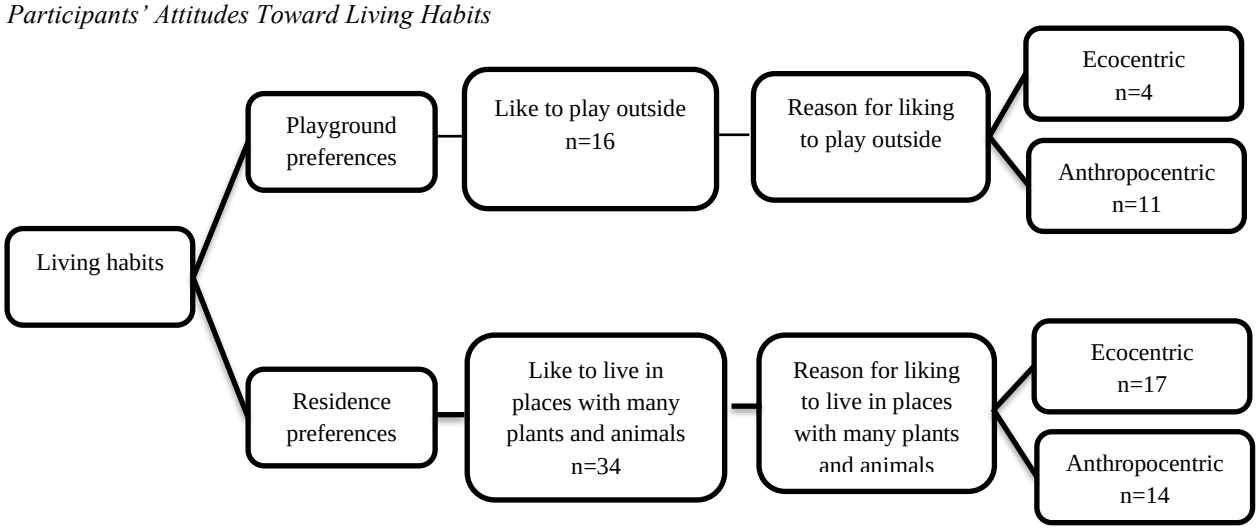
Table 6.
Frequency Distribution of Participants' Attitudes Toward Reusing According to Grade Level

		Environmental attitude	Grades			
			1	2	3	4
Reusing	Reusing old toys	Ecocentric	0	0	0	0
		Anthropocentric	10	9	10	10

Living Habits

Living habits were examined with respect to playground preferences and residence preferences. Results revealed that less than half and most of the participants possessed positive attitudes toward playground preferences and residence preferences, respectively (see Figure 4). More specifically, these participants pointed out that they were most like the children who like to play outside (*n*=16) and like to live in places with many plants and animals (*n*=34).

Figure 4.
Participants' Attitudes Toward Living Habits



When underlying reasons for positive attitudes were inspected, a considerable number of participants were found to have anthropocentric attitudes toward playground preferences (*n*=11) and residence preferences (*n*=14).

The following excerpts from the interviews illustrate participants' anthropocentric attitudes toward playground and residence preferences.

B2.4: "There are many places outside and my friends are outside."

G3.2: "If I play inside, I can break furniture, but if I play outside, I will not damage furniture."

On the other hand, ecocentric attitudes were found to be held by a considerable number of participants toward residence preferences (*n*=17) whereas by a few participants toward playground preferences (*n*=4). The following excerpts are examples for participants' ecocentric attitudes:

B2.2: "[I like to play outside] because there are birds, there are trees, there is the sky, the weather is very beautiful."

G1.4: "[I like to live in places with many plants and animals] I love trees. I also love animals."

With respect to underlying motives for positive attitudes, some participants' responses could not be categorized as ecocentric or anthropocentric attitudes and these responses were reported as "not identified"; attitudes toward playground (*n*=1) and residence preferences (*n*=3).

Tables 7 and 8 reveal frequency distributions of ecocentric and anthropocentric attitudes according to gender and grade level, respectively. As evident in Table 7, among participants with ecocentric or anthropocentric attitudes, more than half of the girls and majority of the boys held anthropocentric attitude toward playground preferences while more than half of the girls and nearly half of the boys had ecocentric attitude toward residence preferences. Accordingly, it can be concluded that the distribution of ecocentric and anthropocentric attitudes seemed to be similar for girls and boys in terms of playground and residence preferences. Supporting this finding, Fisher's exact probability test and Chi-square test for independence (with Yates Continuity Correction) failed to indicate significant associations between gender and attitudes toward playground and residence preferences, respectively (see Table 7).

On the other hand, Table 8 reveals that among participants with ecocentric or anthropocentric attitudes, all of the first graders, half of the second graders, and most of the third and fourth graders were found to hold anthropocentric attitude toward playground preferences while most of the first graders, a sizable minority of the second graders, half of the third graders, and most of the fourth graders were found to have ecocentric attitude toward residence preferences. Consequently, it can be said that the distribution of ecocentric and anthropocentric attitudes for second graders was somewhat different from that for first, third and fourth graders; however, as the grade level increased or decreased, there was no substantial differences in the attitudes of the participants. Therefore, it can be said that there were not clear relationships between grade level and attitudes toward playground and residence preferences.

Table 7.
Frequency Distribution of Participants' Attitudes Toward Living Habits According to Gender

Living habits		Environmental attitude	Gender		*N*	*p*-value
			Girls	Boys		
Playground preferences	Liking to play outside	Ecocentric	3	1	15	.28[a]
		Anthropocentric	4	7		
Residence preferences	Liking to live in places with many plants and animals	Ecocentric	12	5	31	.42[b]
		Anthropocentric	7	7		

[a]The two-sided *p*-value from Fisher's Exact test was used
[b]The two-sided *p*-value from Yates' Correction for Continuity was used

Table 8.
Frequency Distribution of Participants' Attitudes Toward Living Habits According to Grade Level

Living habits		Environmental attitude	Grades			
			1	2	3	4
Playground preferences	Liking to play outside	Ecocentric	0	2	1	1
		Anthropocentric	3	2	3	3
Residence preferences	Liking to live in places with many plants and animals	Ecocentric	4	2	4	7
		Anthropocentric	2	5	4	3

DISCUSSION

The current study assessed primary school students' attitudes toward environmental issues based on the perspectives of ecocentrism and anthropocentrism. As well, students' ecocentric and anthropocentric attitudes were inspected in relation to gender and grade level.

The analysis of participants' attitudes toward consumption patterns resulted in that a large majority of the participants possessed positive attitudes toward water, paper, and electricity consumption. However, when underlying motives of positive attitudes were inspected, it was found that most of the participants who held positive attitudes reflected anthropocentric attitudes. That is to say, participants supported using water, paper, and electricity economically but the reason for this support was benefits using water, paper, and electricity economically could provide them. This finding is not surprising considering the objective of "Investigate the contributions of economical use of resources at home to the family budget" (Ministry of National Education [MoNE], 2018b, p.19) addressed in second grade in the national life science curriculum and the objective of "Discuss the importance of economical use of lighting tools in terms of family and national economy" (MoNE, 2018a, p.23) taken part in fourth grade in the national science curriculum. Supporting this view, in their research with fourth- and fifth-grade students, Yaşaroğlu and Akdağ (2013) concluded that participants were more sensitive to issues directly related to the budgets of their families (e.g., saving water and electricity). On the other hand, similar findings were found in studies which employed the data collection instrument used in this study and were carried out in the Turkish context. More specifically, in the study done by Kahriman-Ozturk et al. (2012) with preschool children, it was stated that most of the participants had favorable attitudes toward water, paper, and electricity consumption and their attitudes could be categorized as ecocentric based on the pictures they chose; however, when the motivation for positive-ecocentric attitudes was examined, it was found that many of the participants had anthropocentric attitudes. The authors of the study attributed participants' anthropocentric attitudes to that participants were in the preoperational stage according to Piaget's stage theory and the main feature of this stage is "egocentrism". In another study, Ertürk Kara et al. (2015) found that 60-72 month old children had mainly anthropocentric attitudes toward water and electricity consumption whereas ecocentric attitudes toward paper consumption.

With regard to environmental protection, this study also indicated that a large majority or all of the participants possessed positive attitudes toward plants, bugs, and other animals and environmental pollution. Investigation of underlying reasons for positive attitudes resulted in that most of the participants with positive attitudes held ecocentric attitudes. In other words, participants valued plants, animals, and the environment and supported protecting them for the sake of plants, animals, and the environment; accordingly, they believed that plants, animals, and the environment were worthy of being cared and protected for their intrinsic value rather than due to advantages that caring about and protecting could provide human beings. Similar to Onur et al.'s (2012) inference, it can be deduced that participants of this study live in the rural area intertwined with animals and plants and this situation may lead them to have emotional connections with animals, plants, and the environment and to think that animals, plants, and the environment have the right to be preserved due to their intrinsic value. Providing a support to this deduction, in her investigation with 13–14-year-old students, Pointon (2014) reported that for some participants, mostly females from a rural district, an emotional bond with animals was the reason for viewing nature as significant. Besides, in a study interested in experiences of sixth-grade

students who took part in the school gardening program, Amiri et al. (2021) concluded that caring about nature and feeling of closeness with nature were among participants' experiences during the program. On the other hand, there are investigations that showed similarities with the results of the existing research. For example, in the research of Ertürk Kara et al. (2015), it was observed that, with the exception of one environmental issue, participating preschool children had largely ecocentric attitudes toward plants, insects, and other animals and environmental pollution. Besides, Kahriman-Ozturk et al. (2012) detected that toward plants, insects, and other animals, many participants had ecocentric attitudes both in their initial choices and in their explanations regarding the reasons for their choices. The authors associated the reason for this finding with that preschool children more easily relate animals and plants with the environment than other dimensions (e.g., consumption patterns) which can be described as abstract and with past and current experiences that children have had. However, with regard to environmental pollution, Kahriman-Ozturk et al. (2012) identified that reasons for most of the participants who threw the garbage in the garbage can they saw around reflected an anthropocentric attitude.

Besides, with respect to reusing, all of the participants held positive attitudes. Namely, they pointed out that they were most like the children who give toys that they are bored of playing and no longer play with to their friends or save them to play again later. When underlying reasons for positive attitudes were inspected, it was observed that almost all of the participants had anthropocentric attitudes. That is to say, participants supported reusing but the motivation for this support was advantages reusing could provide them. This finding can be explained that participants have few friends in the village and therefore they may want to improve the relationship with their friends and that few toys are bought for them and they keep their toys for their younger siblings to play with. Similar to the present finding, Kahriman-Ozturk et al. (2012) revealed that many of the participating preschool children expressed anthropocentric attitudes toward reusing. The researchers attributed this finding to that participants were in the preoperational period and they could not think in terms of environment and to deficiency of issues related to the environment in the curriculum or syllabus. Also, Ertürk Kara et al. (2015) detected that preschool children have mainly anthropocentric attitudes toward reusing.

Furthermore, with regard to playground preferences, nearly half of the participants expressed positive attitudes. Examination of underlying motives for positive attitudes resulted in that most of the participants with positive attitudes held anthropocentric attitudes. In other words, participants stated that they liked to play outside but the reason for this preference was advantages playing outside could provide them. In their investigation, Kahriman-Ozturk et al. (2012) showed that most of the participants preferred outside for play but many participants' reasons reflected anthropocentric attitudes. In the study of Ertürk Kara et al. (2015), it was found that some of preschool students with positive attitudes expressed anthropocentric attitudes toward playground preferences. On the other hand, with respect to residence preferences, most of the participants in the current study possessed positive attitudes. When underlying reasons for positive attitudes were inspected, it was detected that half of the participants who held positive attitudes reflected ecocentric attitudes. That is to say, participants specified that they liked to live in places with many plants and animals and the reason for this preference was feelings associated with plants and animals and living in places with many plants and animals. This finding is not unexpected because as mentioned before participating students live in the rural area and their families have various animals in their garden and therefore participants may establish emotional connections with plants and animals which, in turn, may result in positive feelings associated with living in places with many plants and animals (see also Onur et al., 2012). Similar to the present finding, Ertürk Kara et al. (2015) revealed that preschool children held in general ecocentric attitudes toward residence preferences. However, Kahriman-Ozturk et al. (2012) demonstrated that most of the preschool children had anthropocentric attitudes toward residence preferences. It is clear that more research studies are required to interpret the present findings and to make generalizations on the related issue.

Attitude Toward Environmental Issues in Relation to Gender

The present findings demonstrated that gender was not linked to ecocentric and anthropocentric attitudes toward environmental issues except for the issue from the point of "thinking that animals are important". With respect to "thinking that animals are important", among participants with ecocentric or anthropocentric attitudes, majority of the girls were found to hold ecocentric attitudes whereas most of the boys were found to possess anthropocentric attitudes. This may be due to that girls have higher workload in the care of animals and spend more time with animals than boys and these may lead girls to view animals as part of the family and value them for the sake of animals. Providing support for this idea, in her investigation with 13–14-year-old students, Pointon (2014) concluded that those who were most probably to form an emotional bond and a caring relation with nature were largely female participants from a rural location and this was in general associated with their bonding with animals. However, it is interesting that although gender was related to attitudes toward "thinking that animals are important", it was not associated with attitudes toward the environmental issues including issues on animals such as "not bringing plants and insects home" and "not catching animals". The mixed results found in the current study regarding the connection between gender and ecocentric and anthropocentric attitudes can also be seen in the literature. For example, in their study, Kahriman-Ozturk et al. (2012) found that preschool children's environmental attitude orientation (i.e., ecocentric and anthropocentric) did not differ with respect to gender. Conversely, Onur et al.'s (2012) study with sixth-, seventh-, and eighth-grade participants demonstrated that girls possessed significantly higher levels of ecocentric attitudes whereas boys expressed significantly higher levels of anthropocentric attitudes. Besides, Domingues and Gonçalves (2020) revealed that women had significantly higher preservation attitude scores and lower utilisation attitude scores as compared to men. Certainly, it is obvious that more research is necessary to clarify the associations between gender and ecocentric and anthropocentric attitudes toward environmental issues.

Attitudes Toward Environmental Issues in Relation to Grade Level

The frequency analyses revealed that there were not clear connections between primary school students' ecocentric and anthropocentric attitudes and their grade level. That is, participants' ecocentric and anthropocentric attitudes did not differentiate obviously as the grade level increased or decreased. However, this finding should be evaluated with caution because interpretations were made based on only frequency distributions of ecocentric and anthropocentric attitudes with respect to grade level. In the literature, there exist studies that inspected environmental attitudes in relation to grade level but these studies focused on general environmental attitudes rather than underlying motives of the attitudes and resulted in mixed findings. For instance, Yilmaz et al. (2004) demonstrated that fourth-, seventh-, and eighth-grade students possessed more favorable attitudes toward environmental issues than fifth- and sixth-grade students. Besides, working with sixth-, eighth-, and 10th-grade students, Alp et al. (2006) concluded that students' favorable environmental attitudes reduced as the grade level increased. In their research with grades 1 to 3 students in senior middle schools, Choe et al. (2020) revealed that grade 3 participants held significantly more positive environmental attitudes than grades 1 and 2 participants. As well, although grade 2 participants had more positive attitudes than grade 1 participants, there was not a significant difference between attitudes of grade 1 and grade 2 participants. On the other hand, working with science teacher candidates, Tuncay Yüksel et al. (2015) examined the grade level impact on patterns of environmental moral reasoning (ecocentric and anthropocentric moral reasoning are comparable to ecocentric and anthropocentric attitudes, respectively, in the current study) with regard to local and global environmental problems. The authors found a significant grade level impact on patterns of environmental moral reasoning with regard to local and global environmental problems. Besides, participants' ecocentric and anthropocentric moral reasoning differed according to their grade level when environmental problems were considered in total. The authors also reported that first year participants stated clearly less moral considerations with respect to almost all of the environmental problems. Consequently, it is obvious that more research is necessary to draw conclusions about the influence of grade level on ecocentric and anthropocentric attitudes toward the environment.

Implications, Limitations, and Suggestions

The present findings demonstrated that although a large majority or all of the participants expressed positive attitudes toward environmental issues except for one environmental issue (i.e., playground preferences), their attitude orientation (ecocentric or anthropocentric) toward environmental issues differed. Considering previous research that indicated a positive connection between ecocentric attitudes and pro-environmental behaviors (e.g., Higde et al., 2017; Sahin et al., 2020), we suggest that primary school students should be educated to hold ecocentric attitudes toward environmental issues, that is, supporting the preservation of nature for the sake of itself rather than for advantages that preserving nature can provide human beings. In order to achieve this end, considering the suggestion made by Kahriman-Ozturk et al. (2012), we recommend that primary school students can be supported to establish a connection with nature and feel like a part of nature through appropriate indoor and outdoor activities and educational settings.

The current research has some limitations that require to be stated. Firstly, this research was limited to 40 primary school students from a village school in the Southeastern Anatolia region of Türkiye. Therefore, this study can be replicated with primary school students from different geographical contexts. Besides, future research can compare students living in rural districts with students living in urban districts with regard to ecocentric and anthropocentric attitudes. In addition, in this study, teachers' views were considered to determine students who were able to express their ideas effectively. However, personal judgment may contain errors (see Fraenkel et al., 2012) so that we suggested that further research can employ a method or an instrument to determine participants. Moreover, in the present research, the connection between primary school students' ecocentric and anthropocentric attitudes toward environmental issues and their grade level could not be evaluated through chi-square test for independence since the abovementioned assumption was violated (see "data collection and analysis" section). Thus, interpretations were made based on frequency distributions of ecocentric and anthropocentric attitudes according to grade level. It is suggested that future research replicate the present study by increasing the sample size so that the aforementioned assumption of chi-square test for independence may be met.

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TÜRKÇE GENİŞLETİLMİŞ ÖZET

Birçok çevre eğitimi programında, ana odak çocukların tutumları üzerindedir ve bireylerin gençken çevreye duyarlı tutumlar geliştirmeleri sonraki davranışları için önemli görülmektedir (Eagles ve Demare, 1999). Bu doğrultuda, öğrencilerin çevresel tutumlarını erken yaşta tespit etmenin, çevreci tutumların geliştirilmesi için gerekli adımların atılmasında bilgilendirici olacağı ve bunun da çevreci davranışların gelişimine katkı sağlayacağına inanıyoruz. Thompson ve Barton (1994) araştırmalarında, çevresel konulara yönelik tutumlara ek olarak, bu tutumların altında yatan nedenleri ve değerleri bulmanın da önemli olduğunu öne sürmüştür. Yazarlara göre, hem tutumların hem de ilgili güdülerin incelenmesi, çevreyle ilgili eylemlerin daha iyi anlaşılmasını ve çevreyi korumanın nasıl teşvik edileceğine dair yeni görüşlerin ortaya çıkmasını sağlayabilir. Thompson ve Barton (1994), çevresel tutumların altında yatan, ekosentrik ve antroposentrik olmak üzere iki güdü veya değer öne sürmüştür. Hem ekosentrik hem de antroposentrik kişiler olumlu çevresel tutumlara sahiptir, ancak güdülerinde farklılık gösterirler; ekosentrik insanlar doğaya doğa için önem verirler, antroposentrikler ise doğayı insana yararları nedeniyle korumaya değer görürler (Thompson ve Barton, 1994). Bunları göz önünde bulundurarak, bu çalışma ekosentrizm ve antroposentrizm bakış açılarına dayalı olarak çevresel tutumları incelemeye odaklanmıştır.

Ekosentrik ve antroposentrik tutumlar üzerine artan sayıda araştırma olmasına rağmen (örn., Sahin vd., 2020; Simsar vd., 2021), ilkokul öğrencileri ile araştırma yapılması gerektiği açıktır. Buna göre bu çalışmada, ilkokul öğrencilerinin çevresel konulara yönelik tutumlarını ekosentrizm ve antroposentrizm bakış açılarına dayalı olarak tespit etmek amaçlanmıştır. Bu çalışmanın, çevresel tutumların altında yatan nedenleri daha iyi anlamak ve konuyla ilgili net sonuçlar çıkarmak için literatüre katkıda bulunacağına inanıyoruz.

İlgili literatürde çevresel tutumlar üzerinde etkisi olduğu düşünülen cinsiyet ve sınıf düzeyi gibi demografik özellikler incelenmiştir. Çevresel konulara yönelik genel tutumlarda cinsiyet farklılığı olup olmadığını araştıran birçok çalışma vardır ancak bu çalışmalar farklı sonuçlar bulmuştur (örn., Choe vd., 2020; Mónus, 2022). Öte yandan, cinsiyetin ekosentrik ve antroposentrik tutumlar üzerindeki etkisini araştırarak çevresel tutumlara ilişkin anlayışı genişleten çalışmalar mevcuttur (örn., Kahriman-Öztürk vd., 2012; Onur vd., 2012), ancak bu çalışmalar az sayıdadır. Çevresel tutumların altında yatan nedenleri (ekosentrik ve antroposentrik) ortaya çıkarmanın önemi ve cinsiyetin ekosentrik ve antroposentrik tutumlar üzerindeki etkisini araştıran araştırmaların yetersizliği göz önüne alındığında, bu çalışma ilkokul öğrencilerinin çevresel konulara yönelik ekosentrik ve antroposentrik tutumlarının cinsiyetlerine göre farklılaşıp farklılaşmadığına odaklanmıştır.

Sınıf düzeyinin çevreye yönelik genel tutumlar üzerindeki etkisi ile ilgili araştırmalar da farklı bulgular ortaya koymuştur (Alp vd., 2006; Yilmaz vd., 2004). Diğer taraftan, Tuncay Yüksel vd. (2015) fen bilimleri öğretmen adaylarının çevresel ahlaki muhakeme örüntülerinin (ekosentrik ve antroposentrik ahlaki muhakeme, bu çalışmada sırasıyla ekosentrik ve antroposentrik tutumlara paraleldir) sınıf düzeylerine göre farklılaşıp farklılaşmadığını araştırmışlardır. Sonuç olarak, sınıf düzeyine göre çevreye yönelik ekosentrik ve antroposentrik tutumları inceleyen araştırmaların yapılması gerektiği açıktır. Bu nedenle, bu çalışma aynı zamanda ilkokul öğrencilerinin çevresel konulara yönelik ekosentrik ve antroposentrik tutumlarının sınıf düzeylerine göre farklılık gösterip göstermediği ile de ilgilenmektedir.

Sonuç olarak, ilkokul öğrencilerinin çevresel tutumları ile bunların altında yatan nedenlerin ve bu nedenlerle ilişkili olduğu düşünülen değişkenlerin araştırılmasının ilkokul dersliklerinde, öğretim programlarında ve ders kitaplarında çevreci davranışları teşvik amacıyla gerekli adımların atılmasına yardımcı olacağına inanıyoruz. Bu nedenle, bu çalışma (i) ilkokul öğrencilerinin çevresel konulara yönelik tutumlarını ekosentrizm ve antroposentrizm bakış açılarına dayalı olarak belirlemeyi ve (ii) öğrencilerin çevresel konulara yönelik tutumlarını (ekosentrik ve antroposentrik), cinsiyet ve sınıf düzeyine ilişkin olarak incelemeyi amaçlamıştır.

Çalışmaya rehberlik eden araştırma soruları aşağıdaki gibidir:

1. İlkokul öğrencilerinin ekosentrizm ve antroposentrizm bakış açılarına dayalı olarak çevresel konulara (tüketim kalıpları, çevreyi koruma, yeniden kullanım ve yaşam alışkanlıkları) yönelik tutumları nelerdir?
2. İlkokul öğrencilerinin çevresel konulara yönelik tutumları (ekosentrik ve antroposentrik) ile cinsiyetleri arasında bir ilişki var mıdır?
3. İlkokul öğrencilerinin çevresel konulara yönelik tutumları (ekosentrik ve antroposentrik) ile sınıf düzeyleri arasında bir ilişki var mıdır?

Bu çalışmanın katılımcıları, Türkiye' nin Güneydoğu Anadolu bölgesinde yer alan bir köy okulunda öğrenim gören 40 ilkokul öğrencisidir. Katılımcıların sınıf düzeyine ve cinsiyetine göre dağılımı şu şekildedir: 10 birinci sınıf (5 kız, 5 erkek), 10 ikinci sınıf (5 kız, 5 erkek), 10 üçüncü sınıf (6 kız, 4 erkek) ve 10 dördüncü sınıf öğrencisi (7 kız, 3 erkek). Katılımcıların yaşları 6 ile 11 arasında değişmektedir.

Bu çalışma nitel bir araştırmadır. Verileri toplamak için görüşmelerden yararlanılmıştır. Görüşmelerde, ilkokul öğrencilerinin çevresel konulara yönelik tutumlarını belirlemek için bir görüşme formu ve formda yer alan sorularla ilgili resimler kullanılmıştır. Görüşme formunda yer alan sorular, Kahriman-Ozturk vd. (2012) tarafından Children's Attitudes Toward the Environment Scale-Preschool Version (Musser ve Diamond, 1999) adlı ölçekten adapte edilmiştir. Ayrıca, Musser ve Diamond'ın (1999) önerisi doğrultusunda, Kahriman-Ozturk vd. (2012) görüşme formunda yer alan sorularla ilgili resimler oluşturmuştur.

Görüşmeler sırasında, katılımcı öğrencilere belirli bir çevresel konuda çocukların iki farklı davranışını temsil eden bir çift resim sunulmuş ve davranışların açıklamaları okunmuştur. Daha sonra katılımcılara iki grup çocuktan en çok hangisine benzedikleri sorulmuştur. Katılımcıların yanıtlarından sonra seçtikleri davranışın nedenini belirtmeleri istenmiştir. Öğrencilerin olumlu çevresel tutumların altında yatan güdülere yönelik cevapları, Thompson ve Barton'ın (1994) sınıflandırmasına göre ekosentrik veya antroposentrik olarak kodlanarak analiz edilmiştir. Ekosentrik ve antroposentrik kategorilerinin frekansları cinsiyet ve sınıf düzeyine göre hesaplanmıştır. Öğrencilerin çevresel konulara yönelik tutumlarını cinsiyet ve sınıf düzeyine göre değerlendirmek için frekans dağılımları ve/veya ki-kare testleri kullanılmıştır.

Araştırmanın bulguları, katılımcıların büyük bir çoğunluğunun veya tamamının bir çevresel konu (oyun alanı tercihleri) dışında, çevresel konulara karşı olumlu tutum ifade etmelerine rağmen, tutum yönelimlerinin (ekosentrik veya antroposentrik) farklılık gösterdiğini ortaya koymuştur. Daha belirgin olarak, olumlu tutuma sahip katılımcıların çoğunun su, kağıt ve elektrik tüketimi, yeniden kullanım ve oyun alanı tercihlerine yönelik antroposentrik tutumları yansıtırken bitkiler, böcekler ve diğer hayvanlara yönelik ekosentrik tutumları yansıttığını göstermiştir. Öte yandan, olumlu tutum sergileyen katılımcıların yarısı ve yarısından biraz fazlası sırasıyla konut tercihleri ve çevre kirliliğine yönelik ekosentrik tutumlar açıklarken, olumlu tutum sergileyen katılımcıların yaklaşık yarısı, bahsedilen konulara karşı antroposentrik tutumlar ifade etmiştir. Ayrıca, "hayvanların önemli olduğunu düşünme" ile ilgili çevresel konu dışında, katılımcıların çevresel konulara yönelik tutumlarının cinsiyetleri ile anlamlı olarak ilişkili olmadığı da tespit edilmiştir. Ek olarak, katılımcıların çevresel tutumları ile sınıf düzeyleri arasında bir ilişki bulunmamıştır.