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Love of Nature and Environmental Awareness in Preschool Education

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Authors' contributions

This work was carried out in collaboration between both authors. Author FA designed the study, wrote the protocol and supervised the work. Authors FA and AA carried out all laboratories work and performed the statistical analysis. Author FA managed the analyses of the study. Author AA wrote the first draft of the manuscript. Author FA managed the literature searches and edited the manuscript. Both authors read and approved the final manuscript.

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ABSTRACT

Nature is the combination of specific areas bearing vital importance for the children's learning, discovery, body and mental health, social confidence, participation and interaction with nature and where they perceive environmental features and to being able to improve their abilities to solve problems based on cause and effect relation. Unfortunately, in especially metropolitan cities, children grow being isolated from nature today.

This study was conducted to determine the awareness level of the preschool students in the City Centre of Malatya preschools based on nature friendly and child participative outdoor activities. A Questionnaire Survey was conducted with the participation of 148 students ages 5 to 6 presently attending in preschools in the City Centre of Malatya for this objective.

It was found out from the total number of students who took and answered the questionnaire survey 56.8% like playing in the parks and green areas, 47.3% are disturbed by environmental

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pollution surrounding them, 48.6% do not like flowers and trees, 56.8% feel sorry when trees are chopped. In addition, majority of the students are bored with being in the classroom and want to go on outdoor activities during delivery of lessons and feel sad when nature gets harm.

Keywords: Nature; education; environmental awareness; participative approach; Malatya.

1. INTRODUCTION

Education is to fulfil the harmony of individuals with their social environment. With this aim, it is one of the requirements that education should support what children bring together with heredity through the activities convenient with their cognitive development. The four principle articles of the UNICEF Convention on the Rights of the Child (survival and development; respect for the views of the child; non-discrimination and best interests of the child) bring an obligatory education for all children by taking into consideration their vital interests under the convenient physical conditions with the child's right in supporting the child development and their participation framework [1-3].

Nature is the combination of specific areas bearing vital importance for the children's learning, discovery, body and mental health, social confidence, participation and interaction with nature and where they perceive environmental features and to being able to their abilities to solve problems based on cause and effect relation. Humans are part of nature, however; they began to break their ties with nature with the developing technology and industrialisation. Losing such a connection with nature human faced off nature. Atasoy and Ertürk [4] stated that it is among the most remarkable facts in the present century that struggle between human and nature has turned out to be that between ecology and economy and as the result of this struggle, humans reached a point where they came close to eradicating their generation [4]. It has turned out to be a duty for humans who have benefited limitlessly from the elements around them where they live (Keleş and Hamamcı, [5]) to protect environment and in a broad base nature [6-8]. The most marked evidence for human' alienation to nature is perhaps the decrease in the number of children playing outside in natural environment. Integration of children who are the owners of future with nature and their acquirement of love of nature and their awareness about their living environment can be one of the keys to the solution of today's problems on love of nature and environmental awareness that preschool

students should be moulded by. By considering children's responsibility in the generations next, several studies have recently been carried out to determine the environmental consciousness among children [9-16].

Right of participation at decision making processes, which is the basic requirement of life in a democratic society, is vitally important for the sustainability of all nations as this right is used effectively and equally by all the sides of a society and in all the fields of life. Students, adults of generation next, should actively use their right of participation at all fields and stages of life especially at schools [17]. Quality education, right of every child, should be a process based mainly on the contribution to the provision of individual characteristics, talents, mental and physical development of children and protection of and respect for their rights [18].

Today, in especially metropolitan cities, children grow being isolated from nature. As the consequence of distorted urbanisation and unplanned structuration which can leave considerably limited secure open space for children (parks, play grounds, urban forest, squares etc.), children majorly spend most of their time indoor with limited relationship with society and nature. In addition, children at the age of preschool education receive their education in the environment designed for other purposes than preschool education with limited physical conditions.

Preschool education is majorly performed in the areas designed for not this purpose with inefficient physical infrastructure. This study aimed to determine the awareness level of the preschool students in the City Centre of Malatya based on nature friendly and child participative outdoor activities.

2. MATERIALS AND METHODS

This study was conducted with the participation of 148 students ages of 5 to 6 presently attending in preschools in the City Centre of Malatya. Formula 1 was used for the determination of sample size.

Equation 1

$$n = \frac{Np(1-p)}{(N-1)\sigma_{px}^2 + p(1-p)}$$

Confidence level was adjusted to 95% in order to obtain meaningful results from the study and the size of sampling was determined to be 152 students with an error rate of $\pm 5\%$, however 148 subjects could be reached due to unfavourable conditions [19-21].

A questionnaire survey form composed of 3 parts was prepared to determine the students' views about nature. Demographic information of the participant students, their views about and relationships with nature were included in the first, second and third parts of the questionnaire, respectively. Three questions were included in the form about demographic information, including age, gender and living place of the subjects. In the second part, two questions were chosen in the form to determine the views of students related to nature. These questions were about their views about nature and environment, what they expect from school gardens, what types of places they want to play. In the third part, students' relationships with nature were questioned through 15 questions including the topics such as the preference of students in spending time in nature, contribution of school to students' awareness about nature and environment. The questionnaire involved totally 20 questions.

Required permission was obtained from local administration of education before questionnaire forms were delivered to the preschools. Students were informed about the aim and scope of the questionnaire study before they completed the forms in the classrooms. After that they were asked to complete the forms in 30 minutes.

MS Office and SPSS Inc. (2003) 17.0 software packages were used for data processing and statistical analyses. Analyses were conducted using contingency tables enabling to compare variables. χ^2 (Chi square) test was used to determine if the categories in the contingency tables were independent from each other. Evaluations were performed considering the error to be 0.05 and 0.01.

χ^2 test was used to investigate the relationships between demographic characteristics and basic variables since they are classifying and ranking variables. However, when the number of cells

where expected value was lower than 5 for some variables was larger than 20% of total cell number, χ^2 test was not preferred. In such situations, cell values increased above 5 using "Weight Cases" technique. Confidence of the analysis was guaranteed fully through such a way [21-24].

χ^2 test was also preferred to investigate if H_0 hypothesis suggesting that there was no relationship between nonnumeric variables would be rejected; to decide if frequency distribution obtained from the observation of a sample was convenient with a generalised distribution such as binominal, Poisson and normal etc. and if two or more samples were chosen from the same main mass. It must be known how to calculate χ^2 and degree of freedom before the application of Pearson test, put forward and named after in 1900s by Karl Pearson.

The probability that the value of a variable is larger than its table value in its certain SD can be determined. The formula below can be used to determine if the distribution in the samples where individuals are classified in various groups is convenient with a hypothesis.

Equation 2

$$\sum_{x=1}^k = \frac{(\text{Observed} - \text{Expected})^2}{\text{Expected}}$$

In some problems with results represented by more than two choices, χ^2 (Chi square) is preferred rather than Binominal test.

The photos which are selected by the researcher, occurred negative affects of oriented children have been observed from time to time children of orientation or direction of negative affect were observed from time to time. This is defined as a limitation of the study.

3. RESULTS

Demographic characteristics of the participant students obtained from the first part of the questionnaire are given in Table 1.

Fig. 1 showed the answers of the preschool students for the 1st and 2nd parts of the questionnaire. It can be seen that 53.4% of the students are at the age of 6, 50% are male, 52.7% want to live in cities, 54.1% think that they should not harm flowers in order to keep nature clean. They stated that they acquired their views

about nature and environment from their families, schools and friends in the rates of 25, 48 and 27%, respectively. When the places they want to live are taken into consideration, their answers are equal according to both city and town/village. They reported that they like spending time in playgrounds or parks, at home, at the cinema and theatre and shopping mall at 11.5%, 33.1%, 35.8% and 19.6% respectively. Participants were found to like spending time on computer with 54.1%.

Table 2-6 gives the results obtained from the part related to the opinions about nature. It was found from the results that 53.4% of participants had planted a tree before, 50% have a pet, 59.5% perform outdoor activities at school, 53.4% could meet their needs at school garden, 54.1% want to take part in environmental cleaning activities, 56.8% like playing in parks and green areas, 47.3% are disturbed by environmental pollution surrounding them, 48.6% do not like flowers and trees, 56.8% feel sorry when trees are chopped. Majority of the students are bored with being in the classroom and want to be outdoor activities during lessons and feel sad when nature gets harm (Fig. 2).

There is a statistically significant relationship between age and tree plantation rate, students at the age of 6 planted less trees.

There is a statistically significant relationship between gender and the desire to make outdoor activities. Male students want more outdoor activities.

There is a statistically significant relationship between living place and the feeling about harms to nature. Students living in cities feel more sorry for harms to nature.

A statistically significant relationship was found to be between place to live and being bored in the classroom. Students who want to live in city are bored in the classroom more than those who want to live in village.

Contribution of school to the formation of love of nature is as important as that of family. However, in Turkey, school gardens are generally the sites which lack of plant material and mainly designed for ceremonial area paved with impervious surface materials.

Table 1. Demographic characteristics of preschool students

Demographic and preference characteristics of participants	Name of characteristics	Number (n)	Percentage (%)
Age	5	69	46.6
	6	79	53.4
Gender	Female	64	43.2
	Male	84	56.8
Living place	Town/ village	70	47.3
	City	78	52.7
What should we do to keep clean our nature and environment?	We should throw our rubbish in dustbins	68	45.9
	We should not harm flowers	80	54.1
Where did you get your opinions about nature and environment?	Family	37	25.0
	School	71	48.0
	Friends	40	27.0
Where do you want to live?	City	74	50.0
	Village	74	50.0
Where do you want to spend your spare time the first?	Parks and play grounds	17	11.5
	My home	49	33.1
	Cinema/theatre	53	35.8
	Shopping malls	29	19.6
What do you like doing the most?	Watching TV	27	18.2
	Spending time on computer	80	54.1
	Playing outdoor	41	27.7

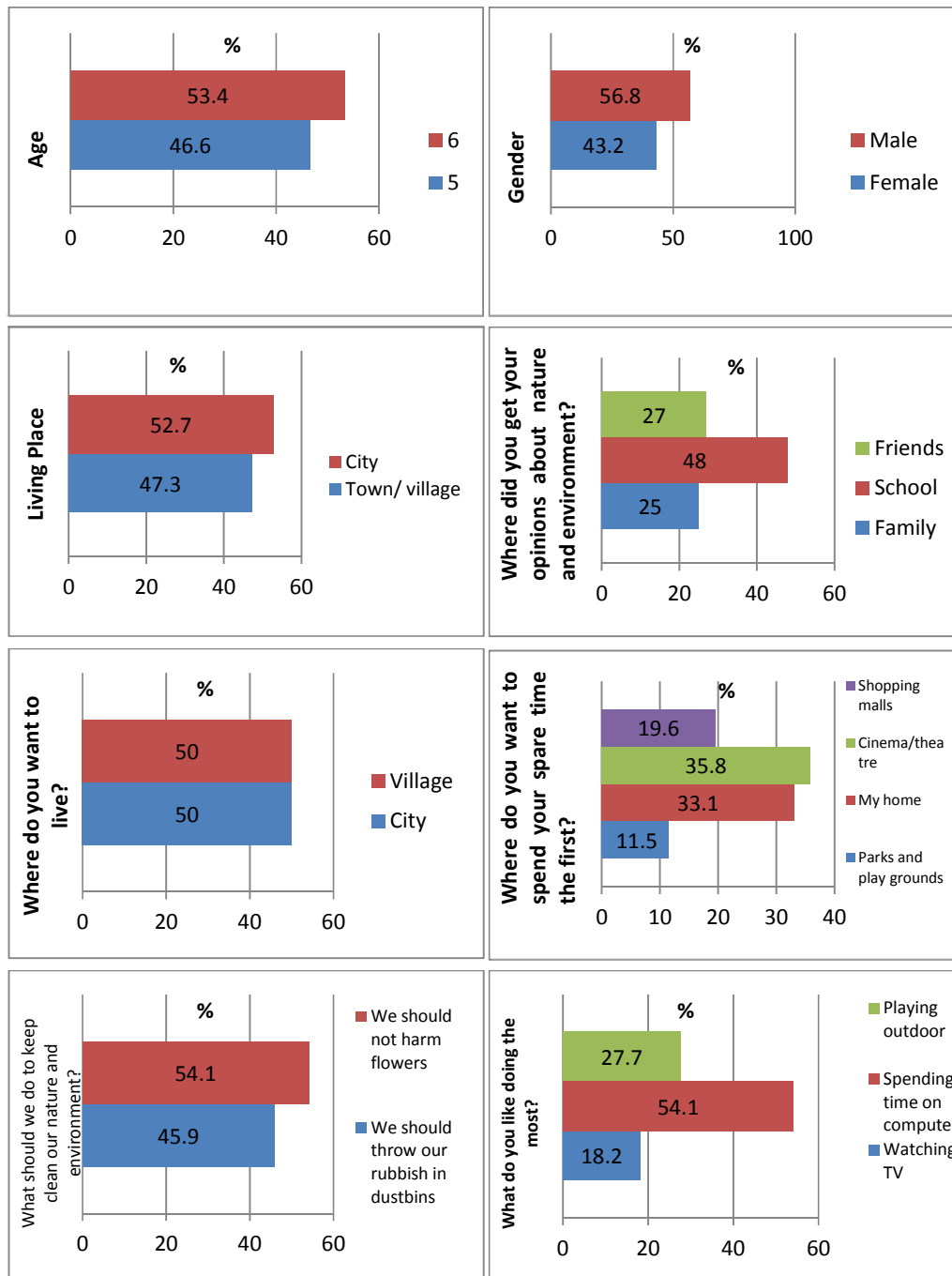


Fig. 1. Demographic characteristics of the preschool students

Table 2. Responses of the preschool students on views and relationship to with nature

Survey questions		Number (n)	Percentage (%)
Have you ever planted a tree?	Yes	79	53.4
	No	69	46.6
Do you have a pet?	Yes	74	50.0
	No	74	50.0

Survey questions		Number (n)	Percentage (%)
Do you perform an outdoor activity at school?	Yes	88	59.5
	No	60	40.5
Does your school garden meet your needs?	Yes	79	53.4
	No	69	46.6
I want to take part in environmental cleaning activities at school.	Yes	80	54.1
	No	68	45.9
I like playing in parks and green areas very much.	Yes	84	56.8
	No	64	43.2
Polluted surrounding environment disturbs me.	Yes	70	47.3
	No	78	52.7
I do not like flowers and trees.	Yes	72	48.6
	No	76	51.4
I feel sad when trees are chopped.	Yes	84	56.8
	No	64	43.2
I am bored with being in the classroom.	Yes	82	55.4
	No	66	44.6
I want to make outdoor activities during classes.	Yes	69	46.6
	No	79	53.4
I feel sorry when nature faces harm.	Yes	80	54.1
	No	68	45.9

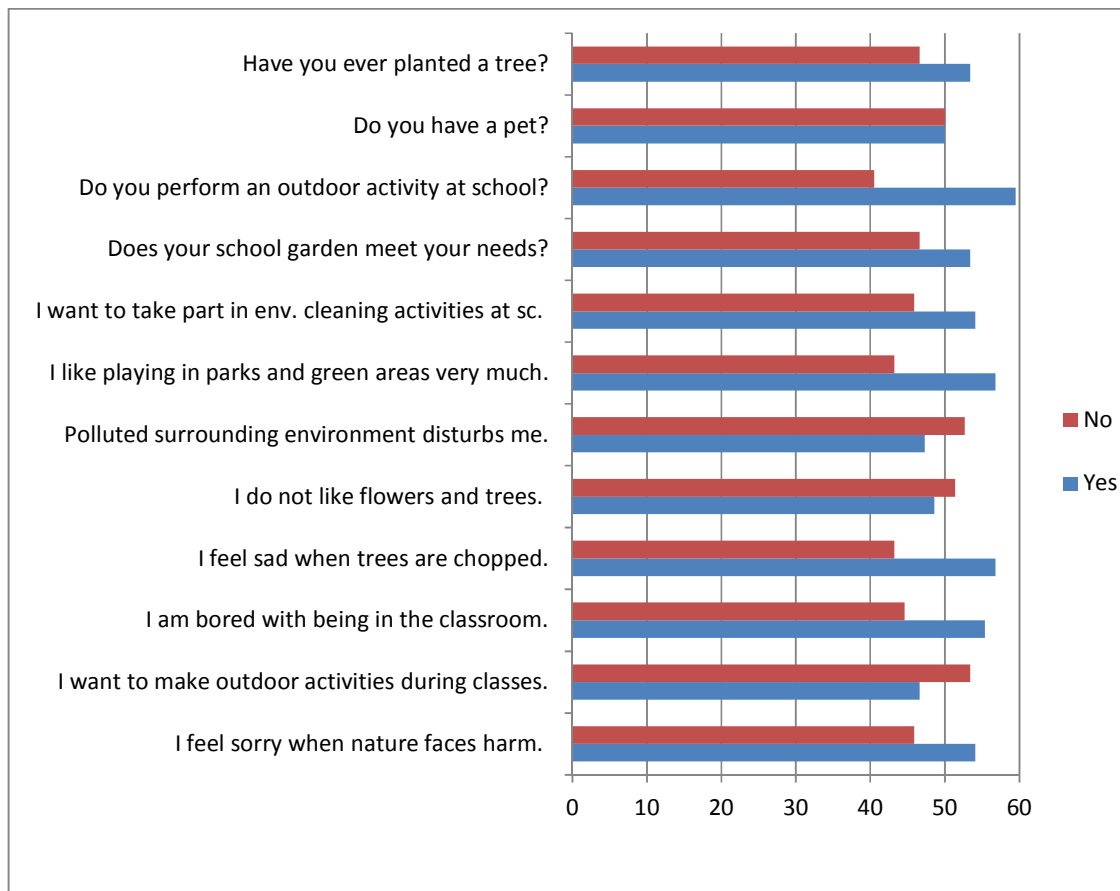


Fig. 2. Responses of the preschool students on views and relationship to with nature

Table 3. Preschool students relationship between age and tree plantation

			Have you ever planted a tree?		Total	p
			Yes	No		
Age	5	Number (n)	40	29	69	0.001**
		%	58.0	42.0	100.0	
	6	Number (n)	39	40	79	
		%	49.4	50.6	100.0	
Total	Number (n)		79	69	148	
	Age		53.4	46.6	100.0	

**p<0.01

Table 4. Preschool students relationship between gender and outdoor classroom activities

			I want to make outdoor activities during classes		Total	p
			Yes	No		
Gender	Female	Number (n)	26	38	64	0.046*
		%	40.6	59.4	100.0	
	Male	Number (n)	43	41	84	
		%	51.2	48.8	100.0	
Total	Number (n)		69	79	148	
	%		46.6%	53.4	100.0	

*p<0.05

Table 5. Preschool students relationship between living place and feeling about harms to nature

			I feel sorry when nature faces harm		Total	p
			Yes	No		
Living area	City	Number (n)	35	35	70	0.001**
		%	50.0	50.0	100.0	
	Town/village	Number (n)	33	45	78	
		%	42.3	57.7	100.0	
Total	Number (n)		68	80	148	
	%		45.9%	54.1	100.0%	

**p<0.01

Table 6. Preschool students relationship between the place to live and being bored in the classroom

			I am bored with being in the classroom		Total	p
			Yes	No		
Place to live	City	Number (n)	39	35	74	0.001
		%	52.7	47.3	100.0	
	Village	Number (n)	27	47	74	
		%	36.5	63.5	100.0	
Total	Number (n)		66	82	148	
	%		44.6	55.4	100.0	

**p<0.01

4. CONCLUSION

Nature is one of the words mentioned together with environment. Nature is composed of anything forming out of human and without anthropogenic intervention, e.g. soil, mines, water, air, plants and animals [5].

Nature consciousness of human includes the consideration of nature in empathy different from other living things, approaching to nature in love and respect [4, 25-28].

Integrity problem is faced in the land use (in and outdoor) in preschool education programs. Integrity in preschool education is considerably important for approaching to students, quality of teachers and suitability of education materials. In- and outdoor areas of preschools should be taken into consideration as a whole and designed to be an educational tool according to characteristics of the education. Respect for the views of the child, which is one of the main child rights mentioned in UNICEF Convention on the Rights of the Child also signed by Turkey, should be considered in the works related to children. A model should be designed where children are accepted to be basic determinant (designer) and practiser in preschool education. Outdoor design and its application to be performed by local authorities should be conducted with the participation of children in decision making stages.

It is expected from preschool education that a child friendly (i.e. existence of child is accepted), democratic and participative approach should be adopted where basic needs of children are known and satisfied with suitable environment and equal education opportunities are provided for students for them to develop in the direction of their abilities. It is also foreseen that education process should be made more attractive for both students and their families by enriching and expanding the possibilities of landscape architecture for preschool education in a nature friendly approach based on child participation, transferring best practice examples from EU applications to educational institutions in the country. It seems to be a requirement in the implementation of preschool education programs that schools should make in- and outdoor design for the development and individual needs of children and integrate these areas as a whole. A child participative understanding should be settled to increase the quality in preschool education, main standards, legal regulations and

alternative applications should be developed in the formation of outdoor design and practice by adopting an environment friendly approach. Effective child participation should be guaranteed in the decision making process of site use in preschool education institutions by developing, universal values i.e. democratic culture, peace, hope, love, respect to nature.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Francis M, Lorenzo R. Seven realms of children's participation. *Journal of Environmental Psychology*. 2002;22(2): 157-169.
2. Melzer ML. Schule in Bewegung, drinnen und draußen: Schulhofumgestaltung gehört dazu; 2001. Available:<http://www.spielandschaft-bremen.de>
3. Van der Hoek M. Landscape planning from a child's perspective. A case study in the Vombsänkan in southernmost Sweden. Master's thesis. Lund University, Science Master's Programme in Environmental Studies and Sustainability, SWE. 2009;12-63.
4. Atasoy E, Ertürk H. A field study about environmental knowledge and attitudes of elementary school students. *Erzincan Eğitim Fakültesi Dergisi*. 2008;10(1):105–122.
5. Çepel N. Doğa, Çevre ve Ekoloji ve İnsanlığın Ekolojik Sorunları. Altın Kitaplar Basımevi, İstanbul. 1992;195.
6. Muthaa G. Factors affecting implementation of early childhood development education in public centres in Imenti South District, Kenya. *British Journal of Education, Society & Behavioural Science*. 2015;7(4):267-272.
7. Sarah C, Brownlow S. Determinants of proenvironmental attitudes in college students. *British Journal of Education, Society & Behavioural Science*. 2014;5(1): 38-49.
8. Meinhold JL, Malkus AJ. Adolescent environmental behaviours can knowledge, attitudes, and self-efficacy make a difference? *Environment and Behaviour*. 2005;37(4):511-532.

9. Jeronen E, Kaikkonen M. Thoughts of children and adults about the environment and environmental education. *International Research in Geographical and Environmental Education*. 2002;11(4):341-353.
10. Korhonen K, Lappalainen A. Examining the environmental awareness of children and adolescents in the Ranomafana region, Madagascar. *Environmental Education Research*. 2004;10(2):195-216.
11. dePauw JB, Van Petegem P. A cross-national perspective on youth environmental attitudes. *Environmentalist*. 2010;30:133-144.
12. Chapman D, Sharma K. Environmental attitudes and behaviour of primary and secondary students in Asian cities: An overview strategy for implementing an eco-schools programme. *The Environmentalist*. 2001;21(4):265–272.
13. Tuncer G, Ertepinar H, Tekkaya C, Sungur S. Environmental attitudes of young people in Turkey: Effects of school type and gender. *Environ. Educ. Res*. 2005; 11(2):215-233.
14. Shivakumara K, Sangeetha R, Diksha J, Nagaraj O. Effect of gender on environmental awareness of post-graduate students. *British Journal of Education, Society & Behavioural Science*. 2015;8(1): 25-33.
15. Robinson SC, Brownlow S. Determinants of proenvironmental attitudes in college students. *British Journal of Education, Society & Behavioural Science*. 2014;5(1):38-49.
16. Özyıldırım T. The opinions of primary school teachers related to the usage of the participation rights of primary school students. Master Thesis, Ankara University, Department of Educational Sciences, Ankara. TR. 2007;50-54.
17. Aslan F. Determination of children's expectations in pre-school establishments in outdoor design. Master Thesis, Ankara University, Institute of Natural and Applied Sciences, Department of Landscape Architecture, Ankara. TR. 2010;1-2.
18. Balcı A. Sosyal Bilimlerde Araştırma. Pegem Yayıncılık, Ankara. 2005;408. (in Turkish).
19. Arıkan R. Araştırma teknikleri ve rapor hazırlama. Asil Yayın, Ankara. 2004;387. (in Turkish).
20. Özdamar K. Modern Bilimsel Araştırma Yöntemleri. Eskişehir: Kaan Kitabevi. 2003;270. (in Turkish).
21. Büyüköztürk Ş. Sosyal bilimler için veri analizi el kitabı: İstatistik, araştırma deseni, SPSS uygulamaları ve yorum (Sekizinci baskı). Pegem yayınları, Ankara; 2007. (in Turkish).
22. Yılmaz T, Gökçe D, Atik A, Yılmaz B. Determination of handicapped people's preference for the use of Urban Parks in Antalya. *Journal of Food, Agriculture & Environment (JFAE)*. 2013;1(3&4):2295-2301.
23. Yılmaz T, Yılmaz B, Atik A, Aslan F. Evaluation of the relationship between the characteristics of park visitors, their expectations from parks and use preference: The sample of Malatya city, Turkey. *Journal of Food, Agriculture & Environment (JFAE)*. 2014;2(2):913-921.
24. Keleş R, Hamamcı C. Çevrebilim, İmge Kitabevi, 1. Baskı, Ankara; 1993.
25. Maloney MP, Ward MP, Braucht GN. Psychology in action – A revised scale for the measurement of ecological attitudes and knowledge. *American Psychologist*. 1975;787-790.
26. Ramsey CE, Rickson RE. Environmental knowledge and attitudes. *Journal Environmental Education*. 1976;8:10-18.
27. Ncube AC, Muranda AC, Tshabalala T, Mapolisa T. The nature and prevalence of bullying in primary schools of Nkayi South Circuit in Zimbabwe. *British Journal of Education, Society & Behavioural Science*. 2015;8(1):1-8.
28. Sara A, Nurit C. Pro-environmental behaviour and its antecedents as a case of social and temporal dilemmas. *British Journal of Education, Society & Behavioural Science*. 2013;4(4):508-526.

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