

A Research On Awareness of Zoos: Landscape Architecture Students

İpek Altuğ Turan*, Emine Malkoç True

Ege University, Faculty of Agriculture, Landscape Architecture Department, Izmir, Turkey

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Abstract: Nowadays, many environmental organisations are trying to attract attention to the awareness against questioning the goals of zoos. Despite educating, the public about conservation there has been much discussion on how efficient zoos are at doing this. In this context, the main aim of this study is to measure the landscape architecture students' knowledge about conservation and zoos; to query the main role of the zoos and to increase the awareness of the landscape architecture students on zoos who have many lectures on environmental issues during their educational period. The main material of the research is the students who are educating at Ege University Agriculture Faculty Landscape Architecture Department. The University is located in Bornova, which is a metropolitan district of Izmir. The study was considered in four main sections, namely, conceptual framework, data collection, findings, discussion and conclusion. After an initial search of the literature, a questionnaire form was prepared. To compare the awareness level, the questionnaire was conducted to 1st, 2nd, 3rd and 4th year students of Landscape Architecture of Ege University Agriculture Faculty where the period of undergraduate study is four years. "Simple Random Sampling Method" was used in the determination of the number of the students on which questionnaire would be conducted, 95 % confidence level and 0.10 sampling error was taken as a basis in the calculations. In the calculation, according to the total number of students which is 391 that the sum of 21 first grade, 18 the second grade, 20 third grade and 26 fourth grade students were used as "Population Size (N)" and the number of students on which the questionnaire would be conducted was determined as 85 at the end. It was aimed at learning each level of the students' opinions and awareness of the subject using these questions. The literature studies on the subject and the information found from the questionnaires were analysed and it was evaluated whether the education of four years on environmental issues has changed the opinions/awareness and the approach of the students to zoos. The approaches of the social and landscape architecture students towards zoos were examined together and the necessity of zoos were questioned. Finally, recommendations to increase the awareness towards zoos were made.

Keywords: *Zoo, Landscape architecture, University students' awareness*

Introduction

The word 'zoo' originated as an abbreviation of the word 'zoological' (Nekolný & Fialová, 2018). According to Blunt (1976), this abbreviation of the term zoological garden was first used in Britain as a popular nickname. It first appeared in print to describe the Clifton Zoo, but was popularized in the famous contemporary music hall song, "Walking in the Zoo on Sunday" (Kisling, 2001).

A zoo is a place where animals live in captivity and are put on display for people to view. The word "zoo" is the short form of "zoological park (URL4). Zoos are public parks which display animals, primarily for the purposes of recreation or education. The first modern zoos were founded in Vienna, Madrid and Paris in the eighteenth century and in London and Berlin in the nineteenth. The first American zoos were established in Philadelphia and Cincinnati in the 1870s (Jamieson, 2017).

Since 1935, the goal of the World Association of Zoos and Aquariums (WAZA) has been to guide, encourage and support the zoos, aquariums and like-minded organisations of the world in animal care and welfare, environmental education and global conservation (URL9).

Many of the larger zoos in the world are close to 100 years old now, and some date back to the 19th century. Zoos were often built in public parks, open spaces and lots which had already been vacant, and city governments approved funding for constructing as well as maintaining zoos because zoos bring tourist revenue to the cities. City governments also recognized that zoos would contribute to educating people of all ages about wildlife, biodiversity and natural habitats in other parts of the world. Zoos are

* Corresponding: E-Mail: ipekaltug@hotmail.com; Tel: +902323112975; Fax: +902323881864

now playing as much of a role in preserving rare and endangered species of animals, and hence, preserving biodiversity and natural ecosystems throughout the world for the future as gene banks throughout the world are (URL8) (Figure 1).



Figure 1. Animal species of wild life

The following is a simple list of the different types of zoos based on exhibit method or function (URL5):

- Ancient Zoos
- Caged Zoos
- Cageless/Barless Zoos
- Children Zoos / Petting Zoos
- Farm in the Zoo
- Travelling Zoo
- Aquatic Zoos
- Wildlife Reserves / Safari Parks
- Wild Animal Parks
- Conservation Parks
- Frozen Zoos

Consequently, zoos are, today, identified as sites of conservation, research, education, and entertainment (Carr & Cohen, 2011). Today there are over 1,000 organized zoos and as many as 10,000 animal collections in the world. In short, zoos are using their unique position to heighten public and political awareness of the interdependence of all life elements on this planet (URL2). There are many arguments against zoos in today's world that bring about a moral dilemma for any free thinking individual (URL7) also there are many articles and some books that make a convincing case for their closure (URL3).

Despite their professed concern for animals, zoos can more accurately be described as "collections" of interesting animals than as actual havens or homes. Even under the best of circumstances at the best of zoos, captivity cannot begin to replicate wild animals' habitats. Animals are often prevented from doing most of the things that are natural and important to them, like running, roaming, flying, climbing, foraging, choosing a partner, and being with others of their own kind. Zoos teach people that it is acceptable to interfere with animals and keep them locked up in captivity, where they are bored, cramped, lonely, deprived of all control over their lives, and far from their natural homes (URL6).

The aims of the study are listed below;

- To learn about the students' awareness of zoos,
- To find out whether the landscape architecture education has effected the opinions / awareness and approach of the students concerning zoos,
- To investigate whether the goals set up are being achieved or not, as parallel to the recent arguments all around the world.

Materials and Methods

The main material of the study is the students who are studying in Ege University Agriculture Faculty Landscape Architecture Department. Ege University, the fourth founded university of Turkey, is established in accordance with the law No. 6595 issued on May 20th, 1955 and began its educational life on November 5th, 1955. By the year 2019, Ege University includes 17 Faculties, 9 Institutes, 4 Graduate Schools, 1 State Conservatory of Turkish Music, 10 Vocational Schools, 6 Rectorate Units, 37 Application and Research Centres. By the academic year 2017 - 2018, Ege University hosts a total number of 65.587 students, 55.875 of which are undergraduate and associate degree students, and 9.712 are postgraduate students. The university has 3156 academic staff and 6347 administrative staff (URL1). Various publications, internet pages and questionnaire forms are used as research material during the study.

The research method is composed of 4 main phases called as conceptual framework, data collecting, finding and analysis, evaluation and synthesis (Figure 2). After the conceptual framework in which the definition of zoos, the history and current situation in the world of zoos, questionnaire form had been formed. In the calculation of sample size of the questionnaire, the following method of Simple Random Sampling was used (Newbold, 1995) and a 95 % confidence level and 0.10 % sampling error was taken as the basis. Assistance was received from the Instructors of the Department of Agricultural Economy in the Faculty of Agriculture at Ege University in the calculation of sample size of the questionnaire.

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

The total registered student number of for 2018 - 2019 education period in Ege University Agriculture Faculty Landscape Architecture Department for 2018 - 2019 educational period (391 that the sum of 105 first grade, 92 the second grade, 62 third grade and 132 fourth grade students) was used as the "Population Size (N)" in the calculation, and, at the end of the calculation, the sample size of questionnaire was determined as 85 (21 first grade, 18 the second grade, 20 third grade and 26 fourth grade).

30 closed - ended questions (grading - scale questions, compulsory-elective questions and demographic questions) under 3 headings, namely, **general characteristics of the students, awareness of definitions and concepts, opinions and attitudes** were posed to the respondents.

The aim of performing a questionnaire with four groups (21 students in the first grade, 18 students in the second grade, 20 students in the third grade and 26 students in fourth grade) is to compare the opinions of these students.

The questionnaires were carried out by means of face-to-face interviews with students selected randomly from the Ege University Agriculture Faculty Landscape Architecture Department from 13 to 24 May 2019. The data which are obtained from the questionnaires, in the evaluation stage of the results and there had some suggestions were put forward on the topic in conclusion.

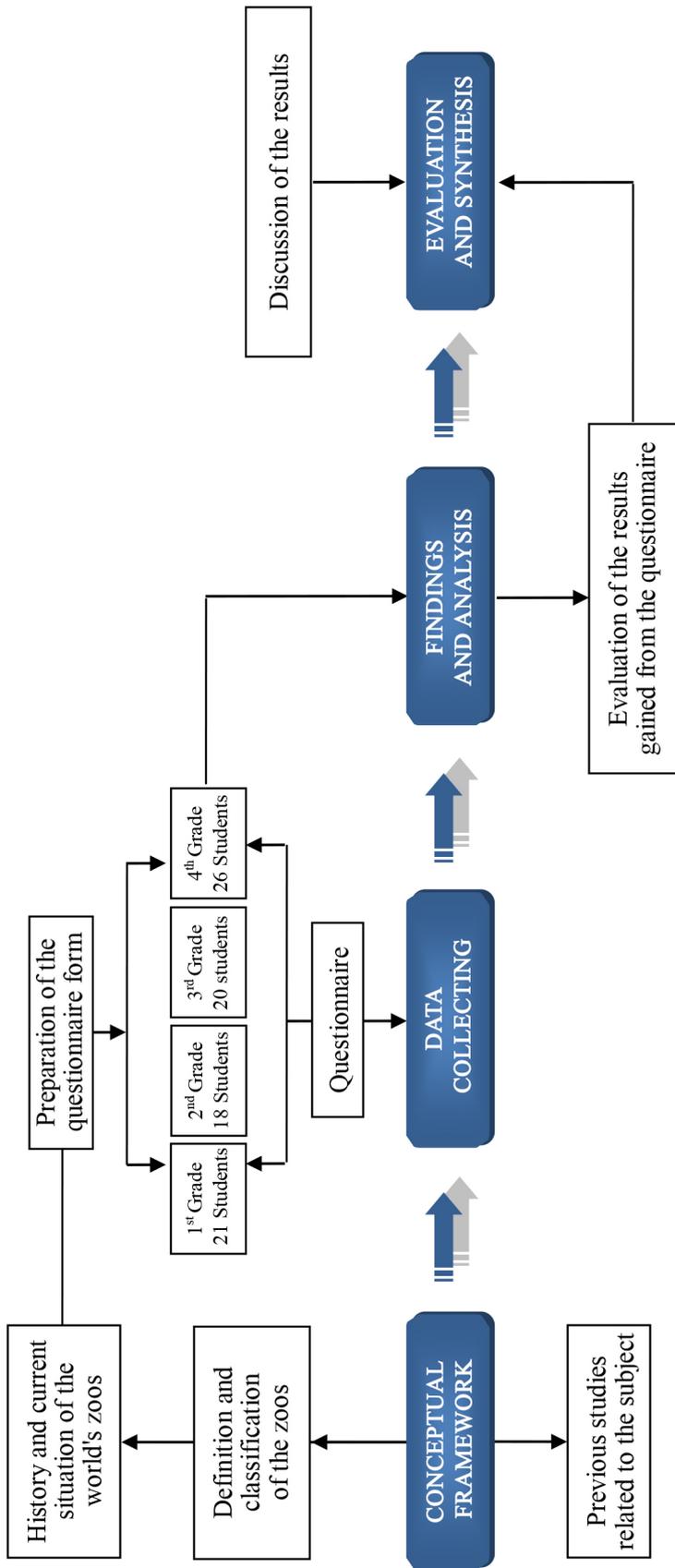


Figure 2. Method Flow Diagram

Results

Questionnaire study was conducted to 85 students of Landscape Architecture Department of Agriculture Faculty in Ege University in order to evaluate the awareness on zoos.

21 first grade, 18 the second grade, 20 third grade and 26 fourth grade students participate to the study. Firstly, demographic structures of the students are determined. It is seen that 80.95 % of 1st year students, 44.44 % of 2nd year students, 85.00 % of 3rd year students and 65.38 % of 4th year students are female (Table 1).

Table 1. General characteristics of the participants

Class	1		2		3		4		
	%	n	%	n	%	n	%	n	
Sex	Male	19.05	4	55.56	10	15.00	3	34.62	9
	Female	80.95	17	44.44	8	85.00	17	65.38	17
Total		100	21	100	18	100	20	100	26

When the awareness of definitions and concepts related to topic is evaluated, it is seen that 76.19 % of the 1st year students, 94.44 % of the 2nd year students, 85.00 % of the 3rd year students and 92.31 % of the 4th year students have been to the zoo. However, most of them partially know the purposes for the establishment of zoos and also partially know the international organizations work relates to zoos. 33.33 % of 1st year students, 66.67 % of 2nd year students, 75.00 of the 3rd year student and 65.38 of the 4th year student gives the correct answer to the 6th question as “municipality” (Table 2).

Table 2. Awareness of definitions and concepts related to topic

	Class	1	2	3	4
		%	%	%	%
Have you ever been to the zoo?	Yes	76.19	94.44	85.00	92.31
	No	23.81	05.56	15.00	07.69
Do you know the purposes for the establishment of zoos?	Yes	14.29	22.22	40.00	42.31
	Partially	76.19	66.67	55.00	42.31
Do you know organisations whose work relates to zoos?	No	09.52	11.11	05.00	15.38
	Yes	28.57	38.89	20.00	30.77
Which governmental organisation are zoos under the control of?	Partially	38.10	27.78	65.00	34.62
	No	33.33	33.33	15.00	34.62
	Municipality	33.33	66.67	75.00	65.38
Which governmental organisation are zoos under the control of?	Ministry of Forestry and Water Affairs	19.05	05.56	00.00	07.69
	The Council of Ministers	09.52	05.56	00.00	07.69
	Ministry of Food, Agriculture and Livestock	38.10	22.22	25.00	19.23

The opinions to the proposals expressed in the Table 3 are given below:

- *“Zoos aims to protect animal species”*

Participants from each class group were found to be indecisive (respectively 28.57 %, 38.88 %, 15.00 %, 30.77 %). Between the 3rd and 4th grades, it was seen that the agreement status towards the proposal increased and it was the dominant approach.

- *“Zoos first aims are to protect endangered animal species”*

With a similar approach to the previous proposal; participants at all levels of education remain indecisive about the issue (respectively 33.33 %, 27.78 %, 30.00 % and 38.46 %). Although the instability in grades 3 and 4 persisted, it was seen that the most dominant thought towards the proposal was in agreement status as the level of education progressed.

Table 3. Opinions and attitudes - I

Class	1				2				3				4			
	Completely Disagree	Disagree	Undecided	Agree	Completely Agree	Completely Disagree	Disagree	Undecided	Agree	Completely Agree	Completely Disagree	Disagree	Undecided	Agree	Completely Agree	
Please indicate your thoughts on the following propositions	%				%				%				%			
Zoos aims to protect animal species	14.29	23.81	28.57	28.57	04.76	05.56	27.78	38.88	16.67	11.11	10.00	25.00	15.00	35.00	15.00	
Zoos first aims are to protect endangered animal species	04.76	14.29	33.33	28.57	19.05	16.67	27.78	27.78	16.66	11.11	05.00	15.00	30.00	30.00	20.00	
The first aim of the zoos is not making economic profit	19.05	23.81	38.10	19.05	00.00	22.22	16.67	38.88	16.67	05.56	10.00	30.00	40.00	10.00	10.00	
Animal species are happy in zoos	52.38	14.29	33.33	00.00	00.00	27.78	27.78	27.78	11.11	05.55	20.00	50.00	30.00	00.00	00.00	
Zoos provide enough space for the vital needs of animal species	28.57	33.33	28.57	09.52	00.00	11.11	16.67	50.00	22.22	00.00	25.00	30.00	30.00	15.00	00.00	
Zoos only take care of animal species	14.29	38.10	19.05	23.81	04.76	16.67	44.44	22.22	11.11	05.56	20.00	50.00	20.00	10.00	00.00	
Animal species live longer in zoos than in nature	33.33	28.57	38.10	00.00	00.00	22.22	33.33	33.33	05.56	05.56	15.00	20.00	55.00	10.00	00.00	
Zoos are educational places that increase social awareness of animal species and nature	09.52	14.29	38.10	38.10	00.00	05.56	33.33	33.33	27.78	00.00	05.00	10.00	50.00	30.00	05.00	
Animal species in zoos are never collected from the wild	23.81	38.10	33.33	00.00	04.76	33.33	27.78	27.78	11.11	00.00	15.00	15.00	65.00	05.00	00.00	

Table 3. Opinions and attitudes - I (Continued)

Class	1				2				3				4							
	Completely Disagree	Disagree	Undecided	Agree	Completely Disagree	Disagree	Undecided	Agree	Completely Agree	Completely Disagree	Disagree	Undecided	Agree	Completely Agree	Completely Disagree	Disagree	Undecided	Agree	Completely Agree	
Please indicate your thoughts on the following propositions	%				%				%				%							
Zoos are also recreation places for visitors	09.52	04.77	52.38	33.33	00.00	05.56	11.11	38.89	33.33	11.11	05.00	00.00	05.00	80.00	10.00	00.00	03.85	19.23	53.84	23.08
Zoos allow scientific research only for the health of animal species	09.52	09.52	61.90	19.06	00.00	05.56	33.33	44.44	16.67	00.00	10.00	35.00	25.00	30.00	00.00	07.69	15.38	57.70	15.38	03.85
Zoos contribute to the city's tourism activities	04.76	04.76	00.00	76.19	14.29	05.56	00.00	22.22	61.11	11.11	00.00	00.00	05.00	80.00	15.00	00.00	00.00	11.54	73.08	15.38
Zoos are one of the most important spaces for visitors to socialize	04.76	14.29	38.10	33.33	09.52	05.56	11.11	22.22	50.00	11.11	10.00	05.00	40.00	30.00	15.00	00.00	15.38	15.38	57.70	11.54

- *“The first aim of the zoos is not making economic profit, Animal species are happy in zoos, Zoos provide enough space for the vital needs of animal species, Zoos only take care of animal species, Animal species live longer in zoos than in nature”*

Indecisiveness includes an important group for these proposals. It is determined that the most dominant thought in all classes for all these proposals is disagreement and the percentages of disagreement status increase as the level of education progressed. 38.46 % of 4th year students disagree that the first aim of the zoos is not making economic profit. Also 50.00 % of 2nd year students disagree that animal species are happy in zoos.

- *“Zoos are educational places that increase social awareness of animal species and nature”*

In response to this proposal, the percentage of indecisiveness found to be very high in each class (respectively 38.10 %, 33.33 %, 50.00 %, 28.00 %). On the other hand, there was no significant difference between the participants in agreeing and disagreeing with the proposal.

- *“Animal species in zoos are never collected from the wild”*

In response to this proposal, the percentage of indecisiveness found to be very high in each class (respectively 33.33 %, 27.78 %, 65.00 %, 38.46 %). It is determined that the most dominant thought in all classes for all these proposals is disagreement.

- *“Zoos are also recreation places for visitors”*

While the approach to this proposal between the 1st and 2nd grades (respectively 52.38 %, 38.89 %) was indecisive, it was found that the instability between the 3rd and 4th grades decreased considerably and the dominant response became to be in agreement status (respectively 90.00 %, 76.92 %).

- *Zoos allow scientific research only for the health of animal species*

In response to this proposal, the percentage of indecisiveness found to be very high in each class (respectively 61.90 %, 44.44 %, 25.00 %, 57.70 %). On the other hand, there was no significant difference between the participants in agreeing and disagreeing with the proposal.

- *Zoos contribute to the city's tourism activities*

The remarkably dominant approach to this proposal appears to be towards agreement status.

- *Zoos are one of the most important spaces for visitors to socialize*

It was found that there was an indecisive group among the participants at all educational levels for this proposal, besides the dominant response found to be in agreement status.

Undecided group for all the proposals always has a large percentage; It was found out that an important part of the survey participants who had information about zoos because of the education they received could not provide information or opinions about the main aims and objectives of these places.

According to the answers given in Table 3, although the majority of the participants thought that the conservation of the animal species in zoos is one of the aims of zoo construction, also it was seen that majority of the participants' opinion is that the necessary conditions for the animals are not provided, the species do not live longer nor happily in zoos and the zoos also aim to make economic profit.

It was requested that the problems that may be encountered in zoos be graded between 1 (least) and 5 (most) points according to their importance level and the answers given to this question are listed in Table 4.

Table 4. Opinions and attitudes – II

Class	1					2					3					4				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
What are the most important problems in zoos?	%					%					%					%				
Failure to achieve appropriate natural living standards	00.00	04.76	19.05	09.52	66.67	05.56	00.00	22.22	22.22	50.00	05.00	15.00	10.00	25.00	45.00	03.85	11.54	11.54	19.20	53.85
Not providing the necessary maintenance services to species	00.00	14.29	28.57	28.57	28.57	00.00	11.11	33.33	16.67	38.89	00.00	10.00	30.00	30.00	30.00	00.00	11.54	42.31	23.07	23.08
Lack of quality of the open spaces created for visitors	14.29	14.29	42.85	23.81	04.76	38.89	44.44	05.56	00.00	11.11	20.00	25.00	45.00	05.00	05.00	15.38	15.38	46.15	11.55	11.54
Poor economic power	09.52	09.52	42.86	23.81	14.29	11.76	41.18	17.65	11.76	17.65	05.00	25.00	40.00	20.00	10.00	11.54	38.46	30.77	15.38	03.85
Making an economic profit is the priority aim	04.76	04.76	28.57	00.00	61.91	11.11	05.56	27.78	22.22	33.33	00.00	10.00	20.00	15.00	55.00	03.85	0385	15.38	26.92	50.00
The conduct of scientific research contrary to animal rights	04.76	09.52	14.29	23.81	47.62	16.67	05.56	22.22	22.22	33.33	15.00	25.00	10.00	05.00	45.00	07.69	11.54	30.77	15.38	34.62

* Please rate as "1" the least important, "5" the most important

Table 5. Opinions and attitudes - III

What should be done to improve zoos?	Class																			
	1					2					3					4				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
	%					%					%					%				
Research for the protection of species should be supported by governmental organizations	00.00	00.00	04.76	00.00	95.24	05.56	16.66	00.00	22.22	55.56	00.00	00.00	00.00	00.00	15.00	85.00	00.00	03.85	03.85	03.85
Penal sanctions should be increased for the people who violate animal rights	00.00	00.00	04.76	14.29	80.95	00.00	05.56	05.56	11.11	77.77	00.00	00.00	00.00	00.00	05.00	95.00	00.00	03.85	07.69	07.69
Effective auditing of the establishment, maintenance and management process of zoos	00.00	00.00	14.29	04.76	80.95	05.56	05.56	11.11	16.66	61.11	00.00	00.00	10.00	05.00	85.00	03.85	03.85	11.54	15.38	65.38
Awareness should be created about the importance of the endangered species	00.00	00.00	04.76	14.29	80.95	05.56	11.11	00.00	05.56	77.77	00.00	05.00	00.00	05.00	90.00	00.00	00.00	00.00	15.38	84.62
The importance of the ecological aspects of living species should be better emphasized at all levels of educational planning	00.00	04.76	04.76	23.81	66.67	05.56	11.11	00.00	05.56	77.77	00.00	00.00	15.00	20.00	65.00	00.00	07.69	23.08	00.00	69.23

* Please rate as "1" the least important, "5" the most important

- The problems of *“Failure to achieve appropriate natural living standards”*, *“Poor economic power”*, *“Making an economic profit is the priority aim”* and *“The conduct of scientific research contrary to animal rights”* received high points from the majority of all grade students.

- None of the participants found the problem of *“not providing the necessary maintenance services to species”* at the least important level.

- Majority of the participants found the problem of *“lack of quality of the open spaces created for visitors”* at the level of 1 and 2 points. The answers showed that meeting the needs of visitors is the least important problem in zoos according to the all grades of students.

- *“Failure to achieve appropriate natural living standards”* was the most important problem for the 1st, 2nd, 3rd grade students and on the other hand *“making an economic profit is the priority aim”* became to be the most important problem for the 4th grade students.

It was requested to grade different proposals that will improve zoos, between 1 (least) and 5 (most) points according to their importance level and the answers given to this question are listed in Table 5.

- It has been seen that all the proposals received 4 and 5 points from the majority of all grade students.

- In the 1st grade, except for a very limited group, no 1 or 2 points were given to the proposal by the participants and the proposals they supported the most were *“Awareness should be created about the importance of the endangered species”*, *“Penal sanctions should be increased for the people who violate animal rights”* and *“Research for the protection of species should be supported by governmental organizations”*.

- In the 2nd grade, it was found that all suggestions could have different values between 1 and 5 points and the proposals they supported the most was *“Penal sanctions should be increased for the people who violate animal rights”*.

- It was seen that 3rd grade gave 4 or 5 points predominantly to all proposals and no prominent approach was determined among the participants.

- In the 4th grade, it was found that all suggestions could have different values between 2 and 5 points and the proposals they supported the most were *“Awareness should be created about the importance of the endangered species”*, *“Penal sanctions should be increased for the people who violate animal rights”* and *“Research for the protection of species should be supported by governmental organizations”*.

Discussion and Conclusion

Conservation, research, education and entertainment concepts are among the tasks of zoos which are part of urban recreation places. Today, however, the ethical accuracy of these spaces and the necessity of ecology are discussed extensively. Among these discussions, the ideas such as *“Zoos are just for entertainment; Keeping animals in cages and zookeepers are cruel; To see animals, it has to be seen done in wild; Animals in zoos are still taken from the wild, They suffer and die prematurely in zoos”* take place. Another discussed idea is, *“Zoos don’t serve conservation”*. One of the most important tasks of zoos is the protection, reproduction and restoration of animal species and especially the species in danger of extinction. However, according to some experts, the goal of zoos is not to bring the species back to nature, but to create captive new species. It is stated that most species found here are hybrids and therefore have little or no value in terms of protection.

As a result of the survey conducted within the scope of the research, these mentioned controversial ideas were also dominant. Therefore, it was concluded that the students who participated in the survey were undecided about the zoos. According to students who are educated about wildlife, landscape ecology, nature conservation issues as well as urban and rural recreation areas, zoos are important in terms of protection of species, but they are suspicious because of the conditions contrary to animal rights and the inadequacy of the legal mechanism that controls this situation.

In this context, the importance of zoos especially in terms of the protection of endangered species cannot be ignored. However, this aim should be fulfilled in full, the reproduction of the species should be supported and the natural environment should be regained in the continuation of this process. These studies should be supervised through legal processes and related institutions. Besides, zoos should be saved from financial concerns with the support of public or private institutions so that the necessary conditions for the survival of living beings that concern the future of the whole world can be provided.

Another suggestion put forward as a result of this study is to provide a different dimension to the educational purpose expected from zoos. Zoos should be one of the places where children will meet animals, learn to love and protect them and also make physical contact with them. For this purpose, species such as bears, tigers, lions, elephants, giraffes, which are part of the wild nature, do not need to be among the species exhibited to the visitors, as it is not possible to establish physical communication with these species. If necessary, these species should be included in the zoo for protection, but not among humans. In addition, the existence of species that cannot be revived in the zoo is not ethical in terms of animal rights. The educational mission of zoos should be based on instilling animal love, not introducing animal species.

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