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Environmental Education for the Nature Conservation

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Abstract: Environmental education seeks to raise society´s awareness about the harmonious coexistence between man and the environment. Thus, this study aimed to develop recreational activities with elementary students to emphasize the importance of nature conservation as well as the importance of conservation units in this process. The activity was carried out at Leonardo Da Vinci State College, in Dois Vizinhos (PR), which is located in a Municipal Conservation Unit (Jirau Alto Ecological Park). A balloon was distributed to each student, in which there was the name of a local fauna or flora species, easily found in the nature until some years ago. All the students had to work together to keep the balloons in the air, in an allusive way to demonstrate the importance of collective work for the species conservation. In addition, it was up to the students to recognize the species described in the balloons. It is noticed that the activity had great relevance, as it instigated the students to the critical thinking about the importance of the community for the preservation of the species presented in the proposed activity and to the role of the conservation units in the process of environmental education and species preservation as well.

Key words: environment, preservation, recreational activities

1. Introduction

According to the report developed by the United Nations Educational, Scientific and Cultural Organizations (UNESCO), “education is the primary agent of transformation towards sustainable development, increasing people’s capacities to transform their visions for society into reality. Education not only provides scientific and technical skills, it also provides the motivation, justification, and social support for pursuing and applying them” [1].

Based on this, the concept of environmental education (EE) started to get the world’s attention, specifically in the United Nations Conference on the Human Environment held in Stockholm in 1972. The countries that participated in this Conference concluded that the environmental education should be recognized and promoted in all countries [1].

What are the goals of environmental education then? Their goals, as stated in the International Environmental Education Programme (IEEP), are the following [2]:

- Foster clear awareness of, and concern about, economic, social, political and ecological interdependence in urban and rural areas;
- Provide every person with opportunities to acquire the knowledge, values, attitudes, commitments and skills needed to protect and improve the environment;
- Create new patterns of behaviour of individuals, groups and society as a whole towards the environment;

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- Facilitate the development of environmental education for sustainable development by linking institutions and specialists in a network and processing and disseminating information.

Thus, the environmental education has a transforming capacity where the individuals become the essential object to promote a new type of development (sustainable development). This way, the environmental education aims to modify the current and historic environmental degradation [3]. It takes place in different ways and the most common are the entertaining activities that relate leisure and education especially when working with children. Entertaining activities are important since they inspire liberty and are not associated with the concept of obligation [4].

Besides environmental education, other tools that should be used to conserve the biodiversity are the conservation units. According to the Brazilian law that establishes the National System of Nature Conservation Units [5], a conservation unit is a territorial space and its environmental resources, including the jurisdictional watercourses, with relevant natural characteristics legally established by the Public Power and conservation aims and limits defined under a special administration regime.

The conservation units focus on biodiversity conservation, merging it with scientific researches, and, in some cases, public visitation and educational activities. As stated before, these educational activities are extremely important to change the scenario of environmental degradation [6].

Thus, this study aimed to develop recreational activities with elementary students to emphasize the importance of nature conservation as well as the relevance of conservation units in this process.

2. Material and Methods

The study was carried out with elementary students from the Leonardo Da Vinci State College, in the municipality of Dois Vizinhos (PR). Dois Vizinhos is a city with approximately 39,856 people and an area of 418.648 km^2, located in the Southeast region of Parana, Brazil [7]. It is located in a region with domain of the Atlantic Forest biome (Fig. 1), in a transition area of Mixed Tropical Forest (known as Araucaria Forest) and Seasonal Semideciduous Forest [8].

The Leonardo da Vinci College is inserted in the single conservation unit of Dois Vizinhos, a municipal one, the Jirau Alto Park, a conservation unit with 33.44 ha [9].

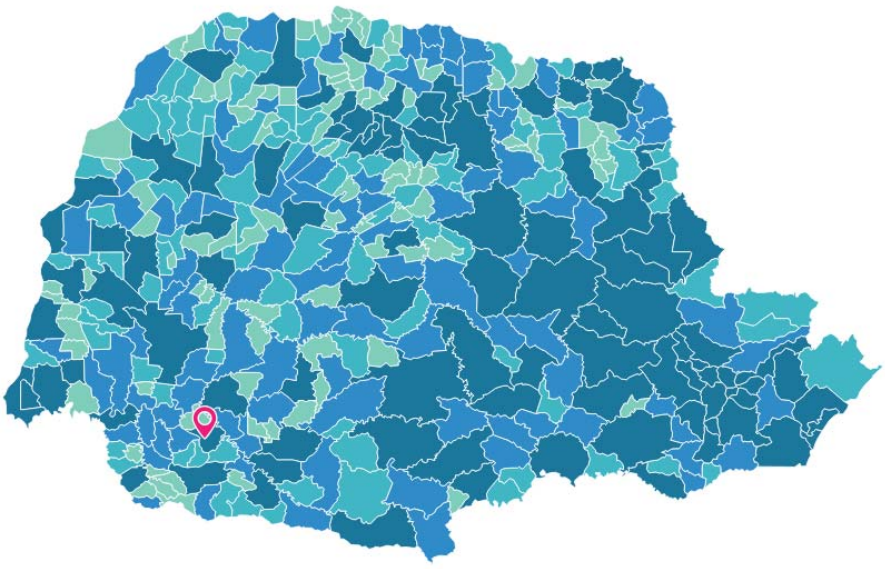

Fig. 1 Location of the city where the study was carried out – Dois Vizinhos, State of Parana, Brazil.

The group of students was composed by 25 people, aging from 13 to 16 years. The first step of the activity was the balloon distribution for each student. Inside each balloon, there was a name of one species of animal or tree present in the municipality and easily found in the nature until some years ago. The species used for this activity are displayed on Table 1.

Table 1 Popular and scientific name of the species utilized in the environmental education activity.

Animals		Trees	
Popular Name	**Scientific Name**	**Popular Name**	**Scientific Name**
Onça-pintada	*Panthera onca* L.	Araucária	*Araucaria angustifolia* (Bertol.) Kuntze
Bugio	*Alouatta* sp	Açoita-cavalo	*Luehea divaricate* Mart. & Zucc.
Cateto	*Pecari tajacu* L.	Angico-vermelho	*Parapiptadenia rigida* (Benth.) Brenan
Tatu	*Dasypus* sp	Cabreúva	*Myrocarpus frondosus* Allemão
Cachorro-do-mato	*Cerdocyon thous* L.	Canela	*Ocotea* sp.
Cotia	*Dasyprocta* sp.	Cedro-rosa	*Cedrela fissilis* Vell.
Paca	*Cuniculus paca* L.	Guajuvira	*Cordia Americana* (L.) Gottschling & J.S.Mill.
Quati	*Nasua* sp.	Louro-pardo	*Cordia trichotoma (*Vell.) Arráb. ex Steud.
Capivara	*Hydrochoerus hydrochaeris* L.	Pau-marfim	*Balfourodendron riedelianum* (Engl.) Engl.
Lontra	*Lutra* sp.	Peroba-rosa	*Aspidosperma polyneuron* Müll.Arg.
Jacu	*Penelope* sp.		
Jacutinga	*Pipile jacutinga* S.		
Macuco	*Tinamus solitaries* V.		
Nhambu	*Tinamus* sp.		

Thus, the students were asked to throw the balloons in the air, simultaneously, and they should keep them in the air as long as they could. During the activity, some of the participants were required to leave the game, and the remaining students should keep all of the balloons in the air even with fewer participants. This action was taken to represent the biodiversity loss in nature and, consequently, the difficulty to keep the food chain balanced. The activity finished when one or more balloons fell down.

In the second step, the students stayed in a circle and one by one would go to the centre, blow up the balloon and find out which species was inside of it. So, the students were encouraged to discuss whether or not they knew their respective species, even if they have only heard about them (through family, school or media, for example).

After these two steps, a round of conversation was promoted with all of the participants to discuss the activities and their goals besides talking about the nature conservation and conservation units.

3. Results and Discussion

Based on the activities realized within the students, we noticed that they got involved in the games and had fun. On the first part, as some teenagers were taken away from the activity, the others showed some difficulty to keep all the balloons in the air, as it was already expected. Besides that, they recognized the importance of each species in order to maintain the food chain balanced in the nature.

On the second part, we observed that most of the students knew some of the fauna´ species used in the game, as capivara (*Hydrochoerus hydrochaeris)* and tatu (*Dasypus* sp), for example, since they are still easily found in nature. On the other hand, most of them have never heard about other species, specially the birds (*Penelope* sp., *Pipile jacutinga* S., *Tinamus solitaries* V. and *Tinamus* sp.). Some species are known by the students but never seen in nature, like

onça-pintada (*Panthera onca)*. Regarding the tree species, only one or two species were recognized by the students.

After the activities, during the debate conducted about the activity's goals and nature conservation in general, we discovered that most of the students´ knowledge about the species was acquired through their families and not because they have seen these species, both animals and trees, in nature. In terms of biodiversity loss, the students cited the afforestation as the main cause, as well as the wild animals hunting. Some of them reported that hunting is very harmful to the animals, demonstrating their critical thinking about this illegal action in Brazil, very damaging to the biodiversity.

We also pointed out that many of the animal and tree species that we used in the recreational activities are endangered and listed in the IUCN Red List [10]. In group, we discussed that the main reasons for such threat of extinction is the illegal animal hunting and afforestation [11]. Thus, we could warn them about the danger of these actions for the existence of these species.

In the end of the activities, we highlighted the importance of conserving the environment as a direct way to preserve the habitat of these species and to allow the next generations to observe them, freely, in nature. In this viewpoint, we discussed with the students the fundamental role that the conservation units play for nature conservation, in order to protect some of our biodiversity [6].

Therefore, it can be stated that the environmental education activities conducted with these students promoted situations of teaching-learning and allowed knowledge construction [11], not only by the students but also by the project bidders, once the environmental education actions allow this knowledge exchange.

4. Conclusion

It is noticed that the environmental education activity had great relevance, as it instigated the students to the critical thinking about the community role for the preservation of the species presented and to the importance of the conservation units in the process of environmental education and species preservation as well.

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