

POSSIBILITIES OF CARRYING OUT ECOLOGICAL EDUCATION IN PITEȘTI CITY

POSSIBILITĂȚI DE REALIZARE A EDUCAȚIEI ECOLOGICE ÎN MUNICIPIUL PITEȘTI

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Abstract. *The activities of teaching-learning carried out in class, by which is assured the transmission of knowledge in ecology, can be combined with visits and outside activities of observation and protection of nature. Visiting the “Environment protection on ecological bases” exhibition, within the Argeș Districtal Museum, is contributing to the enrichment of active vocabulary with terms from the field of ecology. By organizing some activities on ecology subjects within the natural (Trivale forest, Argeș river) and artificial (parks) ecosystems, respectively, it is intended the formation to the schoolchildren and students of an ecological conduct, towards the environment protection and preservation of its quality.*

Rezumat. *Activitățile de predare-învățare prin care se asigură transmiterea cunoștințelor de ecologie realizate în clasă pot fi îmbinate cu vizite și activități de observare și de protecție a naturii, realizate în aer liber. Vizitarea expoziției „Protecția mediului înconjurător pe baze ecologice”, din cadrul Muzeului județean Argeș, contribuie la îmbogățirea vocabularului activ cu cuvinte din domeniul ecologiei. Prin organizarea unor activități pe teme de ecologie în ecosistemele naturale (pădurea Trivale, râul Argeș) și artificiale (parcuri) din Pitești se urmărește formarea unei conduite ecologice, în direcția protejării mediului ambiant și a conservării calității acestuia.*

Concurrently with the progress of human civilization, due to the development of science and technique, the relation of humans with the environment has deteriorated, as they action most often negatively on it, producing imbalances, sometimes irreversible, within the ecological systems. “*The disastrous consequences of imbalance between environment and development*”, “*irrational industrialization, which has pollution and even destruction of environment as effect*”, as well as “*occurrence of some disorders generated by the degradation of the natural environment (air, water, and soil pollution)*” there are factors which generated the need for ecological education (Cucoș, C., 2006). Education concerning the environment is addressed to all ages, having to be “*an active and continuous process, carried out at global level and in all media and social classes*”, “*an education about the environment, through environment and within the environment*” (Cristea, V. et al., 1996; Barna, A. and Pop, I., 2006). “*The people has to feel that they belongs to the nature and, as a consequence, to develop themselves the sense of responsibility*” (REC Moldova, 2003) and to exhibit an precautionary conduct towards the environment. Someone

who will be protecting the nature is supposed to do this because is understanding the importance of its preservation, is instructed and educated in this spirit.

It cannot be said that there is an certain age to which the ecological education of the people it should be started, but is considered that as earlier it will be done, as better the results. The ecological education begins within the family, *“firstly by the power of example and then of words”* (Barna, A., Pop, I., 2006).

The parent is an example for child in respect of attitudes and conduct towards the environment. In the open, recreation places, parks, street, the parent should to keep an eye on the child behavior and to show an disapproval attitude towards his or her tendency to throw away papers, wrappings, plastic bottles wherever, to tear off flowers, shoots from blooming trees or shrubs, to catch insects (e.g. butterflies) just “because they are beautiful”, or to beat animals (crows, jackdaws, dogs, cats, etc.) on the grounds of their “unusefulness” or “lack of a master”. From his infancy, to the child should be developed the feeling of caring for nature, explaining him that each living being, more or less beautiful from the human’s point of view, has its role in nature. The child behavior, sometimes aggressive towards the environment, because of the parent’s lack of concern or ecological “ignorance”, will be hard to correct by education activities organized during the years of study in kindergarden and school, as it is an already well known fact that the effort of teachers should be supported also by the family and community to which the child belongs.

In the primary, secondary and high school, ecological education can be carried out by any type of school activity (lessons, scientific, literary, artistic, art, and sport activities), out of school activities (trips, visits, debating sessions), activities organized by the school or other institutions (conferences, presentations of slides and video films, exhibitions and contests on ecology themes), in frames of which is studied the influence of human’s activities on the environment, either natural or artificial. The school has the mission *“to offer, gradually and in accordance with the age particularities, scientific knowledge which motivate the conduct and ecological-civic duties, to create and organize educational activities and actions concerning the environment”* (Barna, A. and Pop, I., 2006). At the present, there are many schools in Pitești having the statute of eco-schools, in which is organized and carried out a sustained movement of ecological education and environment protection, the students participating as true defenders of the nature to the realization of activities and projects in the field of ecology. It is considered as necessary to extend this movement into the universities, such as to be involved both the students in ecology and other study programs.

The first step towards formation of an ecological conduct is information. In any season, whatever the weather, the doors of the Argeș Districtual Museum in Pitești are opened to every age visitors, either for children before school age, schoolchildren or students. Within the Museum there is an permanent exhibition entitled “Environment protection on ecological bases”, in which are presented the basic principles in organization of life and establishing the relation between the living beings. The whole material is grouped within three sections: 1) Origin of life and living beings evolution

on the Earth (Evolutionism); 2) Organization of living matter and relations within ecosystems (Principles of ecology); 3) Relation human-nature and protection of the environment. The aspects related to the theme of living matter organization and relation between living beings are presented hierarchically as follows: a) Structural organization of the living matter, levels of organization; b) Functional organization of the biosphere, whose functional unit is the ecosystem, with its two components: the biotope (non-living) and biocenosis (living); c) The circuit of matter and energy flow within the ecosystem, from the soil non-living matter into the body of plants, animals, and through decomposers again into the soil; d) The trophic pyramids and scheme of a trophic net in an forest ecosystem, which explain ecologically the relations between producers and consumers, relations which are maintained in a relatively stable equilibrium; e) The adaptative modifications in the world of living beings, as answer to the influences of the environmental factors.

Within the exhibition there are presented, dioramic, ecosystem models (swamp, steppe, mountain forest, cave), in which can be observed the differentiation of living beings depending of the biotope conditions, interdependence between the living beings from biocenosis, and between them and the components of the abiotic environment. By the help of illuminated panels, it is presented the division into zones of vegetation depending of altitude, from the plane to the mountains, from the Danube until the Moldoveanu peak, each zone being characterized by a certain type of woody and herbaceous vegetation. The last part of the exhibition presents the relation human-nature, the transforming action, either conscious or unconscious, of humans over their life environment, which lead to the deterioration of some balances between different components of the biosphere, disappearance of some plant and animal species, as well as the evolution of actions towards the preservation of environment in Romania. During the visit, the schoolchildren or students improves their active vocabulary with terms from the field of ecology, many of them specific, such as: biotic and abiotic environmental factors, biological system, biotope, biocenosis, natural and anthropized environment, as well as intra- and interspecific relation into the ecosystems. Also, there is stimulated the motivation for environment protection, making them aware of the need of saving all the natural resources. Following the visit, might be realized, individually or within groups, essays on some human's activities negatively influencing the flora, offering in the same time solutions for the plant protection. Essays can be also elaborated on animals protected by law in our country, offering in the same time suggestions towards the limitation of the negative influence of humans over fauna. The diseases caused by environment pollution by noise, dust, and toxic compounds, could be also subjects of essays. Debates can be organized, aiming at emphasizing the relation which exist between environmental factors and animal diversity. Also, can be debated the differences between the flora of natural and artificial (parks, cereal crops, etc) ecosystems, respectively, or the possibility of environment protection inside the city or area where the schoolchildren or students are living.. The most appropriate solutions can be noted into the "Locality green book" and presented with the occasions of meetings organized by some non-governmental organizations, which are dealing with the environment protection. The activities of teaching-learning by which is assured the transmission of ecology knowledge must not be realized exclusively with class, within the

lessons of biology, but rather must be combined with activities of observation, research, exploration, investigation and nature protection, carried out in open air. In Pitești, can be organized field applications, in parks (artificial ecosystems) or Trivale forest (natural ecosystem), where can be analyzed the abiotic conditions (air temperature, soil temperature, light, wind), can be observed and identified the trophic categories in the analyzed ecosystem, can be prepared drafts of trophic chains, can be emphasized the effects of some polluting agents on the density within some populations, and can be realized predictions on the dynamics of that ecosystem. There are numerous parks in Pitești, so that the schoolchildren of every school or the students can choose one of them in order to study and take care of it. Among these parks can be mentioned the following: Prundu, Depou, Tineretului, Central Craiovei, Podul Viilor, Fortuna, 1907 Park, Expo-Parc, Lumina, Bălcescu, Trivale (67.900 m²), Ștrand (131.000 m²), Valea cu Tei, Războieni, Oncologie și Capelei (Stănescu, Gh., 1999). Alongside the terrestrial ecosystems, aquatic ecosystems can be observed and analyzed in Pitești – the Argeș river (natural ecosystem) and the lake from Ștrand Park (artificial ecosystem), located nearby the Argeș river. These can be subjects of observations on the water temperature and quality, pollution with different wastes, as well as observations on the plant and animal species characteristics for these ecosystems (Petruța, G., 2003). Within both aquatic and terrestrial ecosystems can be carried out phenological observations, making evident the modification caused on them by global warming.

The teacher shouldn't limit only to the stocking of knowledge by the schoolchildren, but to determine a certain conduct of the child or student, towards the protection of environment and preservation of its quality. They could be involved in tree planting actions within Trivale forest, mounting of artificial nests for wild birds, collection of wastes on certain areas of Trivale forest and valley of Argeș river, carrying of the green spaces, recycling the paper, action which can be realized in schools by exhibitions of drawings on ecology subjects, etc. For making them to adopt an ecological behavior, the emphasis should be on individual involvement and assumption of responsibility by each participant, being necessary that the schoolchildren or students to learn how to organize themselves actions for protection of nature.

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