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Procedia - Social and Behavioral Sciences 200 (2015) 453 - 459

# THE XXVI ANNUAL INTERNATIONAL ACADEMIC CONFERENCE, LANGUAGE AND CULTURE, 27–30 October 2015

## Implementation of Ecological Education in a Higher School

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#### Abstract

The necessity of ecologically-based education is substantiated in connection with global ecological problems. The organization of learning process in a higher school is considered using the example of a set of disciplines at the Biological Institute of Tomsk State University which is directed to the ecologization of education. Disciplines of soil science course are shown to have a special place in the formation of students' ecological culture. The interdisciplinary character of these disciplines is determined as a central connecting element of biogeocenosis; the importance of soils stable development conservation in the process of their usage is also confirmed.

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Peer-review under responsibility of National Research Tomsk State University.

Keywords: Ecological problems; ecological education; soils degradation; soil science module disciplines

#### 1. Introduction

The recognition of ecological problems, the human kind has faced, refers to the second part of the 20<sup>th</sup> century, but to this very day the problems have not been solved. Moreover, they continue to become worse. The development of mankind in the way occurring nowadays leads to the exacerbation of ecological crisis which is accomplished by the imbalance between society and nature. Muravjeva (2008) considers the low level of a modern technocratic society culture as one of the most important reasons of ecological crisis in which the largest value is thought to be a technological infrastructure in comparison with harmonic coexistence with nature. The author also believes that the solution of ecological problems is of great importance since these problems affect the bases of civilization processes from which the survival of mankind directly depends on (Muravjeva, 2008). The solution of the problem can be seen not only at the level of protective actions in nature conservation but, probably, first of all at

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doi:10.1016/j.sbspro.2015.08.095

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the level of human mentality revealing now the lifestyle of irresponsible consumption. In this aspect the ecological education is able to play a crucial role and demands the change of educational policy towards ecologization.

Among the numerous reasons of ecological crisis (land recourses limitation, wastes of production, insufficient knowledge and usage of the nature development laws by a man, shortcomings of institutional and economic activity of government institutions in the environment conservation, etc.) we distinguish some which can be overcome by changing the educational process in order to direct it to the correction of defects in ecological education and of nihilism connected with disparagement to the laws of ecology.

The conference of UNO "Rio+20" (2012) admitted ecological education as one of the essential instruments of the society stable development, the conception of which was suggested by the International Commission in the Environment and Development as a strategic solution for the problem of global ecological crisis at the end of 1980s. In some European countries the national strategies of ecological education were developed. Russia also did not stay on the sidelines and signed Bologna agreement in September of 2003. In 2002 Federal law №7-FL "About the environment conservation" was adopted in Russia, in which the process of ecological culture formation through the establishment of the system of universal and comprehensive ecological education was confirmed (en. 71, chapter XIII). The bases of ecological knowledge teaching must be implemented in pre-school, school educational institutions as well as in institutions of secondary and higher education without depending on their profile and institutional forms (en. 72, par. 1). In 2012 such a document as "The bases of national policy in the sphere of ecological development of the Russian Federation for the period up to 2030" was affirmed, where a set of tasks connected with ecological education and the formation of ecological culture was set.

Zverev (1995) considers ecological education as a "permanent process of learning and personal development directed on the formation of a system of scientific and practical knowledge and skills, valuable orientations, moralethic and esthetic relations providing ecological responsibility of a person for the state and improvement of the environment" (Zverey, 1995, p. 17). Ecological education became especially important at the beginning of the 21<sup>st</sup> century because ecological problems revealed a global character and nobody could solve them without forming ecological culture, ecological responsibility and skills in the sphere of ecology. Ecological education constructs the knowledge about the environment, about causes and consequences of ecological catastrophes, ecological safety, and concepts of the place of a man in nature. These questions are of vital importance at the modern stage of human existence. Everybody should have a perspective view on the world's development, but not an up-to-the-minute one. It is evidently that such education will play the important role in overcoming the ecological crisis. Unfortunately, up-to-date level of ecological consciousness for the most part of the Earth's population is extremely low, and the absence of responsibility to the future generations, as Muravjeva (2008) argues, is considered to be one of the reasons of critical ecological situation. Moreover, it is clear that our time confronts the higher education with new challenges, and any university meets them, first of all, by changes of its "idea", while creating new programmes in which it will manage to realize interdisciplinary approach in teaching students of different specialties (Petrova, et al, 2014). In this paper we deal with the ways of implementation of newly-designed course intended to give students up-to-date ecological education in institutions of higher education.

#### 2. Background of this study

#### 2.1. The role of ecological education in a personal ecological culture formation

Ecological culture formation which is accomplished by the creation of a new value system, by the development of man's ability to compare public needs with the capabilities of nature, by the reorganization of the world view as a whole, can be regarded as the aim of ecological education. It orients people in the process of their activities towards the economy of natural resources, the prediction of anthropogenous impact consequences on the environment, the search of energy conservation methods, to the understanding of the fact that ecological knowledge allows making our world safer, and our life – healthier. The solution of ecological problems and the maintenance of the positive environment for human life are possible only due to the ecological education development.

The institution of higher education should be the central core in the sphere of continuous learning because the principle of interdisciplinary is fully realized here, and also the interlink is arisen between technical and humanitarian sciences. Ecological education should contribute to the formation of students' ecological thinking

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