

Education in the Field of Environmental Protection as Dominant Factor for Ecological Security Improvement

Marija Blagojević MA¹, Željko Nikač PhD², Boban Simić MA³

Abstract - Accelerated and unpredictable technological development, uncontrolled exhaustion of natural resources and the lack of ecological awareness lead to the violation of the nature's balance. Along with the escalation of ecological problems the mankind encounters, the need and interest for education in the field of environmental protection emerges. Therefore, the need for raising awareness of environmental protection as an ambient that ensures the present and future existence of the human kind has been recognized. One of the main priorities and interests of every country is to protect the environment, and exactly this priority requires a thorough change in man's relation towards the environment, in that way securing further advancement of mankind.

In this paper, the authors recognize the need for ecological education as an opportunity for improving ecological security, in particular at the example of the Republic of Serbia.

Key words - ecological education, education, ecological ethics, improvement of ecological security

1 INTRODUCTION

Man is surrounded by the nature and he is a part of it. In order to make better quality of life, humanity has used the natural resources carelessly, which has resulted in the disruption of nature and creation of problems that now threaten to undermine the very quality of life that humanity wanted to improve. In such an environment it is undoubtedly clear that it is necessary to understand the ecological culture not as a means of alienation from the nature, but rather as a means of approaching to it. Creation of ecological culture is imperative to overcome consumer relation of man to the natural resources. It is not possible to solve the existing environmental problems unless we focus on human behavior, because if human behavior remains unchanged, we will continue to meet with the same and perhaps more dangerous new problems. Appeals are coming from all sides from scientists and experts, the imperative is to solve the problems with which we have proceeded into a new millennium. A necessary prerequisite is the creation of environmental awareness and the development of environmental ethics and culture. Individual awareness of real dangers and threats to the security of humanity and other living beings and their behavior are key factors

in changing the whole ecological picture of a country. [1]

The need for environmental information and development of environmental awareness is creating a need for development of non-formal environmental education. The important role in this segment, apart from state institutions and the media, belongs to civic associations and prominent individuals, whose initiatives promote the development of a sustainable society. Educated individuals will be motivated, and with the information they will be able to more actively participate in environmental protection activities. With possession of information, educated individuals will be motivated and more able to actively participate in environmental protection activities. Healthy and ecologically educated society can provide a healthy survival of future generations. [2]

Intensification of the global ecological (environmental) situation, which is reflected in climate change, warming, reduction of the ozone layer, acid rains and desertification, is a result of deteriorating environmental situation in different countries and regions, where there is the most intense environmental pollution. Key directions for serious changes in the world must include the use of alternative and renewable sources of energy, environmentally harmless technology without polluting the atmosphere and hydrosphere, as well as activities aimed at preserving the world's water resources. Success in implementing the strategy of sustainable development largely depends on the understanding of mutual dependence between ecodynamic and socio-economic development.

1. Research Fellow, Academy of Criminalistic and Police Studies, 196 Cara Dušana Str., 11080 Zemun-Serbia, E-mail: marija.blagojevickpa.edu.rs; marijablgjvc@yahoo.com

2. Associate Professor, Academy of Criminalistic and Police Studies, 196 Cara Dušana Str., 11080 Zemun-Serbia, E-mail: zeljko.nikac@kpa.edu.rs

3. Lecturer, Academy of Criminalistic and Police Studies, 196 Cara Dušana Str., 11080 Zemun-Serbia, E-mail: boban.simic@kpa.edu.rs

2 CHARACTERISTICS AND GOAL OF ENVIRONMENTAL EDUCATION

Education for environmental protection as written in Agenda 21 (Programme of measures and activities for the 21st Century), is in the function of sustainable development and it is therefore necessary for all inhabitants of the planet, and it must be long term, planned development of interdisciplinary knowledge about the environment during the entire human life. The aim is to develop awareness of the basic characteristics of the environment, the relationships inside it, as a precondition of man's aspirations for environment preservation and improvement, in favor of present and future generations. It is up to educational process to provide interdisciplinary and multidisciplinary approach for understanding the essence of relations among companies, people, technology, the environment, and express aspects of environmental integrity, economic, social, technological, cultural and aesthetic appeal. The contents, methods of presentation and methods of work must create individuals who are capable of decision-making that will be in accordance with the principles of the so-called sustainable (balanced) development.

At the level of the United Nations many environmental problems related to individual countries or in cooperation with other countries have been solved. The whole series of world conferences helped identify practical ways to solve global problems and mitigating the environmental crisis in many fields such as education, human rights, environment and development, empowerment of women and food security. The main goal of such studies is to achieve results that would bring practical solution in solving disturbed ecological balance in nature, and would assist in the elimination of numerous negative consequences of ecological crises, as well as preventing further deterioration of the ecological balance in the nature and man's natural environment. Simply, these scientific findings are very important for the protection and improvement of the quality of human life. Therefore, the United Nations have organized many international conferences on environmental protection, established their specialized agencies that will deal with specific issues of protection and improvement of the environment, and organized several international meetings dealing with issues of improving the living environment.

The most important international conferences on education for environmental protection were held in Stockholm (1972), Belgrade (1975) and Tbilisi (1977), Congress in Moscow (1987), Conference in Rio (1992) and Thessaloniki (1997), where it was emphasized that education is a key to survival, and since then there has been a new name - education for survival.

Ten years after Rio, in Johannesburg in

September 2002, the international community once again confirmed their commitment to sustainable development and sustainable management of natural resources, and once again a prerequisite of all was education. European Ministerial Conference dedicated to the protection of the environment, held in Kiev in June 2003, was just another confirmation of the view that education is the key to survival and sustainable management of natural resources and environment must be integrated into development policy of all European countries. In 1975, the first "International Program of Education for environmental protection" (UNESCO and UNEP) was prepared and after the Rio Conference in 1993, it was amended with the goal to reorientate the education of the population on the planet for a sustainable (adjusted) development.

The United Nations program for environment, dealing specifically with issues of prevention of pollution of air and water, as well as the implementation of rational use of natural resources, pays special attention to improving the international environmental law. This program encouraged states to contractually solve environmental problems. Basic activities of the UNEP in the development of international and national laws are the continuous collection of information in the field of environmental law, elaboration and development of the adopted principles of State responsibility in the protection of the environment, encouraging the international legal framework, both at globally and locally, encouraging universities and research institutions to include the legal aspect of protection and improvement environment in their programs and projects; reference to comparative study of national environmental law, and assisting developing countries to improve legislation on environmental protection. [3:307]

Also, great attention is paid to education for the protection of human environment.

At a conference in Johannesburg in 2002, where the topic was sustainable development, the need was emphasized to integrate sustainable development into the education system at all levels of education. It was particularly emphasized that education was not only one of the inalienable rights of man, but is an essential prerequisite for achieving sustainable development and essential mechanism for good governance. [4:139]

The United Nations have specified six principles of environmental education, including:

1. Awareness of environmental problems;
2. Basic understanding of the environment and its problems and the role of individuals in the environment;
3. Caring attitude in relation to environmental problems;
4. Skills to overcome environmental problems;

5. Ability to evaluate proposed solutions to environmental problems;

6. Participation in solving environmental problems.

Environmental education aims to provide basic knowledge about basic environmental issues and to develop a critical attitude towards environmental degradation and to develop mechanisms that will improve environmental safety. The goal of environmental education is to develop awareness of the basic characteristics of the environment, the relationships in it, as a precondition of man's aspirations for its preservation and improvement for present and future generations. It is up to educational process to provide interdisciplinary and multidisciplinary approach for understanding the essence of relations among companies, people, technology, the environment, and express aspects of environmental integrity, economic, social, technological, cultural and aesthetic appeal. The contents, methods of presentation and methods of work must create individuals who are capable of decision-making that will be in accordance with the principles of the so-called sustainable development. The introduction of environmental content into all levels of the education system leads to ecological behavior. [5:337]

Environmental education is an integral part of our educational system. In addition, environmental education has the task to develop critical awareness of the necessity of preserving and promoting a healthy, ecologically clean environment, and to inform them of the consequences of technological development and uncontrolled impact of that development on ecosystems and human health. This is achieved by both in and out of institutional education. These two methods of ecological education should be linked together and coordinated. Thus, out of institutional education acquired in the family and through mass media is complemented by institutional education, from preschool through elementary and secondary schools, to college and university education, including postgraduate and doctoral studies. [6:489]

In recent years, with the expansion of environmental problems there is growing interest in pedagogisation of environment. Testimonies of this are considerable scientific publications, meetings and conferences. Numerous studies indicate that environmental education should not be entrusted exclusively to educational institutions. As an important factor in the origin and shaping of environmental awareness in addition to school, family, and mass media, there is working environment. Thus, the working environment as a part of the "human world" in which man confirms its existence may significantly affect the formation of ecological consciousness. Being a part of the working environment can lead to the formation of new attitudes, changing or strengthening the existing

ones, then the working group in which the individual spends a significant amount of time fosters a sense of trust, which is favorable to environmentally relevant contents quickly transferred in a way that fits the personality, the working environment is also a field in which the friendly open dialogue to exchange information, to change ingrained attitudes and encourage desirable behavior towards the environment.

In the formation of ecological culture of modern man, a system of ecological education has an important role. The scope of ecological education provides the necessary synthesis of knowledge, skills and habits of the natural and social sciences. Education - educational process in order to protect and improve the environment represents a conscious and planned development of knowledge about the human environment throughout life, which aims to develop awareness of the basic characteristics of the environment, and relationships in it, based on which the man would strive to preserve and improve the environment. Environmental education needs to provide certain knowledge of basic environmental issues of contemporary society, to develop a critical attitude towards the growing environmental degradation, and points to the necessity of rational use of natural resources. [7]

The basic principle of ecological education is reflected in the requirement that environmental education should not only inform on the environmental facts, that the knowledge that students gain be only at the level of awareness, but that all life within educational institutions should be in adequate to the environmental requirements. Knowledge is not sufficient component for the development of environmental awareness but emotional-willing dimension is also very important, because knowledge without belief and practical activity does not mean much. The ecological approach in education and the formation of ecological way of thinking begin in the early years, and therefore the role of educational organizations at all levels of learning (primary-primary, secondary and tertiary) is very important. [8]

The task of education is learning, so that future generations will have systematic knowledge of contemporary issues of the environment, the nature and the essence of the danger threatening the environment, on how to remove the negative effects of disturbed ecological balance.

Training in the field of environmental protection requires different knowledge sources, the following being among them:

- The immediate reality involves the environment in which one survives. It plays an important role in the formation of environmental awareness and the knowledge thus adopted is the best.

- Text materials - School textbooks, the novels, are the primary source but for the purposes of environmental education they are not sufficiently coordinated with the syllabus and the environment-related contents in them are under-represented.

- The teacher is emerging as an important factor in the realization of the tasks and goals of environmental education. This process is realized by selecting a teaching content, assessment of environmental aspects of materials, process of acquiring knowledge, forming attitudes and habits of students and others.

- Television, newspapers, radio and other mass media are important in the field of activation and involvement in environmental protection. [9:226]

Ensuring sustainable development is practically impossible without respecting:

- The adopted standards
- The postulates of environmental policy
- The construction of desirable environmental awareness and behavior
- Favoring "green" culture and education. [10]

3 ENVIRONMENTAL EDUCATION WITHIN THE EDUCATIONAL SYSTEM IN THE REPUBLIC OF SERBIA

School is the fundamental factor of education. With established program contents and forms, school provides the greatest opportunities in building awareness of students. It provides significant opportunities for the acquisition of certain knowledge, but also for building some habits, to develop environmental awareness by developing love and responsible attitude towards the family. Although the education of youth for environmental protection has its starting point in family education, school has become indispensable to that goal. How much importance will be given to environmental contents, and if there will be correlation among the subjects in the educational process, as well as with the experience and knowledge of the students, depends to a large extent on the affinity and training of teachers. Therefore, great attention must be paid to the permanent professional training of teachers through additional training and seminars. It is very important that school as an institution initiates activities organized at the local community. Modern ecological situation showed that the fund of knowledge in ecology is not at the required level. [11:194]

Themes of ecology and environmental protection in schools in the Republic of Serbia are studied within Biology and Geography, but unfortunately this content is not sufficient to encourage students to start to think about nature conservation. Also, for the students from the first through sixth grades of primary schools there is an optional elective course entitled the Guardians of the Nature. The content of textbooks is adapted to the children's age and provides a good basis for further study, but the problem is that this course is optional, and a small number of children are committed to it.

Within the first cycle of primary education, the environmental activities often permeate nearly all subjects. However, environmental activities are most present in the subject called the World around Us in the first and second grade, and Nature and society in the third and fourth grade of primary education. The overall objective of the subject the World around us is that children learn about themselves, their environment and develop skills for responsible life in it.

The curriculum of junior primary schools provides special contents in the area of protection and improvement of the environment as a part of several subjects. Curriculum activities are provided globally. Teacher is allowed to concentrate, actualize and concretize curriculum content. They ensure that students unobtrusively obtain information about the relationship between man and the environment. [12]

In the first year the goals are achieved through introducing students to the concept and basic elements of the environment, through the identification and description of basic phenomena and environmental change, and phenomena that threaten the environment, developing a responsible attitude towards themselves and the environment and developing the habits of rational use of natural resources.

In the second grade the objectives of this subject is realized through more complex tasks: students must master the concept of the environment, identifying and describing the most effective phenomena and changes in the environment, acquiring knowledge about the phenomena that threaten the environment, forming healthy habits and developing a responsible attitude with themselves and the environment.

In the third grade the tasks that students must achieve are: to know how to recognize the negative effects of human impact on the environment, to recognize causes/consequences relationships (with the execution of simple experiments), to acquire the habits of responsible behavior towards animals, and solve simple problems and situations individually or in teams. Similar tasks are in the fourth grade: students should learn about causes/ consequences relationships in the environment and the negative impact of man, examine causes/consequences relationships by performing simple experiments, test

the changes and phenomena in nature, and students are trained to solve problem situations individually or in teams. [13]

Ecological contents in the higher grades of primary education (from 5th to 8th grades), were represented in the subjects from the group of natural sciences: biology, geography, chemistry and physics. Schools subjects with contents of ecology are carried out through free and optional activities. Such activities include additional courses in natural sciences: workshops (ecological, biological, geographic, hiking ...), as well as through recreational classes in lower grades. Some of these activities are: Eco Action, Green Corner, Green trip, ecology, marking important dates. Ecological contents should ensure that students in elementary school learn: basic concepts (the concept of disturbance of ecological balance, the term degradation of the environment), gain knowledge about the negative effects of polluted air, soil, water, how to prevent and protect against all negative influences. [14:34]

Negative changes in the environment and the ecological crisis requires that in the subjects covering environment content need to develop standards of knowledge, skills and awareness of ecology. The question is whether in this volume and this dynamic, the content in the field of environmental education matches the requirements and challenges of the environment?

As stated by Professor Ivica Radovic, the idea of ecology as a compulsory school subject has been present since 1973. But idea has never been accepted by our educational system in a concrete way. Thanks to the efforts of the Ministry of Environment and Spatial Planning to develop the awareness among young people about ecology and sustainable development, the initiative has been launched for the introduction of ecology as a third optional subject for the older students. As the subject of environmental protection is an interdisciplinary field of natural, technical and social sciences, the idea is that each teacher teaches one area of environmental protection which is specifically associated with his branch of science with prior training in seminars. [15]

Ecological problems are in the group of problems that need to be solved by the city and state authorities, but the role that an individual has within this system should not be ignored.

If we want to make an effort to change the environmental awareness and behavior of individuals, it would first be important to determine the extent to which every individual is informed about the causes and consequences of environmental problems, in which way he experiences these problems, and how they are treated under real life circumstances. Without a healthy environment we cannot fully exercise any human rights, and especially any of the major human rights such as

right to life, right to health, right to food. It is therefore necessary to build legal mechanisms both internationally and nationally that will promote better environmental information for citizens. Good environmental information, as the relevant services involved in the protection of the environment, and the general public is one of the key prerequisites for the development of individual consciousness and the possibility of conducting adequate environmental policies. [16:83]

4 MEASURES AND GUIDELINES TO IMPROVE PREVENTION OF ECOLOGICAL RISK

Environment protection requires continuous monitoring and maintenance of quality in order to avoid negative consequences. Preventive measures in protecting the environment are reflected primarily in the ethical relation of man to the environment, which includes the healthy environment for all generations, the preservation of its resources, rational use of natural resources and sustainable development that does not threaten environmental values.

It is essential for the preservation of the environment to understand the power of man over nature and the destructive consequences of that power on a global scale. [17]

In order to achieve complex goals such as better quality of the environment it is necessary to include education and learning into all forms of teaching inside and outside school through extracurricular activities and practical examples.

To improve the quality of living and working environment, it is necessary to educate and train the professional workers in risky jobs in order to be able to reduce to a minimum the danger in living and working environment. [18:314]

Environmental management is turning into a profession and a very significant factor in business. Business systems see their better position in the market in environmental management. Competitive companies are trying to organize their environmental management better because they know that consumers expect a better relationship with ecology. Sustainable development is not only the material condition of survival of business systems and today's generation, but also the ethical question of defending civilization's honour for future generations. In fact, the sustainable development implies a balance between resource consumption and capacity of natural systems to meet the needs of future generations. In other words, the sustainable development is the development that does not lead to destruction and excessive use of resources which makes the development possible and permissible. Such growth is conditioned and followed by raising the awareness of the need to preserve and improve the environment that contributes to sustainable

human development. [19]

Guaranteeing the right to the environmental protection is among the principal provisions of the Constitution; the writers of the Constitution indicate the crucial importance of the environment and its preservation, for the individual, society and its development. Recent comparative constitutionality's position is that international laws are considered an integral part of domestic laws and as such are directly applicable. This fact is especially important when it comes to the environmental law, since the standards related to guaranteeing the rights are provided for by international laws. Respecting human rights is closely linked with environmental protection. This applies to all human rights to life and health but also to all other human rights at social, economic, cultural and political level, because human rights can be protected only within the ecologically healthy environment.

The area of protection of the environment is, by its very nature, primarily international. Natural processes which, in addition to some other things, spreading of pollution depends on, whether it is the result of human activities or natural origin do not respect the political, economic and other boundaries.

5 CONCLUSIONS

Ecological awareness, as a manifestation of global understanding about the relationship between the man and the nature is an integral part of broader social and political activities towards the conservation of the environment, because without a knowledge of environmental issues, environmental values and environmental responsible behavior at the individual level, any global attempt to this direction remains unsuccessful. Despite the application of mandatory programs and standards, it is necessary to carry out regular programs of environmental education at all levels and encourage people to engage in activities aimed at protecting the environment. Environmental problems are becoming one of the most recent issue in the world, and therefore information in this area are of great importance. In this sense, it is important to point out that the importance of development of ecological culture serves not only to orientation behavior in the local environment in which the individual moves on a daily basis, but also to the general activities aimed at environmental protection globally.

Active participation of youth in creating a healthy and unpolluted environment is a primary goal. Investment in environmental education of young people and education of highly-skilled environmental personnel leads to the formation of public opinion which respects, understands and protects our environment and natural resources.

Recognizing the alarming situation in the environment, demonstrated by the vulnerability, degradation and destruction of ecosystems, as well

as that the main cause of that condition is anthropogenic factors, the already existing scientific disciplines begin to perceive the relationship between the man and the environment. At the same time, many areas of human activities receive the prefix "eco", and speak of the need for environmental education, the establishment of environmental ethics, the conception and implementation of environmental policy, environmental law and other eco needs and ways of their satisfaction.

Bearing in mind that the end of the twentieth and the beginning of the twenty-first century is marked by an accelerated process of globalization that leads to many positive but also negative consequences - the risk associated with the environment, this leads to the creation of the policy of global responsibility, creation of common standards and beliefs which should contribute to the establishment of the environmental security. In order to accomplish this type of security the existence of social and environmental security is required; its realization is linked to economic, social, health, technological, chemical and other types of security. The environmental security implies such a state of international relations which would provide conservation, rational use, reproduction and improvement of the quality of the environment in the interests of sustainable and safe development of all countries and create favorable conditions for the life of every man. Environmental security provides the implementation of normative, organizational and agricultural production measures, adopted within the framework of extensive international cooperation on the basis of international law. Educational and other authorities need to be persuaded that the introduction of ecological content into the system of school and out-of-school education is not an overload to education system, but that it is a real educational content for the new times and new technology, to secure the future of the nation in a healthy living environment.

Acknowledgments

This paper is the result of the realisation of the Scientific Research Project entitled „Development of Institutional Capacities, Standards and Procedures for Fighting Organized Crime and Terrorism in Climate of International Integrations“. The Project is financed by the Ministry of Science and Technological Development of the Republic of Serbia (No 179045), and carried out by the Academy of Criminalistic and Police Studies in Belgrade (2011–2014). The leader of the Project is Associate Professor Saša Mijalković, PhD.

6 REFERENCES

- [1] G. Brun, G., „Obrazovanje i vaspitanje za opstanak“, Zadužbina Andrejević, Beograd, 2001.
- [2] V. Stevanović, Enciklopedija, životna sredina i održivi razvoj, Beograd, 2003.
- [3] M. Blagojević, „Ekološka kriza i njen uticaj na civilizaciju“, Pravni život, 2009. pp. 203-213
- [4] Lj. Sokolović-Đokić, „Neki ekološki problemi savremene civilizacije“, časopis Norma, Vol. 1-2/2004. pp.132-141.
- [5] V. Vasović, „Etičko-ekološka edukacija“, 32. Nacionalna konferencija o kvalitetu, Kragujevac, 19-21. Maj, 2005. pp.332-339.
- [6] I. Živković, S. Janjić, „Krizna menadžmenta u ekološkom obrazovanju u osnovnim školama“, Međunarodna naučna konferencija Menadžment 2010, Kruševac, Srbija, pp. 486-491.
- [7] M. Andevski, „Uvod u ekološko obrazovanje“, Filozofski fakultet, Novi Sad, 1997.
- [8] D. Ž., Marković., „Socijalna ekologija“, 5. prerađeno i dopunjeno izdanje, Zavod za udžbenike i nastavna sredstva, Beograd, 2005.
- [9] S. Šehović, R. Marjanović R., R. Biočanin, „Ekološko obrazovanje u funkciji zaštite i unapređenja životne sredine“, Tehnika i informatika u obrazovanju, 9-11.maj, Čačak, 2008. pp.223-230.
- [10] M. Đukanović, „Životna sredina i održivi razvoj“, ELIT, Beograd, 1996.
- [11] R. Marjanović, D. Jokić, „Sistem kvaliteta u obrazovanju učenika“, Kvalitet, Beograd, 2007. pp. 183-196.
- [12] S. Šehović, R. Marjanović, R. Biočanin, ibid.
- [13] I. Živković, S. Janjić, ibid.
- [14] B. Richardson, Socio-technical Disasters: Profiles and Prevalence, Disaster Prevention and Management 4/94. pp. 29-37.
- [15] <http://www.beta.rs/zelenasrbija/default.asp?s=vesti&id=2321900>
- [16] V. Vukasović, „Međunarodnopravno regulisanje informisanja o životnoj sredini u Evropi“, Životna sredina ka Evropi, Beograd, 2005. pp. 78-85
- [17] L. Harms-Rindaghl, Safety analysis - Principles and Practice in Occupational safety, Taylor&Francis Inc., New York, 2001.
- [18] M. Blagojević, V. Galić, „Ekološki rizik u prevenciji zagađenja životne i radne sredine“, međunarodna naučna konferencija „Životna sredina i biodiverzitet“, Naučno-stručnog društva za zaštitu životne sredine Srbije „ECOLOGICA, Beograd, 22-23.april, 2010. pp. 312-316.
- [19] The UNESCO - UNEP, „International environmental education programm“, Paris, 1993.