

Environmental Awareness of Anthropogenic Impact

Carmen Otilia RUSĂNESCU¹, Gigel PARASCHIV¹, Sorin Ștefan BIRIȘ¹, Marin RUSĂNESCU²

¹ Polytechnic University of Bucharest, Faculty of Biotechnical Engineering

² Valplast Industry, Bucharest, Romania

Abstract: *This paper presents awareness of pollution problems displayed by students of the Faculty of Biotechnical Engineering, future environmental engineers.*

Survey was conducted using a questionnaire consisting of five questions. It was noted that for the final year students is very important to protect the environment, this due to deepening subjects in years of college.

Keywords: *environmental pollution, anthropogenic impact*

1. Introduction

Romania began its transition with some major environmental problems because legislation failed to deliver effective pollution controls. In addition, the slow-down in the economy helped to reduce the scale of environmental damage, although rising unemployment helped to breed a survival mentality which had made the public wary of supporting radical environmental programmes.

Before 1989, Bucharest was considered the largest and most complex industrial centre of Romania, gathering units with lower pollution potential, as the food industry, textile and so on, but as well units with higher pollution potential, such as those in energy production, chemical industries, metallurgy, construction, machinery and equipment manufacturing.

The industrialization phenomenon underwent differently in intensity and spatial expansion, depending largely on the political, historical and economic factors.

After the industrial landscape became a major economic and cultural presence in the urban landscape of Bucharest, a visible change is remarked in the landscape since 1989 by creating urban deserts and conversion of industrial to other functions, required by the continuously changing city, to be competitive at European and global level [4].

The environment represents the ensemble of natural and artificial elements in which life evolves or the sum of the factors exterior to the human body such as: the atmosphere, the light, as well as all the other beings. The water, air and soil, constituents of the biosphere are known under the name of environment factors. For the survival of the animal, vegetal and human kingdom the degree of pollution should be reduced for a cleaner and healthier environment. [2]

Knowing of the conditions of life within each medium has lead to an efficient protection. It is essential to have knowledge about the pollutant sources, especially the pollutants that could prejudice the development of live and then their impact upon the environment and upon life, generally.

In order to characterize and control the phenomena that are specific to some types of activities, and to know their impact upon the environment at a certain point, it is necessary for these things to be known through models of global appreciation upon the state of health or of polluting the environment. The first condition that imposes to the applied model is that of allowing for the comparison of the state of environment at a certain time with the possible state in the near future [2].

Determining the impact upon the environment can be considered a positive argument if the capitalization of the research results are taken into account [3].

Environmental education goes through various stages of formal and non formal education. It is based on social sciences and humanities, education programs must aimed the learning to conserve the nature and a better use of resources [1].

It aims to:

- Human awareness of the existence of natural and social environment;
- Empowering its proper understanding of the relation human-nature-community;
- Formatting an environmental conduct.

Achieving these major objectives it can be made only through complementary actions to all educational factors: school, family, society, and the complex extracurricular activities ensure the climate of these interactions with beneficial influence in shaping the personality of students.

In carrying out environmental education have to be respected the following principles:

- Addressing the environment in its totality: natural and artificial, technological and social, economic and political, cultural and historical.
- Considering environmental education as a continuous process, beginning at preschool and continuing through all formal and non-formal stages;
- Exploration of the major environmental problems from local perspective, regional, national and international, so that students to know the environmental factors also from other geographical regions;
- Focus on current and potential environmental problems, taking into account their trend in history;
- Promoting values and local needs, national and international to prevent and resolve environmental problems;
- To discover symptoms and real causes of environmental problems;
- Promoting cooperative learning.

Environmental Education puts students in direct contact with nature in order to develop love for all forms of life.

Presentations and analysis of environmental problems begin, usually, with a discussion of the causes of phenomena and ends with positive alternatives and possible ways of solution.

Obviously, for people to participate actively, intelligently and beneficial to the process of administration, development and environmental protection must be educated since the school banks to deal with environmental problems to be able to face the environmental problems in the current context.

Harsh reality and the problems of modern society require a redefinition of objectives in education and the education in science and the environment.

The contemporary education in the field of environment should be characterized by several important aspects:

To focus not only on the classical approach of the environment and its protection, but also on the human being in context of a healthy environment;

To change people's attitudes about environmental protection, meaning the state exceeded their declarations and training in order to effectively engage in such actions;

The school programs to be designed to lead to a passive knowledge to active interaction with the environment, to be translated theory into practice. [1]

The changes that should occur to education at all levels of education would mean restructuring the education content.

2. Results and discussion

To verify awareness of the impact of environmental pollution on the students use the following questionnaire, consisting of the following questions:

How aware are you of the environmental issues?

What rights do you think animals, birds and plants have compared to people?

Do you recycle selective? (Yes/ No)

Do you think that nonhuman species status is an indicator of the future for us humans?

Do you consider that your actions help solve the problems of the planet?

After processing the answers given by students the following results were obtained:

How aware are you of the environmental issues? (very aware / not interested).

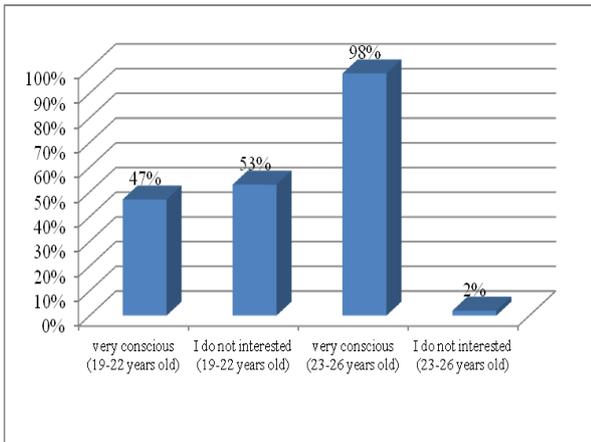


Fig. 1. Awareness to students aged 19-22 years, 23-26 years towards environmental issues

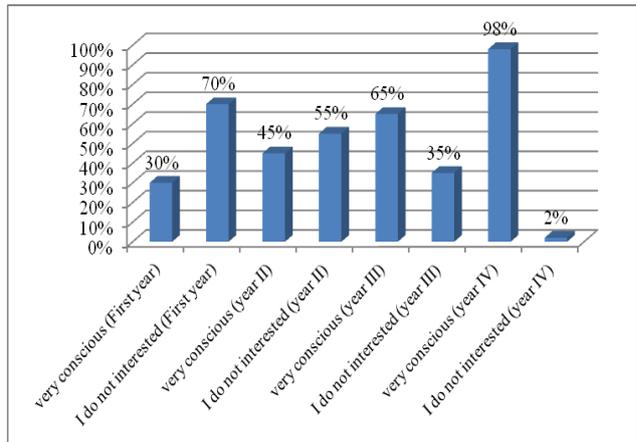


Fig. 2. Awareness of students by year of study towards environmental issues

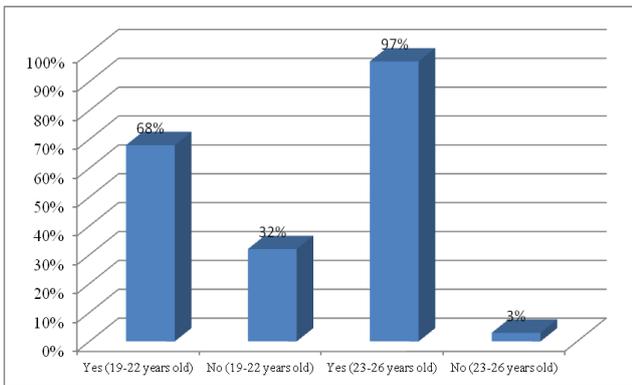


Fig. 3. The answer students aged 19-22 years old, 23-26 years old on selective recycling

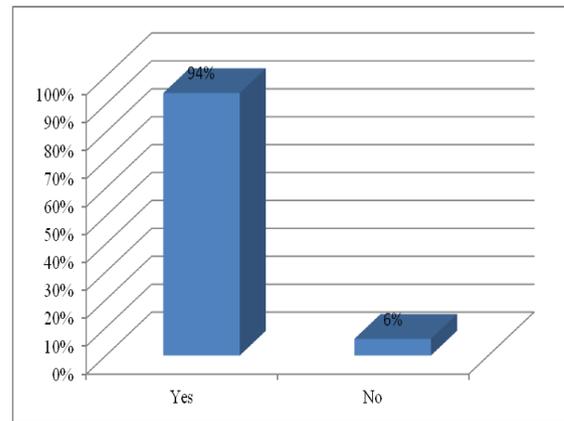


Fig. 4. If students answer animals, birds and plants living together have the same rights as men (Those living / No right)

Do you think that non-human species status is an indicator of the future for us humans? (Yes No).

Do you consider that your actions help solve the problems of the planet? (Yes No).

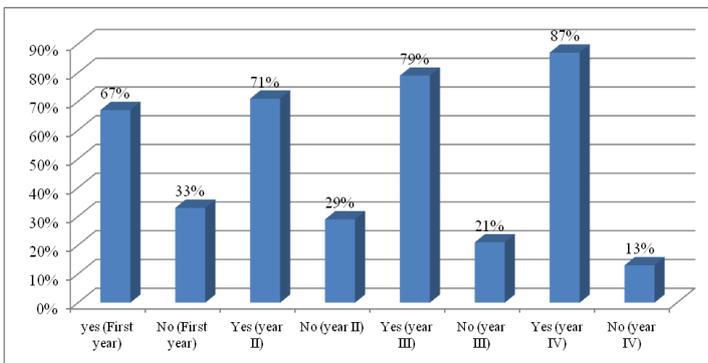


Fig. 5. Students' opinions on the state of non-human species that is an indicator of the future for people

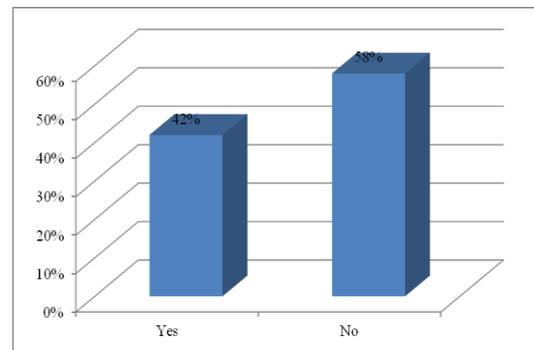


Fig. 6. Environmental actions help solve the problems of the planet

Conclusions

The conclusions were drawn, analyzed and plotted. They are:

When asked about their *awareness of environmental issues* it was observed that with advancement in the years of study the students became more aware of the environmental issues and this is due to the multitude of notions learned about pollution, remediation, environmental engineering. Of students aged 19-22 years only 47% were aware, compared to those aged 23 to 26 years- 98%.

Awareness of students by year of study towards environmental issues has been raised with the increase in years of study; in the first year of studies 30% of students were aware of problems concerning environmental pollution, in the second year 45%, in year III 65%, in the fourth year 98% of the students were aware of the problems of environmental pollution.

The answer of students *on selective recycling*: It was better amongst students aged 23-26 years (97%) than those aged 19-22 years (68%).

When asked *if animals, birds and plants living together have the same rights as humans* students' answer was 94% positive.

Students' answer *whether nonhuman species status is an indicator of the future for us humans* was 87% yes.

When asked *if their actions could help solve problems of the planet*, 42% of students agreed, 58% found we should all get involved to prevent environmental pollution.

- As time passes and with deepening in the faculty the environmental issues, students are becoming more aware of environmental issues.
- The multitude of news and documentaries presented in the media about the planet earth resources have made the students understand that the use of natural resources at will is a good thing for generations to come, and even for the present.
- Regarding the rights of birds, animals, plants, we found that students believe that they have any right to humans.
- The selective recycling - final year students are aware of the impact on the environment of selective recycling, and the lowest in years recycle at random, by recycling 68% and 97% of them selectively. Over the years of college, selective recycling will not have "secret" to the students and this will become the norm as eating, breathing, drinking water, etc.
- The status of non-human species is an indicator of the future for people, according to students who responded to the questionnaire.
- The problem of solving planet using students' actions - there is little difference between those who believe they can help and those who think they cannot help.

The main objectives of environmental education are to:

- Cultivate love for the Earth and all elements on it: water, plants, animals, etc.;
- Increase the desire to protect, respect and preserve nature by involving children in demonstration activities;
- Develop skills of research, exploration, environmental investigation;
- Know organisms and phenomena in the environment and their characteristics;
- Enrich the active vocabulary with words from the environment area;
- Acquire some conduct rules to ensure the balance between human health, society and the environment;
- Know the plants and animals protected by law;
- Investigate remediation methods of environmental status by using students in activities of waste recycling, sanitation of towns, etc.
- Increase awareness of the need to save water, electricity, wood, etc. (natural resources);
- Take negative attitudes on those who violate environmental rules and laws.

Unfortunately, when they return to where they came, forgetting that nature is all there, they continue receiving the same every time. If nature does not ever seem as generous as it is for us humans, we took what we gave.

It is time to relearn respect for nature. Once we realize that the only solution to all our problems. The best and safest way for nature conservation is a new consciousness. That fact is that nature does not need us, but we need nature.

It all comes back to us.

All other solutions will come by themselves, but the first and most important is the awareness of environmental pollution.

References

- [1] H. M. Sabo, “Environmental education and sustainable development –general aspects”, 2011 International Conference on Social Science and Humanity IPEDR vol.5 (2011);
- [2] I. Ifrim, D. Ciobanu, G. Andrioai, “A preliminary impact study upon the environment factors in the case of depollution of wastewaters from the pulp industry with mixtures of phosphoric acid and diammonium phosphate”, Scientific Study & Research ♦ Vol. VIII (2) ♦ 2007 ♦ ISSN 1582-540X 185;
- [3] I. C. Iojă, “Metode și tehnici de evaluare a calității mediului în aria metropolitană a municipiului București”, Editura Universității București, 2008;
- [4]. D. A. Mirea, C. M. Ciocanea, M. Patroescu, “Spatial and temporal dynamics projection of industrial landscape in the environmental state”, Case study: 3RD District of Bucharest present environment and sustainable development, Vol. 7, no. 2, 2013;
- [5] C. O. Rusănescu, I. N. Popescu, M. Rusanescu, L. David, “Analysis of variation in relative humidity in autumn 2009”, Revista International Journal of Energy and Environment, Issue 4, Volume 4, 2010, pp. 113-121, ISSN: 1109-9577;
- [6] C. O. Rusănescu, G. Paraschiv, Gh. Voicu, M. Rusănescu, “Comparative Analysis of Atmospheric Temperature Values, Relative Humidity in 2009 and 2010 in West Side of Bucharest City”, Bulletin UASVM Agriculture, 68(2)/2011, Print ISSN 1843-5246; Electronic ISSN 1843-5386, pp. 130-138;
- [7] C. O. Rusănescu, “Meteorologie si climatologie. Indrumar de laborator”, Editura Matrix Rom, București, 2013;
- [8] C. O. Rusănescu, M. Rusănescu, “Elemente de dinamica poluării”, Editura Cartea Studențească, București, 2007;
- [9] C. O. Rusănescu, M. Rusănescu, “Some aspects regarding the global warming”, Hidraulica (no. 4/2013).