



# **New approach in environmental and ecological education at the Slovak universities**

I. Hudoba, A. Moncmanová

*Slovak Technical University in Bratislava, 812 43 Bratislava,  
Slovak Republic*

## **Abstract**

After the changes in Central and Eastern Europe by the end of 80-ties a new approach in the field of Environmental and Ecological Education at the universities in Slovak Republik can be observed.

The universities have shown undoubt effort to create new curricula which should be compatible with european system of higher education. Comparing to other areas, the education in the field of environmental and ecological problems was insufficient. Therefore many of new activities like new curricula and study courses can be seen.

In order to prepare new curricula the professional teams of experts were formed at the Slovak Universities. Its main task was to introduce a new concept of environmental and ecological education.

The conent of the paper is giving a brief view at the history, present state and new approach in Environmental and Ecological education at the Universities in Slovak Republic.

## **1 Introduction**

Transformation process in political, economical and practically in all sektors including higher education is going on. The main interest of the Slovak Republic is to become as soon as possible the new member of European Union.

The higher education especially universities have been showing an effort trying to adjust their curricula in order to be compatible with the european university system. The great effort was reflected in one of the youngest branches - Environmental Protection and resulted in the requirement upon innovation of the existing and creating of new branches and new university faculties and departments.



## 2 History of Environmental and Ecological Education at Slovak Universities

Environmental protection as an interdisciplinary topic has become the object of interest quite a long time ago before the early symptoms of ecological crisis has been shown.

The representatives of educational and scientific institutions realized, that the students knowledge has to be completed by basic knowledge in the field of ecology and environmental protection. At the universities the professional teams of specialists were formed in order of preparation the basis of this type of education.

The forms of implementation were foreseen here:

- education of all university students through introduction of a new subject
- training of lectures at pedagogical faculties for ecological and environmental education of the whole population
- training of specialists for creation and protection of environment.

One group of specialists tried to enforce formation of a separate subject, the second one was in favour of incorporation of the environmental topic in other subjects to become an integral part of the latter. This lack of uniformity of views has lead the Ministry of Environment to declare a new research task with the aim of designing the content and the extent of curricula for the general subject for the universities according to their respective specialisation. That task was resolved succesfully at the end of 1988 and all universities were involved in. Gradually the curricula assumed its present form. Its goal is to prepare the graduates for solving of the tasks within their specialisation in compliance with the requirement of environmental protection and the same time to cultivate those of their capabilities which would lead them in practice to respecting and enforcement of environmental protection aspects.

The second form of education, namely preparation of teachers in the field of ecology and environmental protection is highly important because of permanent acting of teachers during the whole education process.

The third form, training of specialists at the universities was a subject of extensive research. Education of specialists at the universities is reflected in their profile and is characterized by two directions:

- a./ specialists or experts for individual sectors
- b./ generalists.

The first group of people is able to solve the specific problems of creating and protection of environment in individual sectors. The other include the specialists with synthesizing orientation as well those with crosssectional orientation, who are able to find the general problem solving procedures, to organize the planning and management of activities in this area. The education was modified and approached one or another concept depending on the university profil as well as on the personalities involved in the pedagogical process.



Some of the universities in Slovakia have extended the concept of education incorporating in their curricula also interdisciplinary studies. Due to suitable combination of subject enabled the preparation of a generalists who are able to solve also technical problems in a specific area. The education of specialists and generalists at technically and nontechnically oriented universities has a long tradition. Opening the specialized courses is dated to the end of the seventies.

Technically oriented universities in Slovakia were putting stress mostly towards the preparation of specialists, which was realized in undergraduate and postgraduate study ( PhD study and postgraduate courses ). At the Slovak Technical University, e.g. the Faculty of Chemical Technology back since 1976 has been organizing various types of postgraduate courses and in 1980 a new specialization in the field of "Water and Air Technology" was initiated. This study course has undergone several changes and gradually it assumed its present form called "Technology of Environment". There are three different specializations : Technology of Air, Technology of Water, Radioecology and an interdisciplinary study course entitled "Environmental Sciences", which was opened in the academic year 1992-1993. This course is focused mainly for the education of specialists where the decision-making and policy-making skill is needed. Originally, at nontechnical universities in Slovakia were the specialized courses for education of ecologists and generalists. For example since 1977 the Faculty of Natural Sciences of the Comenius University prepared a course "Protection of Natural Environment". Later in 1991 this existing course was modified in a new branch entitled "Environmental sciences". This course had specializations like "Ecosozology and Physiotoxicology, Soil Science, Environmental Planning and Management ". The study was implemented at three levels: Bachelor's, Master's and PhD.

### 3 Present situation in Environmental and Ecological Education in Slovakia

In the nineties a dynamic development has been started as well as major modernization of the environmental and ecological education at nontechnical and technical universities. New branches were prepared, new specialized faculties and departments were established.

The Faculty of Ecology at the Technical university in Zvolen was founded in 1991, Faculty of Landscape Engineering and Horticultural Agriculture at the University of Agriculture in Nitra was founded very recently in 1995. There are numerous directions, specializations with various educational structures: 3 years Bachelor study, 5 years Master study and PhD study.

An overview of special courses, specializations at the universities in Slovakia is listed in Tab.1.



## 18 Environmental Engineering Education

Tab.2. shows the list of Faculties where the respective type of education is performed. The total number of students admitted annually for individual studies is roughly from 700 to 800 students.

Table 1.: Environmental and Ecological Curricula  
at the Universities in the Slovak Republic

<p>Current branches:</p> <ul style="list-style-type: none"> <li>Creation and protection of environment ( CPE )</li> <li>Environmental protections ( EP )</li> <li>Nature protection ( NP )</li>   <li>Environmental technology ( ET )</li> <li>Ecotechnology ( ET )</li> <li>Technique for environmental protection ( TEP )</li> <li>Technique for working environment ( TWE )</li> <li>Influence of human technology on human environment ( IHTHE )</li> <li>Sanitary engineering ( SE )</li>   <li>Landscape ecology ( LE )</li> <li>Ecology of natural environment ( E )</li> <li>Ecosozology and Physiotactics ( ESPT )</li> <li>Soil science ( SS )</li> </ul>
<p>Curricula of teachers: Landscape ecology Environmental protection</p>
<p>Postgraduate course: Environmental planning and management ( EPM )</p>

#### 4 Conclusion

It can be stated that the present trend in the field of environmental and ecological education at the universities in Slovakia puts emphasis upon comprehensive approach at the education of students, new branches and specialisation are being formed of total duration 3, 4 or 5 years.

In the academic year 1995-96 new branches will be opened e.g. "Environmental Science and Applied Ecology" at the Faculty of Ecology in



Table 2.: List of programmes offered by the Slovak Universities

Slovak Technical University, Bratislava	- ( EP ), ( TEP ), ( SE )
Polytechnics, Košice	- ( ET )
Technical University, Zvolen	- ( CPE ), ( E ), ( LE ), ( NP ), ( IHTHE )
University of Agriculture, Nitra	- ( CPE )
University of Transportation, Žilina	- ( TWE )
Comenius University, Bratislava	- ( LE ), ( ESPT )
Duration: 2 years - basic studies	
3 years - specialistic studies	
3 years - PhD studies	
Pedagogical faculties: Banská Bystrica	- ( EP )
Nitra	- ( LE ), ( EP )
Academia Istropolitana, Bratislava - Advanced studies ( EPM )	

Zvolen. The process of creating of new branches in the field of "Environmental Engineering" at the other universities in Slovakia is going on.

In parallel , there is an effort to harmonise the structures of various curricula based on modules consisting of subject groups. Flexible combinations of different modules enable to create the update curriculum reflecting their specific orientation and the needs of respective region.

Universities in Slovakia are reacting on increasing interest in environmental study at different levels.

## References

1. Moncmanová, A.: Environmental and Ecological Education at the Slovak Universities, Proceedings of the Int. Workshop on New Trends in Environmental Education and Training , Vienna, Austria, 1995