

SLOVENIA AS A LEARNING REGION FOR SUSTAINABLE DEVELOPMENT

DDr. Ana Vovk Korže

International Centre for Ecoremediation, Faculty of
Arts, University of Maribor, Slovenia

Mojca Kokot Krajnc

International Centre for Ecoremediation, Faculty of
Arts, University of Maribor, Slovenia

Abstract: This paper deals with learning environments in Slovenia, enabling mainly schools experiential education for sustainable development. In recent years, municipalities and various organizations have established over Slovenia at the different settings that need to connect to a joint bid. We will need to enhance experiential education and increase the usefulness of the knowledge in practice. New challenges in education are emphasized by the European Commission, which encourages Member States to responsibly carry out the educational process. The emphasis is on broad capabilities that open the door to different activities. More attention should be paid to the intergenerational cooperation, where in addition to the practice education and responsibility is also imparted.

Key words: learning regions, innovative approach, self-sufficient supply, educational tourism, Slovenia.

SLOVENIJA KOT UČNA REGIJA ZA TRAJNOSTNI RAZVOJ

Povzetek: Prispevek obravnava učna okolja v Sloveniji, ki omogočajo predvsem šolam izkustveno izobraževanje za trajnostni razvoj. V zadnjih letih so občine in različne organizacije vzpostavile po vsej Sloveniji različna okolja, ki jih je potrebno povezati v skupno ponudbo. Potrebno bo okrepiti izkustveno izobraževanje in povečati uporabnost znanj v praksi. Nove izzive v izobraževanju poudarja tudi Evropska Komisija, ki vzpodbuja države članice, da odgovorno izvajajo izobraževalni proces. Poudarek je na širših kompetencah, ki odpirajo vrata različnim aktivnostim. Več pozornosti je potrebno nameniti tudi medgeneracijskemu sodelovanju, kjer se poleg prakse prenašata tudi vzgoja in odgovornost.

Ključne besede: učne regije, inovativni pristopi, samooskrba, učni turizem, Slovenija.

1. Introduction

Over the last decade of education for sustainable development (2005 - 2015), there has been a strong emphasis on gaining direct experience in solving the current problems that have been threatening the Earth for decades. Because of the growing number of natural disasters, problems with water, food and soil are increasing constantly, a fact which should be taken into consideration in relevant educational approaches (Haubrich, 2006). The paper presents thematic emphases of the educational polygons in Slovenia and the activities that take place there. Special attention is paid to the analysis of active forms of education and research that are used in classes which are taking place in nature. We have established that the reciprocal relationship between the visitors of the educational polygons and the local inhabitants, who live in the immediate vicinity, has a significant impact on understanding the meaning of traditional knowledge and the formation of intergenerational bonds. Young people are much more interested in natural and cultural heritage than we have expected and they want to contribute in the creation of solutions by themselves (Vovk Korže, 2011; Pintrich in Schunk, 2002). This is the reason for creating conditions in which at least a part of the classes can take place outside of the usual school environment.

2. System-building approach to establish learning polygons in Slovenia

Regional development should be based on internal sources (Krotscheck, C. 2007). Slovenia has a rich natural and cultural heritage, which was included as a development capital. In line with this reasoning, the University of Maribor, Faculty of Arts, International Centre for Ecoremediation reported in 2009 a project with an innovative approach to education, where we developed the methodology of an outdoor classroom in nature. We provided a theoretical basis for interdisciplinary experiential learning with an emphasis on sustainable development. Educational institutions in Slovenia, as well as in the countries of the Balkan Peninsula have supported such an approach to classrooms in nature and the initiative was taken to the then Ministry of Education in Slovenia to prepare a tender for the establishment of conditions for experiential education for sustainable development. Thus, in

Slovenia in the period between 2009 and within the project 2010, an attractive learning environment for all ages was created (Senegačnik et al., 2009). In the Dravinja Valley in the eastern part of Slovenia, in the area of Natura 2000 predominance, and where nature is still well-preserved, real natural classrooms were established. In 2010, the Slovenian Ministry of Education and Sport supported the project of establishing educational polygons in Slovenia, with the objective of providing especially young people (without the exclusion of lifelong education) with a holistic approach in research, teaching and learning in nature. The Educational polygon for standing waters in Sveta Trojica, the Educational polygon for groundwater in Miklavž and the Educational environment for natural ecoremediation by the river Dragonja have as yet been only partially established. In addition, the Educational point for constructed wetlands in Dobrna, the Educational polygon for ecoremediation GRM Novo mesto and the Educational point for soil protection in Rakičan are also under construction. Nature's Classroom, which links the above mentioned educational points, includes several educational paths (the municipality of Poljčane alone features 13 educational paths), cycle tracks and observation points. The majority of activities take place at the two educational polygons in the municipality of Poljčane, i.e. in the settlement Modraže, where the emphasis is placed on ecoremediation and self-sufficient supply. The municipality of Poljčane has systemically approached the transformation of the educational infrastructure into a classroom in nature, whose professional management is carried out by the International Centre for Ecoremediation at the Faculty of Arts of the University of Maribor, while the organisational work is undertaken by the Nature Development Centre, which was founded for the purposes of educational tourism.



Picture 1. Teaching polygons as the basis for learning a region of Slovenia

3. Educational polygons for enhancing experiential education for a sustainable future

The educational polygons for ecoremediation in Modraže provide numerous possibilities for open-air education with their natural and anthropogenic ecosystems. They cover 5 ha of area, and 3 ha are designed for educational purposes. The educational polygon set up numerous educational environments for understanding the ecoremediation. Ecoremediation, which is based on the laws of how nature operates, is used above all in protected areas (for protection) and in the areas where degradation is present (for sanitation). Ecoremediation establishes everyday practice for cleaning water, protecting soil, preventing the spreading of dust particles and erosion, accumulating sediments and improving life quality in general. The educational polygon for ecoremediation is based on innovative approaches, which enable participants to create their own experience and understanding on the basis of their own activity.

The educational polygon for self-sufficient supply in the settlement of Dole is based on compliance with the principles of permaculture and ecovillage. The educational polygon features a yurt (a mobile nomadic dwelling), where it is also possible to stay overnight. The polygon is grown over with autochthonous plant species, namely

chestnut, walnut and fruit trees. The whole principle is based on considering limited natural resources and rational spatial use. The following plantations are shown: a meadow orchard, a forest garden, a field with mixed plants, and a fruit and vegetable garden. There is also a field and an area of natural succession. The elements of a sustainable way of living that are shown include: a solar collector for heating water, photovoltaic modules for electrical energy, a rainwater tank, a constructed wetland for the treatment of spring water and a spring water reservoir. A living building with willows, a fence with berries, a windward shield and an element of water with plants all serve to enrich the space in terms of landscape and ecosystem. The basic aim of the entire concept of Nature's Classroom is thus to develop and strengthen the capacity of individuals to recognize and understand processes that take place in nature and environment, to form visions and alternative suggestions for solving numerous environmental problems, and to make assessments and decisions in favor of sustainable development, which are also the key principles of the education for sustainable development strategy (Šole za 21. stoletje).

Education polygon for ecoremediation in Novo mesto

The project Sustainability Southeast Slovenia ecoremediations established a learning ground for ecoremediation (ERM) as a learning area for sustainable solutions to environmental problems in Southeast Slovenia's ecoremediations. Polygon is the property of Grm Novo mesto - Center of Biotechnology and Tourism. On the ground the pilot learning objects enable the identification of ecoremediation systems. In addition, systems that are built on ground are also natural cleaning systems (www.erm-jvs.si).

Learning gravel pit Kidričevo

The municipality Kidričevo has excellent access to highway upgrading, which also enables its development of new activities, of which in the past it did not know.

It is therefore 'Adventures in the municipality Kidričevo' that offers a new development approach to the local environment on the basis of natural resources and human interest. The LAS project was arranged in gravel pit stubble so that it is already possible to implement the basic educational forms.

Reuse centers

Reuse centers are spread across Slovenia as learning centers and social enterprises. Since Slovenia has a big problem with waste, re-use centers provide assistance in waste management.

Koroška region and biodynamic

Koroška region has biodynamic, using it to clean the floor. Biodynamic is also a method for the processing of agricultural soils and allows the production of the healthy food. For these purposes, the pilots build gardens in many places in Koroška.

4. New teaching materials for experiential education

In the context of professional backgrounds for the preparation of educational curricula and modules for classroom practice, field work and excursions, four curricula were prepared, namely:

- Curricula in accordance with the knowledge catalogues for compulsory and elective modules of the Environment Preservation Technician educational program;
- curricula for research, field work and learning at the established ecoremediation polygon in the fields of
 - o nature preservation,
 - o environmental protection and
 - o environmental education,with cross-curricular links to mandatory general education courses, such as biology, geography and chemistry, as well as elective courses in subjects such as beekeeping and environmental chemistry,
- And preparation and implementation of educational curricula for natural science days and field work within primary education, focusing on
 - o the environmental subjects (1. triad of the 9-year primary education),
 - o natural science and technology (2. triad);
 - o biology and geography (3. triad) and in particular on

- the elective course environmental education at all stages of primary education (www.ucilnicavnaravi.si).

The scientific bases for the preparation of curricula for practical lessons for Biotechnical schools, research, field work and excursions provide an overview of the content and learning objectives that will be achieved through implementation of individual learning programs within the 'classroom in nature'.

In accordance with the strategy for lifelong learning in Slovenia and the strategy for education for sustainable development as well as development of catalogues of knowledge and curricula the purpose of these learning programs is to upgrade and supplement knowledge gained through theory with direct experience in nature. The key purpose of preparing these programs is to emphasize experiential learning and to prepare through a combination of learning paths in the Dravinja Valley and the ecoremediation learning polygon curricula and modules that will help teachers to implement natural science days, project days, field work, required obligatory practice and practical lessons for those Biotechnical schools that implement the educational programs Nature and Environment Preservation Technician. In creating the background for preparation of the learning programs and materials, three practical training sessions for teachers were also carried out.

5. Conclusions

Ecoremediation, permaculture and biodynamic are approaches to achieve sustainability. It is the answer to the science, that an unlimited use of natural resources is not possible and that we are approaching the limits of growth (Prugh, Assadourian, 2003). Despite some doubts about the unsustainable use of resources on our planet and the exploitation of people, for sure, we will have to continue to work and live differently than we have so far. Therefore, by imitating nature (ecoremediation) and sound design humankind is already lowering the cost of erosion, flooding, loss of rare plant and animal species. However, since such approaches to education are insufficient the learning experience is necessary.. Professional is dealing with these approaches in the International Centre for ecoremediation on the learning polygon for self-care and permaculture in the municipality Poljčane (<http://www.ff.uni-mb.si/>).

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