

EDUCATION IN SLOVAKIA IN THE FIELD OF ENVIRONMENTAL EDUCATION WITH AN EMPHASIS ON GREEN INFRASTRUCTURE

Viliam Bárek, Anna Báreková, Oliver Obročník

Institute of Landscape Engineering, Slovak University of Agriculture in Nitra, Slovakia

Abstract

Education in Slovakia, focused on environmental education with an emphasis on green infrastructure, is a manifestation of our lifestyle and way of existence. It is a reflection of our emphasis on values and morals. Training and education in this area lag far behind current needs. A citizen should be civilized enough to know what is suitable for the environment. Basic environmental knowledge of 21st century knowledge and environmental behavior is developed in relation to existing European countries.

Keywords: *environmental education, green infrastructure, environment, landscape, education*

1. INTRODUCTION

Our relationship with the environment is a manifestation of our life values and moral attitudes. It is a reflection of the hierarchy of values and morals that need to be deepened. However, the educational system lags behind the needs of contemporary society, and the necessary skills and attitudes necessary for a civilized citizen. The need to create new standards that take into account the knowledge of the 21st century and pro-environmental behavior is inevitable. The resulting need for a concept in the field of environmental education and training is expressed in several social requirements:

- identification of environmental education and training priorities,
- expansion of the offer of leisure activities related to ecotourism,
- response to topics and priority areas of environmental policy in accordance with modern trends and priorities in the EU and Slovakia,
- increased emphasis on informal activities and public access to information,
- creation of material and spatial conditions to ensure systematic steps in the field of environmental education and training,
- better coordination of environmental activities through better cooperation.

The aim of environmental education and training is to increase the environmental awareness of all residents, and to reduce the "ecological footprint" at the level of individuals, families, households, companies, public and private institutions. To achieve this goal, it is necessary to understand how a person is dependent on the environment and nature, to realize that the survival of a person and maintaining the quality of his life depends on a sustainable relationship with the environment, which has limited resources and the quality of individual parts (soil, water, air, biodiversity...), transfer of acquired environmental knowledge, skills into conscious pro-environmental attitudes and changing patterns of behavior.

2. MATERIALS AND METHODS

2.1. Materials

The governments of the Slovak Republic have always emphatically declared the important role of environmental education, upbringing, and awareness as an effective preventive tool of the SR's environmental policy. Environmental education is aimed at leading citizens to think and act based on the principles of sustainable development, to understand responsibility for the environment, and to respect life in all its forms. Increasing the population's environmental awareness and awareness of the

state of the environment, its causes, and consequences is also declared a priority. In relation to the youth, environmental education is considered the most effective tool for dealing with the environment, by creating a school and extracurricular environmental education system. These goals are elaborated in conceptual materials and commitments of institutions at global, national, and regional levels, as well as in legislation. The Slovak Republic is a member of the UN, and therefore respects and takes account of the UNECE Strategy for Education for Sustainable Development [1], adopted at a high-level meeting of representatives of the Ministries of Environment and Education in Vilnius on March 17-18, 2005. Agenda 21 (1992) is highlighted in the chapter: Children and youth in sustainable development, where the "active involvement of young people in the decision-making process in environmental, social and economic development issues at all levels" is emphasized. Environmental education is also found in the chapter: Support for education, awareness and of vocational training for individual countries [2].

2.2. Methods

Within the framework of the Slovak Republic, Agenda 21 was transferred to the National Strategy for Sustainable Development, approved by the Government of the Slovak Republic by Decree No. 10 of October 2001. 978 and NR SR in the decree of April 3, 2002. In the section entitled People's awareness, education, training and enlightenment, this strategy focuses on environmental education and emphasizes that it should be a regular part of the school system [3]. Since 2015, it has been the successor of Agenda 21 Agenda 2030 - Agenda for sustainable development until 2030 [4]. Among the global goals for sustainable development in the 2030 Agenda is to ensure that all who learn to acquire the knowledge and skills necessary to promote sustainable development, including through education for sustainable lifestyles, human rights, gender equality, peace promotion, and non-violence, global citizenship and recognition of cultural diversity and the contribution of culture to sustainable development. Agenda 2030 is currently in the legislative process in Slovakia.

The implementation of the concept of environmental education is an integral part of fulfilling the obligations of the Slovak Republic in connection with the goals of sustainable development, which is governed by the National priorities for the implementation of Agenda 2030, approved by the government.

2.3 . Procedures

At the national level, the Departmental concept of environmental education, education, and awareness until 2025, approved by the Ministry of Education of the Slovak Republic in 2015 [5], as part of the strategy of building a network of environmental education centers, defines cooperation between subjects active in environmental education, but also undersized infrastructure and improving funding. For the implementation of this strategy, the Ministry of the Environment of the Slovak Republic for environmental education, education, and enlightenment was established, which covers representatives from various institutions, such as subordinate organizations, the non-governmental sector, the Ministry of Culture of the Slovak Republic and the Ministry of Education, Culture and Sports of the Slovak Republic. The following were proposed as specific measures:

- Creation and institutional provision of a functional environmental education system;
- Development of existing successful activities focused on environmental education;
- Development and support of practical environmental education;
- Development of professional educational activities for public administration employees;
- Streamlining the education of environmental education coordinators;
- Attracting and increasing the public's interest in the environment, nature, and landscape protection and the support of civic involvement and active volunteering;
- Support of new trends in the field of environmental education;
- Education in the field of sustainable use of natural resources through the development of environmental infrastructure;

- Education in the field of adaptation to the adverse consequences of climate change;
- Improvement of educational activities in the field of environmental care, cooperation with local actors of local development, municipalities and the general public.

The Government of the Slovak Republic approved resolution no. 87/2019 of February 27, 2019, Greener Slovakia - Strategy of the environmental policy of the Slovak Republic until 2030. The strategy deals with environmental education and education of all age categories. Among other things, in it he also mentions the need to create a network of state and non-state environmental education centers that would be comparable to the standard of European countries. At the level of the state, regional and local governments, a mechanism should be created to implement a network of these centers, as well as information and visitor centers in protected areas, which would be based on the principles of integrity, openness and transparency. Another important document is Slovakia's Adaptation Strategy to the Adverse Effects of Climate Change, which considers building a knowledge base and providing objective information for the decision-making process at all levels to be one of the most important principles.

The concept of nature and landscape protection sets goals and procedures for achieving goals, especially in the field of territorial and species protection, forest and landscape protection, education and training, cooperation with other state administration bodies, self-government, non-governmental organizations, and the field of international cooperation using institutional, legal and economic instruments. The currently approved Concept of Nature and Landscape Protection was adopted by the Government of the Slovak Republic. In December 2018, an updated version of the Concept of Nature and Landscape Protection until 2030 was submitted to the legislative process with the aim of approving the document by the Government of the Slovak Republic in June 2019. Among the four priorities of the submitted draft of the updated concept are:

- Information on nature and landscape protection, international cooperation, education, enlightenment, and communication;
- Creation of a system for collecting data on nature and landscape protection and their online availability;
- More effective involvement in international relations;
- Improving public awareness and knowledge about nature and landscape protection.

Only a motivated group of educators who are competent and creative in the field of environmental issues are capable of using the space defined by environmental education, which is today given by the Cross-sectional theme. However, in most schools, this Cross-cutting theme is formally considered. Currently, there is a lack of a conceptual system of education for future teachers (environmental minimum for all approvals), a conceptual and motivational system of further education

and pedagogues in the field of environmental education, and systemic support of environmental education coordinators in schools. Due to the lack of time, and especially the lack of education of teachers in the field of new and modern educational strategies, less effective activation methods are used in schools.

Motivation for the coordinators of environmental education - the responsibility for the application of the extracurricular curriculum has been linked over time to the most committed educator for this area with a newly created function, but the corresponding award for work in this sector is rarely available. Research for the discussion on the next direction in the field of environmental education is insufficient, because there is a lack of comprehensive and representative research on the effectiveness of environmental education, both in terms of content and the forms and methods used. Environmental education is a dynamically developing field that responds to new knowledge in various scientific fields, as well as to current social and environmental challenges and needs, therefore eco-pedagogues have an extremely urgent need for permanent education. Therefore, the environmental education system needs monitoring and evaluation of the effectiveness of the used content, forms, and methods of environmental education, so that it is regularly updated and innovated. Currently, insufficient attention is paid to topics such as adaptation of individuals and communities to climate change, education for self-sufficiency,

conscious modesty, critical thinking, thinking in contexts, civic activism, defense of one's own opinion, tolerance, and respect for the opinions of others. Likewise, insufficient levels of cooperation occur between environmental organizations and institutions, as well as at the level within individual departments (for example, between schools, and between teachers at the same school level) or within sectors (for example, between non-governmental organizations). The potential of sharing topics, ideas, verified projects, programs, inspirations, and examples of good practice is thus underutilized.

3. RESULTS

In the recently published research Green Slovakia - analysis of the attitudes of the adult Slovak population towards environmental protection, the following areas were mapped (among others): the current state of the environment in Slovakia, the general attitude of Slovaks towards the environment in Slovakia, personal attitude towards the environment in Slovakia, initiatives to change of attitude towards the environment, awareness of the environment. The sample was a representative sample of Slovak residents aged 18 to 65 in quota characteristics: region, level of education, age, size of residence, and gender. The research results show:

- the most interesting area that positively affects people's relationship with the Slovak Republic is nature
- actively participate in activities to improve the environment
- respondents consider the state of ŽP in Slovakia to be neither good nor bad
- according to the majority of respondents, among the priorities are smog, waste (sorting, black dumps, organization of waste collection), and pollution of public space (mess, garbage, dirt),
- respondents rated people's relationship to the environment as unfavorable and at a lower level than in other EU countries - Slovaks are more selfish and consumerist than environmentally oriented,
- more than half of the respondents criticize the insufficient attention paid to environmental protection by the state,
- there is a lack of role models (politicians, well-known personalities) on the topic of environmental protection,
- the most frequent associations for the phrase environmental protection are waste sorting and recycling, nature protection, forest protection, air cleanliness, reduction of emissions, exhalates, environmental cleanliness, not littering...,
- waste sorting is the most frequent contribution of research respondents to the protection of the environment (answer of more than 80% of respondents), the second most frequent answer was saving energy in the home, further saving water, not wasting food..., activities such as supporting composting were mentioned to a much lower extent, utilization of biological waste, prioritizing purchases from local sources or using rainwater...
- most respondents think that everyone can contribute to the protection of the environment through their activities (while 18% of the participants think that an individual's activity cannot change anything), the vast majority are intrinsically motivated to such activity in favor of environmental protection
- specifically, respondents have the most information on the topics of waste sorting, water consumption, alternative transport options, and energy-saving options at home, on the contrary, the least on the topics of NATURA 2000, trade in protected species of plants and animals, invasive plants and animals.

The answer may be a lack of information, deficiencies in education, underestimation of the quality of organic food, or insufficient skills of the respondents in finding connections. As part of finding out how people are willing to make changes for the environment, there were answers such as sorting waste,

drinking tap water, preferring food from regional producers, and minimizing packaging. On the other hand, however, people did not express their willingness to change their meat consumption habits, use public transport for long distances and pay for products with eco-certificates. In the later part of the survey, the respondents' willingness to actively support a sustainable and socially responsible lifestyle was determined. The majority of people expressed their willingness to contribute to the promotion of this lifestyle, which is in line with the results of the above research. Despite this, there are still unsatisfactory results such as the low rate of waste sorting, the large number of illegal landfills, the high consumption of plastic bags, the ever-increasing household consumption, and the increase in greenhouse gas emissions.

It is generally held in low regard by the public

- Credit of nature protection institutions,
- Low demand for nature-friendly leisure activities,
- A modest network of cycle routes, as well as tourist attractions close to nature (agritourism, yard sales, a network of demonstration nature gardens, etc.),
- Growing callousness towards nature,
- Weak reaction of the public (including pedagogical ones) to cases of the devastation of the natural environment,
- Low level of civic involvement in the care of public spaces,
- Excessive tolerance of clientelism and corruption,
- Low awareness of municipal governments and citizens about available subsidy titles.

3.1. Strengths of education

- Introduction of European directives into the education system in the form of a cross-cutting topic,
- The existence of professional institutions (generally in the Slovak Republic, as well as in TSK), dealing with European directives for environmental protection,
- professional and organizational capacities of non-profit organizations (as carriers of innovations), professional and organizational capacities in educational facilities (as well as in educational facilities),
- Several acceptable methodological and professional materials for teachers (but not yet for all topics),
- The existence of good and inspiring projects for European directives for environmental protection (for example, the Green School program, GLOBE, Beagle, and others),
- Existence of motivated and enthusiastic educators in the field of European directives for environmental protection, annual activity with students in the framework of extracurricular activities organized by non-profit organizations, educational facilities, and in schools,
- The existence of environmental subjects at the technical college (at the Faculty of Socio-Economic Relations, the Faculty of Industrial Technologies, and the Faculty of Special Technology),
- Existence of examples of good practice (inclusion of European directives for environmental protection in educational programs), effective forms for European directives for environmental protection,
- Positive results in the area of waste sorting, saving water, energy,

3.2. Weaknesses of education

- Comparison with EU standards shows insufficient results in the area of minimization, waste sorting, water, and energy saving,
- In civic engagement, the results are poor, which results in a low level of engagement and awareness among adults,
- In the area of nature and landscape protection, there are scant results in conservation topics, such as forest protection, biodiversity, awareness of invasive species, and their impact on nature. Practical activities at schools and school facilities are very weak, as well as the use of opportunities for cooperation with regional administrations of PLA/NP,
- Pupils and graduates of TSK schools have a low awareness of the natural potential, specific natural values, and beauties of the region,
- Residents' awareness of environmental burdens and their impact on residents' health and nature is zero to weak,
- Underestimation of the consequences of climate change on the part of pupils (and parents), but also authorities (educators), low level of understanding of the importance of water retention measures in the country and other adaptation measures to climate change,
- Lack of a uniform textbook for environmental education for primary and secondary schools,
- Low motivation of educators in the field of education and cross-cutting topics, which they do not consider to be priorities,
- Weak school equipment, such as bins for sorted waste collection, laboratories, nature classrooms,
- Lack of economic learning trails with low interactivity and out-of-dateness,
- Non-systematic environmental education of teachers in practice,
- Weak motivation of teachers (especially in the field of education and cross-cutting topics),
- Missing definition of priorities and measurable goals, environmental education, education, and awareness at all levels.

3.3. Opportunities in education

- Using the natural features of the region and its surroundings as educational and tourist attractions,
- Adding new topics to the education curriculum,
- The existing base of motivated and enthusiastic teachers in the field of environmental education, education, and awareness,
- Utilizing the potential of environmental organizations, professional institutions, and the broad base of the civil sector - increasing their share in the system of providing environmental, educational, information, and awareness services,
- Making environmental topics more attractive for pupils/students,
- Using the potential of school gardens and campuses,
- Expansion of the network of eco-educational trails, with the aim of increasing interactivity and modernizing them in the context of modern trends in the interpretation of nature,
- Creation of a repository/publicly available resource for educators and lecturers with free topics, games, tests, quizzes, videos, presentations, and environmental education and awareness activities,
- Support/prioritization of regional foods in school,

- Joint projects of schools, and school founders with professional environmental education, education, and enlightenment institutions (state, private, non-governmental...) - at the local, micro-regional, regional, national, and international levels.

3.4. Threats to education

- Competition of environmental education with other thematic areas in schools (for example, traffic education, drug addiction prevention, military education, culture, sports, global and development education, multicultural education, human rights, etc.),
- Lack of funds for further education of teaching and non-teaching staff of schools and educational facilities,
- Concentration of schools' attention on matriculation subjects, performance orientation, and underestimation of general education,
- Insufficient emphasis on environmental topics in civic and ethical education, as well as the unused potential of these subjects.

4. DISCUSSION

Nowadays, the level of knowledge and knowledge is a reflection of the current priorities of the school system in Slovakia. On the contrary, the level of environmental attitudes among pupils and students is not high. In the last five years, however, the number of pupils and students who have an individual interest in solving environmental protection issues has improved, as well as the number of schools and school facilities that are actively involved in quality projects. The study of all available research and surveys revealed the following systemic deficiencies: lack of infrastructure, and resources (financial, personnel, technical, and others); further education of teachers is non-systematic and non-conceptual; the conceptual system of training workers in self-government and the private sector, as well as journalists, is insufficient; the system of environmental education and training in the school system is non-conceptual and formal, which is reflected in solid knowledge, but a low level of skills and environmental attitudes; key topics for environmental education are undervalued; the professional potential of NGOs and enthusiasts is not used; there is a lack of clearly defined departmental and sectoral responsibility for environmental education, etc.

5. CONCLUSIONS

Despite the fact that it is not possible to precisely define the size of the necessary infrastructure for environmental education, it is still very significantly underestimated, especially in connection with the number of specialized workplaces of environmental education and training - such as Environmental Education Centers, eco centers or specialized schools in nature. External influences, such as unlimited economic development, which requires a constant increase in consumption and consumerism, are taking their toll. This is caused by advertising, role models, and desires for an ever-higher standard of living, which is measured by comfort and ever-higher consumption. This influence is demonstrably linked to alienation from nature, both in families and at school. Currently, there is also a very insufficient discussion about the goals of environmental education and the tools to fulfill them. Discussions on various forums and research show that it is necessary to achieve a perfect and precise setting of the goals of environmental education. This unsatisfactory state of environmental literacy and (lack of) upbringing of graduates of Slovak schools and the general public is equally important, as regards the discussion about the effectiveness of the tools and forms used and about the sufficiency of the infrastructure of environmental education and training.

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