



## МЕЖДУНАРОДНЫЙ ОПЫТ ИНТЕГРАЦИИ ОБРАЗОВАНИЯ

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### GEOGRAPHY CLASSES IN FURTHERANCE OF EDUCATION FOR SUSTAINABLE DEVELOPMENT OF SERBIA

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This paper aims to demonstrate how geography as a school subject advances education for sustainable development by integrating knowledge about the natural and social environment, and looking into cause-and-effect relationships between its elements, analysing the current geo-ecological situation and pointing towards potential courses of further development. Tasks which lead to achieving the set goal include: defining main notions related to education for sustainable development; giving an account of the history of the idea of sustainable development and an explanation of its meaning and implementation in education; analysis of Strategy for Development of Education System in Serbia until 2020; presenting elements relevant to education for sustainable development and giving arguments which uphold its feasibility and potential subjects in achieving it; defining which competences develop in students while studying for sustainable development and presenting how teaching geography can contribute to that process from pre-university to higher education levels. Methods will be presented through practical examples not only from our country, but from some other European countries as well; these methods are: field research, making films about geography themes, geography social evenings, discussion meetings, excursions. Both high school and university students need to be instructed about sustainable development as well as about the fact that geography classes should set an example when it comes to raising the awareness of environmental issues and willingness to have a responsible relationship with it, as well to behave in a conscientious manner when they leave school.

*Keywords:* geography classes; sustainable development; Serbia; competences; education; human resources; environment.

### ОБУЧЕНИЕ ГЕОГРАФИИ В ИНТЕРЕСАХ ОБРАЗОВАНИЯ ДЛЯ УСТОЙЧИВОГО РАЗВИТИЯ СЕРБИИ

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Обучение географии в школе служит устойчивому развитию посредством интеграции знаний о естественно-социальной среде и существующей геоэкологической ситуации, а также учета причинно-следственных связей и формирования перспектив дальнейшего развития географического образования в Сербии. В статье определяются основные понятия сферы обучения географии; освещается история идеи устойчивого развития; объясняется его значение и реализация в образовательной сфере; проводится анализ стратегии развития системы образования в Сербии до 2020 г.; перечисляются элементы, относящиеся к образованию для устойчивого развития, и аргументы, отстаивающие свою целесообразность и наличие потенциальных субъектов в его достижении; определяется, какие компетенции развиваются у студентов во время обучения для устойчивого развития и представления, как обучение географии может способствовать данному процессу от довузовского образования к уровням высшего образования. При написании статьи авторами применялись следующие методы: полевые исследования, съемка фильмов на географические темы, общественные географические мероприятия, дискуссионные встречи, экскурсии. Представленные методы опираются на практические примеры не только Сербии, но и других европейских стран. Ученики школ наряду со студентами университетов должны быть снабжены знаниями и компетенциями в области устойчивого развития. В этом смысле обучение географии является прекрасным примером получения знаний о состоянии окружающей среды, способствует повышению осведомленности и выступает в качестве средства воспитания социально- и эколого-ответственных граждан.

*Ключевые слова:* обучение географии; устойчивое развитие; Сербия; компетенция; образование; человеческие ресурсы; окружающая среда.



## Introduction

Education for sustainable development has a very important role in the formation of contemporary ecological culture. It allows a necessary synthesis of knowledge, know-how, and skills of natural and social sciences and represents deliberate and planned advancement of knowledge about main ecological issues of modern society, promotion of critical attitude towards ever-increasing degradation of the environment; also, it stresses the necessity of using natural resources in a responsible manner. People need to be educated before they are expected and required to act according to sustainable development, a goal which can be attained only by introducing specific subject matters into all levels of education. As a result, it would be necessary modernise the existing curricula, while topics from this field of study should be introduced as individual subjects or included in the scope of existing subjects.

## Sustainable development

In 1987, the United Nations World Commission on the Environment and Development released the report *Our Common Future* which brings into focus the pursuance of the concept of sustainable or balanced development. Sustainable development denotes the development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs. Its main idea is the stewardship of economic development which is acceptable in the light of preservation of the environment. What this means is that it promotes the quality of living and the quality of the environment, wise use of resources, social fairness in allocation of resources and goods, each generation's right to choice, and balanced development of urban and rural areas. This concept has evolved since 1987. In that regard, the most important declaration is Agenda 21, a product of the UN World Conference on Environment and Development held in Rio de Janeiro in 1992. There are 27 priorities on the agenda to safeguard the environment and

achieve sustainable development. In 2002, a plan for the implementation of Agenda 21 was formulated in Johannesburg. These documents have determined the scope of sustainable development and principles of sustainability [4].

## Place of Education in National Strategy for Sustainable Development and Strategy for Education until 2020

Serbia's education policy is not clearly focused on building a competitive workforce nor is it in line with the goals set in the Lisbon Strategy planned to be attained by 2010. In addition, Serbian education system has not received sufficient financial support. In 2006, Serbia spent 4.2 percent of its GDP on education, whereas OECD countries recommend that the proportion of expenditure should be 6-8 percent [2].

The educational structure of Serbian population is very unfavourable, which directly compromises the development of the country itself given the fact that more than 20 percent of its population over age 15 have not completed a full course of primary schooling, while nearly 50 percent of them lack professional qualifications.

The present education system in the Republic of Serbia has numerous shortcomings with regard to what it has to offer. A majority of population has not been included in the education system and this refers in particular to a large percentage of children from vulnerable groups, such as people living in rural areas who feel a strong need for adult education. Full advantages of early education are not taken (Serbia's system of preschool education is not developed sufficiently); primary education does not give pupils intellectual skills necessary for independent study, critical thinking and problem-solving; modern ideas about the nature of learning are not adequately relied on in teaching nor do teaching practices give enough leeway to students for relevant thinking activities or for fostering research and innovative behaviour.

Judging by information made available in the Strategy for Development of Education System in Serbia until 2020, the ratio between general-education and vocational

subjects in secondary schools is rather unfavourable. The proportion of general-education subjects should be increased from 26 percent to at least 40 percent points. Moreover, a number of pupils who repeat a class in Serbian secondary schools or even in primary schools have been great and untenable. Many unsuccessful secondary school pupils appear later on in the labour market as unskilled labour. Every 13<sup>th</sup> generation of young people (on average) leaves school without acquiring any qualifications. There are many young people who study or have tried to study within the system of higher education in Serbia, but the percentage of those who complete their studies on time to be considered useful and acceptable to society is fairly low (8-10 percent of the total number of enrolled students). The number of students who repeat their first year of studies approaches 30 percent [2].

In view of the aforementioned, the notion of education for sustainable development implies not only the application of sustainable development subject matter within the education system, but also such an education system (a new kind) which supports a knowledge-based economy and represents a necessary prerequisite for sustainable development of an economy and society as a whole. In order to achieve this, education for sustainable development must ensure that knowledge from all the relevant sectors (the environment, economy, society) is integrated, with a particular stress placed on the application of such knowledge for the purpose of affording a better quality of life for all citizens. It must strengthen fundamental and applied knowledge as a prerequisite for adjusting to conditions which exist in the labour market, ensure that a quality education is available to everyone, strengthen early education and develop a system of further/continuing education for the purpose of preserving the environment, as well as realize a wide range of capacities of educated people in keeping with changes in technology and economic setting. It should synthesise multiple knowledge models and the importance of finding the best techniques and methods in all the spheres of human life; also, it should

ensure conditions necessary for application of the concept of interdisciplinary education for sustainable development and more direct involvement from the civil sector. Thus, it must ensure the involvement of all interested parties (schools, economy, decision-makers, and civil society) and cooperation between them, as well as intensive strengthening of international cooperation with relevant scientific and educational institutions.

In order to set up a viable system and model of education for the 21<sup>st</sup> century, in addition to making strict economies with regard to the use of public funds and undertaking the reform thereof, the Republic of Serbia must take following steps: invest more in education by increasing public expenditure on education to no less than 6 percent of GDP; increase general literacy rates; reduce the number of citizens who do not have a profession; harmonize its education system not only with labour market needs and reforms, but also with the needs of future generations based on new technologies and modes of communication; improve the efficiency of the education system in its entirety. With a view to achieving the above, sustainability education is recommended since it will be: competitive in accord with Serbia's scientific, economic, and technological potentials; available to everyone, in particular to children and members of vulnerable social groups; adaptable and befitting the needs of labour market; attractive enough and in keeping with social and economic changes; included in the European system of education; financed in a modern manner modelled on the European system of financing; based on the system of modern management, certification, licensing, and accreditation.

Goals and direct measures which ought to facilitate the attaining of the single main goal of sustainability education include: ensuring favourable conditions for economic, financial, institutional, and technical support of an education reform and education for sustainable development; promoting the concept and practice of sustainable development and the system of sustainability education through formal and non-formal learning; adequate training in sustainable development for teachers at all levels of edu-



cation; methodical development of research in education for sustainable development; constant promotion of cooperation in the education reform at national, regional, and interregional levels [2].

### **Competences Developed in Students Who Receive Education for Sustainable Development**

In Serbia, the education system is such that it is mainly characterized by teachers giving standard (*ex cathedra*) lectures and students gaining predominantly theoretical knowledge. Such a system does not ensure development of entrepreneurial knowledge nor does it encourage their initiative and inventiveness. Entrepreneurship denotes an ability to turn an idea into action, creativity, inventiveness, taking risks, as well as an ability to plan and manage in order to achieve a desired goal. According to this definition, entrepreneurship is regarded as a dynamic competence. However, findings of 2003 and 2006 PISA surveys showed that our students had demonstrated a very poor ability to apply knowledge in practice, which is why Serbia found itself at the bottom of the scale. PISA surveys are specific because they do not examine to which extent students are able to reproduce what they have learned at school, but how capable they are to understand and use available information when solving relevant problems in everyday life. In 2006, the European Parliament and the Council produced a set of recommendations to their member states concerning manners in which they should support the development of key competences within the framework of their lifelong learning or sustainable development strategies. In this context, a competence is understood to mean a person's inner capacity which is manifested in how that person performs relatively complex activities, and it is structured from knowledge, skills, attitudes, values, and reflexions conditioned by the requirements of a context in which the given competence is demonstrated. Key competences for lifelong learning and sustainable development have been included in Serbia's latest Fundamentals of the Education System Act. Key competences encompass

knowledge, skills, and attitudes which are necessary for each individual's personal fulfilment and development, social engagement, active civic participation, and employment in a society based on knowledge. They include: communication in the mother tongue, communication in foreign languages, mathematical competence and basic competences in science and technology, digital competences, learning to learn, social and civic competences, sense of entrepreneurship and initiative as well as cultural awareness and expression. The following skills play an important role in all the key competences: creativity, initiative, readiness to take risks, decision-making, managing emotions in a constructive way, problem-solving and critical thinking. For that reason, in addition to lectures, methods such as learning through discovery, problem-solving, learning in a group through research, creative learning, and cooperative learning in groups or teams, model-based learning should be employed in the classroom [1].

### **Geography Classes and Education for Sustainable Development**

Learning about the natural and social environments is a field of study within a preparatory preschool curriculum into which topics from the sphere of environmental protection are incorporated and whose goals are set in the Rulebook on General Fundamentals of Preschool Curriculum. Within the first cycle of primary education, ecological topics in the form of sustainable development topics are dealt with the most in subjects such as the world around us (1<sup>st</sup> and 2<sup>nd</sup> form) and nature and society (3<sup>rd</sup> and 4<sup>th</sup> form). As regards higher forms in primary schools, grammar schools and vocational secondary schools, such subject matters are taught within the scope of biology, geography, physics, and chemistry or some other subjects depending on the main field of study of a vocational secondary school. As regards geography, topics related to sustainable development are studied within the scope of topics related to the atmosphere, hydro-sphere, biosphere, economic development, etc. When undergraduate studies, specialist studies and MA and PhD programmes are

concerned, subjects from the field of environmental protection are present at almost every faculty to a lesser or greater degree. Many faculties have courses of study or departments specialised in providing higher education in the field of eco-safety and environmental protection. Courses of study in the field of environmental protection are mostly taught at faculties specialised in natural or engineering sciences [3].

Geography acquires its true value only when its problem areas are studied in the field. In such conditions, pupils and students are able to directly observe and examine, find cause-and-effect relationships between different geographical categories in a given area, and develop logical thinking about geographical issues on which the study of geography is contingent. Geography excursions, field trips, and fieldwork allow pupils and students to be introduced to scientific research, which is one of the main goals of educating the youth. Teachers ought not to only present the scientific truth, but they should train their students and pupils on how to arrive at such truth. As an active teaching method, fieldwork develops intellectual abilities and critical faculties; arouses curiosity, and develops an interest in geographical issues which arise from the reality and logic of space. Using discussion when teaching geography classes/courses has advantages not only in terms of education, but also when it comes to upbringing. While being instructed, students develop their debating abilities, critical thinking and self-assessment; while discussing an issue, they notice problematic situations about which they should form opinions, foster the art of rhetoric, receive training on a specific model of arguing and alike. In cases of topic-based discussions, topics from any geographical discipline, in particular the social ones can be set, since their themes are more suitable for discussing on account of the fact that students are more informed about them. Using geography films when teaching geography has a substantial role and significance because a considerable portion of the curriculum can be covered in that manner. Owing to breakthroughs in filmmaking, there is virtually no phenomenon which cannot be captured on film, whether it is cosmic

expanses or events taking place on earth. Teaching with films can be used to present phenomena in their current evolutionary state, which brings about significant educational effects, in particular if films are made by pupils or students. In such cases, specific preparations should be made in connection with methodology so that the end result, *i.e.* a film could be a source of knowledge for pupils and students [5].

### Conclusion

The present system of education in Serbia is untenable. It is not efficient enough, nor does it include every child and youth; also, its outcomes are not satisfactory on any level. The consequences of such a situation are: the level of general education has been fairly low; the dropout rate is rather high at all levels of education; there has been a significant drain of qualified staff; a lack of standards for quality assurance; a rigid and outdated curriculum; a lack of complex and modern skills necessary in an education process both amongst teachers and pupils/students. A new system of economy and a present-day make-up of economic factors imply a need for educated individuals who are fast learners, innovative and creative, have an ability to think critically, who solve problems and cooperate with each other and who will be able to build a new economy and a stable social system and promote sustainable development. In order to achieve this, it is necessary to undertake the following measures: reorganise the system of financing; put private and public systems of education on an even footing; modernize curricula; introduce a system of quality assurance in education; educate a progressive workforce to work in education; establish a social partnership for education and conduct licensing, certification, and accreditation procedures. Geography classes have an important role and significance for implementing education for sustainable development, not only because of specific qualities of teaching topics and methods used to teach those topics, but also because of the knowledge, skills, and habits acquired by studying this subject, which are responsible for developing the necessary competences in pupils and students.



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