

## **Tasks and importance of “school digitization support programme“ as an initiative of a centre of modern educational technologies EDULAB in Slovak Republic, in the framework of a new education concept of the European Union in the 21<sup>st</sup> century**

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### **ABSTRACT**

*This article aims to analyze the current situation and the further possibilities of school digitization in the framework of the National curriculum objectives in the Slovak Republic, following the new education concept in the European Community in the 21<sup>st</sup> century. It deals with the possibilities of access of primary and secondary schools to high-quality digital educational content and its use especially in teaching science. There is a formulated conception of an active use of ICT by teachers and their students in everyday educational practice of a modern, 21<sup>st</sup> century school.*

**KEY WORDS:** The European Union, UNESCO, the Slovak Republic, the concept of continuing education, open educational resources, school digitization, digital educational content, advanced learning technologies, educational portals

### **INTRODUCTION**

#### *New technologies open education*

European Commission launched a consultation on strengthening the development of knowledge and skills by the digital technologies to help towards open education. By the end of November 2012, educational institutions, public authorities, organizations and individual citizens could engage in an online consultation called Opening education, connected to a European initiative to strengthen the implementation of the so-called Open Educational Resources (OER) in the European Union. European Commission will introduce the initiative in the middle of next year.

The European Commission states that "open access to educational resources offers an unprecedented opportunity to strengthen excellence and equality in education. EU seeks to help individual students as well as educational and training institutions in member states to benefit from these opportunities and increase

their contribution to society." In 2001, American College MIT announced that almost all of its courses would be available free on the net and UNESCO defined the concept of OER a year later. Gradually, more and more schools, libraries and other organizations began to take advantage of new opportunities provided by information and communication technologies.

OER are digitized materials that are offered freely and free of charge to institutions, students and self-study in teaching, learning and research. They vary in shape from the modules with complete content of courses, learning subjects, software tools to implementation resources such as copyrights promoting open publishing of materials. They can have written, image, audio form or a form of video that can be copied, used, modified or re-shared.

Within the UNESCO congress on open educational resources, Paris Declaration on OER was approved in 2012. With OER, the schools and experts around the world can combine their knowledge and together create even better sources of education.

Open education also brings significant challenges with it. A variety of resources for educational materials means the necessity for clear standards of quality and suitability of available materials. The certificates of acquired skills and Competences through OER should be reconsidered as well. In its initiative to open education, the EC will therefore focus on four areas:

- Access and equality
- Quality, efficiency and internationalization
- Teaching, educational procedures and assessment
- Development of policies

The proposed activities are financially supported from the programme of education, the budget for the period 2014-2020, still known as Erasmus for all.

In recent years, information and communication technologies have greatly influenced both the learning process and the teacher/student preparation for it at all levels of education. They help streamline the teaching, using the increasing quality of multimedia options of computers and related modern teaching techniques. Digitally processed teaching and learning materials are changing the organization of teaching by teachers and have brought new modern elements using its digitized content for presentation, interpretation, and disclosure of both subject matter and study materials for students.

Compulsory teaching of informatics at primary and secondary schools is gradually changing the approach of pupils and students to information, working with it and is leading teachers to the usage of new advanced technologies in the preparation and implementation of the learning process. Classroom computer networks, servers and e-learning portals affect the speed of access to information, their processing, sharing and updating.

Ensuring the access of pupils, students and their parents from their home computers to school networks positively affects the distribution of multimedia educational material character, input and evaluation of homework, as well as the evaluation process and clasification of students.

An active use of the information digitization opportunities accordingly creates the need for sharing already developed learning materials by teachers on teaching portals, such as, within „The Knowledge

Planet“, an education system for primary and secondary schools with the professionally processed digital content, portals naučteviac.sk, naučiťviac.sk, naučsaviac.sk, a virtual library: zborovňa.sk, a digital library as a part of the portal www.skoly.org, EduPage sites, e-Aktovka.sk and others.

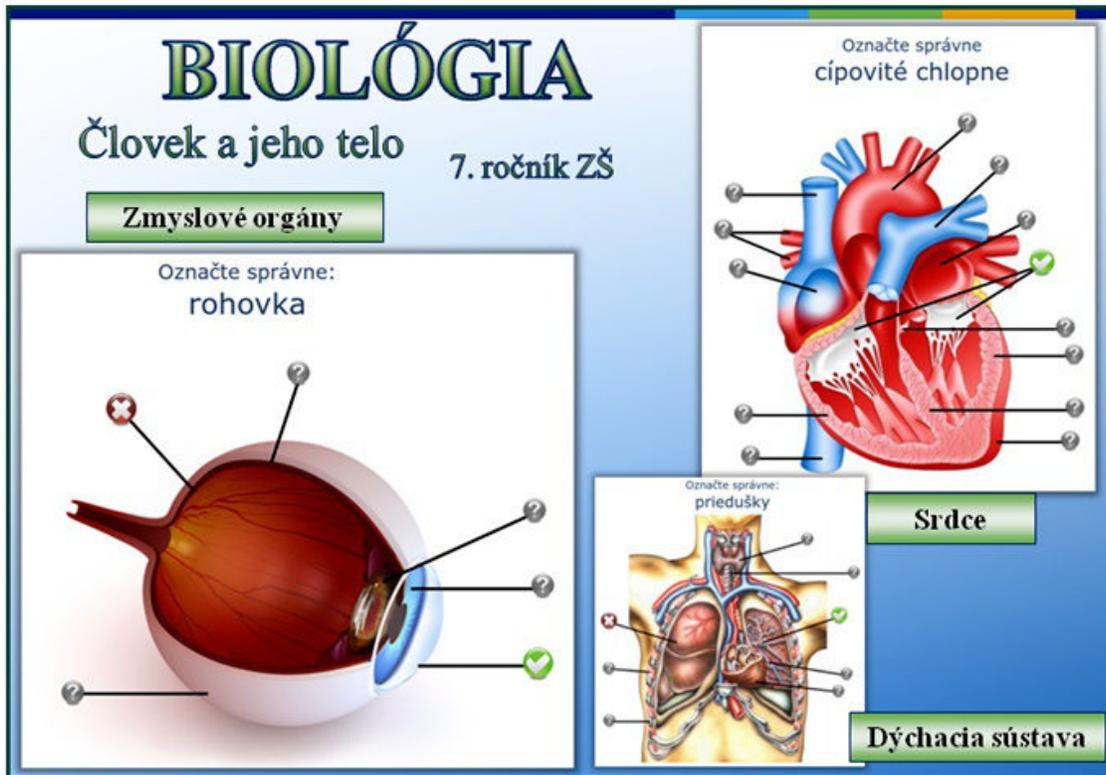


Figure 1: Digital library in EduPage

## 1 LEARNING CENTER EDULAB

EDULAB is a unique centre of advanced technologies in the center of Bratislava, designed for the efficient application of information and communication technologies and the use of digital educational content in the learning process.

Is is a prototype of a future modern multimedia class, which represents a comprehensive hardware and software solutions in educational practice, with a primary focus on schools and educational organizations.

The main objective of the EDULAB centre is to increase the popularity of using modern educational technology at schools and show the benefits and relevance to the real modernization of education. EDULAB gives teachers the opportunity to gain practical skills through trainings and work with the latest technologies while teaching their students.

Via the educational multimedia content processing and other technologies, the quality and pace of acquiring knowledge increase and students change their passive listener role for the position of an active participant in the teaching process.

EDULAB offers schools options to create conducive environment for the creative work of teachers and students, using modern information and communication technologies



**Figure 2: Premises of EDULAB**

## **2 SCHOOL DIGITIZATION SUPPORT PROGRAMME**

School digitization support programme in the Slovak republic is an initiative of EDULAB centre, oriented at the area of education modernization at primary and secondary schools.

The programme was launched by EDULAB, with the support of the Association of state secondary schools headmasters, the Association of municipal schools in Slovakia plus business companies. The program is designed for all primary and secondary schools in Slovakia.

**The main objective is the digitization and long-term support of schools by the private sector and non-profit organizations.**

The programme objectives:

- To promote the use of digital technologies in teaching and develop a professional innovative training and consulting centre, connected to schools.
- To provide financial assistance to schools to buy digital teaching aids from the private sector.
- To increase the motivation of companies to social responsibility.
- To encourage headmasters and teachers in an effort to active use of digital technologies in their schools.
- To popularize the use of digital learning technologies in teaching with teachers, children, parents and general public.

Benefits and school support:

- The first 1,000 schools registered in the programme receive digital learning content for 5 science subjects from the portal [www.naučteviac.sk](http://www.naučteviac.sk) to 30 June 2013 for free.
- Organizing of professional seminars and methodological lectures designed for school headmasters and teachers.
- Financial support for teachers designed to produce digital educational content.
- Rewards of school headmasters who actively support the digitization of their schools.
- The possibility to obtain benefits from commercial partners.
- The possibility to obtain sponsorship for the purchase of digital teaching aids.

The programme timetable:

Starting date: 15 March 2012

Registration of schools in the program: from 15 March 2012

Professional methodical seminars for teachers: March - June 2012

Programme duration: 15 March 2012 – 30 June 2015

Membership in the programme is for schools in the period up to 30 June 2013 for free

The programme activities

#### **Support for schools:**

- Establishment of 20 innovative Information Centres of school digitization in all the Slovak regions, connected to the centre of modern educational technologies EDULAB.
- Implementation of expert methodological seminars by the lecturers in individual information centres.
- Upon the conditions fulfillment, the first 1,000 registered schools obtain ***digital learning content for 5 science subjects from the portal [Naučteviac.sk](http://Naučteviac.sk) to the end of the school year 2012/2013 (30 June 2013) for free - over 30,000 educational materials from mathematics, physics, chemistry, biology and science.*** The condition is graduation of at least 1 teacher per school from a free methodological training seminar.

#### **Support for teachers:**

- In each school year, at least 10 projects focused on the creation and use of digital educational content will be supported by EUR 1,000 per project.
- Project outputs will be made available for free to other teachers and students on the portal [Naučteviac.sk](http://Naučteviac.sk) and on the upcoming educational portal for home.



Figure 3: Network of school digitization information centres



Figure 4: Education in EDULAB

### 3 PORTAL NAUCTEVIAC.SK

Naucteviac.sk is an educational portal for modern teachers, including more than 35,000 interactive educational materials. It offers teachers several online tools for easy retrieval of materials, preparation of teaching materials for lessons, creating enterings and homework for pupils and their check.

The portal contains educational materials for mathematics, physics, chemistry, biology, science, English and computer science for primary and secondary schools. There is also a digital content distribution

by the State educational programme for the corresponding ISCED. Materials in the educational portal are continuously updated and supplemented.

Teachers can quickly and easily search in the materials by keywords and other tools, make preparations for lessons using digital materials from the portal, as well as their own materials in the form of format files and web pages. Simultaneously, they have an opportunity to enter students tasks and monitor their solutions and outcomes.



Figure 5: Example of educational material from Science

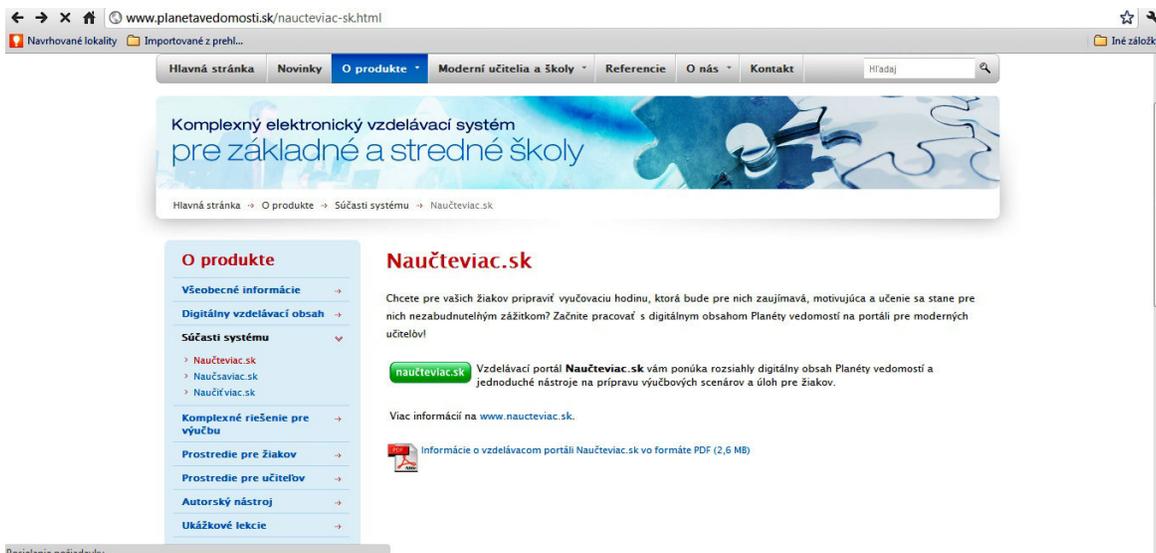


Figure 6: Portal [www.naučteviac.sk](http://www.naučteviac.sk)

## CONCLUSION

The programme to support the digitization of schools and related continuing education of teachers, with material support from the Ministry of Education, the private sector and NGOs, is a systemic way to the use of digital technologies in the educational process.

The support of creative teachers and their projects, along with their willingness to share them with teachers' public, creates the conditions for quality education, using the latest digital technologies, at schools at all levels.

The fundamental prerequisite for the successful participation of the Slovak Republic into the global information space and the global economy is the high educational level of its citizens. Education and training are therefore crucial for informatization of the society. Therefore it is necessary to achieve in the education sector following global objectives:

- Education in informatics, where informatics is the subject and tool and education is oriented to prepare professionals in computer science and informatics.
- Education in other areas using informatics methods and tools that creates informatization of education. Information technology is a tool which enables the introduction of new, effective forms of education, supporting interculturalization of education.
- Eliminate digital splitting of society, to create the conditions for the acquisition of basic digital literacy during compulsory education for every pupil.
- Build and develop information systems at all levels of management to carry out management activities in the education sector and its operations.

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