

Schoolnet Report – SLOVENIA

What is a Schoolnet?

A schoolnet is a virtual learning environment and a gateway to education.

We consider the Slovenian Education Network – SIO (Slovensko Izobraževalno Omrežje - <http://sio.edus.si/>) as one of the educational networks and portals in Slovenia, which offers educational information and support.

Teachers, pupils and other employees within education are encouraged to use SIO and to visit relevant Slovenian educational websites, such as the portal of the National Education Institute of the the Republic of Slovenia, websites of other educational institutions, the website of the national project Computer literacy, the eTwining programme website, websites with research projects on Faculties, websites for EU projects and the new Slovenian educational portal <http://info.edus.si> .

Schoolnets and policy

SIO was founded in 1995 with the aim to provide access to individual educational servers and to the materials they offer. SIO is also a member of the European Schoolnet (www.eun.org).

In the document: “Strategy of the Republic of Slovenia” from the year 2003 Slovenia described beside other statements that digital platforms should be developed for pupils, that educational materials should be offered through the Internet, that support should be available and that virtual classrooms should be opened to the Internet.

SIO fulfills some of these statements and together with other educational web resources SIO offers pupils a possibility for e learning. The main function of SIO is to collect, maintain and provide information of educational resources and services. It is based on the catalogue system “Trubar” in which different materials (photos, drawings, texts, maps, programs, data, sounds, etc.) are collected.

Concerning all benefits and achieved principles listed bellow, Schoolnet SIO and the whole Slovenian Educational Network fit very well to the educational policy of Slovenia.

Who are Schoolnets designed for?

Schoolnets are designed for:

- Students
- Teachers
- Headmasters/principals
- Institutions (offering basic information about the use of ICT in education)
- Economy
(information about integrating economy to educational process, sponsorships, visits to enterprises)
- Press

Since the schoolnet can be reached by everyone, materials and other services can be used for general compulsory education, adult education, specific educational provision for groups at risk of social exclusion and for educational provision for pupils with special educational needs.

What do Schoolnets contain?

Through the schoolnet pupils develop all eight competences, which are considered necessary for all knowledge-based societies. The emphasis is placed on digital literacy and ICT skills competence. Pupils learn critical and confidential use of electronic media for their work, leisure and communication.

These competences are related to logical and critical thinking, to high level information management skills and to well developed communication skills. Pupils learn how to search, collect and process electronic information and how to use them in a systematic way. Browsing SchoolNet they learn how to use appropriate support techniques to present information as well as how to use internet-based services.

Main services of the Slovenian Schoolnet are:

- References (educational information and resources)

Different collections of data: interesting websites, educational resources, educational institutions.

- Educational resources and learning materials

Catalogues of educational materials, list of books and magazines from the field of education, electronic publishing handbooks, recommendations, instructions, tutorials, dictionaries, articles, online textbooks and manuals, electronic journal List SIO

- Connections
List of servers and portals related to education in Slovenia and the world.
- News
Information about national and international educational events, news in the educational field
- Communication
Newsgroups, conferences, mailing lists, bulletin board, forums, etc.
- Support
Support for (self) education of teachers, possibility to ask the experts, support for distance learning, teacher training and didactic supplies.

Services provide and support:

- Improved (quicker, cheaper) information for pupils and teacher
- Easier distribution of educational software and other materials
- Motivation for pupils and teacher for active use of the Internet and participation in the development of SIO
- Cooperation among schools.

To automatize most of SIO's functions we have developed our own support system "Trubar" - a Windows based system of programs to build, search and maintain the catalogues - collections of units described by a list of properties (dictionaries, directories, lexicons, catalogues, inventories, glossaries, etc.). It is freely available at: <http://www.educa.fmf.uni-lj.si/trubar/>. Tools, like "Trubar", support the idea that every user should also contribute to the growth of a network.

Organizing the SIO following principles were considered:

- Decentralization:
Responsibility of server administrators for the local organization and its operations.
- Standardization:
Agreement on common solutions to common problems that simplifies the support and the usage of the network services.
- Non-mandatory use:
The network only provides services, but it is user's decision to use them.

- Logical organization:
The user accesses the information through the content labels (addresses). It is the responsibility of the system to arrange physical connections (URL). This simplifies changes in services and their relocation.
- Openness:
Any server with educational contents can join the network

Suggestions made in 2003 towards the improvement of SIO:

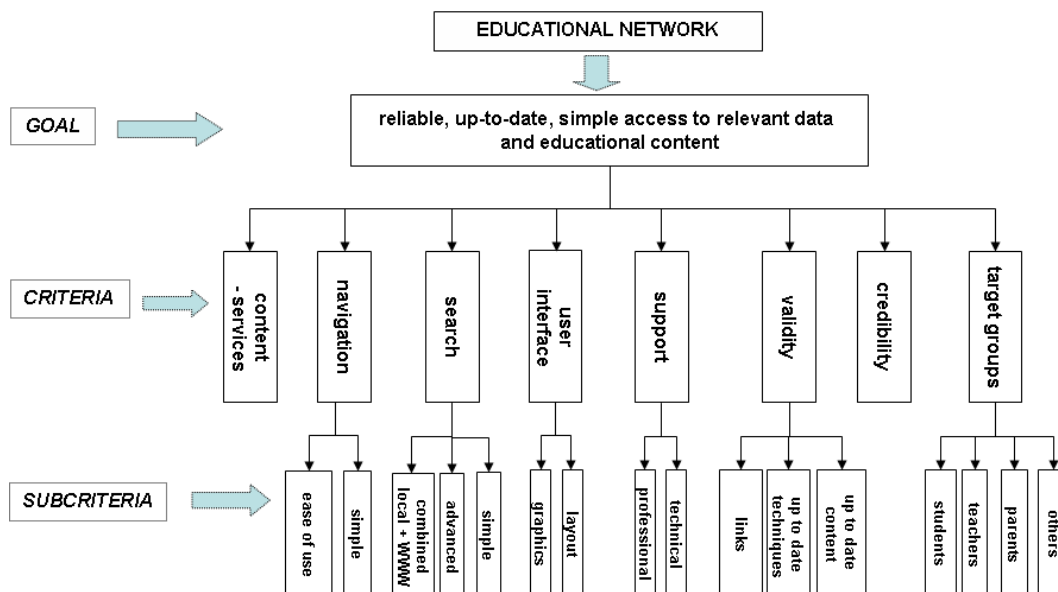
The answer to the question “What should be changed about SIO in order to achieve the portal to become a valuable information source for education?” is as follows: more programs, improved teacher training, up to date and solid information, promotion, better design and more activities to convince additional teachers to use SIO.

We decided to develop the new SIO as a multi-entry site – each entry providing different, user/goal-oriented view of the content stored in catalogues: portal (entry **dveri**), e-journal (entry **list**), entertainment (entry **zabava**), for non-Slovenian guests (entry **english**), etc. For example, the portal entry will provide fresh information (last contributions in catalogues, news, surveys, events, etc.) and information sources (addresses and basic data about schools and other educational institutions, manuals, dictionaries, templates, etc.).

A special challenge is the kindergarten entry. Here it was tried to produce an environment adapted to the capabilities of children – use of picture language, sound (audio) output, etc.

SIO could be described as an archive of selected educational materials.

Criteria which are used to define the shape and content of Schoolnet:



Who is involved?

The Slovenian Schoolnet is a collection of different educational networks, websites and portals, which are managed on their own servers and by their own administrators.

Main goals:

- To follow EU directives in educational fields with the emphasis on developing e-materials,
- To use educational servers in Slovenia,
- To collect and organize information of educational resources and events in Slovenia and world-wide,
- To support collaboration among students, teacher and parents,
- To facilitate the distribution of educational materials and products,
- To provide support for solving common problems (FAQs, recommendations, manuals, dictionaries, libraries of templates, etc.)
- To support distance learning,
- To provide access to official documents on education (curricula, projects, announcements, etc.)

During the last few years promotion was done with electronic newsletters, which are being sent each month to all teachers in Slovenia.

What research has been done into Schoolnets?

1. **Batagelj, V., Brodnik, A., Lokar, M , Janez Čač: Slovenian Education Network, 1996,**
<http://www.educa.fmf.uni-lj.si/ro/izomre/novice/html/sen96.htm>

Abstract

In 1994 the Slovenian government started the six years project Information Technology in Slovenian Schools. The aim of the project is to raise the level of computer supported information mainly in elementary and secondary schools. It should contribute to problem oriented, more efficient and more friendly school. The project deals with providing of appropriate hardware and software, teacher training and organisation. A special emphasis is placed on the research and development approach. Some strategic subprojects concerning teaching methods, information technology and networks, the use of knowledge based systems and multimedia are still going on.

Conclusions

We believe that the success of the project crucially depends on the following factors: information concerning curricula, networking and multimedia, teacher education, establishing the life-cycle of IT equipment and introduction of IT technicians.

Essentially, all project activities will emerge from the digitalization of curriculum with the aim to enrich the process of teaching and learning. Networking and multimedia will provide a new framework for communication and will open new frontiers of knowledge activities.

The research and development approach will disclose advantages and disadvantages of IT. Though we are fully aware of the fact, that IT does not always offer all the answers to educational problems, it's an undisputed indispensable contribution to the quality of school education.

2. Žibert, Alenka, Batagelj, Vladimir and Rajkovič, Vladislav: COMPARATIVE ANALYSIS OF EDUCATIONAL NETWORKS, 2003

Abstract

Educational networks and portals are a formation of thematically gathered data on the web. The structure of national educational networks and portals depends on the environment of their origin. In the paper, selected educational networks are analysed according to the following criteria: content-services, navigation, search, user interface, help, credibility, validity and target groups. The criteria were identified by a group of experts and final users (students and teacher) on the basis of a web survey. The importance of criteria was articulated by using the Analytical Hierarchical Method and program "Saaty". For the evaluation Slovene National Educational Network (SIO) as well as educational networks of Canada, Ireland, United Kingdom, Europe, Germany, Africa, Australia and America were selected. Based on the results of the comparative analysis a concept and guidelines for improvements of our national educational network SIO were prepared.

Conclusions – Improvement to Sio and future development

SIO was renewed for the first time in 1999. In the survey, described in the previous section, the users were satisfied with the design and content of its pages. SIO has a good position in the Slovenian web – according to the internet research study SIO was in the year 2002 on the 56th place among all Slovenian web sites (Petrič, 2003) with respect to betweenness (Freeman, 1979).

It also contains a critical mass of content. The downsides are problems concerning the maintenance of the content. The main reason for this is that SIO is not institutionally appropriately integrated and supported by the Slovenian educational system.

From our overview of ENs (Educational Network) and results of the survey we can conclude that SIO plays an important role in Slovenian education, but it should be renewed in technological (new tools), functional (additional services) and organizational (collection of materials, maintenance) structure.

In the development of an EN there are two basic options: to establish a central institution that provides most of educational web services; or to establish only an 'index' to educational services distributed across several institutions.

For this reason the primary function of SIO is to collect, maintain and provide information about educational resources and services. As we already explained in the first section, SIO is based on the catalogue system "Trubar" in which also different materials (photos, drawings, texts, maps, programs, data, sounds, etc.) are collected.

Because of SIO's financial and man-power limitations these materials are mainly contributed by users. Systematic approaches have to be developed to provide 'complete' collections of materials.

During the last months we have checked several content management systems to find an appropriate replacement for "Trubar". We will probably base the new SIO on the open source software "Zope" connected with Python and MySQL on the Apache server. These tools provide an up-to-date and platform independent development environment. We do not expect special problems in transferring the services from "Trubar" to the new environment. In the new solutions we intend to provide several new options: active link control, access statistics, voting evaluation system, editing, personalization, etc. They will support semantic web (RDF, OWL) and educational (SCORM) standards.

Since an EN is used by several types of users with different needs, we decided to develop the new SIO as a multi-entry site – each entry provides a different, user/goal-oriented view of the content stored in catalogues: portal (entry dveri), e-journal (entry list), entertainment (entry zabava), for non-Slovenian guests (entry english), etc. For example, the portal entry will provide fresh information (last contributions in catalogues, news, surveys, events, etc.) and information sources (addresses and basic data about schools and other educational institutions, manuals, dictionaries, templates, etc).

A special challenge is the kindergarten entry. Here we will try to produce an environment adapted to the capabilities of children – use of picture language, sound (audio) output, etc.

In the internet there is the problem of non permanent contents – they are appearing, changing and disappearing. An additional service of SIO could be an Archive of selected educational materials.

Schoolnets in Schools

Students need to learn how to adapt and adopt a range of skills to be truly effective learners. Information and Communication Technology provides the glue to link these skills together. It is also highly motivating for most young people.

Schools use Schoolnets with the following aims:

- To get information (they use links to documents, to websites using OCT for educational purposes)
- Organising lessons (information about the organization of lessons, using ICT, how to implement project work, examples of curricula, experiences, researches)
- Using good practise examples as a model for their work.

Financial aspects of Schoolnets

The new Slovenian educational portal <http://info.edus.si> is co-financed by the Ministry of Education, the National Education Institute of the Republic of Slovenia and by EU Structural Funds. We expect that SIO will be funded partly by the European project Calibrate and will also be supported by the Ministry of Education and Sport.

Organisational aspects of Schoolnets

We expect that the new portal info.edus.si will become the main entry point in Slovenia. So far SIO represents the entry point for users in the educational field since its establishment in 1995. It was organised and promoted by Ministry of Education and Sport and ZRSS. During last years also other relevant educational sites have been used frequently. During the last few years promotion was done by media and electronic newsletters, which are being sent each month to all teachers in Slovenia.

Examples of Schoolnets

- Schoolnet SIO (<http://sio.edus.si/>) - main Schoolnet
- National Education Institute of the Republic of Slovenia - ZRSŠ (<http://www.zrss.si>): information about subject areas, seminars, events, teachers training, international cooperation, research, schools digitalization.

- Ministry of Education and Sport : <http://www.mszs.si/>: organisation of Ministry, conferences, public tenders, organisation of educational system, organisation of sport and international cooperation
- websites of other educational institutions (<http://www2.arnes.si/>),
- web side of national project Computer literacy (<http://ro.zrsss.si/projekti.htm>) – description of the program, results, linked to educational systems
- eTwining program site (<http://www.cmepius.si/eLEARNING/eTwining>): projects, list of schools
- Research projects on Faculties (ex on Faculty for electro-technics: (<http://www.lfpe.org/>), <http://www.e-slovenscina.si/> - Slovenian online language
- Centre for mobility and European educational and training programs: EU projects (<http://www.cmepius.si> - EU programs and projects
- New main portal: <http://info.edus.si>: news for teachers, teacher training, digitalization of primary schools, seminars, videoconference lectures.
- ARNES backbone: <http://www.arnes.si> - giving access to all Slovenian schools
- <http://oko.edus.si> - portal for Open source

Use of ICT in Slovenian schools

So far the Slovenian Computer Literacy Programs exists - Ro Programme (1994-2000) has been upgraded in higher level to enlarge quality of teaching and learning.

The activities aim at all levels of education in Slovenia:

Pre-school education (120),
 Primary education (445 + 370),
 Education for children with special needs (70),
 General secondary education (147),
 Student dormitories (43),
 Teacher training faculties (12),
 Other public institutions and organisations (youth, etc).

The main focus is on managing school leaderships and preparing e- learning materials as well as on the following goals:

- Digitalization of education should enable continuously computer and information training for teacher.

- Building up a friendly informational and communicational learning environment of pupils and teacher.
- Development of new e-methods of teaching, learning and playing. Permanent (24 hours) connection of educational institutions to the internet for high-speed exchanges.
- Connection to the internet should be effective, friendly and cheap.
- This should be provided by the National education network which is a part of the international academic and research network. All citizen in Slovenia, who have the will and desire, should get the possibility to be educated (computer, information, telecommunication)
- Every Slovenian home should become anxious to learn and should become an educational house at the global internet village.

Program Computer literacy (1994 – 2000)

In 1994, the Slovenian government started a six years project RO -- [Ra~unalni{ko opismenjevanje](#) / Information Technology in Slovenian Schools. It should contribute to problem oriented, more efficient and a more friendly school.

The following factors are identified as crucial for the success of the project:

- Normalization of curricula,
- Networking and multimedia,
- Teacher education
- Staff support for the IT at schools,
- Establishing the life-cycle of the IT equipment.

It is expected that in the following years a number of schools will establish their own servers and offer their own educational materials through them. Besides, there are/will be established servers at individual faculties and other institutions connected with the educational process (museums, galleries, institutes, etc.).

In October 1995 it was decided to start organizing [Slovensko izobra`evalno omre`je](#) / Slovenian Education Network -- SEN that should provide access to individual servers and material offered through them. The basic purpose was to increase the use of the educational use of ICT and thus to contribute to a more efficient, modern, creative a user-friendly environment for teachers and learners.

The goals are:

- To equip schools with up-to-date information and communication technology.
- To qualify teacher and pupils for the use of information and communication technology.
- To facilitate research and further development in the field of introducing new information technologies into schools.

Within teacher training, there are four groups of programmes:

- Basic training
- Didactic-methodological training of teachers who use computers in their lessons
- Education for projects
- Education for special programmes and groups.

Modern and standardised computer hardware was bought. All computers received by the schools were supplied with a (licensed, free or open source) basic software package and didactic-educational software. All schools have free internet access.

In the field of research and development there are three strategic research and development projects concerning the use of ICT in education related to technological and social aspects. The strategic projects deals with some basic technological issues concerning the use of computers in school lessons, the development projects including development tasks, which are necessary for the implementation of the Computer literacy programme and the development of methodology for individual subject areas.

Why should we have Schoolnets?

Educational users need a safe online environment, which they can trust. Nowadays we can not imagine being without such an educational network, which offers new ways and possibilities for e-learning. The schoolnet should be oriented to progress, described in the Education and Training 2010 programme. It should also support the role of teacher and her/his lifelong learning. Furthermore it should prepare students for their life. Slovenian Education is aware of the importance in building knowledge-based activities. For this reason eight key competences are considered as an absolutely necessity in the educational system. The biggest emphasis in the Slovenian Schoolnet is on developing digital and ICT skills competences.

Examples of European Schoolnets for schools

EUN Schoolnet (www.eun.org)

New EUN community (community.eun.org)

References

Batagelj, V., Brodnik, A., Lokar, M , Janez Čač: Slovenian Education Network, 1996, <http://www.educa.fmf.uni-lj.si/ro/izomre/novice/html/sen96.htm>

Vladimir Batagelj, Vladislav Rajkovič: [Information Technology Project in Slovenian Schools](#). Euro Education'96, May 22-25, 1996, Aalborg

dr. Slavko Gaber, Minister for Education: [Making IT work for schools](#) (PowerPoint 97 / ZIP), European Schoolnet Conference, Brussels, September 8-9, 1998.

Žibert Alenka, Batagelj, Vladimir and Rajkovič, Vladislav: COMPARATIVE ANALYSIS OF EDUCATIONAL NETWORKS, 2003

Implementation of "Education and training 2010" work programme – Framework for key Competences in the Knowledge-based Society.working group report, November 15, 2004

Dr Cheryl Morgan.:The Learning and Skills Development Agency in Wales., proceedings, MIRK 2005 conference

Strategija RS v informacijski družbi (feb 2003)