

Schoolnet Report – HUNGARY

Sulinet

Sulinet is the Hungarian member of the European Network.

What does Sulinet do?

The Sulinet Express Program is a governmental initiation, which was launched 1996. The year 2003 was a milestone in the program's life. Until 2003 the main goals were:

- To provide schools with an Internet connection and computer labs
- A portal, with structured extra teaching materials in order to help teachers
- To organise trainings for teachers and camps for students, teachers and system administrators
- To announce calls for applications.

In 2003, besides the traditional activities, new challenges appeared within the frame of the program. According to a governmental initiation the Sulinet staff started to work on extensive content development, referred as Sulinet digital knowledge base. The aim of this development is to create a digital curriculum that covers the national core curriculum of levels 7-12, secondary school, within two years.

Sulinet staff was searching for an appropriate portal to deliver their educational content, but could not find a suitable one. Therefore they started to design and create a new portal as a PPP solution. This portal should have LCMS and VLE functions.

The infrastructure of the schools should be further developed. With their present computational infrastructure most of them would not be able to use the portal with its interactive and multi-media based curriculum.

The development of the infrastructure is a public initiative. Not every elementary school has an Internet connection yet. Although all the high schools have already had Internet connections, the quality of the connections is not good enough. The goal is to provide all the elementary schools with an internet connection and to establish a broadband connection in every school where such a connection is not available yet.

It is also very important to provide teachers with information about the use of digital teaching materials. For that reason they organise trainings for teachers, which are based on the results of a recent research that detected the needs.

Content development

The content development takes place by calls.

Content development: 1st call

The deadline of the first call for tender was 3rd November 2003. The call was announced for schoolbook publishers. They could apply with existing secondary level (9-12 or 7-12 age blocks) course books, which cover a complete curriculum. Sulinet did not aim to create digital books, but it wanted to change the ratio between text and illustrations through building in interactive and multi-media based tools into the curriculum. The publishers had to transform the curriculum into the wanted form within a short time (half a year). The revision, the testing of the materials and the portal has been going on.

The professional novelty of the content development is the real interoperability and reusability of contents. Hungary complies with rules and standards, which are needed to achieve this goal. They divided contents in as small as possible elements. As far as we know this is the only system that provides the possibility to search for elements of existing materials (pictures, texts, sounds applied in an LO) individually. In other systems a search function is also possible, but only for those elements that are not built into a teaching material.

Materials that have already been produced and being checked:

- Geography (Our Earth and environment): 7-12
- Mother tongue: 9-12
- Literature: 7-12
- History: 9-12
- Mathematics: 9-12
- Physics: 7-12
- Biology: 7-12
- Chemistry: 7-10
- Music: 7-10
- Movie and Media Studies: 11-12

Content development: 2nd call

The competition was announced for cross-curricular modules, newly introduced or still missing subjects. The cross curricular modules are defined in the National Curriculum. Those subjects are classified as cross-curricular modules, which can be connected to not only one, but also to more curricula.

Materials that have already been produced and which are being checked:

Digital literacy: 4-6
Digital culture: 7-12
Philosophy and Ethics: 11-12
Knowledge on Man: 7-12
Religion: 7-12
Religion and Culture History: 9-12
Economy and venture: 7-12
Art history: 7-12

Health studies: 7-12
EU studies: 7-12
Cultures and the peoples of Hungary: 7-12

Content development: 3rd call

The third call was announced for additional teaching materials and media collections. In this phase schools could apply with self-made materials. Institutions could apply to digitalise or open their collections (for example about travellers and explorers, Hungary's chronology with pictures, dance-tradition-civilization, etc.).

Content development: 4th call

The deadline of the fourth call was 31st January 2004. It was announced for screen scripts of LOs. Individual teachers with even no ICT knowledge can apply. Their task was to hand in their ideas in a digital scenario form, afterwards ICT experts will carry out these plans.

There is a multi-stage quality assurance system towards the excellent quality of developed contents. Also experts and consultants are part of this system. Three different kinds of publisher's readers also control the quality (for scientific and pedagogical value, language and style, and also for technical expectations).

Portal

The access to SDT (Sulinet Digital Knowledge Base) has been opened since September 2004 via an educational portal, locally designed and developed. The gathered contents as a result of the four tenders, is available through the portal. The portal comes into being within the framework of public and private partnership co-operations, also as a joint development of the state and different companies.



Structure of SDT

The portal has functionalities of storing and searching materials. The materials are made of and stored as elements, editing materials (LCMS), publishing, collaboration and communication (VLE).

The testing of the portal is still going on. From springtime it has been tested at the Innovative Schools (ENIS), which system was set up with 30 schools in October 2003. All innovative schools got a sponsorship of 10 million Ft (38.462 Euros) for the development of ICT tools.

ICT Methodology / Trainings

During these in-service trainings, teachers learn how to integrate ICT into interdisciplinary teaching. Sulinet colleagues work together with ICT experts on the development of different modules, which can be used by teachers. This progress is also supported by the state. The modular training allows flexibility and free choice.

In Hungary, methods that are being used are mainly Prussian, frontal or instructional. Therefore there is a need for shift in paradigm. The constructivist pedagogy should be supported. This covers for example TIP-TAP instructions (ideas for teachers and students) within the digital learning materials and inbuilt tools of the VLE. They want to teach teachers as they are expected to teach.

Detailed description of the Sulinet Programme

The Sulinet programme has a two-sided task. On one hand the task is to manifest and to modernise the already existing and continuously developing system. On the other hand the task is to develop contents of the Sulinet web site. Goals of the enhancement of the website are development of content services and courses for teachers, the duplex data circulation and generally the development of the information system of public education.

The tasks were to combine the culture of the interactive network systems and the traditional form of education, to aid teaching and learning and the creation of a forum of communication and fun. Teachers, students and parents can get access to an enormous amount of information (regarding surveys several terabytes.) This information fulfills all demands on the material of teaching and learning or on any other fields of cultural interest. The participants of the public education system (schools) and those who maintain them, ministries, parents, local authorities, institutions of higher education and pedagogical institutes can get access to up-to-date information and to essential data for their everyday work and lives.

Due to all this, Sulinet is a promising opportunity of a cyber communication space that is able to support the constantly changing decentralised education system in Hungary.

Teachers and students of the participating (more than 2000) institutions can all have their own e-mail accounts that will enable them to send letters, texts or pictures to each other. They can also join mailing lists, select from various newsletters or create websites to introduce their school or themselves. The realisation of these plans would activate a new way of virtual communication and activities. This would lead to new opportunities for the Hungarian education.

Technical background

The SuliNet website places also great emphasis on its technical development. In 1998 the number of labs, which are equipped with seven workstations and one server and which are connected to the network system, raised from 910 to over 2000. The number of schools (majority elementary schools) that were equipped with a single workstation and one printer was raised from 624 to 2164. As a result of this development, by now all secondary schools and about 20 per cent of elementary schools are connected to the programme through the Internet. This is almost an increase of 40 %. Connections for Hungarians who live abroad will be established.

Primary schools, secondary schools and pedagogical institutions can join SuliNet through a 64 Kbps digital line (or, where it is not available, through an analogue line.) The great number of institutions joining SuliNet makes the hierarchical set-up necessary. End users join the nearest regional centre. These regional centres are linked to the SuliNet national centre. There are ten regional centres in the country: Debrecen, Győr, Miskolc, Pécs, Szeged, Székesfehérvár, Szolnok, Zalaegerszeg and two in Budapest.

There is a regional server in every centre with the task of speeding up the web connection of the connected schools. The SuliNet server responsible for the content and services of websites is in the main SuliNet headquarter in the Ministry of Education in Budapest. This central web server unit has distinctive administrative and technical functions. Uploaded materials (articles, competitions, appeals) are stored in a database. This makes it simple to form the outward appearance of the page allowing data to be easily displayed in various arrangements. The only thing that has to be designed is the uploaded html page. The columns, links and references are automatically joined and arranged by the server. The forms can be filled in and submitted through the web, making it possible for teachers to submit work that contributes to the site from a distance.

Due to this system and the quick work of html designers submitted materials are quickly processed and displayed on the server. At the same time votings and forms increase the interactive nature of the pages. The SuliNet headquarters office designed these technical innovations.

With the help of the monitoring system, functioning in the Ministry of Education, webmasters can observe the utilisation of the lines, the operation of the system and the performance of regional servers. Due to this networking system, the Ministry of Education has up-to-date information about the organisation. It can precisely check the quality of services and it can make suggestions about the directions of further development.

Parallel with the linkage of the joining institutions the standard of the services has been continuously improved. Since 12th April 2002 Sulinet has been connected to the World Wide Web through 4.5 Mbps bandwidth instead of the previous 1.4 Mbs European and International transmission capacity. The Memory space of the central and regional servers has been doubled, too. Regions are linked to the Sulinet centre with a 2 Mbps optical cable. Furthermore, this year the development of the system to 3 Mbps will be started.

THE MOST IMPORTANT DATA OF SULINET PROGRAMME (JUNE 1998 – 2003)

INFRASTRUCTURAL DEVELOPMENT (SCHOOLS – COMPUTERS)

	June 1998	2002	2003
Number of internet connections and computer labs:	1564	2340	4800*
Number of schools with one computer workstation:	624	2164	
Band width (Regional centres):	2,0 Mbps	~ 17,0 Mbps	
Band width (Hungarian connection):	10,1 Mbps	100,0 Mbps	
Band width (international connection):	1,4 Mbps	68,0 Mbps	
64 kbit/s band width institutions	910	1017	0
128 kbit/s band width institutions	0	813	0
Institutions with ADSL I. and II.	0	510	2200
256-512 kBit/s	0	0	2600

***All elementary and secondary schools**

The Sulinet website

Services

The mailing lists of various subjects of the educational areas hosts the communication space for about 8400 visitors in 17 different topics. About 5400 visitors have subscribed for the weekly newsletter of Sulinet and since they started their new freemail service in February 2001 about 4000 visitors chose this application to administrate their emails.

Several interactive solutions make the site's services interesting. Forums can be attached to articles of common interest. Therefore visitors can comment them or ask their questions in a moderated forum. Student visitors, beyond articles of popular or cultural topics, can find lately fashionable applications like on-line games or chat

rooms. It is apparent that visitors not only visit the page for entertainment. The most often visited pages are within the education section.

Regarding future plans the content and technical development areas are the following:

- Linking all schools into the Sulinet network
- Continuous development of connection speed
- Software development
- Use of e-book
- Use of e-learning
- Enlargement of the educational data basis
- Increase of interactivity

The site's particular services

IT allows access to special databases, mailing lists, votings and forums using regular features of the Internet.

- "Life and Science" archives, where visitors can find all 1999 issues of the popular Hungarian periodical.
- National parks: An introduction to every Hungarian national park gives an excellent help for the organisation of school trips.
- "In higher education": the Ministry offers an online page with a search engine for all Hungarian data from universities and colleges (departments, majors, admission points, scholarships, dormitory availability, social allocations etc.)
- From the beginning of March 2000 Internet university preparation course.
- Mailing lists of teachers (of particular subjects)
- Sulinet newsletter
- Coaching and preparing: Anyone can write to the teacher concerning a certain problem of each column/page. The teacher will help solving any problem.
- Teachers' office hours in the students' page: regularly invited experts answer students' questions.
- A significant gallery of Hungarian poet's portraits with a selection of their works, with notes, with a manual and with lesson plans for teachers. Furthermore with a search engine that was designed for the purpose to provide an easy browsing.
- A selection of contemporary writers' works
- Practice tasks and exercises from every subject with conclusions, studies and reading lists.
- Chatorna the Sulinet chat channel

- Voting machine
- Interactive games

Open Sulinet lab

Every student could be in the situation where he needs an outside-school computer lab to connect to the Internet. This can happen for instance, when somebody is preparing for school lessons in a library, when somebody is ill and absent from school for a longer period of time (maybe in a hospital), when a group is hiking and one person needs to rearrange the programme of the group.

Considering these situations Sulinet is developing a system of out-of-school computer labs within the year 2000. Primary and secondary school students and teachers in mentioned situations can use these services. The first link of this Sulinet Plus chain is the internet lab in the surgical department of the Heim Pál hospital, which was installed on 21st December 1999. Now children who need to stay in this department have a chance to keep contact with their peers, parents and teachers. There will not be a lack in personal relationships nor in school contacts. With help of the programme, children can study and play.

Moreover, according to the plans of the Ministry of Education, special programmes for students who have to spend longer periods of time out of school will be designed. Regional centres and two mobile educational centres, those are in content equal with the regional centres have been developed.

Summary

Teller Ede thought that those who can't use a computer by the end of the millennium would be illiterate. Sulinet's aim is that there are no students or teachers that are illiterate in this sense by beginning of the third millennium. There is great responsibility on all of us. Every member of the generation between eight and sixteen years must have basic computer skills and must be able to use the internet, e-mail services and multimedia.

As special possibilities are given, the network is unique in Europe.

It is continuously modernised and developed via a widely known and used web page system. Sulinet is approaching the level of quality that was drawn for Hungary, which is to fulfill the expectation of the European Union. A website which has accomplished an extensive technical and content development uses every possible means to support the decentralised, public education and its institutions' modernisation. It contributes to the regions' independence, increases its chances and brings us closer to Hungarians living abroad.

Education Sub Portal

The Education sub portal is one of the biggest sub portals on the Sulinet website. On the average 40.000 enquirers are registered per month.

The Education sub portal is especially popular, because its target group covers almost every educational area: elementary and secondary school students, undergraduates and teachers, civilians. Those, who are not strictly related to education, also might find interesting topics in the different sections.

The structural backbone of the Education Subportal rests on eleven curricular sections and on two other sections covering knowledge areas in a wider sense. The curricular sections include biology, physics, geography, literature, informatics, chemistry, mathematics, media, arts, history and languages (English, French, German and Spanish). The knowledge areas cover natural sciences and arts.

The sections mentioned above aspire completeness in view of the content. Articles related strictly to the directives of the National Core Curriculum support the students in preparing for classes and in the entrance to examinations of universities. The methodological guidance attached to the articles serves the preparation of teachers. The Educational Forum allows the creation of a dialogue between students and teachers. They can state their opinion and talk about questions concerning subjects or articles.

The articles that are exploiting the opportunities of the internet and serving the demands of the readers of the 21st century have several attractive characteristics, like interactivity. Even very popular are curriculum-based games.

The Education Subportal of the Sulinet webpage drew level with the paper-based educational tools in recent years. It is crucial for numerous students and teachers to visit this portal regularly.

Introduction to the Languages Column section

The Languages Column was called into existence with the purpose of providing learners of foreign languages and language educators with up-to-date information relevant to their field of interest.

Furthermore, a database of foreign language teaching materials has been set up to help language teachers to incorporate internet based digital materials and lesson plans into their everyday teaching practices (currently in four languages: English, German, Spanish and French).

Students can test their knowledge using the Sulinet Interactive Test Machine, which contains nearly 2500 test items including an answer and an explanation for each of the items (available in English only).

Besides the Interactive Test Machine, there are e-books for vocabulary development of students with different levels of language proficiency, interesting 'fun pages', a collection of nearly 3500 quotations and more materials in altogether 15 different categories.

The languages column publishes not only language teaching supplementary materials. It also boasts an ever growing collection of digital lesson plans for language teachers.

The News column provides information on conferences, scholarships as well as on other upcoming, important events in the language teaching community. In addition, it is this column, where other interesting websites from all over the world are embedded in a regular slot. The languages column regularly organises competitions for its visitors (for example the Newsweek translation competition), where the winners are awarded with invaluable prizes.

Introduction to the Mathematic section

The section offers various reading materials to elementary and secondary school students, teachers of mathematics and everyone interested in the subject.

The main task is to support the mathematics education through digital curriculum. There is a database of digital exercises. Those, who are part of the educational process, might choose from exercises with different difficulty levels. Additional articles deal with the solution of mathematical exercises.

It regularly presents useful educational animations, demonstrates software supporting the learning process and it provides teaching ideas concerning the modern subject methodology.

They publish reviews of books to support the professional development. For interested students, who want to raise their competence, background information is provided.

Through competitions the motivation of students should be enhanced. At the same time calls and competitions announced by others get more attention.

They consider the dissemination of mathematics knowledge to an important task. For that reason they gladly care for it. They present writings about curiosities of their science. Several times wholly novel ideas appear on their columns.

They introduce other countries' mathematics education to allow the takeover of useful experiences.

Introduction to the Geography section

The geography site has been working since the foundation of the Sulinet Portal. The main objects are to help secondary school teachers and students and to present interesting geographical themes.

The contributors are very good at geography. In addition they are good at biology, sociology, anthropology and astronomy. They visited a lot of places in different continents, where they took a lot of pictures and gained a lot of experience. These facts raise the quality of the site.

There has been made regular efforts to get the students acquainted with natural, social and economical features of the environment. They want to enable them to find their ways in natural and social processes. It is also important to provide background information and to help students to think independent.

Another task is to offer methodological help for those, who want to use the online materials in their teaching. Presentation of the possible use of computers and digital materials of the SDT (Sulinet Digital Knowledge Base) in education is important as well.

According to experiences the animations and interactive elements make the geographical laws more easily conceivable and explain the process properly.

Illustrations in books can not exactly show the dynamism of geographical processes e.g.: continent spreading, atmospheric circulation or volcanic eruption.

They can improve the understanding and the spatial thinking by using short flash animations concerning the processes mentioned above.

The published subjects on the site comprising several approaches provide understanding and easier working and help expressing the explanation of the teacher.

Students Sub Portal

The Students sub portal is the biggest and the second most visited site on the Sulinet portal after the Education Subportal. Its main goal is to provide students with valuable information about activities which are not directly connected to learning and school.

The Subportal informs the readers about spare time activities and opportunities of entertainment in a wide range that could be interesting for secondary school students.

The sections serve the above mentioned purpose. The section **Motion Picture** informs about newest performances, Hungarian movies and valued foreign movies. It contains video films.

In the **Music** section the world of substantial music is highlighted. Priority has been given to qualified performers, who are able to provide the audience with artistic experience. Worse performers or performances are subject of criticism.

The so called “What to do heading” supports the students to get a scholarship, to plan their further study and to make good use of their knowledge outside of school. A large scale of topics fits into the spare time section.

Of course the visitors of the site get more than a simple program preview. There are criticisms and essays available.

The Writers section is only for students. Here they get knowledge of literary calls, events and courses. In the section for calls and events the site attracts students to pay attention to the newest calls, competitions and quizzes. Curiosities, peculiarities, scientific and technological novelties can be found in the section of bits and pieces.

Especially girls might enjoy the Lifestyle section. The message is about school life. Here they demonstrate issues related to school, school newspapers and web pages and they analyse foreign educational portals. Visitors of the Students' Rights section can get a picture of the student councils and of the employee assumptions for young people.

Teachers Sub Portal

The Teachers sub portal provides the educators and the prospective teachers with useful information.

Sulinet intends the articles mainly for professionals, who are working in pedagogical-educational institutions and who would like to get a line on calls, news, events and laws of the educational system. With help of the articles the changes and events of the domestic alternative pedagogy can be observed closely.

In the Digital Pedagogy section they report about the educational challenges of the twenty-first century. They analyse domestic and foreign problems of the educational area and they follow the Hungarian educational trade press attentively in the Educational Research section. The sub portal also supports the planning of extra curricular activities: the articles inform teachers and spare time organizers, who would like to increase their students' knowledge in open-air schools.

The Interactive Teacher Site is also part of the sub portal, which is especially useful for teachers, who would like to keep in touch with their colleagues from other institutions via the internet. There is also the opportunity to find or to advertise jobs for teachers.

The site gives every educational professional a chance to publish information, which might be useful to others.

Parents sub portal

The main point of view by forming the Parents Sub portal was to transmit interesting information to parents quickly and dependably on the grounds of the available technology.

The headings present widespread information material related to education and bringing up. The present headings of the site are: Schoolbag, Psychologist, Health, Spare time, Fight for the rights, Children's room, Idea Depot, Calls.

In our days the public educational system provides several opportunities. The problem is that sometimes the information does not reach the appropriate target group. This happens, because of the great variety of the opportunities. But the parents need to know the opportunities to be able to choose the most favourable one.

The School Database enumerates all Hungarian public educational institutions arranged according to settlements. The Register of the Private Schools completes the database and supplies complex information about the pedagogical methods and equipments of different alternative educational institutions.

The Family Database helps parents to handle financing opportunities, child-care allowance and other social contributions. The child psychologist provides parents having problems with child-rearing with direct, personal advice. Headings contains interviews, reports and comments, which are constructed by an agency of consultative professionals.

(Source: <http://www.sulinet.hu> - English)