

Schoolnet Report Bulgaria

What is a Schoolnet?

The most extensive and detailed definition of the general concept of a schoolnet is provided in the National Strategy for implementation of ICT in Bulgarian secondary education, based on the programs of the Bulgarian government for achieving the goals of the Lisbon strategy of the European Union. The strategy defines the concept **National Educational Network (NEN)** – an overall educational network which carries out the communicational connectivity between schools and the network management centre of NEN, between the schools themselves, as well as connectivity with other information networks. NEN requires a support network which should:

- Provide connectivity within the whole country
- Have the necessary admission capacity (34/155 Mbps)
- Provide centralized monitoring and control of all resources
- Provide reliable control of usage, access and the content of the distributed materials
- Provide opportunities for expanding and further development of the services

As a support network for the purposes of NEN every well developed infrastructure with the necessary POP (points of presence), services and quality for supplying a broad access to them can be used.

This national educational network should have the following characteristics:

- Easily to expand in order to include new work centers and users
- Independence of the users' work centers (absence of hierarchy in typology);
- Centralized control over the contents;
- Centralized control over the access to the network resources;
- Centralized management of the network resources
- Minimum exploitation costs

It is necessary to develop three logically divided networks based on the physical communication connectivity:

- Computer classrooms network - Comprises the computers, used by the students in the course of studies;
- School administration network – Comprises the computers used by the school administration in their everyday work;
- *Service network*

At a logical level, the connectivity will be possible between each two units within a certain network – for example:

- The specialized classrooms in the different schools will be able to exchange information;
- The administrations of the different schools will be able to exchange information;
- All users will have regulated access to Internet;
- The specialized classrooms will not have access to the school administration network.

For the purposes of the communicational connectivity between schools within a national network, the strategy includes the creation of an **educational portal**, **platforms for distance learning** and **educational content** for all disciplines. The educational portal provides information for all citizens by offering:

- Access to database.
- Analytical information regarding the national educational structure.
- Information for national educational projects including introduction of ICT.
- Indicators for the educational situation, comparisons and tendencies.
- Virtual hall (Call centre).

Also, **local software platforms** for computer training should be developed and they should provide:

- Environment for sharing knowledge.
- Management of the educational contents: from a given text to dynamical multimedia content, simulation, animation, video and sound, tests and questionnaires.
- Basic tools for the elaboration of electronic contents and users' applications.
- Management of the subjects' curricula, as well as design of these curricula.
- Curriculum and scheduling study hours.
- Online testing, assessment and evaluation.
- School administration.

The network will also provide **educational software, multimedia contents** regarding a script given by the teacher - a number of **learning modules** on the main subjects.

Schoolnets and policy

The policy of the Bulgarian government, as far as this matter is concerned, is in compliance with the Lisbon strategy adopted by the European Union, with its fundamental goal of becoming the world's most competitive knowledge based economy. This implies consistent efforts for further development and improvement of education by means of broader distribution of information and communication technologies (ICT) in schools and their efficient usage in the learning process, by students, teachers and administrators.

In order to carry out the implementation and to contribute to the introduction of ICT in education, the European Commission adopted an **eLearning Action Plan**.

The main components of this action plan, also included in the National strategy for implementation of ICT in Bulgarian schools, are the following:

- Training courses for teacher to use digital technologies.
- Elaboration of European educational services and software.
- Acceleration of the construction of an integrated academic network, servicing schools, teachers and students.

The main guidelines for the training are:

- Training for adaptation – aimed at servicing the qualification standards of employees in the educational sphere in the period of change of the requirements.
- Training for increasing the qualification and re-qualification in response to the changed individual needs, the changed qualification requirements imposed by the present educational system.
- Training for encouragement – aimed at obtaining a higher qualification degree, which allows occupying a position that requires a higher qualification grade.
- Training for innovation - allows the introduction of innovative methods in professional organizations and in the work process (for example, elaboration of new products and services, ensuring higher quality).

Groups of activities, included in the National Strategy for implementation of ICT in Bulgarian schools:

- Adopting the suitable legal basis which will regulate the training on ICT and the teaching based on the use of ICT.
- Supplying schools with computers – Creating classrooms equipped with computers in every school.
- Creating an information network and high-speed connections to the Internet in all schools.
- Training and raising the qualification of teachers in order to make the implementation of ICT in all study subjects possible.
- Creating an Internet portal on education that is elaborating distance learning schemes.

The **main goal** of the strategy is the effective use of modern ICT for increasing the quality of education, improvement of the educational contents and introduction of innovative educational technologies and methods in the teaching process.

The **goals** that will be reached are in accordance with the requirements of the pedagogical use of ICT, through applying the innovative methods and approaches in education:

- Modernization of the whole educational system and improvement of the quality of education in such a way that all students will be entirely prepared for the information society through developing their literacy concerning computer and information technologies.
- Development of new learning standards based on an activity-oriented learning model which will replace the existing reproductive model.
- Improving the teachers' skills for using the ITC for teaching purposes.
- Co-operation on European level in the development and exchange of innovative programmes, methodologies and training materials, as well as sharing of good practice.
- Closer co-operation between all interested parties - teacher, professional organizations and institutions defining the ICT policy in education on local, regional, national and international level.
- Providing a quality educational system, based on the good traditions of the Bulgarian educational system and the European Community experience.
- Increased ability for expression and decentralization of the management of the educational process on local level, growth of the institutional and analytical capacity at national and local level for the purposes of formulation, planning, assessment and analysis of the policy.

The specific goals are:

- Provision of computer equipment for schools and connecting them to the Internet. Reaching a proportion: number of students per computer should be 10/1 in 2007.
- Achieving an equality of the opportunities for using ICT for all students, regardless of their social and cultural environment, ethnical origin and state of health.
- Introduction of the ICT in curricula and programmes for teachers' training.
- Creation and adaptation of educational software and systems for co-production, exchange and dissemination as well as taking the respective measures for the protection of the intellectual property.
- Provision of ICT education for children in special schools.
- Management support for school managers and the Ministry of Education and Science.
- Carrying out the administrative process within the educational system: Decision- making, assessment, planning and prognosis, observation and control of the special needs of the following institutions:
 - The managing body, which determines the policy – Ministry of Education and Science
 - The central and regional administrative bodies.
 - The local administrative bodies (school personnel, local council).

- Increasing the transparency by providing free access to Internet regarding all aspects of the educational system and regarding public projects in the educational sphere.
- Acceleration of the use of ICT and keeping the pace of long-term and short-term implementation of ICT.

Who are school nets designed for?

For students, teachers, school managers, schools, etc.

What do Schoolnets contain?

Refer to question 1 of this document.

The national network which is planned to be created will contain an educational portal, which will offer developed curricula, teaching programs, different lessons, etc., including educational software, created by both teachers and students, which will be a learning aid during the study process on different subjects. In the beginning some representatives of Bulgarian schools will participate and it is planned to increase their number. The portal will provide information and different possibilities for exchange of opinions, ideas and experience of teachers and students.

Who is involved?

- School administrations, connected by networks to the information centers and between themselves.
- Computer classrooms, connected to the network and between themselves.
- Ministry of Education and science – information and management centre, hosting the main server of the national network

What research has been done about the SchoolINets?

<http://www.sacp.government.bg/>

<http://cis-sacp.government.bg/sacp/CIS/index.htm>

<http://cis->

sacp.government.bg/sacp/CIS/content/secondconference/silviakancheva.htm

Article on information technologies education by Sylvia Kancheva, available on the link given above.

“The educational programs for Internet training were developed in 1998. At that time teachers, who started work on international projects using Internet, were trained within the framework of I*EARN program. About 80 schools that were included at that period continue their work on other international programs and are part of a number of other school networks.

One of those networks is “myEurope”. Twenty four Bulgarian schools are registered in this network. The schools in this network receive a bulletin every month, where the most recent information for projects and new resources for the implementation of ICT in other subjects are presented. This network is also a union of teacher, who work together, help themselves and co-operate and play an important role in the progress of education towards a better use of technology, in

order to satisfy the needs of education and communication in the European context”.

www.minedu.government.bg – National Strategy for implementation of ICT in Bulgarian schools

www.mtc.government.bg

<http://www.bulgaria-gateway.org/ebulgaria/e-bg2004/index.htm> - E-Learning and E-Education report, chapter 1: Availability of ICT in Bulgarian schools p.33-37 (E-Bulgaria report)

Schoolnets in schools?

Refer to question 1 of the present

Financial aspects of Schoolnets?

Page 37 of the report on E-Education and E-Learning – section 1.5 Funding for ICT in schools.

Refer to <http://www.bulgaria-gateway.org/ebulgaria/e-bg2004/index.htm>

Organisational aspects of Schoolnets

The realization of the strategy is assigned to expert teams from the Ministry of Transport and Communication and the Ministry of Education and Science:

- The Ministry of Transport and Communication is responsible for the computerization of schools and the construction of an information network.
- The Ministry of Education and Science is responsible for adopting the legislation, training of the teaching staff and the elaboration of educational contents on every subject.

The control over the realization of the strategy is carried out by the co-ordinating council for information society and the constant working teams in it:

- Working teams for accelerated development of the informative society,
- Working team for the ICT use in education.

A **Center for ICT in education** has been established– one of the responsible bodies for implementing the National strategy.

Other authorized institutions to take action in this field are the **National pedagogical center** (director – Mr. Plamen Surudjiiski) and the **Regional**

Pedagogical centers – 28 centers (Mrs. Ljuba Alexandrova is the head of the RPC- Sofia) – <http://www.npc-bg.com> .

Examples of schoolnets

- A local schoolnet in Varna municipality, between the secondary schools “Dr.Petar Beron” and “Geo Milev”.

Refer to www.varna.bg, the official site of the municipality of Varna.

Other examples (international schoolnets with the participation of Bulgarian schools):

<http://www.eun.org/portal/index.htm>

<http://eschoolnet.eun.org>

<http://smc.eun.org> – School Managers Centre

<http://etb.eun.org> – teaching resources

<http://www.schoolsonline.org>

Use of ICT in schools

The analysis of the current situation shows that although there has been made some progress, Bulgaria is still drastically retarded in the process of implementation of information and communication technologies (ICT) in education.

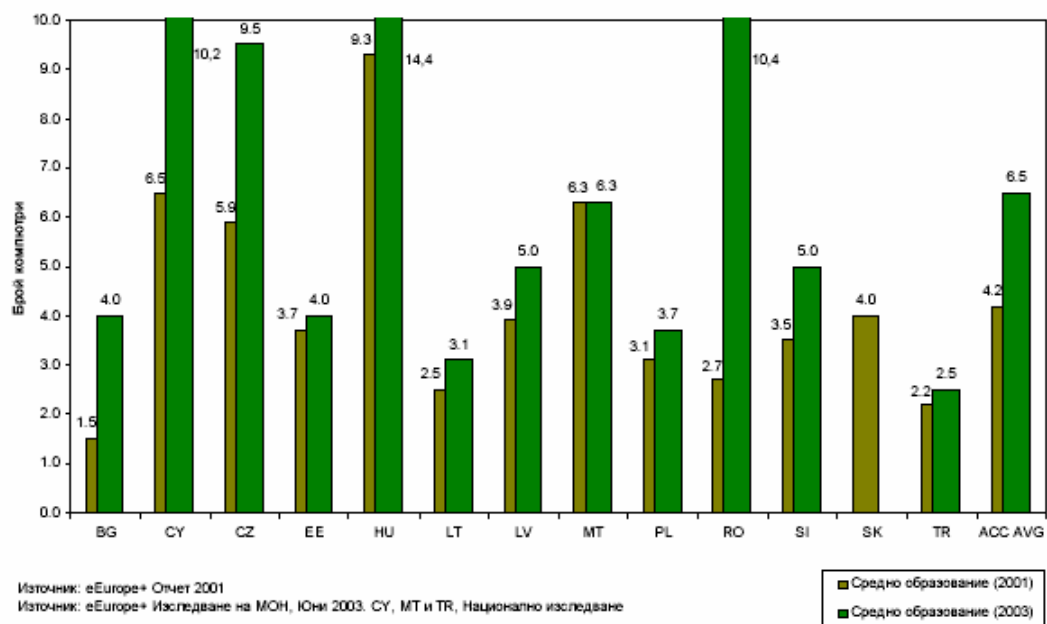
	<i>European Union, average (25-Member States)</i>	<i>New Member States</i>	<i>Bulgaria</i>
<i>Number of computers per 100 students</i>	9.5	6	2.1
<i>Percentage of schools connected to Internet</i>	80	55	33 (dial-up connection included)

Examples of quick overcoming of the retardation in the field of ICT implementation in education are the Czech Republic and Hungary. In the Czech Republic the number of computers per 100 students has increased from 2 in the year 2001 to 10.2 in the year 2003 and 80% of all schools have access to Internet. In Hungary 85% of the primary and secondary schools are connected to Internet and 25% have a high-speed access to Internet.

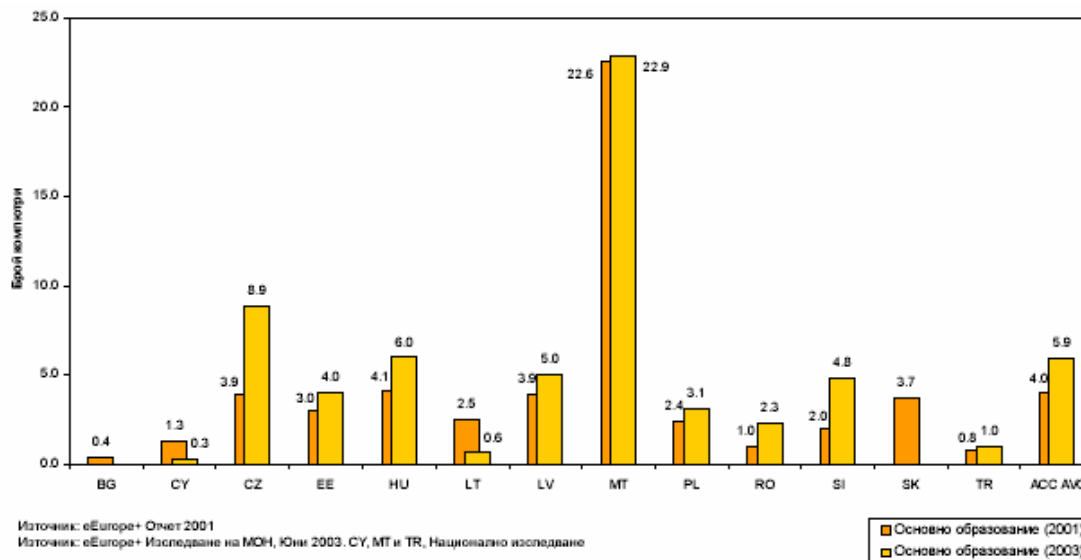
In the beginning of 2004, one hundred Bulgarian students use 2.1 computers, but if we consider only the number of modern machines, this ratio is a lot less favorable and it is 1.3 computers per 100 students. The number of the schools that are connected to Internet through LAN is small.

Number of computers per 100 students in secondary education

Брой компютри на 100 ученика в средното образование (в брой)



Number of computers per 100 students in primary education



With regard to this information, the analysis of the current situation of ICT in Bulgarian schools shows that:

- Due to the lack of resources, no centralized computer provision has been made in schools for the last ten years. In 2003-2004 school year for the first time one million levs from the budget of the Ministry of Education and Science were allocated and personal computers were bought for the equipment of about 100 computer classrooms.

Within the framework of E-BULGARIA initiative in 2004 the Ministry of Transport and Communication provided 10.73 million levs for the computerization of 750 more schools.

- No investments were made for teachers' training for using ICT and no accompanying software products for special and general subjects were supplied.
- There is no centralized network at national level connecting the schools, nor such network for Internet connection. Separate local networks were created with the support of local structures and non governmental organizations.

- The municipalities support to different extent the incorporation of ICT in schools and that's the reason for the big differences in the number of computers in every school in the country.
- At present in secondary education curriculum two subjects are included, connected with the information technologies and computers: informatics for tenth grade and information technologies for 9th and 10th grade. Generally there are no regulations, specifying the introduction of ICT in secondary education.
- Practically ICT is not applied in the teaching of general subjects.
- There is no actual link and applicability of the developments of scientific and academic teams in computer-based learning.

Page 33 – 37 of the report on e-education and e-learning

<http://www.bulgaria-gateway.org/ebulgaria/e-bg2004/index.htm>

Why should we have schoolnets?

To contribute to the overall development of education by providing user- friendly environment for cooperation, information and experience exchange among teachers, students, educational decision-makers, which will greatly facilitate the progress of Bulgarian schools towards achieving the goals stated in the Lisbon strategy of EU.

Any other information or examples or research on Schoolnets

In May 2005 in the town of Bankia a National meeting was held. It was organized by the Ministry of Education and Science and it gathered ICT experts with representatives of the ministry and the regional pedagogical centers. In April 2005 another National meeting was held in the town of Gabrovo, focused on the training of teachers and the National strategy for implementation of ICT.

In the town of Dupnitsa a training course for teachers was organized by the Ministry of education. Its purpose was to train senior tutors of computer classrooms and it had two stages. In the first stage representatives of 1000 Bulgarian schools (primary and secondary), most of them qualified informatics teachers, were trained. In the second stage were trained representatives of another 2000 schools.

Examples of European Schoolnets for schools

<http://www.eun.org/portal/index.htm>

<http://eschoolnet.eun.org>

<http://smc.eun.org> – School Managers Centre

<http://etb.eun.org> – teaching resources

References

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<http://www.bulgaria-gateway.org/ebulgaria/e-bg2004/index.htm> - E-Bulgaria report
www.varna.bg

http://www.minedu.government.bg/opencms/export/sites/mon/left_menu/documents/strategies/strategia_ikt.pdf - National strategy for implementation of ICT in Bulgarian schools of the Ministry of Education and Science

www.mtc.government.bg

<http://www.npc-bg.com>

Action plan for implementation of ICT in Bulgarian schools.

Curricula for training of teachers on the use of ICT – Dupnitsa.