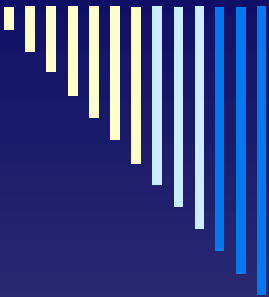


SchoolNet
Report



What is a Schoolnet ?



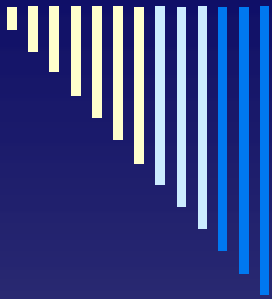
The most simple translation into Romanian of the word schoolnet means "school connexion through internet". In fact we may describe the term schoolnet in Romanian as a connexion between schools realised with the help of international means, especially the internet.

Schoolnets can also be a partnership between the national and local authorities, the educational community and the private sector which promotes a continuous learning through informational means.

Schoolnets should also contain, among schools of all levels, open libraires which could be a source of direct information for the users.

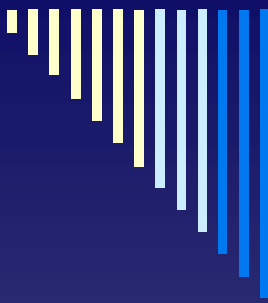
We consider the Romanian Education Network, or RoEduNet, as one of the schoolnet in Romania.

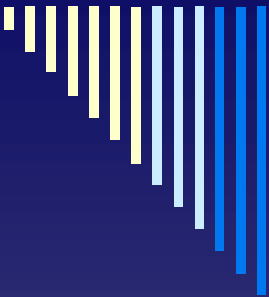
RoEduNet is an organization and in the same time a data communication system, which connects a large number of Local area networks to a national WAN data communication infrastructure. This infrastructure is operated by Network Operation Centers (NOCs) in Bucharest, Galati, Iasi, Targu-Mures, Cluj, Timisoara and Craiova.



The aim of this technical complex is to offer the participants-universities, high schools, cultural, scientific and research nonprofit institutions - the means to communicate with each other, well as to have access to Internet information resources. Another one is TVET (Technical Vocational Education and Training) In TVET school nets are created in order to gain a cooperation which focuses on TVET objectives : a qualitative professional development and social and professional integration, according to pupils' expectations and the demands of the working field.

The schools cooperate to use together the resources more efficiently (human and material resources, equipments, workshops, etc), to create viable partnerships (with the social partners).

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- **Schoolnets and policy** –
how do Schoolnets fit into the
education system (policy) in your
country?
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The romanian system of education consists of two level;pre-university education and university education:

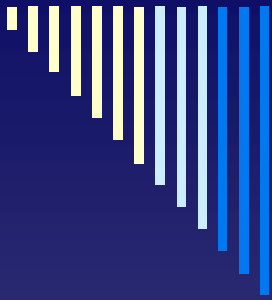
- pre-school children
- primary school pupils
- secondary school pipils
- theoretical or professional high school pupils.

Pre-university education, primary school and secondary school education represents the basis of young people's general knowledge and its mostly financed by the State budget.

Highschool education,financed mostly from the State budget,allows pupils to take a career-oriented field of instruction and the training lasts 3 or 4 years,for the following stages of study.

The number of educational institutions from the State education:

- Primary schools(forms I-IV):6099 from urban area:485,rural area:5614
- Secondary schools(forms I-VIII):7583 from urban area:1996,rural area:5582

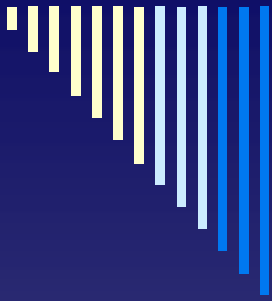


High Schools: 1309, from urban area: 1121, rural area: 188.

The basis of a modern education require the changing of the old methods and ways of education. We mean by these educational procedures, ways of teaching and communication the role of computers becomes thus essential, both as an educational means and as a source of documentation, a quick acces to information for pupils and teachers.

There are isolated preoccupations regarding this; several schools benefit by programs of certain associations or non-governemental groups, but this does not have a national character, and it is not oriented towards the act of modernization of the teaching act through the use of computers.

The Ministry of education was introduce “the technology of Education and Information” as a school subject in the pre-university education for all the levels of study.

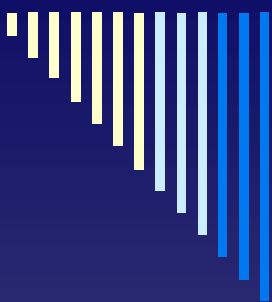


The project suggests a three-direction development; the elaboration of a new curriculum that will monitor the introduction and the gradual application of TIC in teaching the pre-university subjects of education teacher's training In the field of using the TIC in the process of teaching endowing the laboratoires with educational software and equipments, that will facilitate an education based on ICT and a communication target through a national network of knowledge.

The project proposes a three-stage development, which will ensure the efficient use of resources and the obtaining of maximum benefit.

The first stage, with a period of two years, regards the piloting of the project, with special stress on conception and elaboration, on evaluation and improvement.

- The Ministry of Education will make up a working team formed by:
- Counciller of the State Secretary for the Pre-University education
 - The manager of the management of the pre-university education
 - Informatics inspectors
 - A representative of the direction informatics(MNE)
-



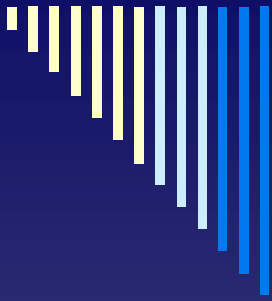
- A representative for the coordination service RoEduNet
- Regional informatics inspectors
- Teachers with experience with this type of projects
- A representative of the curriculum component
- A representative of the teacher Development component
- A representative of the Institute of the knowledge of education.

From the working group can take part NGO representatives, those who have the education as working subject, and representatives of some ICT firms. The group will approve and evaluate the evolution of each stage.

The project will last 4 years and it will as a target the gradual implementation of the technology of information and communication in pre-university education.

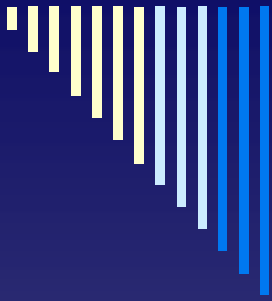
The project will cover the network of institutions from the pre-university education, at the national level, during three stages: 15% during the first two years, 35% in the third year, and 50% during the last year.

The budget below covers the starting and “the piloting” stage of the project for the first two years and a for 15% of the educational institutions (2250 schools).



- basic equipment and software 75%
- laboratory for instruction and communication 45%
- mobile multimedia multidisciplinary laboratory 17%
- methodological laboratory 13%
- the development of RoEduNet network of communication 2%
- the development of the infrastructure superior level 0,5%
- local knot of communication-150 knots 1,55
- instruction 10%
- making up projects,plans,strategies,documentations 0,5%
- training teachers 1%
- instruction and mass courses 5%
- instruction network administrators 0,5%
- documentary materials,courses,publications,handbooks of utilisations 35
- educational software 10%
- communicational expenses plus aditional ones 1,5%
- expenses regarding the technical assistance 1%
- evaluation expenses 0,5%.

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- **Who are Schoolnets designed for?** — are they for teachers, school managers ?
Headteachers ? Schools? Pupils?
Educational experts?
-



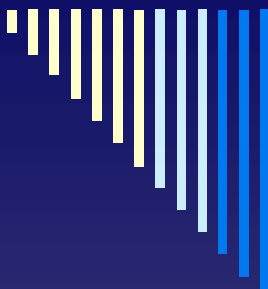
Schoolnets equall is designed for teachers, school managers, teachers experts in education, schools, students.

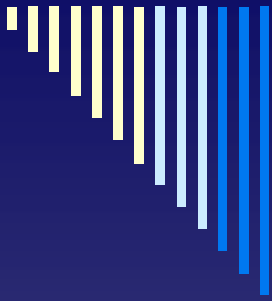
Each category is part of a schoolnet and can find informational ressources whitin it.

Tachers exchange experiences between them regarding new methods or evaluation teaching and learning and the students also can communicate improving their linguistic abilities.

The school can present the educational activities they take part in.

The main actors are the managerial teams, which contain the expert for the curriculum, the orientation advisor, the manager of the quality check, and the manager of the social partnership (the link with the hiring staff)

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- **What do Schoolnets contain?** What do they offer? What features do they have in general? (Forum, information, education resources)
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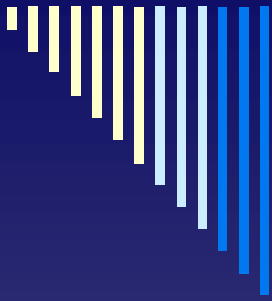


The schoolnets must contain an educational portal, which will offer developed curricula, teaching programmes, lessons, educational software created by teachers, students and researchers.

The main goal of RoEduNet is to provide a modern data communication infrastructure that connects all educational, research and cultural institutions in Romania, and to provide Internet connectivity for all connected institutions.

RoEduNet provides a full range of IP services, such as DNS, HTTP, SMTP, FTP, webcache(proxy), NTP, but also a couple of services under the new implementation of IP protocol, Ipv6, acting as a testbed for new and upcoming technologies.

Another aspect of RoEduNet activities is the development of human resources needed for the IT.



Since 1998 RoEduNet is part of Cisco Networking Academy Program hierarchical structure fits well on the RoEduNet structure, each RoEduNet NOC being a Regional Academy (Bucharest NOC hosts in fact a CATC), and part of the POPs are Local-ones.

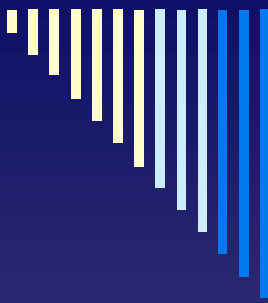
Also other connected institutions, like highschoools, schools, universities joined the program as a needed point for their internal networks design and management.



Main services of the RoEduNet are:

- learning materials
 - educational resources
 - cold and warm resources (equipments, workshops, professional development facilities, human resources)
 - informational resources – e.g. the information about the local and regional demand of working force
 - connections (list of servers and portals related to education in Romania and the world)
 - news, information about national and international events, news in educational fields
 - communication, chat, forum, mailing lists, conferences
 - curricular resources – the elaboration of the curriculum in the local development
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- **Who is involved?** — who manages or runs the Schoolnet? Who supports and promotes? Who supplies information and tools?
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Schoolnets are directed by experts in education. Their promotion and support come from educational associations or governmental support.

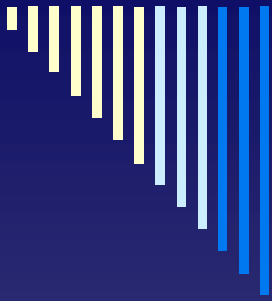
The information is provided by also those who are involved in schoolnets.

Teams especially designed for these networks, and people responsible with them from each partner



□ What research has been done about Schoolnets?

– who has written about Schoolnets in your country/language? What did they say? PLEASE make sure the reference is provided (author, year, title, publisher and Web address if relevant)



www.iasi.roedu.net

www.e-scoala.ro

www.edu.ro

www.didactic.ro

www.invata-ma.ro

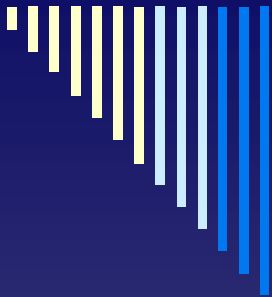
www.tvet.ro

www.rural.ro

www.intuitext.ro

www.amoba.ro

At the beginning of 1997, the name Romanian Education Network, or RoEduNet, appears for the first time officially, replacing RDIS in a minister of Education order (3629/March 25, 1997). In April of the same year international connection of RoEduNet is upgraded to 1,5 Mbps. In a short period, November-June 1994, more than 30 institutions from main Romanian cities are connected to the new emerging network via dial-up and, later, low speed analog leased lines. In late 1994 this network gathers an official status and is called the "Romanian Higher Education Network" (Reteaua de date a



invatamantului superior-RDIS),by minister of education order(8964/November 24,1994).

Although RoEduNet was founded officially in August 1998,its history starts earlier in 1990,when a project about data Processing and Communication was started between “Politehnica”University from Bucharest and Technical University from Darmstadt,Germany.the goal of the project was to develop a data communication infrastructure and an experimental e-mail,which connects to international data networks.

In October 1990 the e-mail system is operational,using donated equipament from technical University from Darmstadt, the connectivity being accomplished via dial-up means.

In 1991-1992 the basics of a romanian national academic network are founded,with the great help of deutches Forschungsnetz (DFN-verein).This new project’s main purpose was to install a communication server and an X25 switch,connected to German Scientific Network-WIN.

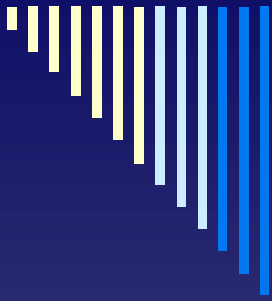


At the end of 1992 an X25 dedicated line is in usage between Bucharest and Germany, also making new connection inside the country is possible now.

Another important milestone was the first local Area Network at the Politehnica University Bucharest, which was installed in November 1993. This LAN communication infrastructure is connected to EuropaNet through a 9,6 Kbps dedicated line, the other endpoint being the EuropaNet's access node from Dusseldorf, Germany.

After this first Internet point of presence in Romania academic world was made, the data communications infrastructure growing process was started. In the same year two network connections are spreading access to Internet in the country: Bucharest-Cluj and Bucharest-Iasi.

In June 1995 a new communication channel is realized between Bucharest and Amsterdam EuropaNet (DanteNet) access node, this was also an upgrade from 9,6 to 64 Kbps. This new communication channel was saturated at the end of the same year (more than 70 institutions

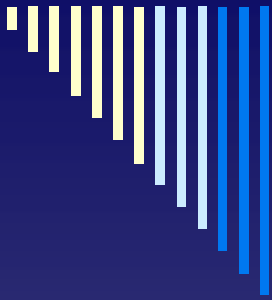


connected),so another bandwidth raising was necessary.This was done in February 1996 with an additional 256 Kbps VSAT connection,to TaideNet.At this time all the cities with universities had connections to Romanian education Network.

After the official foundation of RoEduNet through a Romanian Governement Decision all the 6 NOCs are equiped with high-end routers,servers and digital communications hardware,as a minimal configuration to be able to support a large network.

Also,in December due the increase of network resources demand,the existing external link is working simultaneous with a new 4 Mbps connection via LORALORION,which funding is approved by Education Ministry.

The 1999-2000 year were not good ones for RoEduNet,there where many problems regarding the bills for internal connection between NOCs and between NOCsand POPs,local carrier RomTelecom suspending for good reasons after all,a couple of long periods,digital lines leased to RoEduNet.

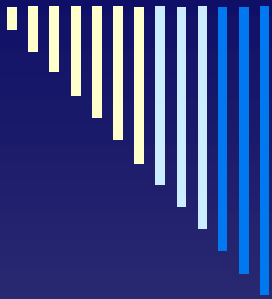


The next year, 2001, RoEduNet is giving up with satellite connection, which were expensive and with big transmission delays, and chooses a terrestrial 8 Mbps link via RDS/GTS. This year culminates with the connection of RoEduNet to GEANT, with 34 Mbps capacity connection. In 2003 year the capacity was 622 Mbps.



Schoolnets in Schools -

What do Schoolnets do? How are schools using them?

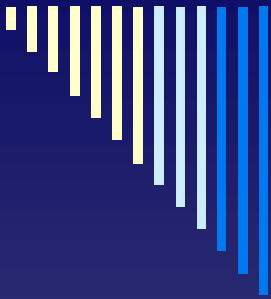


Schoolnets want to help schools, no matter their level the schools use the schoolnets to suggest ideas for educational projects.

Schools use SchoolNets regarding the purpose aims like:

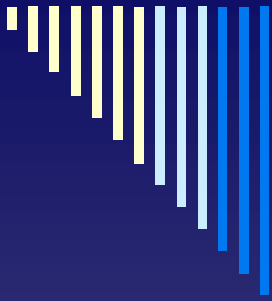
- to run partnerships for school projects such as Socrates-Comenius, Leonardo da Vinci, etc. and to promote the educational events to take part in.
- exchange information regarding the educational policy.
- for using lessons models for the work on-line testing, assessments and
- evaluation basic tools for the elaboration of electronic contents.
- Acces to database
- Curricula and schedule by study hours
- Teaching-learning materials
- Information regarding the national educational structure
- Indicators for the educational situation.

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- **Financial aspects of Schoolnets** – who finances Schoolnets? Who sponsors or supports them? Is industry involved? Is it Government funded or private companies? Who are the sponsors? For example Microsoft, Intel etc.
-



The schoolnets is financed by Ministry of Education, non-governmental organisation, few economical agents.

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- **Organisational aspects of Schoolnets** – how are they organised? Who manages them? Who promotes and advertises them?
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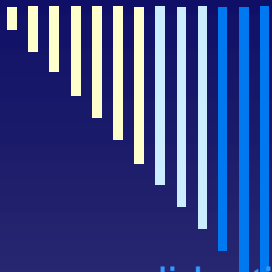
During the project UIP, www.tvet.ro and each school, through their own sites and mostly through their actions.

Schoolnets is organised as a schoolastic network. The schoolnet management is provided by a team coordinated by a general manager. Schoolnets are promoted through their different channels but also through educational companies.

The strategy of schoolnets are promoted by:

- The Ministry of education
- Councelor of the State secretary for the Pre-universitary education
- The manager of the management of the pre-universitary education
- Informatics inspectors
- Regional informatics inspectors
- Teachers with experience in diverse projects
- A representative of the Curriculum component
- A representative of the Teacher Development Component
- A representative of the Institute of the knowledge of education.

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- **Examples of Schoolnets** –
provide Web sites and information about
them
-



www.e-scoala.ro is an educational site for teachers and pupils. There can be found here on-line lessons, career advice, information about European programs, on-line forum, on-line games, and news about education.

www.didactic.ro is a site dedicated to modern teachers. It contains information related to didactic materials needed in schools, programs of school financing, and Ministry of Education orders.

www.intuitext.ro is a site dedicated to e-learning, containing interactive lessons and the latest news about the educational software.

www.edu.ro is the Ministry of Education official site, which displays the educational strategies and politics of the Ministry.

www.amoba.ro is a site that promotes and organizes ICT training activities for Hungarian minority from Romania.

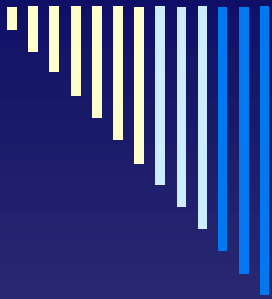
www.invata-ma.ro Teach me.ro displays educational programs run by Romanian firms and Romanian teachers or pupils.

www.tvet.ro is a site that promotes the development of the professional and technical education. This site includes a network of 122 professional and technical schools.

www.referate.ro is a site where pupils can post or exchange ideas related to their assignments.



Use of ICT in schools

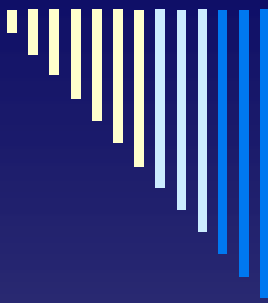


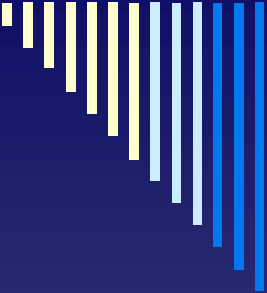
The ICT in schools has several functions and not only one but several roles: neutral mediator between the person who learns and the knowledge that has to be taught, evaluator, tutor, partner.

In the teaching process the ICT may be regarded as instrument of transmission and assimilation: once the content of teaching is stocked in computers memory.

The soft using for teaching may also help in applying, new methods of evaluation and serving the students progress in an objective way.

- instruments of individual work for the teachers in preparing their lessons, courses, testes
- instrument of individual work for the student-the computer make the curriculum more flexible help in organizing and guiding individual learning
- demonstrative basis: the computer offers an excellent basis of demonstrations and materialization of the knowledge either by taking over the laboratory works and completing laboratory demonstrations
- interactive medium-it is able to ask and accept questions, to sustain a conversational way of teaching, to practice a dialogue with the students to become of a real help in solving certain complex problems; it can help the knowledge assimilation through specific techniques of programming.

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- **Why should we have Schoolnets?** – what has been said about Schoolnets? Is there any publicity or are there press releases/advertising about Schoolnets in your country? Have they run or organised any special projects or campaigns? What are they?
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Schoolnet is needed in the educational system in order to help the institutions be in touch , help them establish partnerships, change ideas and educational software, and get the latest news in education.

Schools can promote their own educational politics.

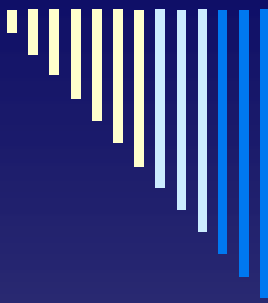
Teachers can establish partnerships and they can take part in various on-line projects, they can exchange ideas about new teaching-learning methods or types of evaluation.

Pupils improve their level of performance. They can virtually visit different schools, and be advised in choosing a career.



Examples of European Schoolnets for schools

- www.eun.org
 - www.educa.ch
 - www.schule-bw.de
 - www.infoguide.emu.dk
 - www.gogab.se
-



References – provide a list of references (where you got the information from) and any links in here

- www.edu.ro
 - www.iasi.roedu.net
 - www.tvet.ro
 - www.didactic.ro
 - www.phare.ro
 - www.finantare.ro
-