



Case Study

1:1 eLearning
Education



Education Transformation in Russia

1:1 eLearning programs help students develop 21st century skills

An economy based on knowledge

Russia is rapidly entering the world economy, one that is primarily based on knowledge. This knowledge can be transformed into an inexhaustible natural resource for any country and the key to building it is for students to develop 21st century skills – technology and media literacy, effective communication, critical thinking, problem solving, and collaboration – that prepare them for success in today's global economy. These are best developed in modern learning environments with improved teaching methods, professional development for teachers, modern technology, Internet connectivity, and local digital content.

Russia's educational system is undergoing extensive modernisation to address these requirements. A national education project, started in 2006, has already doubled the number of modern computers in Russian schools. In addition, all schools have been connected by Russian government to the Internet. Currently, a state program called "Education and Innovative Economy Development" is being run, designed to support the development of the most promising activities in secondary and higher education.

The process of developing the technological infrastructure in schools is being carried out in parallel with the provision of computer technology to other areas such as Russian business structures, public institutions, and homes.

New technologies for schools

Russians have much experience with using computers in education and children have been being taught IT in the classroom since 1986. Gradually, the use of digital educational programmes, internet resources and e-mail has become more consistent in pedagogical practice.

Russian teachers have built up a large amount of practical teaching experience with information and communication technologies (ICT). They exchange their experience during annual conferences that are carried out in various regions of the country.

While most ICT classes take place in secondary school (12-16 years), students in primary school are introduced to the basics of computer literacy at a young age. This is in line with guidelines from the Federal Education Agency of Russia, which recommends that schools develop an educational programme to teach students about computer technology. Russian students study for a total of 11 years and enter 1st class at the age of six to seven years. The federal guidelines indicate that ICT should be included in the curriculum from 2nd class onwards.

Partnerships for education

In addition to the government's efforts to modernise education technologies, there are several international and local initiatives being carried out in Russia that are supported by public and private foundations and business organisations. A programme named 'Developing IT in the Educational System' has been implemented by the Russian office of the World Bank. It now plays a large role in the creation and spread of new electronic teaching materials and the training of teachers in how to use them. In addition, Intel has been running an educational programme in Russia, named Intel Teach, since 2002. This program shows teachers how to successfully use ICT to support improved teaching and learning methods in the classroom. Meanwhile, the charitable foundation Volnoe Delo has decided to equip schools across Russia with notebook PCs. It has set itself a goal of donating one million units to schools nationwide in the next few years.



The 'Computers for Students' Project

In 2007, at a meeting of Intel and Volnoe Delo representatives, a decision was made to become partners on the 'Computers for Students' project. This would develop 1:1 eLearning environments in a large number of primary schools in several regions across Russia.

When the project was launched, representatives of Intel and managers of the Volnoe Delo Foundation organised a joint decision-making group. Plans were made in line with tight deadlines about teacher training, the delivery, customisation and testing of computer equipment and wireless networks and other technical issues. Joint presentations were made to the directors of schools that were participating in the project, and meetings held with suppliers of digital educational content and integrator companies in order to include new computer equipment in the

current school infrastructure. Partners in the project developed solutions and guidelines for all aspects of the project. These ranged from making recommendations related to the setting up of specially equipped places where notebooks could be recharged, to writing and making copies of methodological recommendations and information booklets for the parents of primary school students.

Project Impact on Students

Each student receives a notebook at his or her desk and works with it as necessary during the lesson. When lessons end, all the notebooks are cleared away to be recharged on special carts. Lessons in primary schools end at around noon, after which the students can either stay in an 'extended-day group', go home or go to another class for additional lessons in a group related to a specific interest.

Volnoe Delo

Volnoe Delo was created in 1998 and is sponsored by the Russian businessman Oleg Deripaska. The strategic aims of the foundation are to invest in the future of the country and take an active part in as many different socially significant projects and initiatives as possible. One of the priorities of the foundation's work is to assist in the introduction of the latest technologies in education and it aims to donate one million notebook PCs to Russian schools in the next few years. The decision to participate in a joint project with Intel was another step in the implementation of Volnoe Delo's policy of social responsibility in Russia.

Intel World Ahead Program

The World Ahead Program is Intel's global initiative to bring the benefits of the digital world to the next billion people. Taking a comprehensive, long-term approach, Intel collaborates with local and global leaders to improve citizens' lives through:

- Access to highly capable PCs
- High-speed connectivity
- Effective teaching and learning
- Locally relevant content

Intel is investing \$1 billion over five years on efforts to increase the opportunity for people worldwide to develop 21st century skills and participate in the global economy.



The 241 schools involved in the first phase of the project used 2,500 Classmate PCs and 51,000 Asus EEE PC 701* computers in lessons, which were united in a wireless class network together with the teacher's notebook PC. For school work, office applications such as Microsoft Word*, Excel* and PowerPoint* were used, as well as teaching programmes for Russian, Maths, Natural Science, the Fine Arts and the development of creativity skills.

The appearance of notebook computers in the classroom has made a significant impact on the students, enhancing their daily schoolwork and their interaction with teachers and one another. Instead of the usual focus on the blackboard, students receive and carry out assignments on their notebook PCs. The results of completed tasks and examples are entered via a wireless network into a common database which the teacher can look at after the lesson. The number of lessons that are carried out in a mini-group format has increased. This helps students to improve their teamworking skills and gives the teacher more freedom to wander round the class and interact with the students. This means their role becomes more that of a learning facilitator than a lecturer and the students are given more control over their own educational experience.

Julia Klebanova, Corporate and Public Sales Manager of Intel Russia/CIS comments: "Intel is happy to share the success of the Volnoe Delo Foundation and the schoolchildren and teachers participating in the project. We're very excited to note the growing

motivation, discipline, quality of teaching, development of non-conventional thinking skills, opportunity for collective work and active involvement of children's parents in the teaching process in the regions that have been equipped thanks to Volnoe Delo."

Primary school pupils have been able to use their notebook PCs to participate in research and projects outside the classroom, for the local community. For example, a pupil in Class 1 from Ust-Labinsk helped to organise a hippotherapy centre for the rehabilitation of sick teenagers, while an illustrative compilation of the family histories of schoolchildren in Krasnodarsky Krai was published based on the results of a school-wide project called 'The History of my Family'. In schools in the Sverdlovsk Region, parents were specially invited to lessons that used notebooks for the presentation of school projects. At parents' meetings, teachers encouraged parents to share their views and helped them to understand the new features of their children's education.

The use of ICT in the classroom has been found to have a knock-on effect on children's home life too. Pupils who used to only use their PCs at home for games are now using them for educational purposes too, and some families that previously did not own a PC have invested in one to support their children's studies. This means that whole communities are learning new skills and benefitting from the 1:1 eLearning project.



Tamara Rumiantseva,
General Director, Volnoe Delo

'A day in the life'

For a typical Russian primary school student participating in the project, the school day begins at 8.30 am. Students get to school on foot or in special buses if there are no primary schools where they live (many of the schools participating in the project are in rural areas). There are usually 15–20 pupils in one class. Primary school teachers teach all subjects apart from PE and foreign languages.

Krasnoturinsk

- An ordinary city in central Russia. (59° 46' 24' N, 60° 11' 7' E)
- 65,400 citizens
- 13 schools
- 2,820 primary school students (50% have computers at home)
- 116 primary school teachers
- 'Computers for Students' project started September 1st, 2008

Project Impact on Teachers

All teachers participating in the project receive high-quality notebook PCs powered by Intel® Core™ 2 processor for their personal use, learn how to use them independently and go through additional training in further qualification courses. The first training for 40 primary school teachers was provided by Intel in the city of Ust-Labinsk (Krasnodarsky region). Later, the project specialists worked with education providers to develop special learning programs. All teachers have now mastered skills in 'Computer and technical literacy' and 'Methodology of ICT uses in education'. The Volnoe Delo Foundation also financed training seminars and other masterclasses for teachers. It also arranged conferences for them to share their experiences with each other. Those who at the beginning of the year had been unfamiliar with ICT skills, began to train colleagues from other schools. Teachers at primary schools in Krasnodarsky region also developed and held joint lessons with teachers of other subjects, such as foreign languages. Teachers in these lessons help students use the notebooks to create visual ABCs to support their learning of English with a picture for each letter of the alphabet.

Teachers also enliven the learning experience by using technologies for group chatting, the distribution of text and multimedia files and the transmission of video materials to pupils' notebooks. This is generally done using eLearning 6.0* software, which is pre-installed on each notebook PC although some schools have their own intranets.

In order to develop and support an inter-regional social network of teachers and project participants, Volnoe Delo created the <http://www.vdsc.ru> website. The site features a 'lessons money box' with information about competitions and master classes for teachers, useful links to web resources and guidance on the use of software.

For more information, visit

www.intel.com/worldahead or:

<http://www.vd-fund.ru>

- Website of the Volnoe Delo Foundation
(in Russian)

<http://www.vdsc.ru>

- Website of the Computers for Students
project (Volnoe Delo Charitable Foundation)
(in Russian)

<http://www.intel.ru/education>

- Intel's educational programmes (in Russian)

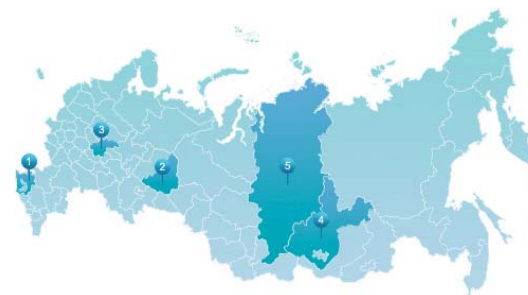
Perspectives for development in other regions

During the first year the Computers for Students project was run in 241 schools in Krasnodarsky, Sverdlovsky and Nizhny Novgorod regions. Over 52,000 personal computers were delivered to school children and 1,608 to primary school teachers. In addition to equipment procurement, the Volnoe Delo Foundation has completed the full PC installation process and trained one hundred and ninety two IT teachers. This marks Russia as a pioneer as it is the largest private charitable initiative in the world to provide computer equipment to the school system.

The results of the initial phase of the project were discussed during an all-Russia conference that was held in December 2008. Representatives of other regions in Russia that were interested in developing similar projects attended the conference to learn about the various challenges and successes. A proposal is now being prepared to include the development of the one-to-one eLearning programme within the state guidelines for the modernisation of education. Based on the success of the project so far, Volnoe Delo is confident that it will be able to meet its aim of donating one million notebook PCs to schools across Russia over the next few years.

"'Computers for Students' is the largest private charitable project in the field of education in the country. We consider it as our contribution to the important national education project and the modernisation of Russian schools," said Tamara Rumiantseva, General Director of the charitable foundation Volnoe Delo. "The project has received a lot of support from regional administrations and education management authorities. It is also enjoying a lot of interest from pupils, teachers and parents. It's already clear how useful it is for the effective organisation of the teaching process." Viktor Sotnichenko, Project Director, adds: "It is very important that students' motivation and teachers' self assessment grow. They are proud of the fact that teachers in primary classes teach differently and the students learn differently, using all the benefits of modern information technology."

Intel is planning to support further Volnoe Delo initiatives to increase the geographical scope of the project and test the 'Computers for Students' solution in secondary schools. It is hoped that the strong example set by the collaboration between Volnoe Delo, Intel and state educational bodies will also act as a model for 1:1 eLearning projects in other countries.



Regions currently participating in 1:1 eLearning project

1. Krasnodarsky region
2. Sverdlovsk region
3. Nizhny Novgorod region
4. Irkutsk region
5. Krasnoyarsk region

Key technologies

Primary schools using the 1:1 eLearning model use the following technologies:

- Asus EEE PC* 701 computers or Intel-powered Classmate PCs for students
- Notebooks based on Intel® Core™ 2 processor T5250 for teachers
- Microsoft Windows XP* and Microsoft Office* 2003
- ELearning 6.0* application (teacher and student versions)

