



## UNESCO INSTITUTE FOR INFORMATION TECHNOLOGIES IN EDUCATION

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### IITE ACTIVITIES IN 2002

(IITE in figures)

Research activities	
<b>Under development:</b>	
International projects	14
Analytical surveys and statistical reports	6
<b>Held:</b>	
Expert meetings	5
International conferences	4
Working meeting on a national pilot project	1
Round table	1
Training activities	
<b>Under development:</b>	
Sets of methodological and training materials	6
Specialized training courses	2
Educational resources (CD-ROM)	4
<b>Held:</b>	
Training sessions	2
Workshops	2
Thematic online seminars	6
Clearinghouse activities	
<b>WWW Portal:</b>	
Database on Information Technologies in Education	> 1000 items
Web site and tools for research and training	30,000 visitors and users monthly
<b>Publications issued:</b>	
IITE Medium-Term Strategy 2002-2007	1
Statistical report	1
Specialized training courses	2
Educational resources (CD-ROM)	3
Information materials	5
IITE Newsletters	4
<b>Dissemination</b>	> 400 addressees

### IITE Chronicle

Ms Eleonora Mitrofanova, UNESCO Assistant Director-General for Administration, visited IITE on 19 October 2002 during her trip to Moscow. She was informed about the main IITE activities and practical results, including the latest IITE publications. Ms Mitrofanova and IITE Director Vladimir Kinelev discussed administrative issues, relevance and possible ways of application of the IITE practical results for UNESCO Member States as well as various forms for cooperation.

Mr Abdul Waheed Khan, UNESCO Assistant Director-General for Communication and Information paid a visit to IITE on 21 October 2002.

Mr Khan was introduced to the staff and learned about the IITE activities. IITE Director made a presentation on the Institute mainstream programmes. The following issues of further cooperation between the UNESCO Communication and Information Sector and IITE were discussed:



Mr Abdul Waheed Khan

- cross-cutting project on ICT applications in education;
- digital libraries in education;
- programme and work plan proposals for 2004–2005.

Mr Adama Samassekou, President of the Preparation Committee for the World Summit on the Information Society, and Mr Birania Sangare, First Counsellor and Charge d'Affaires of the Embassy of the Republic of Mali, visited IITE on 22 October 2002.

Mr Samassekou and Mr Sangare met IITE Director Vladimir Kinelev and discussed the cooperation between IITE and the African Academy of Languages within the framework of the IITE

### IITE ON-LINE NEWS

□ 25–29 November 2002 (Vilnius, Lithuania): Face-to-face part of the Lithuanian Seminar on Multimedia in Education organized jointly by UNESCO Section for General Secondary Education and IITE in close cooperation with the Ministry of Education and Science of Lithuania and its Centre for Information Technologies in Education was held in Vilnius, Lithuania.

□ 18 February – 25 April 2003 (Bangkok, Thailand): High Level Seminar and Workshop for Decision- and Policy-Makers from Asia and the Pacific *Towards Policies for Integrating Information and Communication Technologies into Education* co-organized by UNESCO Asia and Pacific Regional Bureau for Education and IITE to be held in Bangkok, Thailand.



Mr Birania Sangare, Mr Adama Samassekou, and Mr Vladimir Kinelev

project *ICTs in Teaching/Learning Foreign Languages*. Mr Samassekou being the President of the Academy, expressed his strong willingness to foster collaboration in this field. Mr Sangare confirmed interest in promoting IITE projects in Africa.

The guests were exposed to the IITE facilities, programme

activity, WWW portal, databases and online seminars. They were informed about preparation of IITE seminar for high-level experts *Policy Formulation and Practical Usage of ICTs for Higher Distance Education in Countries in Africa* (Nairobi, Kenya, 29 October – 1 November 2002).

## ICTs IN TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING: NEW CHALLENGES AND PERSPECTIVES

**International Expert Meeting *Information and Communication Technologies in Technical and Vocational Education and Training*  
IITE, Moscow, 26–27 April 2002**



Dr Chris Chinien (Canada)

International expert meeting *Information and Communication Technologies in Technical and Vocational Education and Training* was held on 26 and 27 April 2002 at the UNESCO Institute for Information Technologies in Education (IITE) in Moscow.

The main goal of the expert meeting was to overview the existing international experience in the sphere of information and communication technologies (ICTs) usage in technical and vocational education and training (TVET), to identify the most important issues and outline strategic directions of project development, and to create an international expert team for its accomplishment. To attain this goal, 15 experts from Canada, India, Italy, Netherlands, Norway, and Russian Federation, and from such international bodies as International Labour Organization (ILO), United Nations Industrial Development Organiza-

tion (UNIDO), Canadian Centre for UNESCO's Project on Technical and Vocational Education (UNEVOC-Canada) and World ORT met to share their experience.

In accordance with the Agenda and IITE Information Materials, the following issues were discussed during three thematic sessions:

- Identification of UNESCO Member States needs for ICT usage in TVET for the 21<sup>st</sup> century labour market.
- Evaluation of ICT role in TVET.
- Setting up main trends and perspectives of IITE international project *ICTs in TVET*.

Dr Chris Chinien, Director of UNEVOC-Canada, opened the first thematic session with his presentation *Assessing the Effectiveness and Efficiency of ICTs in Technical and Vocational Education and Training*. Dr Chinien gave a brief description of knowledge-based economy and its influence on the structure of labour market. The changes in technical and vocational education arising from ICT implementation in teaching-learning process were discussed together with possible roles of ICTs as a technical assistance for teaching, a teaching tool, a working instrument for students, and a system control or a workshop tool.



Dr Piet Kommers (Netherlands)

Dr Piet Kommers, Associate Professor of University of Twente (Netherlands), continued the first thematic session with his presentation *Virtual Environments for Flexible Industrial Vocational Training – New Media Scenarios for Embedded Corporate Training and Life-Long Learning*. Short historical retrospective was given of Media and Learning interaction illustrated with glaring examples of information and media technology influence on education and everyday life.

Depicting globalization, liberalization and expansion of information technology being basic trends of societal development, Dr Kommers described the transforming nature of life-long learning in the modern society. Alternative evolution of teaching-learning models was presented as a base for education development.

Dr Alexandre Giglavy, Director of Moscow Lyceum of Information

Technologies (Russian Federation), finalized the reflection on the problems of new world economy, labour market, job skill trends and workforce development in his report *Managing Teenagers' Research Projects: Productive Workforce Development Paradigm*.

Dr Giglavy introduced the experience of the Moscow Lyceum of Information Technologies in application of the project-based learning and practical training methods in ICT-based education, and described current trends in workforce development and particular features of vocational education for high-technology economy. Main features of ICT-based projects were presented and discussed in details with the examples of real projects developed by students of the Lyceum.

Ms Julieta Leibowicz, Senior Activity Manager of DELTA Programme, International Training Centre of the ILO, started the second thematic session *Evaluation of the Role of ICTs in TVET* with the presentation *Training Technology Competence Standards* within the framework of the International Training Centre of the ILO. Ms Leibowicz showed a systematic dynamic pattern for organization and management of technical and pedagogical contents of training technology based on the demand-driven approach.



**Prof. Krishnamurthy Subramanian (India)**

Dr Sergey Gorinskiy, Deputy Director General of World ORT Representative Office for the CIS and Baltic States, continued the second thematic session with his presentation *ICT Usage in Technology Education and Vocational Training: World ORT Experience*. He emphasized the difference between technical and technological education, gave a brief discourse into historic roots and main features of technological education and accentuated the importance of technology education in the knowledge society. Dr Gorinskiy concluded that the technology education is an integral part of modern comprehensive, higher, vocational education, training and retraining, indicating that ICT usage in technology education is an indispensable tool in the developing modern educational system.

Prof. Krishnamurthy Subramanian, Deputy Director General of the National Informatics Centre, Ministry of Communication and IT of the Govern-

ment of India, proceeded the third thematic session with the review *IT – A Catalyst for Human Resource Re-engineering in Knowledge Networked Environments*. The expert demonstrated a professional pyramid of principal levels and types of vocational skills and described the application of different generations of



**Mr Odd Johannessen (Norway)**

computers to IT solutions in industrial re-engineering and development. Prof. Subramanian spoke on the main tasks of industrial reforms in relation to specific situation in India and other developing countries. Virtual education was proposed as a means to implement these reforms. Main challenges of the 21<sup>st</sup> century knowledge societies were discussed and specific features of knowledge management systems were described in connection with open education and virtual universities.

Closing the second thematic session Mr Odd Johannessen, Headmaster of Technical and Vocational College of Haugaland

(Norway), shared his experience on ICT implementation in TVET in the presentation *How to Organize Schools in Order to Facilitate a Pedagogical Use of ICTs in the Learning Process*.

He mentioned his personal professional experience that made him realize the vital importance of ICT usage in everyday vocational activities.

The third thematic session covered the experiences of various institutions involved in education:

- Centre of Intensive Technologies in Education “Open College” (Russian Federa-



**Mr Tjerk Busstra (Netherlands)**

- tion), Dr Alexandre Dolgorukov;
- Head Organization of Pre-license Education (Russian Federation), Mr Yuri Balyberdin;
- Federation of Internet Education (Russian Federation), Mr Pavel Belkin;
- Moscow State Technical University after N. E. Bauman

(Russian Federation), Mr Alexander Zimin;

- Dutch University of Professional Education, Hogeschool (Netherlands), Mr Tjerk Busstra.

The experts took part in the final discussion on main trends and perspectives of IITE international project *ICTs in TVET*. In the course of the discussion the recommendations for IITE international project *ICTs in TVET* were elaborated and approved by the experts.

The participants stated much content with the results of the meeting and agreed that cooperation is needed for further development of IITE international project *ICTs in TVET*. They also expressed their gratitude to IITE administration and organizers of the expert meeting who provided the opportunity to share visions and experiences on the problems of ICT usage in TVET, which are of great importance for UNESCO Member States.



**Ms Julieta Leibowicz (ILO)**

## EXPERT MEETING IN KIEV – THE STEP IN DEVELOPMENT OF UNESCO CROSS-CUTTING THEME PROJECT

**Meeting of the IITE Focal Points in the CIS and Baltic Countries on the UNESCO Cross-Cutting Theme Project Higher Education Open and Distance Learning Knowledge Base for Decision-Makers and Workshop Kiev, Ukraine, 10–12 October 2002**

Sharing the responsibilities within the framework of the UNESCO cross-cutting theme project *Higher Education Open and Distance Learning Knowledge Base for Decision-Makers (ODLKB)*, the UNESCO Institute for In-

formation Technologies in Education (IITE) is in charge of the project fulfilment in the CIS and Baltic countries. At the preliminary stage IITE carried out the needs analysis in collaboration with the IITE focal points in Kazakhstan,

Kyrgyzstan, Russian Federation and Ukraine. Results of this work became the basis for the project development.

In compliance with the work plan of the project, the Institute con-

ducted a meeting and a workshop, which were hosted by its focal point in the Ukraine, namely the Institute for Applied System Analysis, from 10 to 12 October 2002. These events were held in Kiev at the invitation of the





Opening of the meeting

Ukrainian National Commission for UNESCO. The Ministry of Education and Science of the Ukraine, UNESCO Chair in Higher Technical Education, Applied System Analysis and Informatics as well as the National Technical University of the Ukraine "KPI" co-organized these events.

The representatives from the IITE focal points of the CIS and Baltic countries, namely Azerbaijan, Armenia, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Lithuania, Republic of Moldova, Russian Federation, Tajikistan, and Ukraine, as well as Mr V. Chernomyrdin, Russian Ambassador Extraordinary and Plenipotentiary to the Ukraine, former Prime-Minister of the Russian Federation, Mr D. Storti, a representative of UNESCO Headquarters, Mr V. Slesarenko, a representative of the Culture and Clergy Committee of the Ukraine Parliament, representatives of the Ukrainian National Commission for UNESCO, Ministry of Education and Science, National Academy of Science, Higher Educational Institutes of the Ukraine – the specialists in the field of distance education – took part in the meeting and workshop, more than 40 persons overall.

Mr Storti described the process of project development, Mr Valery Meskov (IITE, National Programme Specialist) analysed the participation of the CIS and Baltic countries in it.

During the meeting three keynote speeches were made:

- *Development of the Information Science and Educational Portal* – by Prof. Mykhailo Zgurovsky (Ukraine);
- *ODLKB: Design, Structure and Content* – by Associate Prof. Vladimir Verzhbitsky (Russian Federation);
- *Development of Distance Education in Central Asia Region* – by Dr Vladimir Grebnev (Kyrgyzstan).

Besides, Dr Julia Vlasova informed the participants about the IITE research *Distance Learning in the CIS and Baltic Countries: Monitoring of Educational Needs and Opportunities*.

During the meeting the presentations concerning the state-of-the-art and perspectives of distance education development in Armenia, Azerbaijan, Belarus, Kazakhstan, Kyrgyzstan, Lithuania, Republic of Moldova, Tajikistan, and Ukraine were made.

In order to disseminate the best practices of ODLKB, the workshop was organized, where "OSVITA" – the Information and Production System of the Ministry of Education and Sciences of the Ukraine – was demonstrated.

In conclusion, the participants agreed on the **Final Document**, which is given below.

#### *We, the participants of the meeting and workshop,*

- recognizing an outstanding role of higher education for the progress of society and the necessity to improve qualification and retrain a large number of specialists;
- taking into consideration the state of scientific, educational and cultural communications among the CIS and Baltic countries;
- realizing a high level of educational needs of the CIS and Baltic countries,

#### *have agreed as follows:*

The most important components of the collaboration between the CIS and Baltic countries in the field of distance learning are:

- development and implementation of the policy and strategy to create and apply information technologies, learning systems and complexes specialized in the information resources in education;
- acquisition, analysis, synthesis, dissemination and exchange of information about the state, requirements and perspectives of the information technologies usage in the field of open and distance education in the CIS and Baltic countries;
- consulting services, technical and financial assistance in the development of learning systems and complexes, training programmes and courses, textbooks and manuals, educational information resources;
- assistance in the development and usage of up-to-date information technologies, computer systems and telecommunication networks for distance and other forms of education;
- research in information technologies for education and other directions within the framework of the UNESCO programmes in the field of education, information and communication as well as IITE projects;
- main role of information and analysis in the field of open and distance learning for the CIS and Baltic countries;

- assistance in complex state programmes on scientific and educational communications in the CIS and Baltic countries;
- integration of scientific, educational and information segments of the CIS and Baltic countries into the European and international information environment.

The international meeting and workshop *Higher Education Open and Distance Learning Knowledge Base for Decision-Makers* **recommends** the participants of the project:

- to study the proposed variants of architecture of the base of knowledge to identify one of the two priorities: a common ODLKB or a portal ODLKB;
- to make Russian a working language of the Project in the region and to introduce it alongside with English and national languages in the course of development;
- to foresee a possibility of attracting business partners during the Project realization;
- to be guided by the following list of main sections in order of their priority when the structure and the base of knowledge of the Project are elaborated:
  - normative and legal base for open and distance education (ODE) in regard to quality, accreditation, and evaluation of qualification;
  - ODE information provision and analysis;



Participants of the workshop familiarize with "OSVITA", the Information and Production System of the Ministry of Education and Sciences of the Ukraine

- organization and management of ODE systems;
- ODE methodology;
- ODE educational information resources;
- ODE technology;
- ODE personnel;

- to create a working group to develop documentation of the project *Higher Education: Open and Distance Learning Knowledge Base for Decision-Makers* for the CIS and Baltic countries;
- to coordinate the Project in the region with the partners from

- other regions involved in the UNESCO cross-cutting theme project (Africa, Asia and the Pacific);
- to apply to IITE for organizing on the unified principles a special regional research related to the Project prob-

- lems to fill in the base of knowledge;
- to support the IITE activities in monitoring of educational needs and possibilities in the field of distance education and to recommend this undertaking be spread in the CIS and Baltic countries.

## SEMINAR IN KENYA

The UNESCO Institute for Information Technologies in Education (IITE) held the seminar for high-level experts on *Policy Formulation and Practical Usage of ICTs for Higher Distance Education in Countries in Africa* in Nairobi, Kenya from 29 October to 1 November 2002.

The participants from seven countries, namely Ghana, Kenya, Namibia, Seychelles, South Africa, United Republic of Tanzania and Uganda as well as the representatives of four national focal points for cooperation with IITE, UNESCO Regional Bureau for Education in Africa (BREDA), UNESCO International Institute for Capacity Building in Africa (IICBA), World Bank Group (IFC), US International University, Centre for Flexible and Distance Learning, University of Auckland (New Zealand), and African Study Centre took part in the seminar.



The participants of the seminar

The participants listened with interest to the welcome address of Mr John Daniel, Assistant Director-General of UNESCO for Education.

Recognizing an exceptional role of higher distance education (HDE) for the progress of society and the necessity of training and retraining of qualified specialists, the partici-

pants discussed the key issues regarding HDE development in the world with particular emphasis on Sub Saharan Africa (SSA); policy formulation and practical usage of ICTs in higher distance education in Africa; state of the ICT usage in HDE of the participating countries; needs for training and retraining of educational personnel and ways to use the IITE specialized

training course *ICTs in Distance Education*.

Strongly supporting the IITE endeavors towards the partnership with SSA countries to provide for capacity building and to reinforce the national potential in ICT usage in education, the participants adopted a set of recommendations and addressed IITE with the request to initiate the proposals for a sub-regional project on ICT application in distance education in SSA countries in cooperation with BREDA and IICBA and close partnership with UNESCO Member States.

The experts requested IITE to elaborate a plan of implementation of a pilot course for training prospective trainers in ICTs for distance education in countries in Africa using the IITE specialized training course *ICTs in Distance Education*.

## EXPERT MEETING “DIGITAL LIBRARIES IN EDUCATION”

By Leonid A. Kalinichenko

Dubna, Russian Federation, 15 October 2002



Prof. Leonid Kalinichenko and Dr Victor Zakharov (Institute of Informatics Problems of the Russian Academy of Sciences)

The expert meeting *Digital Libraries in Education (DLE)* was organized by the UNESCO Institute for Information Technologies in Education (IITE) in Dubna (Moscow region, Russian Federation) and Joint Institute for Nuclear Research (JINR) on 15 October 2002 in cooperation with the Russian Conference on Digital Libraries (RCDL'2002), JINR and Institute of Informatics Problems of the Russian Academy of Sciences. The expert

meeting was held as a round table in the course of RCDL'2002.

UNESCO strives to foster new forms of networking of teacher training institutions and teachers, usage of digital libraries, production and deployment of digital educational material. Thus, IITE has launched the project *Digital Libraries in Education*. Main objective of the expert meeting in Dubna was a discussion of the draft analytical survey *Digital Libraries in Education* developed by the





**Dr Sergei Christochevsky, manager of the IITE Digital Libraries in Education project**

international working group. Prof. Leonid Kalinichenko (Chief of laboratory, Institute of Informatics Problems of the Russian Academy of Sciences) presented the analytical survey at the expert meeting.

The content of the analytical survey reflects the results of joint work and meetings at the NSDL (National STEM<sup>1</sup> Education Digital Library) Policy Committee, UCAR (University Consortium for Atmospheric Research, Boulder), SDSC (San Diego Supercomputer Center, UC San Diego), University of Michigan (Ann Arbor) as well as with Ed Fox, David Fulker, Mary Marlino, Tamara Sumner, Mike Wright, Bertram Ludäscher, Mike Free-ston, Dan Atkins, and their colleagues. The analytical survey incorporates the information accumulated at these meetings and centres. Additionally the survey includes excerpts of *Digital Libraries in Education: State-of-the-Art Report*<sup>2</sup> that were discussed in 2001 with Yannis Ioannidis (Greece, University of Athens), Stephan Koernig (Germany, TU of Darmstadt), Pasquale Savino (Italy, IEI CNR, Pisa), Narasimhiah Seshagiri (India, SERC, Bangalore) and other participants of the international expert meeting at IITE in June 2001.

The survey provides the detailed analysis of current DLE technologies and their anticipated evolution, thus forming a base for planning the forthcoming phases of the IITE project for DLE development. Several DLE projects have been carefully selected to identify

typical DLE features, characteristics of current state of DLE technologies, to clarify social and organizational issues of DLE development, and to predict a DLE impact on education. Advanced frameworks and methodologies related to DLE are analyzed for further evolution of DLE technologies and applications. This information serves a ground for future development within the IITE project.

A general discussion of the role of digital libraries as an integral part of the rapidly changing educational environment starts the survey. A wide range of interpretations of the digital library concept is given. The survey treats DLE as a repository of educational resources with services. Managed Learning Environment (MLE) and Virtual Learning Environment (VLE) definitions and interactions are treated as the



**Conversation in IITE after the expert meeting: Prof. Leonid Kalinichenko, Prof. Vladimir Kinelev (Director of IITE), Dr Mary Marlino, Dr Alex Ushakov**

“Integrated Learning Environment”. The related pedagogic models for VLE are discussed in this connection. The survey lists criteria of digital library quality in the learning environment. Perspectives of incorporation of VLE and digital library into the learning process are discussed, the example being the recently accepted JISC<sup>3</sup>/NSF<sup>4</sup> project proposal for DLE in Human Geography, GIS and Earth Observation. The survey briefly outlines works on standardization of educational metadata. To analyze DLE technologies, several American projects (NSDL, DLESE<sup>5</sup>, CITIDEL<sup>6</sup> and NDLTD<sup>7</sup>) as well as some European projects (DNER<sup>8</sup>,

Scholnet and Cyclades) were selected to demonstrate the current state-of-the-art and the planned evolution of technologies. To show the anticipated evolution of DLE frameworks from the current ones based on the conventional library metaphor, to more knowledge-based systems, the survey collects information on several advanced frameworks and methodologies related to DLE. This discussion covers the issues of instructional courses development re-using the pre-existing learning objects, works on extended information content of digital libraries in education and research with specialized educational resources of data (including real-time data), the use of advanced infrastructures (Cyber-infrastructure and Data Grid) as a possible basis for future DLE, researches on knowledge-based approaches for DLE frameworks



**Dr Mary Marlino (University Consortium for Atmospheric Research, USA)**

Stephan Koernig (TU Darmstadt, Germany), Prof. Vladislav Shirikov (JINR, Russian Federation), Dr Sergei Christochevsky (IITE Senior Project Manager), Prof. Alexander Marchuk (Institute of Informatics Systems of the Russian Academy of Sciences), Dr Victor Zakharov (Institute of Informatics Problems of the Russian Academy of Sciences) and others.

Among the remarks there was an indication that DLE is too broad a subject to be covered exhaustively in one survey. The report could not consider every educational discipline, mostly concentrating on education in natural science and engineering. Thus, the specificity of many other disciplines for DLE needs to be investigated further. Geographically, the report is based on the information produced mostly in the USA and Europe. Collecting information about the state-of-the-art in other regions is important for UNESCO. Several essential issues (such as sustainability and economy, DLE globalization as national/regional development) were not sufficiently analyzed in the report and require an extended discussion.

The expert meeting recommended the analytical survey be published and broadly disseminated, and the next phase of the IITE DLE project be proceeded to.

<sup>1</sup> Science, Technology, Engineering and Mathematics

<sup>2</sup> Information materials prepared for IITE expert meeting on DLE by Leonid Kalinichenko and Liang Zhang, May 2001

<sup>3</sup> Joint Information Systems Committee, UK

<sup>4</sup> National Science Foundation, USA

<sup>5</sup> Digital Library for Earth System Education

<sup>6</sup> Computer and Information Technology Interactive Digital Education Library

<sup>7</sup> Networked Digital Library of Theses and Dissertations

<sup>8</sup> Distributed National Electronic Resource

<sup>9</sup> Alexandria Digital Earth Prototype

## 12<sup>th</sup> INTERNATIONAL CONFERENCE AND EXHIBITION “INFORMATION TECHNOLOGIES IN EDUCATION” (ITE-2002)

Moscow, 4–8 November 2002

This year the 12<sup>th</sup> International Conference-Exhibition *Information Technologies in Education* (ITE-2002) was for the first time held under the aegis of the Conference of the CIS Ministers for Education and Council for Cooperation in the Field of Education of the CIS Countries.

The conference was organized by the Ministry of Education of the Russian Federation, Moscow Committee of Education, UNESCO Institute of Information Technologies in Education (IITE), Russian Teacher Support Fund, Institute of Informatics Problems of the Russian Academy of Sciences, Moscow City Pedagogical University, Moscow Institute of Physics and Engineering (state university), Moscow Centre of Internet Education, Scientific and Production Enterprise “BIT pro”.

Reports and presentations were made at the conference by more than 600 participants from Azerbaijan, Belarus, Germany, Italy, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Netherlands, Poland, Portugal, Russian Federation, Ukraine, USA. The Russian Federation was represented by Moscow, Moscow region, Saint-



The participants of the round table IITE, 6 November 2002

Petersburg, Chelyabinsk, Kazan, Leningrad region, Nizhny Novgorod, Omsk, Perm, Rostov-on-Don, Samara, Saratov, Tver, Volgograd, Voronezh, and Yekaterinburg.

Almost 4500 teachers from various educational institutions attended the exhibition. Questionnaires were disseminated among the teachers to rate the best educational software.

The conference attracted the employees of 650 organizations: academies, pedagogical institutes and universities, colleges and vocational schools, comprehensive schools, pre-school institutions and education management bodies.

The following sections worked at the conference:

1. Purposes, content and methods of teaching informatics and information technologies (IT):
  - theory and methods of teaching;
  - teaching experience;
  - training and retraining of teachers.
2. IT in the learning process:
  - natural sciences and mathematics;
  - the humanities;
  - vocational training;
  - software development, expertise and evaluation technology.
3. IT in open education:
  - telecommunication technologies;
  - distance learning;
  - educational Internet resources.
4. IT in education management.
5. IT in teaching persons with special needs: information and

communication environment for social adjustment and rehabilitation of the disabled; virtual environment for studies and communication; special software and hardware, etc.

6. IT in control and evaluation of the results of education.

Round table *International Experience of ICT Usage in Education* was held at IITE within the conference framework. It gathered over 60 representatives of various educational organizations. At the meeting the IITE Director Vladimir Kinelev spoke about the major activities of the Institute, the projects realized in the CIS countries and the IITE biannual plans. The invited speakers were Dr Serenella Besio (Italy), Dr Eugenijus Kurilovas (Lithuania), Dr Piet Kommers (Netherlands), Dr Katja van den Brink (Germany), Dr António M. Duarte (Portugal), Dr Terry Haydn (United Kingdom), Dr Boris Kotsik (IITE). The participants shared their experience of ICT application in education.

The conference proceedings were published. All presentations can be found at: <http://ito.edu.ru>, <http://ito.bitpro.ru>.

## SECOND INTERNATIONAL FORUM – INFORMATIZATION OF EDUCATION OF KAZAKHSTAN AND CIS

By Galymkair M. Mutanov, Gul K. Nurgalieva  
Almaty, Republic of Kazakhstan, 17–18 October 2002

Second International Forum *Informatization of Education of Kazakhstan and CIS* was held on 17 and 18 October 2002 in Almaty on the initiative of the Ministry of Education and Science of the Republic of Kazakhstan and the UNESCO Institute for Information Technologies in Education (IITE).

Traditionally this International Forum in Kazakhstan gathers

representatives from various states, international organizations, scientific institutions and business circles under a common cause: to find ways to new level and quality of education based on modern information and communication technologies (ICTs).

Over 300 participants, including the representatives of IITE and its focal points, Council for Coopera-

tion in the Field of Education of the CIS Countries, UNESCO office in Kazakhstan, International Academy of Informatization, republican, regional (municipal) departments (agencies) and organizations of education and science, worked at the Forum.

The leading companies – ALSI, Microsoft, IBM, Astel, APC, Kushpen-Telecom – actively supported the Forum.

The Forum followed the press conference of the representatives of the Ministry of Education and Science of the Republic of Kazakhstan and the UNESCO Institute for Information Technologies in Education, which was dedicated to the most important problems of informatization of education. It was largely covered by mass media.

More than 100 participants spoke on a variety of problems related to

informatization of education, including the following:

- development of scientific and educational portal of the open information environment;
- problems and perspectives of educational software development;
- setting-up an information system for education management;
- distance learning: methods, theory and practice.

At the Forum the exhibition was arranged, which presented international and domestic experience in the field of educational software, scientific and educational portals, applied forms of distance education as well as modern information and communication technologies in education.

The exhibition has become a specific report on the results of the five-year state programme of informatization of comprehensive education, which was approved by Nursultan Nazarbaev, President of the Republic of Kazakhstan, in 2001.

The following are the main trends of the Kazakhstan state policy in the field of informatization of education:

- comprehensive computerization of schools with Internet access;
- developed infrastructure providing the accessibility of educational information for every subject of the learning process;
- implementation of information system for education management;
- development of ICT-based domestic educational software;
- functional distance education at all levels;
- training and retraining of teaching personnel.

Kazakhstan has commemorated the new school year – the year of

the tenth anniversary of independence of the Republic – with **100% computerized schools**. Computers are installed in every school in the Republic, be it complete or incomplete, comprehensive schools or small-sized ones. Further informatization means renovation of computers as well as more computers per student.

One of the leading trends of education informatization is **to create conditions for school children to use the Internet**. Currently, over 1,400 schools have Internet access in the Republic of Kazakhstan; these are the schools with direct communication lines, primarily.



“Kazakhtelecom OAO” has deployed the network “Kazakh Internet”, providing Internet access to the web-resources of Kazakhstan at a discount tariff for students.

One of the major directions of the state programme of informatization of education is to develop and employ **the informatization system of comprehensive education management**.

At present, the first stage has been completed with the automated data input at the level of regional departments of education. The second stage means to establish information exchange between

the Ministry of Education and Science, regional departments, local (municipal) departments and schools. Within this stage the Ministry plans to implement pilot projects first in several regions and, based on the gained experience, to develop the system further.

The step to follow school computerization is **the unified information educational environment**. In this respect the educational software quality acquires great importance.

In Kazakhstan the electronic textbooks have become the most popular: they are considered to be a

For Kazakhstan, where more than a half of schools are rural and small-sized, the electronic textbooks improve the quality of school education and facilitate the communication of rural school children with the best teachers and prominent scientists of the country. The Republican Scientific and Methodological Centre of Informatization of Education is a focal point for cooperation with IITE; it elaborates the distance education project for rural schools, which was presented to the participants of the International Forum.

To realize the distance education project, the schools open electronic reading halls equipped with five – ten computers and lecture halls with TV sets, multimedia projectors and screens. The first centre of distance education now functions in the West Kazakhstan region.

Currently, the project embraces 68 schools in the West Kazakhstan region, 55 schools in the East Kazakhstan region and 312 schools in the Pavlodar region. It was made operational via the *Satellite Channel of Distance Education* based on the equipment provided by “ZAO KATELKO”. Distance education software developed by the Institute of Virtual Technologies in Education (Moscow) provides for the feedback via the Internet. Consequently, rural schools receive 40 hours of distance education per month.

Thus, the Republic of Kazakhstan realizes the idea of transition from computerization to the unified informational educational environment, which shapes the system of the state policy in informatization of education and aims at humanization of the activities of a teacher and a student as well as the informational culture of a person.