

# IITE NEWSLETTER



## UNESCO INSTITUTE FOR INFORMATION TECHNOLOGIES IN EDUCATION

No. 2'2002

April-June

### THE FOURTH SESSION OF THE IITE GOVERNING BOARD



The first day of the fourth session of the IITE Governing Board

The fourth session of the Governing Board of the UNESCO Institute for Information Technologies in Education was convened in accordance with the Statutes of the Institute at the headquarters of IITE in Moscow, on 12 and 13 June 2002.

The following Board members attended the session: Prof. Saleh Abdulrahman Al-Athel (Saudi Arabia) – Vice-Chairman of the Board; Prof. Vladimir Bulgak (Russian Federation); Dr Robin Ritzema (United Kingdom); Dr Takashi Sakamoto (Japan); Dr Narasimhiah Seshagiri (India) (via videoconference during the session); Prof. Mykhailo Zgurovsky (Ukraine).

In compliance with the Statutes of the Institute (Article III, p. 4), the

Director-General of UNESCO was represented by Mr John Daniel, Assistant Director-General for Education.

The fourth session of the Board was opened on Wednesday, 12 June 2002, at 10.00 a.m. by Prof. Saleh Abdulrahman Al-Athel, Vice-Chairman of the Board. He greeted the Board members, Mr John Daniel, Representative of the Director-General, and the guests of honour: Mr Alexander Kiselev, First Deputy Minister of Education of the Russian Federation; Mr Vladimir Fortov, Chairperson, and Mr Vladimir Sokolov, Deputy Secretary-General of the Commission of the Russian Federation for

UNESCO; Mr Eugene Savinov, Adviser to the Russian Government Administration; Mr Wolfgang Reauther, Director of UNESCO Moscow Office and Mr Alexander Sannikov, Chief of Unit, UNESCO Headquarters.

Mr John Daniel made a presentation *The UNESCO Institutes: Towards Greater Programme Integration*. He familiarized the Board members and the guests with the results of the 162<sup>nd</sup> session of the Executive Board of UNESCO and drew special attention to the specific criteria, which laid down the foundations of an overall strategy with regard to UNESCO institutes and centres.

#### IITE ON-LINE NEWS

□ On 28 and 29 July 2002 in Troitsk (Moscow region) under auspices of IITE the 13<sup>th</sup> International Conference *New Computer Technology in Education* was held and was visited by specialists from Russian Federation, Australia, Belarus, Kazakhstan, Kyrgyzstan, USA and United Kingdom. Dr Sergei Christochevsky, IITE project manager, made a report about IITE programme activity at a plenary session.

□ IITE hosted a visit of specialists from *National Institute of Multimedia Education* (Japan) from 11 to 13 June 2002. They were familiarized with the IITE research projects, in particular *Multimedia in Education*.

□ IITE continues the development of the project *Digital Libraries in Education*. Prof. Leonid Kalinichenko, the coordinator of the IITE international working group on the analytical survey, Institute of Informatics Problems of the Russian Academy of Sciences, visited the USA from 3 June to 1 July 2002. Among the rest of the activities he fulfilled the IITE mission devoted to the study of the existing US experience in the digital library development and usage in education.

In the course of his visit Prof. Kalinichenko had a chance to meet and have discussions with the people from NSDL Central Office, DLESE, COMET, as well as with San Diego Supercomputer Center researchers, professors from the University of Michigan (see <http://dpc.ucar.edu/newsletters/current/visitor.html>). The working group plans to submit the analytical survey draft to IITE in September 2002.

□ A one-day workshop *Modern Trends of Distance Education in Canada* was organized by IITE on 20 June 2002 in Moscow. It was focused on Canadian distance education and moderated by Professor Grigori Melnik (Southern Alberta Institute of Technology (SAIT)/ University of Calgary/ Athabasca University/ Humber College, Canada).

□ In May 2002 IITE published the statistical report *Basic ICT Usage Indicators in Secondary Education in the Baltic and CIS States* (in English and Russian). The report presents the results of a study carried out under the *Indicators of ICT Usage in Education* project. For detailed information please refer to Dr Boris Kotsik ([kotsik@iite.ru](mailto:kotsik@iite.ru)).

The IITE Director reported to the Board members about the results of the 31<sup>st</sup> session of the General Conference of UNESCO, its decisions concerning IITE as well as about overall UNESCO policies in the field of the ICT application in education. He informed the Board on the IITE activities conducted since the third session of the Board.

The Board members thanked the Director for the detailed report, which showed the significant progress made during the last period. They noticed that a large scope of problems of the ICT application in education tackled by

IITE since its establishment allowed to identify the specifics of the Institute's activities and to create a firm ground for further concentration on the topics most vital for UNESCO Member States.

The Board discussed the IITE Draft Programme and Budget for 2002-2003 in detail and decided on the distribution of estimated resources according to the main areas of the IITE programme activities. It emphasized the increase of the resources assigned for training. The IITE Programme and Budget for 2002-2003 were approved.

The Board expressed the gratitude to the Government of the Russian Federation for its valuable contribution to the programme activities of the UNESCO Institute. A number of recommendations concerning IITE further development and activities was made.

The Director expressed his appreciation to the Board members for their active work during the last four years, their attention to the needs of

the Institute and fruitful participation in the fourth session. He thanked Mr John Daniel for his visit and valuable tribute to the session of the IITE Governing Board.



Exchange of opinions via videoconference

## EXPERT MEETING “INFORMATION AND COMMUNICATION TECHNOLOGIES IN SPECIAL EDUCATION”

IITE, Moscow, 12-13 April 2002



Dr A. Edwards (United Kingdom),  
Chairman of the expert meeting

The expert meeting *Information and Communication Technologies (ICTs) in Special Education* was held by IITE in Moscow on 12 and 13 April 2002. The meeting was organized in close cooperation with the Armenian National Commission for UNESCO, Ministry of Education and Science of the Republic of Armenia and Educational Complex “Informatics” – Armenian focal point for cooperation with IITE. Thirteen experts from eight countries (Armenia, Australia, Belarus, Cyprus, Denmark, Italy, Russian Federation and United Kingdom) participated in its work.

UNESCO has always paid particular attention to the issue of special education for children and adults.

For this reason in 1999, IITE launched the project *ICTs in Special Education*. During its development the first expert meeting took place in February 2000 and the analytical survey *Information and Communication Technology in Special Education* was prepared and published in 2000. At present IITE is developing a specialized training course for teacher trainers and other groups of educators within the framework of the IITE Educational Programme on ICT application in education. In this connection, the following issues were considered at the expert meeting:

- structure of the IITE specialized training course *ICTs in Special Education* for different categories of educators;
- introductory note, curriculum and supplementary set of materials for the training course (tutors' guide, reference, bibliography, visual materials, courseware and supplement materials);
- didactics of the training course application in education.

The experts were welcomed by IITE Director Prof. Vladimir Kinelev. He conveyed the hope that under IITE auspices the interna-

tional working team would create methodology and training materials for new ICT usage among different groups of people with special needs in education, which would help children with disabilities to realize their learning capacities to the full and prepare disabled people to have jobs including a job with computers. He noted the IITE international database with information on this theme and the web site in the Internet to be created as one of goals of the project. Concluding the speech Prof. Kinelev said that the received results would be widely disseminated by IITE among UNESCO Member States.

Dr Alistair Edwards (United Kingdom) was elected Chairman of the expert meeting and Dr Elena Hadjidakou (Cyprus) – Rapporteur. The experts discussed intensively the suggested themes in accordance with the agenda and agreed on the task and structure of the IITE specialized training course, its aim, target audience, content, organization, practicalities, etc. It was recommended that the content of the training course would be simple and flexible to be used by people in different fields of expertise. Specifically, it will include the following:

- Background information on ICTs in education for people with special education needs (SEN).
- Assistive technology (e.g., screen readers). ISO classification of assistive technology for different types of SEN was suggested.
- Educational technology: the technology as a part of education and teaching. Mainstream software and/or specialized software may be used.
- Communication at a distance: e.g., WEB.

The participants of the meeting agreed that the target audience of the training course should be:

- heads of educational institutions;
- administrators: regional, ministerial;
- trainers of trainers.



Dr Elena Hadjidakou (Cyprus),  
Rapporteur



Dr Serenella Besio, Fondazione don Carlo Gnocchi ONLUS (Italy)



Dr Ole Hansen, Ministry of Education of Denmark



Dr Gevorg Margarov (Armenia)



Dr Achuthan Pillay, University of Melbourne (Australia)

At the end of the meeting the experts created an author working group to develop the specialized training course and decided to coordinate their work via e-mail and on-line seminar on the Internet: <http://www.iite-unesco.org>.

One of the main objectives of the on-line seminar will be to set up structures so that the working group can produce an educational module on the topic. The discussion of the exact aims, content and structure of such a module should be continued at the online seminar. The main questions that members of the working group will have to address are:

- What are the objectives of the training module?
- How should the module be structured?
- What should the content of the module be, both in terms of

technologies and special educational needs?

- How should the production of the module be managed?

The experts invited all other specialists to take part in the online seminar. For further information please contact the IITE Project Manager Dr Sergei Christochevsky (e-mail: [christ@iite.ru](mailto:christ@iite.ru)).

The second day of the meeting was devoted to the discussion of the IITE national pilot project for the Republic of Armenia on ICTs in education for people with disabilities. The project was presented by Dr Yuri Baroyan, Director-General of the Educational Complex "Informatics" and Dr Gevorg Margarov, Head of Department. As a result, the members of the expert meeting approved the following recommendations.

### Recommendations on the national pilot project for Armenia launched by UNESCO IITE on ICTs in Education for People with Disabilities and Unemployed

The national pilot project for Armenia launched by UNESCO IITE on *ICTs in Education for People with Disabilities* was presented on 13 April 2002 by Dr Gevorg Margarov and Dr Yuri Baroyan from the Educational Complex "Informatics". It was agreed that the success of the project depended on the recognition of the related problems of special educational needs and unemployment. The experts discussed the draft and approved its content in general. As far as the recommendations are concerned, the following points have been raised:

- The experts agreed that the project was in line with the Dakar follow-up objectives of *Education for All Throughout Life*.

- Emphasis should be made on training on new technologies for the trainers of people with special education needs (SEN) and unemployed.

- Some areas need more clarification (e.g., the content of training, the number of teachers who will need training).

- The parents of SEN pupils must be involved in the project.

- The national pilot project for Armenia can be used as a field-testing for the course *ICTs in Special Education*, that the experts will develop. Namely, the testing can take place in Armenia in Spring 2003.

The experts have expressed their interest and willingness to complement to the successful project implementation in Armenia.

## THE CYPRUS SEMINAR ON THE USE OF INFORMATION TECHNOLOGY ACROSS SCHOOL CURRICULUM (MULTIMEDIA AND INTERNET)

By Katja van den Brink



Meeting with Eleni Nikita, General Secretary of Cyprus National Commission for UNESCO

The Cyprus Seminar on the Use of Information Technology across School Curriculum, organized jointly by the UNESCO Section for General Secondary Education and IITE (Moscow) in close cooperation with the Cyprus National Commission for UNESCO, Cyprus Ministry of Education and Culture and Cyprus Pedagogical Institute, was held in Nicosia, Cyprus, from 7 to 11 January 2002 at the Cyprus Pedagogical Institute, where a team of three consultants (Bent B.

Andresen, Katja van den Brink and Sergei Christochevsky) ran the course. This seminar was the first event of the IITE specialized training course *Multimedia in Education* developed by Bent B. Andresen, Danish University of Education (Denmark) and Katja van den Brink, University of Koblenz Landau (Germany).

The course of 50 hours in total was brought about in the five-day seminar in Nicosia/Cyprus (25 hours) and the two-month team-based





e-learning period after the seminar (25 hours) supported and guided via the Internet. The participants were 23 teachers from technical schools and lyceums and seven teacher-trainers from the Cyprus Pedagogical Institute.

The objective of the seminar was to provide the participants with a framework for further build-up of deep knowledge and high competencies regarding the following aspects: why, where and how to use multimedia in education; pedagogical scenarios concerning the mainstream and future use of educational multimedia and the Internet; important learning and teaching aspects, in particular, teachers' roles, students' and learning strategies, metacognitions, motivation, social/collaborative learning, ICT literacy; present educational goals and use of information technology to support these goals; critical and reflective selection and use of educational multimedia according to mainstream scenarios and evaluation methods related to the educational use of multimedia. A further aim was to encourage the participants in motivations to use multimedia in education and to adapt the knowledge and skills of the course into the educational practice.

The framework, to deal with these contents, was specified by pedagogical scenarios. The notion of pedagogical scenarios within the learning process with multimedia designates a postulated sequence of imagined events of a learning situation, which are characterised by particular roles of the teachers, students and educational multimedia.

According to the Scenario Model, when learning with educational multimedia by Andresen (1999), there are four mainstream scenarios, which cover the widely used multimedia genres in educational settings: (Scenario 1) the use of multimedia linear educational sources (i.e., Power-Point presentation), (Scenario 2) the use of multimedia hypertext-based materials (CD-ROMs as information sources; Internet sites), (Scenario 3) the use of multimedia supervising products (applications, which provide learning tasks, feedback etc.) and (Scenario 4) the use of multimedia productive tools (products such as HyperStudio, FrontPage). Scenarios No. 1-3 consider the students as end-users of messages from educational multimedia, whereas Scenario 4 regards the students as producers of small-scale multimedia products. Such practical embedding in pedagogical scenarios provides the participants with a problem-based learning environment where they can learn according to their own professional background as teachers.

During the five-day seminar, the participants could get familiar with these topics via active involvement in the following organization of the seminar: the morning session was a plenary one, at which the contents of the seminar was elaborated, presented and discussed. This part of the seminar was characterised with oral presentations of the consultants and some participants, dialogues and discussions.

The second part of the seminar was reserved for teamwork, i.e. team building and initiation of the demanded work. The task for the teamwork was a written proposal concerning the development of classroom activities for the four proposed pedagogical scenarios, which should include concrete planning and reflections on the following aspects: choice of multimedia product, subject matter, student's level, student's activity, teacher's role, assessment and

evaluation of the students' performance and classroom activities, reflections on the learning and teaching process within these scenarios. The teamwork was assisted and guided by the three consultants. After the five-day seminar the teams had to work for two months more to finish their studies. This was organized in an e-learning form (open and distance learning via the Internet) – the participants communicated with the consultants on problem solving, getting feedback and delivered their work by e-mail and conference system.

At the seminar the following equipment was accessible: a beamer, an overhead projector, a classroom equipped with 20 multimedia computers with the Internet access, and other rooms where the participants could work in teams. Furthermore, they received the course material, which consists of a printed curriculum and a collection of the Internet links to additional material on the Web.

The participants' knowledge was evaluated on the basis of the team written proposals. Those, who communicated for two months and delivered their work to the consultants, got the IITE Certificate of successful participation in the two-month seminar (75 %). The others, who joined the five-day seminar, received the Certificate confirming their participation in it.

The final assessment of the seminar by the course participants was very positive and constructive in



Dr B. Andresen (Denmark)

regard to the questions they were asked. Answering the questionnaire, the participants gave their opinions on the quality and quantity of the knowledge and the way it was presented at the seminar, as well as on the support, which was rendered to them by the consultants. Furthermore, they expressed their attitude to say if they had learned anything new, important and useful; if the contents of the seminar had met the participants' needs and if they could have prepared the course outside the seminar.

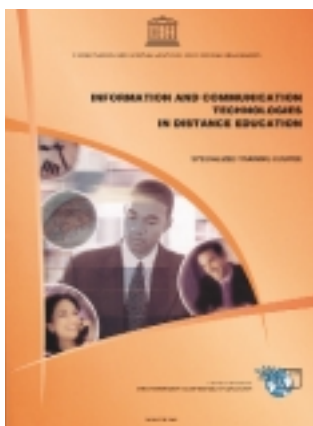
The Cyprus Seminar on the Use of Information Technology across Curriculum in School was a useful, important and successful event within the system of further education and teachers' training of the Republic of Cyprus. We hope that this positive implementation of the IITE specialized training course *Multimedia in Education* creates a basis for a further fruitful, joint activity of the UNESCO Section for General Secondary Education and IITE in other UNESCO Member States.



Teamwork

## IITE PROMOTES SKILLS DEVELOPMENT FOR DISTANCE EDUCATION AND ICTs

By Wayne Mackintosh



Within the framework of the development of the IITE educational programme and IITE international project *Distance Education: Structure, Methodology, Staff Development and Legal Aspects*, the UNESCO Institute for Information Technologies in Education (IITE) prepared the specialized training course *Information and Communications Technologies in Distance Education*.

The course materials were prepared by an international team under the leadership of Professor Michael G. Moore, Director of the American Centre for the Study of Distance Education. The team members are Wayne Mackintosh (South Africa), Honoratha Mushi (Tanzania), R. K. Shimhopilemi (Namibia), John Nworie (Nigeria), Creso Sa (Brazil), Linda Black (USA) and Edward Thompson (USA). Many of the course team members were from the developing countries and they

have extensive experience of education in such environment. As a part of the course development process, the participants at the expert meeting initiated by IITE and held at the Open University of Tanzania reviewed early drafts of the course materials late last year. Professor Wayne Mackintosh, Director of the Centre for Flexible and Distance Learning at the University of Auckland (New Zealand) was also asked to assist with the critical review process before finalizing the materials. The process has resulted in the development of a course specifically tailored to the needs of developing society participants but at the same time ensuring adherence to the knowledge base associated with the best global practice in distance education (DE).

Attaining the objectives associated with *Education for All* in developing regions is still a daunting challenge, particularly, at the secondary and tertiary levels. DE combined with the pervasive advances in digital information and communication technologies (ICTs) can play an increasingly important role in achieving these objectives in a sustainable way. However, the success with DE initiatives is largely dependent on the DE specific basic skills of those involved with policy development and practical implementation. DE is a highly specialized field with unique requirements.

When the challenges of evolving technologies application in the developing society context are added to the equation, the need for well-founded skills development in this area is unquestionably a high priority.

IITE identified this need and commissioned the elaboration of a short course to support and promote skills development in distance education. The course is unique because it was designed from the perspective of developing societies, but at the same time the application of ICTs is facilitated in a responsible and well-founded way. This is an exciting time to be involved with DE because of the growing educational interest in the potential role of ICTs. The course will help learners become more informed about the application of ICTs in DE. It also promotes conventional wisdom of what can realistically be achieved in conjunction with the specialized requirements of qualitative DE practice.

The course is designed for learners who have some prior training and experience in conventional classroom education and can be completed in a face-to-face training workshop or as an independent distance education course and will require approximately 36 hours to complete. The course will introduce participants to a number of important themes that are relevant

for developing society environment, including:

- DE concept, its development and the role of ICTs in DE;
- functions of distance teaching and corresponding organizational types with special emphasis on the implications for ICTs;
- DE system components and consequent demands associated with ICTs and developing DE courses;
- requirements for teaching in different DE systems with special emphasis on the effective integration of ICTs;
- what is known about DE learners covering important research on distance learning and ICTs;
- issues that relate to DE policy and the application of ICTs in this form of education.

The course represents a valuable addition to the range of resources available for skills development in DE. Its focus on a developing society combined with a responsible and well-founded approach to ICTs in DE will certainly support the training of a cadre of DE professionals.

For more information about this course please contact: Dr Yuri Zaparovanny (yuz@iite.ru).

You can find information about IITE project on distance education at: [www.iite-unesco.org/iite/activity/projects/projects?id=4](http://www.iite-unesco.org/iite/activity/projects/projects?id=4)

## INTERNATIONAL COOPERATION National Conference in China

Chinese national conference on the Experimental Area (refer to Northeast area) of Information Technology in Education of Elementary and Secondary School was held in Northeast Normal University of China (Chanchun) from 27 to 29 January 2002. About

two hundred persons attended the conference. They were mainly chief leaders from Ministry of Education, local educational administrators (refer to Northeast area), persons in charge of experimental area, researchers, post-graduate students.

IITE was represented by Dr Sergei Christochevsky, Senior Project Manager, who was invited for this conference as a keynote speaker. He made two reports: *Indicators of ICT Usage in Education* and *IITE Specialized Training Course 'Multimedia*

*in Education*'. Ms Marina Tsvetkova from the Ministry of Education of the Russian Federation, made the report *Two Directions of Using ICTs in Education in Russia: Informatics as a Subject and Informatization of Education*.

## Working Meeting of CIS Representatives on Cooperation in the Field of ICT Usage in Education

Moscow, 11 April 2002

Cooperation with the CIS Member States is one of the priorities of the UNESCO Institute of Information Technologies in Education (IITE) programme activity. The Institute works in close cooperation with the CIS Ministries of Education and the Council for Cooperation in the Field of Education of the CIS Countries.

In April 2002 in accordance with the address of Education Ministers' Conference and the Council for Cooperation in the Field of Education of the CIS Countries to the CIS representatives, a practical workshop was held at IITE in Moscow to work out a joint program of actions for the CIS Member States in the field of ICT usage.

The seminar attracted representatives from six countries – Armenia, Belarus, Kazakhstan, Republic of Moldova, Russian Federation and Ukraine.

The joint program of actions of the CIS Member States in the field of ICT usage in education is developed to increase the efficiency of ICT application in the education of these states, to facilitate the equal access to education as well as to bridge the gap in the field of new information technologies in edu-

cation based on the single educational information environment to be elaborated and effectively employed.

At the workshop Mr Vladimir Kinelev, IITE Director, made a presentation as well as Mr Nikolai Kuzmich, a secretary of the Council for Cooperation in the Field of Education of the CIS Countries and other representatives from these countries.

The workshop was an important stage in the preparation of the 7<sup>th</sup> Conference of Education Ministers and 11<sup>th</sup> meeting of the Council for Cooperation in the Field of Education of the CIS Countries, which were held from 28 to 30 May 2002 in Almaty (Kazakhstan).

At the forum Mr Kinelev represented UNESCO and made the report *Education in Information Society of the 21<sup>st</sup> Century* at the Conference of Education Ministers.

Of great importance for the cooperation development in the field of ICT usage in education for the CIS Member States and IITE, were the meetings in Almaty of the IITE Director with Mr Levon Mkrtchan, Minister of Education and Science of the Repub-

lic of Armenia, Mrs Shamsha Berkimaeva, Minister of Education and Science of the Republic of Kazakhstan, Mr Vladimir Filippov, Minister of Education of the Russian Federation and Mr Vasily Kremen, Minister of Education and Science of Ukraine.

The web site (<http://cis.iite.ru>) was created for the on-line presentation of the preparation and results of the Education Ministers' Conference and the meeting of the Council for Cooperation in the Field of Education of the CIS Countries as well as the IITE collaboration with these states.

The web site was presented at the Conference and the participants learned about the possibilities of the on-line service.

The web site is intended to facilitate further collaboration between the participants of the Conference. The registered users who got the passwords during the event can share their ideas reviewing documents in the on-

line forum, through the mailing lists or add new documents for discussion through the web site interface.

The Conference web site is an integral part of the *IITE in CIS* section on the IITE official web site ([www.iite-unesco.org](http://www.iite-unesco.org), [www.iite.ru](http://www.iite.ru)). This section aims at Russian-speaking audience and focuses on the issues of the IITE cooperation with the CIS Member States. It contains information on plans and results of the IITE programme activity, related events and publications, links with CIS Ministries of Education and educational sites within the Commonwealth of Independent States. Those interested in the activity of national focal points for cooperation with IITE and the implementation of the national pilot projects for the CIS Member States will also find essential information there.



## TASK FORCE ON IITE INFORMATION SYSTEM DEVELOPMENT

According to the recommendations of the working meeting on activity of the European national focal points (NFP) for cooperation with IITE (Prague, Czech Republic, October 2000) a Task Force on Information System on Information Technologies in Education (TF ISITE) was set up during the expert meeting *ICTs in Education: State-of-the-Art, Needs and Perspectives – Indicators and*

*Information System*, which was held at IITE from 28 to 30 March 2001.

The mission of TF ISITE was stated to be promoting the ISITE development at the levels of organization, content and technology through:

- analysis of the situation with available means and resources at IITE NFP;

- identification of the possible ways of information exchange among the ISITE members;
- distribution of the responsibilities among NFP and IITE;
- determination of the functional and technical specifications for ISITE;
- elaboration of the common methodological basis (metadata set and schemas) for ISITE development and maintenance;

- discussion of information quality, copyright and translation issues in the ISITE implementation context;
- setting the timeframe of the ISITE development.

TF ISITE comprises of three IITE national focal points' representatives – Alexis Skuratov, State Research Institute of Information Technologies and Telecommuni-



cations "Informika", Moscow, Russian Federation; Vainas Brazdeikis, Centre of Information Technologies of Education, Ministry of Education and Science of the Republic of Lithuania; Katerina Zdravkova, Institute of Informatics (II), Faculty of Natural Sciences and Mathematics, Scopje, former Yugoslav Republic of Macedonia (FYROM). On behalf of IITE, Azat Khannanov, Chief Information Officer coordinated the TF activities. TF ISITE started its work in April and prepared the Final Recommendations by December communicating through a mailing list.

First, the TF ISITE members through interviews and questionnaires gathered information from European NFP in 12 Member States: Andorra, Belarus, Czech Republic, Finland, Iceland, Lithuania, Poland, Republic of Moldova, Russian Federation, Tajikistan, Ukraine and FYROM.

On the basis of the information acquired the gap analysis was performed separately for the following regions: Commonwealth of Independent States, Central and East Europe, South Europe. Special attention was devoted to the demands' analysis: identification of the needs in information, managerial and other resources of NFP proper and expected information offer from NFP within the ISITE framework. The elaborated supply analysis, which presented the current state with the information created and collected by the focal points and IITE using the technologies and organizational schemas for cooperation with partners at the national and international levels, argued real possibilities to create an effective network community, at least in the limited areas of interests.

The solutions for the gap study, including the analysis of informational, organizational, resource and technology interaction models as well as the ISITE development strategy, were proposed in the TF ISITE Final Recom-

mendations. The short extracts from this document are given below.

### 1. Networking

The NFP network is growing into a large information system on ICTs in education. IITE is considered to be the 'head' of this system and organize collection and dissemination of international research data to monitor the development of ICTs in education. NFP can provide national data flow to ISITE and at the same time facilitate the access of the national agencies to the entire information system. The NFP network members are supposed to exchange ideas and information on teacher training, teaching aids, national research, etc. in the sphere of the ICT use in education. Such activities could be successful if a strict and formal structure is established and reliable schedule and management are provided.

### 2. Information

The following types of information are preferred for the exchange within ISITE – statistical data, database of teaching software, research and teacher-training courses' database. The data could be resolved to the institutional level or age group. For documentation, Dublin Core oriented metadata approach could be used, namely IEEE Learning Object Metadata (LOM).

### 3. WWW Portal

On the basis of the NFP web sites, an ISITE portal should be built. The ISITE portal will focus on capacity building and empower communities to use Internet tools in their professional activities more effectively. It should be noted that due to the complexity, scale and rich scope of features, we should plan to gradually build on a set of services and features with the project progress dependent on the demand and technical capabilities. The functional dimension will unite regional and thematic communities on the same technological platform by providing them with many tools and services that can be

organized into several blocks, namely information, collaboration, knowledge, transaction, e-learning, hosting and customization.

### 4. Technology

The portal technology platform should be based on the principles, given below.

*Centralized software and hardware platform and hosting, decentralized content management:* the portal will have a common superpower software and hardware platform, with common content management tools used by all NFP servers.

*Commitment to open content:* all organizations and people around the world will be able to contribute the content to portal central server (and, therefore, to ISITE).

*Commitment to open source software:* the portal may be built on top of open source software platform (ACS, ArsDigita Community System), except for the areas where commercial applications have big advantages over their open source counterparts.

*Highly scalable and modular architecture:* flexible system that will handle high traffic.

*Virtual community building:* the portal will provide state-of-the-art computer and human technologies to enable the building of effective virtual communities.

*Personalization:* users will be able to customize their access by defining fields of interests, and what kind of information they want to see in which order out of various sources. The portal will offer customization with regard to the content, appearance and language.

*High standards of privacy protection:* the portal could comply with the EU requirements for user's privacy protection.

### 5. Responsibilities

The responsibilities of the Focal Points and IITE are clearly given at each stage. To conclude, IITE is

recommended to be a coordinator of similar representatives from regional centres. Most of the job can be finished in NFP. A list of personal responsibilities could be exposed on the NFP homepage.

### 6. Copyrights

Allocation and publication of materials is related to the authorization users' rights. At the first stage this should be centralized, while the level of decentralization can become more significant at the later stages. All documents and programmes that will be presented on the Web should have a written approval from their authors. They are intended to be widely exposed, with no limits.

### 7. Access

ISITE is envisaged to have three kinds of information. First, the information of mutual interest free for external access and information that will significantly influence education. The second one should be free for access by participants from the IITE network. The access to this part of ISITE should be protected by a password. The last should be free for the members of the TF ISITE and for selected members from IITE.

### 8. Quality of information

This problem will be partly sorted out by the criteria recommended by the proposed team from IITE and NFP. Three independent referees from different countries, including IITE experts, could advocate each document and programme.

### 9. Language

Each document created for the purposes of ISITE can be presented in English and the official language(s) of the country it comes from. Russian, French, German and other languages are also recommended. Restricted items – documents and programmes that are not free of charge – should be separated from the free ones. The approach to them will be in line with the previously suggested protection measures and will be assigned to IITE or NFP members.

### 10. Time limits

All activities concerning NFP is envisaged to be defined until May 2002. The extension of the network could be finished by July 2002. The contents for national homepages is supposed to be finished before

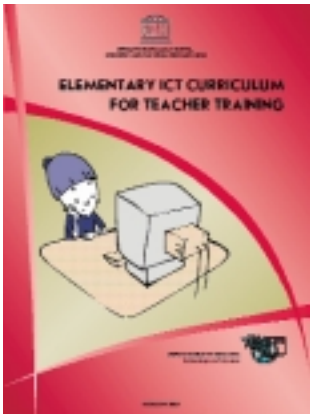
September 2002, excluding the last NFP nominated. The deadline for new NFP could be September 2002.

The library system could be organized without preliminary

preparation, because IITE has already finished the first stage of the process. The criteria for selection could be established by January 2002. The counter of logs and grades could be finished two weeks after its acceptance. To

accept a document or a programme will take about two months, starting from its proposal for ISITE, selection of referees and, finally, the approval. ISITE first stage is supposed to be operating from December 2002.

## ELEMENTARY ICT CURRICULUM FOR TEACHER TRAINING



The UNESCO Institute for Information Technologies in Education (IITE) has edited a book *Elementary ICT Curriculum for Teacher Training*. The authors are the members of the editorial working group of the International Federation for Information Processing (IFIP), consisting of Sindre Røsvik, Erling Schmidt and headed by Anton Knierzinger.

The book will not give you examples of specific ICT-based activities in the classroom, but will provide you with some very important guidelines on what is necessary for a successful travelling across the immense variety of options brought forth with the advent of ICTs. Application of ICTs influencing and changing the world and a human being's life is leading to the emergence of the information society in which not material resources but information and scientific knowledge will be the objects and results of work of the majority of employed population.

The Curriculum comprises a few themes, which consider the problem of ICT application in education from different angles possible.

In *The Role of ICT in Schools* the authors tell about the role of ICTs in society and education, including those of the Industrial and Digital Age. Education, in any sense of the word, is considered of great importance to national economical planning and political development. However, strategies are different in different societies, according to the pace of development and need. A school system is a function of culture and social traditions. School is closely related to its society so that major societal changes will transform schools and schooling. It, therefore, ought to be worthwhile to present some leading trends in the society of today in order to predict school developments of tomorrow. Digitalization seems to be one of the most dominant trends in the world society along with globalization. Here, digitalization or information and communication technologies, will be at the forefront. ICTs cause changes of organizations, infrastructures, structures of corporations and challenge national policies. Therefore, in the global and digital world the quality of education must be redefined in the context of utilization.

The topic on *ICTs in the Developing Nations* describes the

key elements in designing an elementary ICT curriculum for teacher training and considers some case studies of national ICT programmes illustrated by the examples of the Mauritius, Malaysia and Pakistan.

The part on *The Matrix of Competence* seems one of the most important and useful as pedagogy not technology should be in the forefront when implementing ICTs into teaching and learning. The matrix presented here is a detailed list of competencies that need to be considered in any elementary ICT curriculum for teacher training, though such list cannot be considered complete or sufficient in a field of such rapid change. Meanwhile, the basic ICT teacher training curriculum and the matrix are not meant to be what commonly is considered a curriculum, but rather a point of departure to formulate study programmes where ICTs are an integral part. This chapter highlights such aspects as an adequate technology competence, ICT productivity tools, assessment, evaluation and others. The matrix of competence is designed within the framework of ECDL (ICDL) – European (International) Computer Driving License, the standard set of computer knowledge and skills adopted in Europe and worldwide, or the world's leading IT skills certification programme.

The final part of the book is dedicated to national reports produced by the members of IFIP working groups from countries of different cultural background and various political systems (Bulgaria, Brazil, China, Denmark, Japan), giving examples of good practice and showing the experiences of ICT integration in schools.

One of the main missions of the UNESCO Institute for Information Technologies in Education is to train and re-train educators of UNESCO Member States to apply information and communication technologies in teaching different educational subjects. On this end, IITE holds a Training Session comprising a Basic Course and a few Specialized Training Courses (Modules). The Curriculum alongside with the Recommendations on *Informatics for Primary Education* and other materials of IITE serve the sources of conducting the Basic Course *Re-training of School Educators in Application of ICTs in Education* within the framework of the Training Session *Application of ICTs in Education*.

Information and communication technologies have become an integral and badly needed part of human life in modern society and we offer you to keep in pace, taking part in our Training Session.

UNESCO INSTITUTE FOR INFORMATION TECHNOLOGIES IN EDUCATION  
8 Kedrova St. (Bld. 3), Moscow, 117292, Russian Federation  
Tel. (7-095) 129-2990 Fax (7-095) 129-1225  
E-mail: info@iite.ru Web site: www.iite-unesco.org