IITE NEWSLETTER

UNESCO INSTITUTE FOR INFORMATION TECHNOLOGIES IN EDUCATION

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EDITORIAL

Dear readers,

The information about the 32nd session of the UNESCO's General Conference held in Paris from 29 September to 7 October 2003 and participation of the Institute in it opens this issue of IITE Newsletter.

The issue we bring to your attention mainly concerns IITE training activities. The article of Dr Boris Kotsik, Chief of IITE Training unit, informs readers about the IITE actions in launching of the sub-regional project *Information and Communication Technologies for the Development of Education and the Construction of a Knowledge Society* for South Eastern Europe. This project promotes planning and policy-making of ICT-mediated education, namely, development of analytical data, training of senior teaching personnel, and production of relevant materials to shape national action plans in education. Main objectives of the project are to strengthen professional capacities and technical skills of teachers, to integrate ICTs into the educational systems of South Eastern European countries, UNESCO Member States; to stimulate professional networking of educators aiming at introduction of ICTs at all levels of education, and to offer broad access to educational and training opportunities.

From 12 to 14 September 2003 the preparatory meeting on project implementation was held in Skopje, FYROM[1]. Representatives from the ministries of education and UNESCO National Commissions of Albania, Bosnia and Herzegovina, Bulgaria, Croatia, FYROM, Republic of Moldova, Romania, Serbia and Montenegro, Slovenia, Turkey participated in the meeting. The article presents the output of the meeting as the basis for further activities on the project.

UNESCO Headquarters, Paris

In the article *IITE Teacher Training Activity in 2003* the results of the training seminars in Azerbaijan and Lithuania illustrate IITE training activities in 2003, present the goals, objectives and structure of IITE basic course *Training and Retraining of School Educators on ICT Usage in Education* constituting the groundwork of the seminars.

The training programme is based on a number of IITE publications prepared in cooperation with international experts.

[1] the former Yugoslav Republic of Macedonia

IITE ONLINE NEWS

The First Training Session of IITE sub-regional project for South Eastern Europe *ICTs for the Development of Education and the Construction of a Knowledge Society.*

- **10–14 February 2004:** Training seminar *Retraining of School Educators on ICT Application in Secondary Education.*
- **16 February 2004:** Workshop *Indicators of ICT Application in Education.*
- **16–20 February 2004:** High-level seminar for decision- and policy-makers *Towards Policies for Integrating Information and Communication Technologies into Education.*

The seminars comprised thematic discussions and specialized trainings to review the basic concepts presented in the introductory lectures and reflected in the projects. Practical results of the projects were discussed at the final conference. The participants of the training seminars devoted much time to the debate of potential solutions of the problems.

Since 1998 the project *ICTs in Distance Education* has been one of the basic projects in the structure of long-term IITE projects. We have regularly informed the readers of Newsletter about the IITE-elaborated analytical and training materials as well as about the results of expert meetings, seminars and training sessions employing these materials. This issue will introduce another work prepared within the project, which is the analytical review *Distance Learning in the CIS Countries: Monitoring of Educational Needs and Perspectives*. Vladimir Verzhbitsky and Yulia Vlasova, authors of the review, write that the monitoring was based on the IITE programme of sociological research with active participation of the IITE focal points in three largest CIS countries – Kazakhstan, Russian Federation and Ukraine. The research results clearly demonstrate the level of demands among the populations of these countries in distance education, and decision-makers of various levels can successfully apply the results to upgrade systems of distance education in their countries and regions. The given method is universal and can be applied in analogous studies, which IITE plans to accomplish in 2004–2005 with the assistance of the interested focal points in the CIS and Baltic states.

The article *The Use of ICTs in Technical and Vocational Education and Training* (TVET) gives the information on the results of IITE research project. As a follow-up of the IITE expert meeting *ICTs in TVET* held in May 2002, IITE initiated the survey and performed it in cooperation with Dr Chris Chinien, Director of UNEVOC Centre, Canada. The survey reflects a new role and main trends of ICT usage in vocational education of a digital society. Major issues related to ICT integration in TVET, such as digital and cognitive divide, are discussed along with a proposed framework to estimate the effectiveness of ICT-mediated learning. The content and context of ICT literacy for TVET teachers is analyzed, the barriers hindering ICT integration into teaching and learning in TVET are described. The article suggests the ways of project progress and incorporation into IITE training programme.

Vladimir Kinelev
Director of IITE

32nd SESSION OF UNESCO's GENERAL CONFERENCE

The 32nd session of the UNESCO's General Conference was held from 29 September to 17 October 2003. The General Conference examined and adopted the Draft Programme and Budget for 2004–2005, which five priorities are: education for all; water resources and associated ecosystems; ethics of science and technology; promoting cultural diversity and dialogue between cultures; and access to information and knowledge.

The current session recorded the following figures: 3,577 participants and 430 journalists; 185 Member States registered; 2,999 delegates, among whom five Heads of State, the First Lady of the United States of America, three Vice Presidents, two Deputy Prime Ministers and 297 Ministers. Besides, there were 551 observers from 462 non-governmental and 65 intergovernmental organizations.

Commission II (Education) worked on 30 September – 2 October and 6 October 2003 embracing eight meetings. The second meeting ended with the discussions of Major Programme I (Education) of the Draft Programme and Budget for 2004–2005, including the programmes of UNESCO education institutes and the projects related to cross-cutting themes that concern the Education Sector. 67 Member States, one Associate Member, one Observer and four non-governmental organizations took the floor in the debate. The fourth meeting held in the afternoon, Wednesday, 1 October 2003, was closed by the Assistant Director-General for Education, representative of the Director-General, who replied to the comments and questions raised by the Commission during the debate.

Prof. Bernard Cornu, Vice-Chairperson of IITE Governing Board, presented the report on the activities of the UNESCO Institute for Information Technologies in Education (IITE) in 2002–2003 within the framework of Commission II on 29 September 2003.

Prof. Cornu stressed that the endeavours of IITE Governing Board and the Institute were oriented toward the implementation of the decisions of the 31st session of the UNESCO's General Conference.

He listed the following as the major results achieved in 2002–2003:

National capacity for applying ICTs in education of UNESCO Member States was strengthened through training activities, involving educators in research activities, providing exchange of information and experience, launching and monitoring projects for Member States.

Educational personnel were trained during 19 training sessions, seminars and workshops devoted to the specialized aspects of ICT application in education.

Support to UNESCO Member States for policy formulation and elaboration/upgrading of national action plans related to ICT applications in education was rendered at high-level seminar for decision-makers and policy-makers from ten countries of Asia and the Pacific *Towards Policies for Integrating ICTs into Education* held in Bangkok, Thailand, with relevant support resources, analytical surveys, training and methodological materials as well as publications disseminated in UNESCO Member States.

The data and knowledge bases were shared with UNESCO Member States through the IITE clearing house and the international network of 36 IITE national focal points, including circulation of IITE publications to 400 addresses.

IITE Governing Board noted considerable progress made by the Institute during the biennium, its productivity and support to UNESCO Member States; expressed gratitude to the Director and staff of the Institute, and recommended the Headquarters to utilize IITE's unique potential more within the framework of UNESCO Education Programme.

Commission II recommended to the General Conference that it approve the proposed resolution on the UNESCO Institute for Information Technologies in Education.

In the course of the General Conference the Institute participated in the exhibition *Building Knowledge Societies* by providing the multimedia (containing the information on the Institute's programme activities) for the section *Transmitting Knowledge*. IITE display and publications (IITE Medium-Term Strategy, IITE Newsletters and some information materials) aroused interest among the participants.

In the framework of the General Conference, the round table *The Quality of Education* for ministers of education was held on 3 and 4 October 2003. The need to enhance quality of education was reaffirmed at the World Education Forum in Dakar (2000). The exponential growth of demand for education globally and the disparities and weaknesses apparent in education systems of several regions bring some questions to the fore: What works in the classroom? What is being taught and what is being learned there? During three sessions (*Challenges and Dilemmas Facing the Quality of Education, The Need for an Expanded Definition of the Quality of Education,* and *Tools for Change and Improvement*) the participants sought for means to improve an access to education in the view of ensuring that children do not merely attend school but do well there.

PREPARATORY MEETING FOR IMPLEMENTATION OF THE IITE SUB-REGIONAL PROJECT FOR SOUTH EASTERN EUROPE

12–14 September 2003, Skopje, FYROM

In March 2003 the UNESCO Institute for Information Tech-nologies in Education (IITE) launched the sub-regional project *Information and Communication Technologies for the Development of Education and the Construction of a Knowledge Society* for South Eastern Europe. This is an integral venture that synergetically compounds the research and training activities in the main fields of IITE competence. In particular, the project consists of analytical research on ICT application in education, thematic seminars and training sessions for education administration and instruction support specialists. The project is planned for the years 2003–2005 and is funded by the Japanese Funds-in-Trust for the Capacity-Building of Human Resources.

The preparatory meeting on project implementation was held from 12 to 14 September 2003 in Skopje, FYROM. To provide for the participation at the meeting, the information letter describing main aims and objectives of the project was circulated to the ministries of education and UNESCO National Commissions of Albania, Bosnia and Herzegovina, Bulgaria, Croatia, FYROM, Republic of Moldova, Romania, Serbia and Montenegro, Slovenia, Turkey. The letter suggested that the national coordinators from the countries participating in the project should be nominated to coordinate the events and attain the goals of the project.

Representatives from the ministries of education, National Commissions for UNESCO and national coordinators of the project gathered in Skopje to discuss the workplan and ways to implement the project provisions.

The participants of the meeting

International experts and IITE specialists in charge of the project presented the objectives and main events focusing on the regional features and world experience in the sphere of ICT application in education.

The representatives of UNESCO National Commission of the FYROM and Macedonian Ministry of Education opened the meeting stressing the importance of the project for the development of education in the Balkan region, and wishing fruitful work to the participants.

Dr Boris Kotsik (IITE) gave an overall description of the project and its main events. Mr Sindre Roesvik (Norway) spoke on the role and challenges of education progress in a digital society. Prof. Valery Meskov (IITE) introduced the IITE strategy for ICT application in education development. Dr Azat Khannanov (IITE) presented the IITE information system as a support to the project advance.

Ms Katja van den Brink (Germany), Mr Sindre Roesvik (Norway), Mr Alexandru Borcea (Romania), Dr Cornelia Munteanu (Romania)

Mr Svetoslav Ivanov (Bulgaria), Dr Boris Kotsik (IITE), Dr Petya Assenova (Bulgaria)

The international experts responsible for implementation of the modules – Prof. Bernard Cornu (France), Ms Katja van den Brink (Germany) and Dr Boris Kotsik – described the project modules in details.

During the discussion Prof. Agim Minxhozi, Secretary General, Ministry of Education and Science, Albania; Dr Borisa Starovic, Rector of University of S. Sarajevo, Bosnia and Herzegovina; Dr Petya Assenova, Associate Professor, Head of Department, New Bulgarian University, Bulgaria; Mr Svetoslav Ivanov, State Expert, Ministry of Education and Science, Bulgaria; Dr Ratimir Kvaternik, Assistant Minister, Ministry of Education and Sports, Croatia; Dr Cornelia Munteanu, Expert, Cross-Cutting Subcommittee of Romanian National Commission for UNESCO, Romania; Dr Katerina Zdravkova, Associate Professor, FYROM; Dr Simion Caisin, Director of Continuing Education Institute, Republic of Moldova; Mr Borut Campelj, Counsellor, Ministry of Education, Science and Sport, Slovenia; Prof. Korkmaz Alemdar, Vice-President of Turkish National Commission for UNESCO; Dr Nizami Aktürk, General Director, Ministry of National Education, General Directorate of Educational Technologies, Turkey, shared their impressions of the project and suggested on practical implementation of the project events.

To define whether the project objectives were important for the country and relevant to the goals of national education development, IITE-compiled questionnaire was circulated among the participants. The answers to the questionnaire were analyzed and used for further planning of project events. Proposals of the participants of the preparatory meeting were included in the workplan and schedule of the project events.

As it was noted, the success depends on the official support of the project initiatives by national ministries of education. To provide for the support the participants of the preparatory meeting suggested the following:

- to approve the workplan confirming the importance of project arrangements to attain the goals of national education development in the countries of South Eastern Europe;
- to address national ministries of education and UNESCO National Commissions with a request to endorse national coordinators and support their activity in project realization confirming their leading role as organizers of the project events for the countries;
- to apply to national ministries of education, national coordinators, and IITE to coordinate their efforts and to provide appropriate information on the project in educational mass media and other information resources.

Information on the project, materials of the preparatory meeting, main documents and the preliminary workplan are published on the special page found at IITE web site http://iite-unesco.org/cgibin/parser.cgi/activity/projects/projects?id=23.

The next event of the project programme is a training session to be held in Romania from 10 to 20 February 2003.

IITE welcomes the cooperation with institutes and organizations interested in accomplishment of this sub-regional project.

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IITE TEACHER TRAINING ACTIVITY IN 2003

Modern level and spread of information and communication technologies (ICTs) in all spheres of human activities increase a need of the targeted advanced training of schoolteachers in the field of ICT application in educational process.

This complex problem can be solved only if the following questions get the answers:

- What is the notion of new literacy in the information society?
- Can we determine what ICT means are required for the educational process to meet the claims of the modern society?
- What is the place of ICTs in the system of general secondary education?

- What is the strategy of ICT usage in educational process, school management and instruction support for teachers?
- How can the educational information environment be organized in schools?
- Where can a teacher trainer, an administrator or a teacher find positive experience of ICT use in education?

The IITE regular training programme gives the answers to these and many other questions.

The training programme is based on a number of IITE training materials developed in cooperation with distinguished international experts from leading institutions, universities and well-known international organizations.

The IITE training seminars for teachers, teacher trainers, and school administrators have set the following objectives:

- to form the understanding of the ICT role in the contemporary society;
- to specify goals of modern education and ICT contribution to their achievement;
- to present the methodological basis of ICT application in the educational process;
- to introduce the essential methods of advanced training for teachers in the field of ICT usage;
- to demonstrate specific organizational models of educational ICT-based activities;
- to master certain fundamental technological and instruction skills for ICT-based educational process;
- to share the international experience of organization of information education environment in a secondary school;
- to create learning objects to be used in educational practice.

The target audience of the seminar comprises:

- heads of educational institutions, administrators and leading specialists from education control bodies,
- experts of teacher training departments and institutes for advanced and in-service teacher training,
- teachers employing the ICTs to upgrade content and organization of educaional process.

The training seminar goals imply:

- understanding of modern tendencies of ICT application in education;
- acquiring new knowledge in the field of computer science;
- mastering new models of education activities within a lesson, a subject, a certain field of studies as well as school activity in general;
- designing of information environment of an educational system (school, region);
- giving the idea of up-to-date technological achievements (equipment and information resources);
- acquiring the specific skills of ICT usage;
- shaping the awareness of participants about the role of advanced training for teachers to facilitate their efficient involvement in renovation of the content and forms of educational process.

Project presentation by seminar participants

The seminar is scheduled in three stages:

- introductory lectures,
- individual accomplishment of the projects,
- reflection of the ways to solve professional tasks within thematic discussions, specialized trainings and educational conference.

Introductory lectures present specific goals and ICT role in education development, disclose the content of basic teacher training in ICT field as well as essential principles of organization of teacher training activities on ICT applications in education.

The lectures are followed by the educational projects to be developed in small groups of participants of similar positions and professional interests.

In the course of the project, thematic discussions and specialized trainings are held to review the basic concepts presented in the introductory lectures and implemented in the projects. Practical results of the projects are discussed at the educational conference. Considerable time is devoted to the problems raised by the participants, and examples of their solutions from the world practice. Thus, the discussions conclude on the project achievements and meet overall objectives of the seminar.

Mr Sindre Roesvik during the presentation *Education in a Digital Society*

The project results are published in the Internet.

The following issues, supposedly, are to be discussed at the training seminars:

- role of ICTs in the system of general secondary education;
- educational information environment;
- transformations of the education content under ICT application;
- positive experience of ICT didactic usage;
- changes in educational process and curricula;
- interactions of a teacher trainer, a teacher, a student and parents;
- forms of instructional support of educational activity;
- assessment of teaching and learning;
- role of an ICT coordinator in the formation of information environment in an educational institution;

- approaches to create an informatization programme for a region, an educational institution, or an educational field;
- legislative ground of ICT-based educational activity;
- in-service retraining and advanced training for teachers and administrators.

In the year 2003 the IITE regular training activity mainly implied the CIS countries. Two training seminars *Training and Retraining of School Educators on ICT Usage in Education* were held in Druskinenkaj, Lithuania, in May and in Baku, Azerbaijan, in October 2003.

During each seminar about 30 head teachers, methodologists, subject teachers and school librarians participated in the training. They attended the lectures of international experts, participated in the guided project activities, contributed to the thematic discussions.

International observers from ministries of education and pedagogical institutions were present at the training. All participants of the seminars successfully accomplished graduation projects and received an IITE certificate.

The basic course introduced, specialized courses on the most important aspects of ICT usage in education will be offered as the next stage of the training programme.

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DISTANCE LEARNING IN THE CIS COUNTRIES: MONITORING OF EDUCATIONAL NEEDS AND PERSPECTIVES

Review of analytical survey

The project *Distance Learning in the CIS Countries: Monitoring of Educational Needs and Perspectives* elaborated by the UNESCO Institute for Information Technologies in Education (IITE) aims at optimization of information analysis to provide for international cooperation in the field of distance education (DE). The project is to give good reason for the developing national programmes of distance education, deeper and more efficient cooperation of CIS countries in education. To identify educational needs of the citizens of CIS countries in vocational training as well as the capacities of the populations in these countries to meet the needs via basic ED technologies, general monitoring approach was worked out in the course of the project. Moreover, the sociological programmes were developed and accomplished for the major CIS countries – Russian Fede-ration, Republic of Kazakh-stan, and Ukraine.

In the Republic of Kazakhstan and Ukraine the activities were run at the IITE focal points: Republican Scientific and Methodological Centre of Informatization in Education of the Republic of Kazakhstan (Prof. Gul Nurgalieva, Director, headed the activities), Institute for Applied System Analysis of the Ministry of Education of Ukraine and National Academy of Sciences of Ukraine (Prof. Natalia Pankratova, Deputy Director of the Institute, supervised the work).

At the first stage of the project one of the important objectives is the quantitative assessment of educational needs of the adult population in the CIS countries. The numbers imply the needs of millions and tens of millions people. To meet their educational demands is a prime task of a state; if solved, it opens the perspectives for cultural, economic and social development of a country. The research employs the level of actualization of educational needs as a basic factor to assess the educational needs. In fact, it is an index of unsatisfied demand of education. On the one hand, it characterizes the interest in education, on the other – the difficulty a person overcomes receiving the education traditionally. Figure 1 shows the generalized levels of actualization of educational needs of adult population in the major CIS countries in 2002–2003. Accounting for all adult population the total number of people with actualized educational needs (AEN) in three major CIS countries for late 2002 – early 2003 is estimated to be 37 million, approximately: Republic of Kazakhstan – 2.4 mln, Russian Federation – 27.9 mln, Ukraine – 6.8 mln.

People with actualized educational needs in the three countries mentioned significantly surpass the educational capacities of existing systems of vocational training. According to the CIS Statistics Committee the average number of trainees in the systems of vocational education was about 0.7 mln in the Republic of Kazakhstan, 7.8 mln in the Russian Federation, 2.1 mln in Ukraine[1] in the same period. This means that there are about 3–4 persons wishing to get education per one trainee in the major CIS countries.

Dominating motivation of a person with AEN to study in the system of vocational education is his/her interest in the subject of teaching and acquisition of a qualification. Ho-

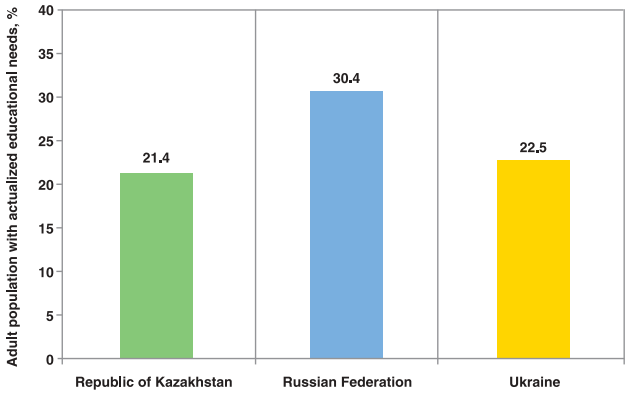

Figure 1. Generalized levels of actualization of educational needs of adults in major CIS countries in 2002–2003

[1] The data are taken from the book Commonwealth of Independent States in 2001. (Preliminary statistics in brief) / CIS Statistics Committee – M. 2002, p. 384 – pp. 245, 301, 365.

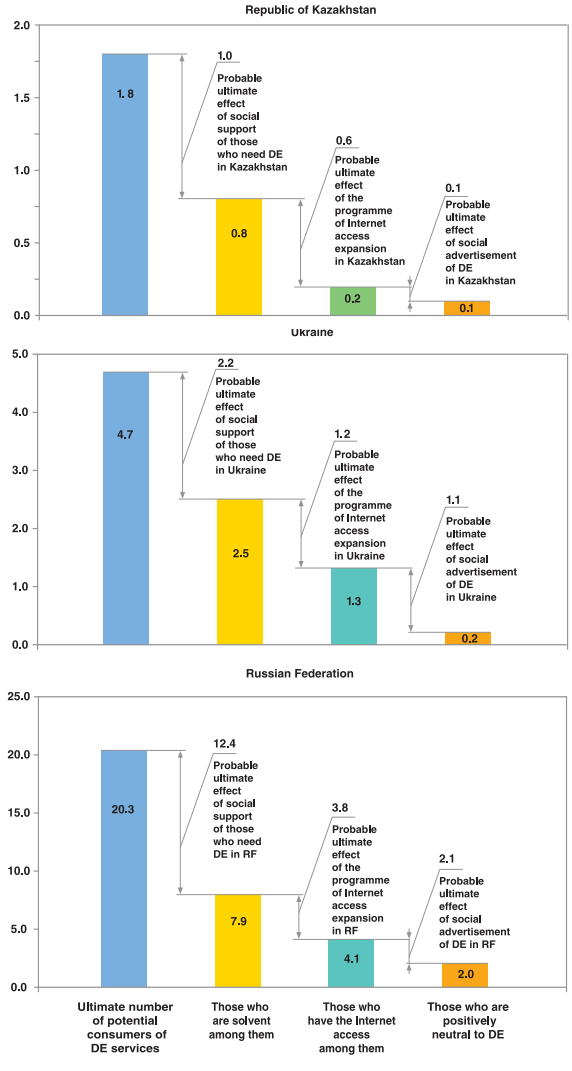

Figure 2. Estimated numbers of potential consumers of DE in major CIS countries (2002–2003)

wever, an offer of an educational service adequate to an actualized educational need does not constitute a start of training. Complicated complimentary features are required for the educational service and interests, capacities, demands, preferences and subjective assessments of its consumer. In case the AEN is realized in the system of distance education, the monitoring technique accounts for four groups of conditions for its complimentary nature providing for an integral assessment of ultimate number of potential DE consumers in the major CIS countries (see Fig. 2). The figure displays the estimated number of people who are solvent, equipped with the Internet, informed and deprived of negative attitude to DE. The comparison of the numbers allows to determine possible social impacts of the programmes of social support, if realized, for those who need DE as well as of expanded public access to the Internet and social advertisement of DE.

The IITE analytical survey *Distance Learning in the CIS Countries: Monitoring of Educational Needs and Perspectives* publishes the detailed results disclosing the research technique, and basic parameters of studies in the CIS countries. The authors scrupulously analyze the actualization of educational needs in the field of vocational training and interest in DE services accounting for such factors as market demand of educational profiles and levels, social structure of adult population with actualized educational needs, readiness for self-education, availability of the Internet and other technologies for population, consumer conditions, preferences and requirements to DE organization, legal status of a trainee, methodological and technological supply, and languages of education.

Social portraits of potential solvent consumers of DE services in the major CIS countries are shown. Optimal ways of informing on DE services are described. The capacities of DE service market are evaluated for each country under study. The recommendations accounting the needs and capacities of population on the perspective cooperation of the CIS countries in the field of DE development are given.

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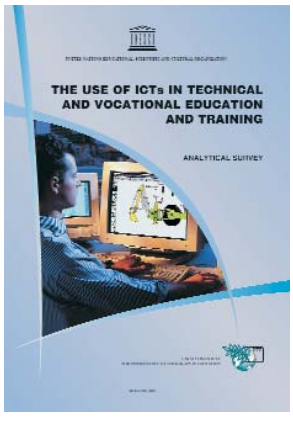
USE OF ICTs IN TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING

Review of analytical survey

Globalization has established new political and economical principles of social development. New information and communication technologies have changed the way we live, learn, work, and even think. The synergy of globalization and new technology has dramatic economic and social impacts. It has created new opportunities as well as new challenges and uncertainty. Lots of workers have become dislocated, and a significant number of young people are structurally unemployed or underemployed. As these changes have brought about considerable challenges to technical and vocational education and training (TVET), they have created new opportunities for change and innovation. In the past, the status and condition of vocational education were undervalued in relation to its potential contribution to a society. However, in the new environment where human capital has become the most critical element to achieve a competitive advantage, TVET can now realize its potential fully.

Information and communication technologies (ICTs) drive the new economy, human capital being its fuel. In fact, the ICT revolution makes knowledge a competitive resource and advantage. In this market era, economic prosperity depends on brains, rather than brawn, employment of knowledge workers and continuous learning create a value. The need of recurrent education and changeable labour market conditions call for flexible access to TVET. Continued education models meeting workers' lifelong learning needs have to be relevant and adjustable to provide just-in-time learning irrespective of



distance. ICTs can play a crucial role in removing a notion of distance from education and in developing a lifelong learning culture in TVET. In spite of these potentials little is known regarding the usage of ICTs in TVET within UNESCO Member States.

To progress in this area the UNESCO Institute for Information Technologies in Education (IITE) has launched a research and development project focused on the usage of ICTs in TVET. International expert meeting was held in April, 2002 at IITE. The materials of the meeting were published in the final report *Information and Communication Technologies in Technical and Vocational Education and Training*. Following the resolution of this meeting, Dr Chris Chinien (UNEVOC-Canada) was invited to conduct the analytical survey for IITE.

Two main objectives of the analytical survey are the following:

- to review and analyze the use of ICTs in TVET within UNESCO Member States;
- to familiarize the specialists from UNESCO Member States with ICT usage in TVET.

The analytical survey is addressed to the major stakeholders involved in TVET, i.e.:

- policy- and decision-makers;
- managers and administrators of education and training institutions;
- instructional designers and developers;
- programme planners;
- teachers, trainers, workplace educators, tutors, mentors and coaches;
- teacher educators and trainers of trainers;
- researchers;
- programme and product evaluators.

The survey is focused on the usage of ICTs in TVET, specifically, for administrative purposes, communication, teaching and learning, curriculum development, assessment, career education and guidance, labour market information, job placement, and systems control.

It provides a comprehensive review of advantages and disadvantages of various ICTs commonly used in teaching and learning. These include audiotapes, radio, videotapes, CD-ROM, Internet/web-based training, audio conferencing, audio graphics, interactive television, videoconferencing, and wireless technology.

The analysis concentrates on certain specialized applications of ICTs in TVET, namely, teaching attitudes and practical skills, learning at the workplace, studying at home, developing informal skills, and participating in virtual internships. The discussion extends to various ways of ICT usage to support the delivery of TVET programmes. The specific features examined include the use of ICTs for administrative purposes, programme design and development, learning assessment, control of technical systems, information search and retrieval, career education and guidance, placement of graduates and assistive technologies for people with disabilities.

Major issues related to the integration of ICTs in TVET such as digital and cognitive divides are discussed along with a proposed framework establishing the effectiveness of ICT-mediated learning. Three critical indicators of effectiveness are identified: achievement, attitude, and study time. A brief overview of research on the effectiveness of ICT-mediated learning is presented alongside with the discussion of its cost-effectiveness.

The ICT literacy for TVET teachers is analysed in the light of two critical elements: occupational ICT literacy and pedagogical ICT literacy. The essential ICT literacy skills for learners are examined. Finally, a framework for policy formulation and a working model to integrate ICT-mediated learning in TVET are given.

Regional surveys and experience of more than 20 UNESCO Member States are included to give a global perspective and practical examples of ICT penetration in TVET. The survey integrates 37 case studies to illustrate the most attractive and successful experience of ICT implementation in education. Valuable reference and illustrative material are in the form of a supplement.

TVET educators have always been the first to adopt innovations related to ICT tools, equipment, and system controls. The same is true regarding the use of ICTs as a support for the delivery of TVET programmes. The information is scarce on the extent to which ICT-mediated learning is being integrated in TVET, while there are pockets of exemplary TVET programmes that have successfully implemented ICT-mediated learning in different parts of the world. Australia, Canada and the United States appear to have reached the most advanced level of integration. There are many barriers hindering the integration of ICTs into teaching and learning in TVET. The most significant among them are infrastructure, available materials, job threat, appropriate methods, and credible programme content. Although there are some records of successful attempts to use ICTs for teaching of effective and practical skills, there is no firm evidence to support the claims. TVET teachers need to keep up-to-date in order to maintain their occupational literacy skills. Those involved in the integration of ICT-mediated learning need training in the pedagogical applications of ICTs for teaching and learning.

To foster practical usage of the survey results, IITE continues to develop a set of instruction support materials to be used at training seminars, in IITE international projects and regular training programmes.

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