

Announcement

News on ICT in Education

Highlight

ICT can transform education!

The 13th UNESCO-APEID International Conference, in conjunction with the World Bank-KERIS High Level Seminar on ICT in Education, emphasizes the powerful role ICT can play in changing the way we teach and learn. The conference, which will be held 15-17 November 2009, in Hangzhou, the People's Republic of China, will provide a forum to explore, identify and synergize innovative approaches for harnessing the potential of ICT to increase the reach and quality of education.

News & Events

The Director-General opens the UNESCO Future Forum on Knowledge Acquisition and Sharing

The Director-General of UNESCO, Mr Koïchiro Matsuura, underlined that the dramatic advances in information and communication technologies (ICTs) over the last twenty years have provided the ideal conditions for widening and globalizing public access to and the sharing of knowledge.

UN announces launch of world's first tuition-free, online university

A leading arm of the United Nations working to spread the benefits of information technology announced last week the launch of the first ever tuition-free online university.

Seminar on ICT Measurement and Indicators concluded in New Delhi

The seminar, organized by the Indian Department of Information Technology (DIT), in collaboration with the International Telecommunication Union (ITU), focused on issues relating to measurement of ICT access, infrastructure and usage, as well as on the impact of ICT on society in general, and on business, individuals, governance and education in particular.

UNESCO to help community media with mobile content production

In January 2009, UNESCO launched a project aimed at empowering community media for mobile broadcasts of local content and news in order to better reach populations.

Malaysia: ICT education for a "creative society"

Malaysia's Higher Education Ministry is studying how to develop a creative and innovative Malaysian society through human capital development.

Programmes & Projects

ICT Professional Development of Teachers in Thailand: The Lead-Teacher Model

In recent years, the Institute for the Promotion of Teaching Science and Technology (IPST), an autonomous body within the Ministry of Education of Thailand, has developed a Teacher Professional Development (TPD) programme in support of educational reform.

Resources

Online portal for the exchange of information on technical and vocational

education and training

UNESCO-UNEVOC announced the launch of TVETipedia, an internet portal where users can exchange information and share knowledge on TVET issues; showcase good practice examples and lessons learned; and collaborate on TVET projects.

Free and open source software: applications for education, culture and access to information

This publication (in the Russian language), produced by UNESCO's Office in Almaty, provides teachers and employees of museums and libraries with practical recommendations on the use of free and open source software (FOSS) in order to improve the potential of their institutions.

Gender and ICT

This e-Primer looks at ICT for development through a gender lens. It provides a gender perspective to issues of ICT policies; access and control; education, training and skill development; and content development and introduces a framework to integrate gender in ICT for development and to empower women.

A study of the effective use of social software by further and higher education in the UK to support student learning and engagement

The primary function of the study was to collect information about the way social software was actually being used in the sector and to record the experiences of the staff (mainly educators) and students to find out what benefits had been found, what, if any, problems and issues had been encountered (and how these had been resolved).

How science works: Bringing the world of science into the classroom through innovative student-centred multimedia approaches

This paper outlines the base-line research and underpinning evaluation which led to the development of a multimedia package of curriculum and continuing professional development (CPD) material developed to support the teaching and learning of "How Science Works", an approach which aims to bring to life the excitement of scientific discovery and exploration.

MathWorld - an online mathematics reference work

MathWorld is an extensive mathematical resource, provided as a free service to the world's mathematics and internet communities as part of a commitment to education and educational outreach by Wolfram Research.

Highlight

13th UNESCO-APEID International Conference World Bank-KERIS High Level Seminar on ICT in Education

ICT Transforming Education

15-17 November 2009
Hangzhou, People's Republic of China

ICT can transform education!

The 13th UNESCO-APEID International Conference, in conjunction with the World

Bank-KERIS High Level Seminar on ICT in Education, emphasizes the powerful role ICT can play in changing the way we teach and learn. This Conference will provide a forum to explore, identify and synergize innovative approaches for harnessing the potential of ICT to increase the reach and quality of education.

The organizers – the Asia-Pacific Programme of Educational Innovation for Development (APEID) of UNESCO in Bangkok, the National Commission of the People’s Republic of China for UNESCO, the World Bank and the Korea Education and Research Information Service (KERIS) – invite papers on the following topics:

- Developing ICT in Education Policies and National Master Plans
- Promoting Effective Management and Applications of ICT in Schools
- Improving Quality and Efficiency of Higher Education through ICT
- Enhancing Innovations in Open and Distance Learning
- Preparing the Next Generation of Teachers
- Using ICT to Promote Literacy and Life-long Learning
- Monitoring and Measuring Impact of ICT in Education

Submit English abstracts, no longer than 200 words, on forms available from the Conference website at:
<http://www.unescobkk.org/education/apeid/conference/china> by 1 August 2009.

The Opening Ceremony will be held at the Zhejiang People’s Grand Conference Hall in Hangzhou. All other sessions will take place at the Zhejiang International Hotel.

Conference Fees

| | |
|----------------------------|----------------|
| International participants | USD\$ 350 |
| Early bird | USD\$ 250 |
| Group registration | USD\$ 250 each |

** Payment for early bird must reach the Conference Secretariat by 31 August 2009*

*** For five or more individuals from the same organization/institution*

Send bank draft payable to “UNESCO”

UNESCO-APEID International Conference Secretariat,
UNESCO Bangkok,,
920 Sukhumvit Road,
Bangkok 10110, Thailand.

Important Dates

| | |
|-------------------------------------|----------------|
| Submission of abstracts | 1 August 2009 |
| Payment for early bird registration | 31 August 2009 |

For more information and to register for the conference, access:
<http://www.unescobkk.org/education/apeid/conference/china>.

“Tell me and I’ll forget; show me and I may remember; involve me and I’ll understand.”

Chinese Proverb

Further information:

- [13th UNESCO-APEID International Conference on Education and World Bank-KERIS High Level Seminar on ICT in Education](#)

Related links:

- [ICT in Education - UNESCO Bangkok](#)

Previous issues of the e-newsletter:

- [UNESCO "ICT in Education" Announcement e-newsletter](#)

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News & Events

The Director-General opens the UNESCO Future Forum on Knowledge Acquisition and Sharing

On 11 May 2009, the Director-General of UNESCO, Mr Koïchiro Matsuura, opened the UNESCO Future Forum entitled: “The Future of Knowledge Acquisition and Sharing”. This was the second Future Forum in a series pertaining to foresight issues launched by the Director-General in March 2009, when a group of eminent experts discussed the impact of the global financial and economic crisis on multilateralism and UNESCO.

“We have gathered today to consider the future prospects for knowledge acquisition and sharing”, said the Director-General. He recalled his address at the March Forum, in which he had argued that the current crisis required UNESCO to intensify its efforts to promote the ‘free exchange of ideas and knowledge’, noting the relevance of information and knowledge as being crucial in tackling the challenges and crises that societies face.

Mr Matsuura underlined that the dramatic advances in information and

communication technologies (ICTs) over the last twenty years have provided the ideal conditions for widening and globalizing public access to and the sharing of knowledge. “Never before in human history has so much information been so readily available to so many. In an increasingly connected global community, the ability to access information and transform it into meaningful and useful knowledge is a key driver of sustainable social and economic development,” he said.

“Yet, knowledge acquisition and sharing is still far from equitable”, said the Director-General. “Huge numbers of people, particularly in developing countries but also marginalized groups elsewhere, are denied the opportunities to acquire, use and share knowledge in this way. Narrowing the digital divide is essential. But that is not all. We also need to narrow the knowledge divide which cumulates rifts in knowledge creation, preservation, acquisition and sharing”.

The Director-General underscored that UNESCO was founded on a presumption of the importance of accelerating knowledge acquisition and that it has always sought to promote a vision of how knowledge societies could be built. He went on to highlight some examples of contributions towards that reflection made by UNESCO, such as the findings of the International Commission on Education for the Twenty-first Century; the concept of knowledge societies – based on the principles of quality education for all, universal access to information and knowledge, respect for cultural and linguistic diversity, and freedom of expression that UNESCO promoted in the framework of the World Summit on the Information Society (WSIS); and the related UNESCO World Report “Towards Knowledge Societies (2005). “UNESCO initiatives such as the Community Media Centres or the World Digital Library Project seek to translate the vision of knowledge societies into concrete action”, he added.

“In their search for viable responses to the global crises that are currently destabilizing societies around the world, government leaders have recognized that investments in the social sector are critical to laying the foundation for recovery, sustainable development, economic growth and prosperity. Investment in the large and complex knowledge domains will be of particular relevance”, emphasized the Director-General.

In conclusion, Mr Matsuura stated that “UNESCO wants to work with all stakeholders to identify the challenges arising from these developments and to determine areas in which international policy planning and governance might be necessary to address them”.

Further information:

- [*UNESCO Future Forum: Knowledge Acquisition and Sharing*](#) – more information including presentations and webcasts
- [*Address by the Director-General*](#) on the occasion of the Opening ceremony of the UNESCO Future Forum: *The Future of Knowledge Acquisition and Sharing*

Related links:

- [International conference on knowledge networking concluded in India](#)
- [UNESCO, U.S. Library of Congress and partners launch World Digital Library](#)
- [New UNESCO-supported publication maps media education policies](#)
- [Education for a digital world](#)

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- [UNESCO "ICT in Education" Announcement e-newsletter](#)

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UN announces launch of world's first tuition-free, online university

A leading arm of the United Nations working to spread the benefits of information technology announced last week the launch of the first ever tuition-free online university. As part of this year's focus on education, the UN Global Alliance for Information and Communication Technology and Development (GAID) presented the newly formed University of the People, a non-profit institution offering higher education to the masses.

"This year the Global Alliance has focused its attention on education [and] on how ICT can advance education goals around the world," Serge Kapto from GAID told a press conference at UN Headquarters in New York.

For hundreds of millions of people around the world higher education is no more than a dream, Shai Reshef, the founder of the University of the People, told reporters. They are constrained by finances, the lack of institutions in their region, or they are not able to leave home to study at a university for personal reasons.

Mr Reshef said that this university opened the gate to these people to continue their studies from home and at minimal cost by using open-source technology, open course materials, e-learning methods and peer-to-peer teaching.

Admission opened just over two weeks ago; and without any promotion some 200 students from 52 countries have already registered, with a high school diploma and a sufficient level of English as entry requirements.

Students will be placed in classes of 20, after which they can log on to a weekly lecture, discuss its themes with their peers and take a test - all online. There are voluntary professors, post-graduate students and students in other classes who can also offer advice and consultation.

The only charge to students is a US\$D15 to US\$D50 admission fee, depending on their country of origin, and a processing fee for every test ranging from US\$D10 to US\$D100. For the University to sustain its operation, it needs 15,000 students and US\$D6 million, of which Mr Reshef has donated USD1 million of his own money.

Further information:

- [University of the People](#)

Related links:

- [UN announces launch of world's first tuition-free, online university](#)
- [Global Alliance for Information and Communication Technology and Development \(GAID\)](#)
- [ICT for Higher Education](#)
- [UNESCO Open Training Platform](#)
- [UN News Centre](#)

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- [UNESCO "ICT in Education" Announcement e-newsletter](#)

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Seminar on ICT Measurement and Indicators concluded in New Delhi

The Indian Department of Information Technology (DIT), in collaboration with the International Telecommunication Union (ITU), organized a Seminar on ICT Measurement and Indicators in New Delhi (India) from 12 to 14 May 2009.

The seminar focused on issues related to measurement of ICT access, infrastructure and usage, as well as on the impact of ICT on the society in general, and on business, individuals, governance and education in particular.

To take advantage of the rapidly changing information society, governments need to monitor and benchmark progress in order to design and review national policies and strategies. In order to do so, reliable data and indicators on the access and use of ICT, and their impact on development have to be defined and collected. Such data and indicators help governments design and evaluate ICT policies and strategies, compare their ICT developments with those in other countries, and adopt solutions to reduce the digital divide. Different agencies need to work together to identify priority areas, to examine ways of coordinating activities, to maximize available resources and to achieve optimum results.

The seminar was addressed to national ICT policymakers, regulatory agencies, national statistical offices, industry associations and academia. It covered issues related to: indicators for infrastructure and access, households, business, education and e-government; benchmarking the information society; measuring impact; measuring ICT and gender; security and trust in the online environment; statistics on ICT-enabled services; and capacity building for ICT measurement.

During the session: “Indicators on ICT in Education” Mr S. Venkataraman, of the UNESCO Institute for Statistics (UIS), briefly introduced concepts of information literacy indicators, media development indicators and literacy assessment, as well as the Monitoring Programme (LAMP) of UIS, which are very useful for measuring the information society.

The participants of the seminar extensively consulted the following documents and publications in order to better understand concepts and methodologies:

- [Revisions and Additions to the Core List of ICT Indicators](#). Partnership on Measuring ICT for Development, 2009;
- [Manual for Measuring ICT Access and Use by Households and Individuals](#), International Telecommunication Union, 2009;
- [Manual for the Production of Statistics on the Information Economy](#), revised edition, UNCTAD, 2009;
- [Measuring ICT: the Global Status of ICT Indicators](#), Partnership on Measuring ICT for Development, 2005;
- [Measuring the Information Society: The ICT Development Index](#), International Telecommunication Union, 2009;
- [Report of the Partnership on Measuring Information and Communication Technologies for Development: Information and Communications Technology Statistics](#), Economic and Social Council, 2009.

The seminar provided a platform for national experts, policymakers, practitioners and stakeholders to discuss ICT indicators and topics that are important to national policymaking. The following suggestions were made to improve the availability of ICT statistics in India:

- harmonising and scaling up statistics available at ministries, national statistical offices and other agencies;
- bridging the data gap between available statistics and those required by the [Revised Core List of ICT Indicators](#);
- adapting international statistical tools and guidelines related to gathering, analysing and presenting statistical data; and
- building the capacities at the national level in order to maintain the quality and the reliability of data.

Further information:

- [Seminar announcement on ITU website](#)

Related links:

- [Towards information literacy indicators \(UNESCO publication\)](#)
- [Media development indicators: a framework for assessing media development \(UNESCO publication\)](#)
- [Seminar on ICT Measurement and Indicators concluded in New Delhi](#)
- [New ICT development index compares 154 countries](#)
- [ITU Asia-Pacific Telecommunication / ICT Indicators Report to be released at ITU Telecom Asia 2008](#)
- [infoDev releases report on state of ICT use in education in African countries](#)
- [Indicators for policy makers](#)
- [Handbook on Monitoring and Evaluation of ICT in Education Projects](#)

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UNESCO to help community media with mobile content production

UNESCO is analysing the potential for mobile-friendly content to be generated by community media in the context of developing countries. As the use of mobile media steadily grows, the organization is conducting a study on the possibility to shape alternative audio and video productions by community media into mobile content. In January 2009 UNESCO launched a project aiming at empowering community media for mobile broadcasts of local content and news in order to better reach populations.

The first phase of the project consists in collecting lessons learned from existing successful and unsuccessful experiences in the production of mobile audiovisual

content by community media. A pilot initiative based on UNESCO's own experience in community media, including Community Multimedia Centres (CMC), will be designed to identify sites and to prepare the basis for the use of mobile technologies by community media groups.

The pilot initiative will also assess the current skills of community media and CMC staff for mobile content production and diffusion, and identify the training needs. It will then prepare draft model curricula for a training programme that will include a gender equality strategy, workshop outlines, learning objectives, case studies, exercises, etc. These materials will be shared as open educational resources.

The second phase of the project is expected to start in 2010 and will build the capacities of community media and CMC to:

- best exploit the opportunities offered by mobile radio and TV as demonstrated in good practices from other initiatives;
- produce mobile-adapted content, e.g. educational games, breaking news and development videos;
- produce voice-based wikis or repositories for the use of spoken content on mobiles (instead of video- or text-based content);
- develop systems to diffuse content on mobile devices, for example by means of: direct downloads, streaming, RSS, video-on-demand, and live radio and video mobile broadcast.

UNESCO also intends to help community media to partner with telecommunication operators, telephone manufacturers and major broadcasters to diffuse the mobile content from developing countries.

The project is being carried out in cooperation with the Commonwealth of Learning (COL), in the framework of UNESCO's action on "Promoting the development of free, independent and pluralistic media and community participation in sustainable development through community media." It will end next year with recommendations to make UNESCO Member States and COL aware of the importance of mobile media.

Further information:

- [UNESCO to help community media with mobile content production](#)

Related links:

- [Commonwealth of Learning \(COL\)](#)
- [COL's "Media for Learning" programme](#)
- [UNESCO develops community multimedia centre for education in Indonesia](#)
- [Enhancing community multimedia centres in India](#)
- [The benefits of open source software for learning centres](#)

- [Uses of radio and TV in education](#)
- [Tonga harnesses ICT for community education and poverty alleviation](#)

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- [UNESCO "ICT in Education" Announcement e-newsletter](#)

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Malaysia: ICT education for a “creative society”

Malaysia Higher Education Ministry is studying how to develop a creative and innovative Malaysian society through human capital development.

The ministry is planning to work with Microsoft in unearthing creative and innovative students of tertiary institutions in the area of ICT and with Shell Malaysia in energy saving.

Its minister Datuk Seri Mohamed Khaled Nordin said the study to produce creative, innovative human capital was started last year by the Malaysian Invention and Design Society (MINDS), Universiti Teknologi Mara and the Malaysian Design Council. The study will be looking at programmes by government agencies that could contribute to the creation of “innovative human capital”.

“We hope when the study is completed, expected this year, we will be able to draw up a national blueprint in this context,” he said. “Malaysia wants to move away from a resource-based economy to one generated by innovations with the existence of an innovative society, which will indicate that the country has reached developed-nation status,” he said.

Mr Nordin said creativity and innovations were vital for a country and studies had shown that technological innovations contributed to higher productivity, Gross Domestic Product, economic growth and improved standards of living.

Author: Alice Kok, FutureGov

Further information:

- [Malaysia: ICT education for a “creative society”](#)

Related links:

- [FutureGov](#)
- [Malaysian teens reveal their lives and concerns through one-minute videos](#)
- [A journey of hope ... A new way of learning through ICT in Education](#)
- [Student Peer Teaching Strategy: Hands on, heads on and hearts on learning](#)
- [Malaysian Smart schools shaping up well](#)

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Programmes & Projects

ICT Professional Development of Teachers in Thailand: The Lead-Teacher Model

Introduction

In recent years, the Institute for the Promotion of Teaching Science and Technology (IPST), an autonomous body within the Ministry of Education of Thailand, has developed a Teacher Professional Development (TPD) programme in support of educational reform.

The TPD contains a component that aims to improve the skills of teachers in the use of information and communication technologies (ICT) and enable teachers to utilize ICT effectively as tools for teaching. The ultimate goal of IPST in terms of in-service teacher training is to improve students' learning outcomes, particularly in science and mathematics, to reach international standards.

The IPST has adopted the Lead-Teacher Model as a vehicle for developing professional development through partnership and collaboration between schools and organizations, such as universities.

ICT Education in Schools in Thailand

Since the enactment of the National Education Act in 1999, the education system in Thailand has undergone reforms and has been decentralized so that it now

operates on the basis of Education Service Areas (ESA). School education is mainly under the control of the Office of the Basic Education Commission (OBEC). During the transition period the OBEC still has direct influence on an ESA's schools in terms of funding and authorities.

IPST has been committed to the development of school science, mathematics, and technology education in Thailand since the 1970's. IPST's major responsibilities involve curriculum development, teacher training, and science talent promotion and development.

The information and communication (ICT) policies and practices for basic education follow the National IT 2000/2010 Strategic Plan which aims to promote innovation, build human capacity, and strengthen the information infrastructure and industries to transform Thai society into a knowledge-based society. The MOE regards the use of ICT as an important tool for driving educational reform and sets the policies and standards for ICT in Education to maximize the uses of ICT in educational management and administration, and teaching and learning across subjects. The policies focus on ICT accessibility and preventive action on Internet safety, digital resources development, ICT professional development, and community involvement. (Thai Ministry of Education, 2007)

The first phase of ICT use in education in Thai schools began in 1984, when computer courses were first delivered to school students, in order to provide students with the basic skills in operating and applying ICT. The courses were compulsory within the mathematics subject cluster. Revisions were made in 1990 and 1997 to cope with rapid technological advancements. Lower secondary courses included: Introduction to Computers and Information Technology; Introduction to Computer Applications; Introduction to Database Management; Introduction to Programming Concepts; Graphics and Computer Presentation; and Computer Creativity. Upper secondary courses included: Computer and Information Technology; Electronic Spreadsheet; Database Management; Computer Applications and Word Processing; Advanced Computer Technology; Multimedia Presentation; Programming I; Programming II; Introduction to Computer Architecture; Data Communications and Computer Network; and Computer Projects. These courses were offered to students according to their preferences and each course earned students two units (comprising four periods of instruction per week per semester).

In response to the enactment of the Education Act 1999, in 2001 the Ministry of Education (MoE) established the National Curriculum Standards for all key learning areas in order to drive reform of school education. Standards for core subjects, including ICT curriculum standards, were developed for students at all 12 grade levels. Technology education included not only ICT but also Design and Technology (D&T) courses. Both D&T and ICT courses have been offered to students within the cluster of Technology and Career subjects.

Various initiatives were undertaken to facilitate the development of ICT skills in all students, including the training of teachers and provision of hardware and software. In many cases, however, efforts were stymied by the lack of resources, computer personnel, equipment, and funding. (Pelgrum & Anderson, 1999).

The second phase of ICT use in education in Thai schools was influenced by the findings by studies that the students' achievements in the core subjects at primary

and secondary grade levels in recent years were below the international average. (OBEC, 2007; Klainin & Soydhurum, 2004; Klainin & et al, 2007)

These results led to the development of a sense of urgency regarding the need for education reform. In response, the National ICT for Education Master Plan 2001-2005 and the MOE Education Reform Roadmap (2005-2008) mandated the use of learning technologies to improve the quality of education and training in Thailand. (OEC, 2006)

The Lead-Teacher Model

The IPST Teacher Professional Development Programme was established in 1995 with the goal of building the capacity of ICT teachers nationwide. This programme was funded by the government and by other donors.

The primary objectives of the programme were to:

- Develop, support and empower lead trainers for in-service teacher training in the uses of ICT tools, particularly in mathematics and science subjects.;
- Design and disseminate ICT-relevant training materials for in-service teachers;
- Utilize distance learning technologies to provide services to both trainers and teachers;
- Develop networks with local authorities and organizations to facilitate the work of teacher trainers across schools in remote areas;

In the early years of integrating ICT into education in schools, most of the training programmes were designed to build the capacity of teachers who were assigned to teach computer courses. These teachers had different subject backgrounds and demanded intensive training to be able to teach the courses.

IPST, in collaboration with university partners, began a series of train-the-trainer workshops. Well-skilled ICT teachers from schools all over the country were recruited to be IPST lead trainers. These teacher trainers provided training to other teachers both in their own and other schools in their area. By 1995, there was a lead teacher trainer in each province (76).

In 1999, IPST requested the Provincial Education Authorities to recommend potential ICT teachers from secondary schools in their areas to be lead teachers. The total number of ICT teacher trainers rose to 325. In 2005, 230 additional ICT teachers from 168 schools joined the programme. Currently, there are 555 lead trainers who provide training services to other teachers, both ICT and non-ICT, all over the country. These trainers provide training for in-service teachers at 20 training centres in the Education Service Areas, training approximately 1,000 teachers each year.

The ICT training courses were frequently revised and updated with respect to content, pedagogical practices and assessment, in accordance with the ICT curriculum standards implementation guide. (IPST, 2002)

The courses include the following components:

- Fundamental Concepts of Information Technology: Basic knowledge and understanding of data, data processing, basic applications of computers and operating systems;
- Computer Assisted Task Creation: Application of word processing, graphical and presentation software to real life tasks;
- Assessment Tools: Knowledge and understanding of spreadsheet software and its applications for assessing student's learning. Managing and practicing learning activities using spreadsheet software;
- Internet and Web Creation: Basic knowledge and skills development for communicating via the Internet. Basic webpage creation using HTML;
- Hardware, Software, and Computer Network: Windows Operating System and installation. Office software installation and removal. Assembling microcomputer parts. Basic problem solving. Fundamental concepts of computer network. Intranet and data management in web servers;
- Algorithm and Problem Solving Tools: Identifying problems and problem-solving Implementing problem solving plans, testing, verification and improvement.

Additional courses requested by the trainers included “how to” courses such as ICT School Curriculum Development, Web Resources Construction, Test Item Construction, and Assessment Strategies. These courses were designed for both ICT and non-ICT teachers.

In the 10 years since the implementation of the ICT TPD programme, these ICT lead trainers become valuable resource persons for IPST, the MoE, and other ICT in Education projects. They are charged with reviewing digital materials, and with creating resources and training course materials. The trainers have played a major roles in building the capacity of both ICT and non-ICT teachers and have created a technology-friendly culture in their schools. In addition to providing training to teachers in their own school and neighbouring schools, the lead teachers have been involved in various activities, including:

- Providing distance training (12,207 teachers from 1,514 schools were registered for six training courses);
- Providing training for ICT teachers of the IPST Special Project, the “Development of High Calibre Science and Mathematics Teachers”.
- Providing training customized for teachers in schools located in remote areas.
- Organizing outreach programmes for youth, to develop their ICT skills. For example: Computer Youth Camp and Robot Control Programming.
- Developing teaching packages for ICT-integrated project-based learning.
- Developing websites to provide on-line digital resources for teachers (www.krumontri.com) and
- students (www.thaigoodview.com).

Factors influencing the effectiveness of the TPD

Over the course of implementing the TPD programme, a number of factors were identified as being important for its success. Several of these factors are described below.

Continual development of lead trainers

In addition to regular training workshops based on new practices, these trainers

are encouraged to participate in conferences and to attend special training courses and seminars which enabled them to keep up-to-date with changes in technologies. Developing these lead trainers' skills and knowledge not only benefited the teachers but also the learners in the areas within which they work.

Sharing knowledge and skills

There are 20 school clusters in Thailand. Within each cluster, trainers provide teacher training with regard to their expertise and teachers' needs. ICT teachers pass on what they have learned to other teachers in their schools and coach them to utilize ICT in other subjects. In this way, non-ICT teachers gain confidence in using ICT tools in their classrooms. For example, mathematics and science teachers learn to use tools such as the Internet for classroom activities.

Collaboration and partnerships

The TPD programme led to the formation of partnerships among teachers, trainers, university instructors, education supervisors, and personnel from the private sector. These collaborative networks facilitated interaction and sharing of experiences and common interests, leading to further improvement in the use of ICT in classrooms,

Support from school principals and administrators

Formal and informal support from school principals is vital for the integration of technology into classroom teaching. For example, it is important for principals to understand that computer laboratories can be used for teaching other subjects as well as ICT and to support such use. Likewise, it is important for principals and administrators to provide a supportive environment for teachers; one that enables them to apply and integrate technology into the curriculum and engage students in various ICT-enhanced learning projects. Similarly, it is necessary for principals and administrators to recognize that professional development of teachers requires time, and teachers must be encouraged to invest time in improving their skills in using ICT in education. Principals and administrators should also be flexible in terms of allowing teachers to adjust the school time-table, where necessary, to allow them to make better use of ICT tools.

Conclusion

Building the capacity of teachers in the uses of ICT for education requires long-term continuous development of the lead trainers, sharing of knowledge among teachers, partnerships and collaboration among educators and organizations, and support from principals and administrators. These factors must be in place in order for ICT use to bring about change in the classroom.

To be able to lead, both teachers and trainers require ongoing support and opportunities to experiment with new skills and strategies over time. A professional development programme should also include provision of leadership skills, such as decision making, team building, communicating, and problem solving.

Although the TPD programme has been a success, there remain a number of challenges. A key challenge is the need to scale-up the TPD programme to provide training opportunities for a larger number of teachers. Another challenge is to coordinate various components of the system to provide sufficient support to teachers to assist them to change their practices. A further challenge is quality control. It is necessary to monitor and evaluate the work of trainers and monitoring and evaluation mechanisms should be integrated into the TPD programme. An

additional challenging area is in determining the extent to which the teacher training programme has had an impact on the students' learning outcomes. These challenges are areas which the IPST will focus on in the future.

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Author: Pornpun Waitayangkoo

Further information:

- [ICT in Teacher Education: Case Studies from the Asia-Pacific Region](#)

Related links:

- [IPST](#)
- [NECTEC](#)
- [Satellite education – Providing quality education under extreme conditions](#)
- [ICT integration in pre-service teacher training through action research, e-learning and electronic portfolio](#)
- [Paying attention to attention](#)

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Resources

Online portal for the exchange of information on technical and vocational education and training

UNESCO-UNEVOC announced the launch of TVETipedia, an internet portal where users can exchange information and share knowledge on TVET issues; showcase good practice examples and lessons learned; and collaborate on TVET projects.

TVETipedia aims to

- become an important source of information about TVET worldwide;
- engage TVET stakeholders; and
- increase awareness of the importance of TVET.

It was initially developed in 2007 by UNESCO's International Centre for Technical and Vocational Training ([UNESCO-UNEVOC](http://www.unevoc.unesco.org) (<http://www.unevoc.unesco.org>)) and launched on 19 March 2009.

The anticipated community of authors consists of UNEVOC's more than 1,000 [e-Forum](http://www.unevoc.unesco.org/forum) (<http://www.unevoc.unesco.org/forum>) members, staff members of [UNEVOC Network](http://www.unevoc.unesco.org/network) (<http://www.unevoc.unesco.org/network>) institutions, and all others who are interested in TVET and education for the world of work be it as practitioners, researchers, or policy-makers.

TVETipedia is not meant to be a competitor for other seemingly similar undertakings, but rather a complementary, more specialised collaboration portal. We do hope that the TVETipedia community will also contribute to other [Wiki](http://en.wikipedia.org/wiki/Wiki) (<http://en.wikipedia.org/wiki/Wiki>)s where feasible, especially in the field of education. Such wikis and portals are listed on one of TVETipedia's wiki pages: Education wikis and portals with TVET content.

Further information:

- [TVETipedia](#)

Related links:

- [UNESCO-UNEVOC](#)
- [TVET - UNESCO Bangkok](#)
- [Technology-based vocational skills training for marginalized girls and young women](#)
- [From veil to camera: Empowering women through skills training](#)
- [Vocational School Aims to Bridge the Digital Divide](#)

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Free and open source software: applications for education, culture and access to information

The guide *Свободное программное обеспечение. Приложения для образования, культуры и доступа к информации* has been produced by UNESCO's Office in Almaty in the framework of its project: "FOSS for Education, Culture and Access to Information".

This publication, currently available only in Russian, provides teachers and employees of museums and libraries with practical recommendations on the use of free and open source software (FOSS) in order to improve the potential of their institutions.

Three FOSS products have been successfully used by cultural and educational institutions in Central Asia, under UNESCO projects, since the last ten years: Moodle, Museolog Museum's Digital Catalogue and Greenstone Digital Library Software.

The present guide contains the detailed descriptions of these three products and instructions on their use. Readers will also find the translation into Russian of the CD-ROM produced by UNESCO's Office in Bangkok, *Web Tools for Educators*, and a thesaurus of terms related to ICT and culture.

Further information:

- [Free and open source software: applications for education, culture and access to information](#)

Related links:

- [Web-tools for Education](#)
- [Free Software for Computers CD-ROM](#)
- [Multimedia Resources CD-ROM](#)
- [ICT Resources for Teaching and Learning CD-ROM](#)
- [UNESCO Almaty](#)

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Gender and ICT

The status of women's access to participation in the Information Society is a microcosm of the larger society that we live in. It is a startling testament of the sheer mountain of the task that is before us and also how optimism at the highest levels of national policy makers has to be tempered with the harsh realities of the socio-economic and political landscape that is evident in the developing world. It is within this crippling environment that the role of ICTs and their potential for the empowerment of women should be examined to be able to provide concrete and tangible results for the participation of women from all levels of society into the Information Society.

There are notable examples of successes within the region in attempting to push this agenda forward, but it should also be cautioned that we need to place these pilot projects and ad hoc policies in the appropriate context. We need to ensure these successes do not detract attention from the actual status of participation of women in the Information Society. In the final analysis, equal participation of women in the Information Society involves attention on issues such as the ability to access, process, create and manage information.

UNDP has always advocated that ICTs have enormous potential, especially in the field of education, health and commerce. Even more so, it has a critical role in

providing an opportunity to democratize decision-making and enhance the governance processes of women's rights. However, to ensure we are able to reap the full potential of the opportunities within this new Information Age, the global community and national policy makers have no other choice but to be proactive about ensuring that the benefits of ICT are equally available to and shaped by women and men.

It is within this vein, that UNDP-APDIP and APC WNSP collaborated on this publication to examine and discuss the context of ICTs and gender by placing it within the Gender Equality Framework.

We hope this publication will move the dialogue forward to address the questions of implications of integrating a gender perspective by realistically examining the state of play across the region.

Read the publication:

- [Gender and ICT](#)

Related links:

- [Gender in Education - UNESCO Bangkok](#)
- [Gender and ICTs for Development: A Global Source Book](#)
- [Appropriate and accessible ICT tools for women's education and empowerment](#)
- [Gender Evaluation Methodology for ICT-related Projects](#)

Previous issues of the e-newsletter:

- [UNESCO "ICT in Education" Announcement e-newsletter](#)

What do you think about this topic?

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A study of the effective use of social software by further and higher education in the UK to support student learning and engagement

This is the final report for a JISC-funded study into the appropriate and effective use of social software in further and higher education. The study was carried out in a six-month period from August 2008 to January 2009. The report is intended to be read by both policy makers and teaching staff in further and higher education who are considering the use of social software as an aid to teaching or as a means of encouraging, motivating or helping to retain students.

The primary function of the study was to collect information about the way social software was actually being used in the sector and to record the experiences of the staff (mainly educators) and students to find out what benefits had been found, what, if any, problems and issues had been encountered (and how these had been resolved).

Read the report:

- [A Study of the Effective Use of Social Software by Further and Higher Education in the UK to Support Student Learning and Engagement](#)

Related links:

- [Digital Research Tools Wiki](#)
- [Personalised learning puts students in a class of their own](#)
- [How useful is online social networking in Education?](#)
- [Twitter - A Teaching and Learning Tool](#)
- [How do I use social bookmarking in education?](#)

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How science works: Bringing the world of science into the classroom through innovative student-centred multimedia approaches

Both the scientific and educational communities in the UK are now in agreement that simply exposing a greater number of young people to more scientific knowledge is not a sound mechanism for achieving further interest in the subject.

In order to address this issue, the new curriculum specifications for Science in the UK (Qualifications and Curriculum Authority 2006) partly comprise an approach described as “How Science Works”, which aims to bring to life the excitement of scientific discovery and exploration, focusing on science as a living, breathing endeavour, carried out by people who are both ordinary and extraordinary, working as teams, and in which its applications raise ethical, legal, social and other

questions.

This paper prepared by Mark Windale of the Centre for Science Education, Sheffield Hallam University (UK), will outline the base-line research and underpinning evaluation which led to the development of a multimedia package of curriculum and continuing professional development (CPD) material developed to support the teaching and learning of How Science Works. It will introduce the television programmes developed to help students explore the work of cutting edge scientists, and the innovative student-centred classroom activities designed to support the programmes and engage the students in the scientific endeavour of the scientists. It will also introduce the online CPD programmes and materials developed for science teachers.

Further information:

- Download the [paper](#) (pdf, 80kb) and [presentation](#) (pdf, 210kb)

Related links:

- [Papers and Presentations - 12th UNESCO-APEID International Conference](#)
- [13th UNESCO-APEID International Conference on Education and World Bank-KERIS High Level Seminar on ICT in Education](#)
- [UNESCO Bangkok releases new CD-ROM on ICT Resources for the Teaching and Learning of Science, Mathematics and Languages](#)
- [Teaching multimedia in the offline world](#)

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- [UNESCO "ICT in Education" Announcement e-newsletter](#)

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MathWorld - an online mathematics reference work

MathWorld™ is an extensive mathematical resource, provided as a free service to the world's mathematics and Internet communities as part of a commitment to education and educational outreach by Wolfram Research.

MathWorld has been assembled over more than a decade by Eric W. Weisstein with assistance from thousands of contributors. Since its contents first appeared online in 1995, MathWorld has emerged as a nexus of mathematical information in both the mathematics and educational communities. It not only reaches millions of readers from all continents of the globe, but also serves as a clearinghouse for new mathematical discoveries that are routinely contributed by researchers. Its entries are extensively referenced in journals and books spanning all educational levels, including those read by researchers, elementary school students and teachers, engineers, and hobbyists.

MathWorld continues to grow and evolve with the assistance of thousands of contributors. Careful oversight of all aspects of its content and interface by creator Eric Weisstein, and more recently with able assistance from MathWorld associate Ed Pegg, Jr., provides an exacting level of quality, accuracy, and consistency. As a result, MathWorld is considered not only the clearest and most readable online resource for mathematics, but also one of the most reliable.

MathWorld is actively developed and maintained. The site is updated daily, thus achieving extremely rapid communication of new and extended results--many of which are provided by outside contributors--while at the same time maintaining a degree of editorial oversight and consistency across (and among) the site's nearly 13,000 entries that is simply not possible for other sites.

MathWorld currently features a number of innovative interactive elements that enhance its usability for a variety of different readers. These features include:

- The MathWorld Classroom, which provides a set of pop-up “capsule summaries” for more than 300 mathematical terms.
- Extensive citations to books and journal articles, many of which are active hyperlinks.
- Several types of interactive entries, including LiveGraphics3D applets for interactive three-dimensional geometry.
- A powerful full-text search engine with both basic and advanced searching capabilities.

The technology behind MathWorld is heavily based on the software Mathematica. In addition to being indispensable in the derivation, validation, and visualization of MathWorld's content, Mathematica is used to build the website itself, taking advantage of its advanced mathematical typesetting and data-processing capabilities.

Further information:

- [MathWorld](#)

Related links:

- [A Study on the use of ICT in mathematics teaching](#)
- [Online mathematics and science learning resources](#)

- [How science works: Bringing the world of science into the classroom through innovative student-centred multimedia approaches](#)
- [Phun: a simulated physics playground](#)
- [UNESCO Bangkok releases new CD-ROM on ICT Resources for the Teaching and Learning of Science, Mathematics and Languages](#)

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