Announcement
News on ICT in Education

News & Events
Project-based learning and tele-collaboration launched in Thai schools
UNESCO Bangkok organized the first Capacity-Building Workshop on Project-Based Learning and Tele-collaboration in Thailand as part of the Facilitating ICT-Pedagogy Integration Project with the collaboration from Burapha University in Chonburi province from 17 to 20 August, 2010.

Training workshop on new pedagogy and ICT in Samarkand, Uzbekistan
This training course was aimed at building the skills of teachers for effective and comprehensive use of information and innovative educational technologies in a classroom to develop key competencies of students based on values, knowledge and skills necessary for the 21st century generation.

Many countries unprepared to advance Non Formal Education (NFE) using ICTs
To fill the gap for comprehensive and comparative information about ICT and education, infoDev launched its “Survey of ICTs for Education in India & South Asia” on 21 April, 2010, along with five thematic essays. One such essay, entitled ICT in Non Formal Education, investigates and analyzes examples of how governments and individuals leverage ICTs when planning for and providing NFE.

India launches phase-II of African e-network project
India launched the second phase of its pan-Africa e-network, adding 12 more countries to the New Delhi-aided long distance education and tele-medicine programme.

Education the winner as NICTA and ACS award Australian ICT student prize
NICTA, Australia’s Information and Communications Technology (ICT) Centre of Excellence and the Australian Computer Society (ACS) have awarded the inaugural Young Aus-Innovators National ICT Prize to a team of high school students from Newington College in New South Wales.

New UK study looks for ways to spice up IT lessons
Several studies show how numbers of students studying computing are plummeting across the UK. Concerns over these declines and the constraints in the way that computing is taught in school are so great that an unprecedented range of organisations has come together to launch a study of the issues and possible solutions.

Submit your entry for the eLearning Awards 2010 competition today!
Since 2001, the eLearning Awards competition has been run by European Schoolnet and supported by key industry partners. Ten years after its launch, the eLearning Awards remain Europe’s leading competition to reward excellence for the best use of technology in education.

Programmes & Projects

Interactive Radio Instruction improves Indian student learning
Interactive Radio Instruction (IRI) is the use of radio to bring curriculum and teacher training to classrooms – a tremendous resource for learning and dissemination. IRI, which only requires a radio and an adult facilitator, reaches large numbers of teachers and learners who are isolated by distance and poor infrastructure.

Resources

Technology to the rescue - Can gadgets in the classroom enhance learning?
We sought the opinions of young people in the Asia-Pacific region on how information and communication tools can be used to promote literacy in a more fun and active learning environment.

Where desert meets technology: Findings from ICT in Education initiatives in rural schools in Mongolia
This report acknowledges the many factors that influence the teaching and learning environment in schools and the effectiveness of ICT in Education initiatives.

Sustainable ICT in further and higher education
Sustainable ICT in Further and Higher Education is the final report of the SusteIT project that analyses and develops best practice cases and tools on environmentally sustainable ICT practices in further and higher education.

Global learning community centers for developing countries
This is a vision paper, based on interviews with a variety of domestic and international learning centers. It outlines a map to develop a collaborative set of rural and urban, globally connected Community Learning Centers.

Geocaching makes walking fun for physical education classes
Thanks to modern technology, there is now a fun activity that combines satellite navigation, orienteering, computer skills, treasure hunting…and walking. It’s a super cross-curricular game that your students will enjoy.

Tate movie
The Tate Movie Project is a uniquely ambitious project using great artworks to inspire 5-13 year olds to contribute their ideas to an animated movie made by and for children.
News & Events

Project-based learning and tele-collaboration launched in Thai schools

UNESCO Bangkok organized the first Capacity-Building Workshop on Project-Based Learning and Tele-collaboration in Thailand as part of the Facilitating ICT-Pedagogy Integration Project with the collaboration from Burapha University in Chonburi province from 17 to 20 August, 2010.

Facilitating ICT-Pedagogy Integration Project was introduced to more than 50 participants of the Capacity-Building Workshop who come from eleven schools in Chonburi province. Experts in the area of Project-Based Learning from UNESCO Bangkok discussed the concept of 21st Century skills and helped teachers understand the elements of Project-Based Learning (PBL), and how Tele-collaboration can complement the implementation of PBL.

The teachers from primary and secondary schools then formed five project groups and were guided through the components of designing a concrete PBL project to be implemented in their schools. Resource persons from UNESCO clarified existing misconceptions regarding Project-Based Learning and emphasized the need for thorough planning of activities and resources within each step of a PBL project. With the advice from resource persons, the groups designed projects for students, making use of relevant issues in the community, and refined them to ensure all elements are realistic and meaningful.

A session on blogs and forums was delivered by Burapha University expert in education technology to introduce teachers to the collaboration tools which can be employed as a channel for communication among students and teachers in the same project teams. Projects that the PBL groups collaboratively planned will be carried out in the schools in three possible scenarios: Inter-disciplinary, Inter-School and Inter-cultural.

Participants received certificates at the end of the workshop and left with the confidence to implement the projects effectively for the benefits of students. Burapha University, as UNESCO’s partner of the project, will work closely with project teams to guide and supervise school teachers in their PBL project implementations to ensure continued support.

The Facilitating ICT-Pedagogy Integration Project, funded by the Korean-Funds-In Trust (KFIT), aims to create an enabling environment for student-centered use of ICT by building a stronger partnership between teacher education institutions (TEIs) and schools using “project-based learning” and “telecollaboration”. For more information and updates, visit UNESCO Bangkok website or contact Dr. Fengchun Miao, f.miao@unesco.org.

Further information:
• Facilitating Effective ICT-pedagogy Integration

Related links:

• UNESCO launched project-based learning and telecollaboration in Chinese schools
  Next Generation of Teachers Project

• Vietnam to develop Next Generation of Teachers

• Nepal develops Master Plan for ICT in Education

• Creating the next generation of educators

• UNESCO Bangkok kicks-off new ICT in Education project funded by Korean government

• ICT in Education Teacher Training Modules for Developing Countries

• UNESCO Bangkok and Intel sign agreement to deliver Next Generation of Teachers Project in Asia-Pacific

• Next Gen empowers teacher education institutions

• Fourth Deans Forum – The Next Generation of Teachers Project

• Developing ICT curriculum for the next generation of teachers

• Next generation of teachers from the Asia-Pacific successfully trained in integrating ICT into teaching

Previous issues of the e-newsletter:

• UNESCO "ICT in Education" Announcement e-newsletter

What do you think about this topic?

• Visit our on-line forum and share your views
Training workshop on new pedagogy and ICT in Samarkand, Uzbekistan
UNESCO Tashkent office in cooperation with the Ministry of Public Education of the Republic of Uzbekistan and INTEL Moscow has launched the first pilot training workshop on introduction of New Pedagogical and Information Communication Technologies in Education process in Uzbekistan. This training workshop held in ancient city of Samarkand was organised for master teacher educators from pre-service and in-service teacher training institutions of Uzbekistan 17-21 May, 2010.

The course was aimed at building the skills of teachers for effective and comprehensive use of information and innovative educational technologies in a classroom with the aim of developing key competencies of students based on values, knowledge and skills necessary for the generation of 21st century.

Training participants benefited from full range of teacher and student educational multimedia materials and digital resources, ICT integrated lesson plans and other useful resources for effective and efficient educational process. Training sessions were facilitated by the trainers from Russian Federation supported by the INTEL Moscow.

Also Web 1.0 and 2.0 as teachers’ tool for creating ICT based multimedia resources has been introduced. Another session was dedicated on Intel Digital Help Guide, an essential tool for teachers and students for self learning Microsoft Office Suit, as well computer literacy.

Presentation on Digital Viewer - an application for accessing Intel Teach and Intel Learn course materials in offline mode from the student computer has been delivered. On Digital Viewer the course materials have been customized to accommodate the Viewer’s interface and online capabilities.

Viewer helps teachers to find easily necessary content, search for specific concepts and terms, access course resources, open the Intel Education Help Guide skills, look up glossary terms, record notes, and more. All these tools and materials were disseminated to participants in the end of the training.

Sessions on modern pedagogical technologies for teaching have been delivered to build the skills for effective facilitating the learning process such as: how to speak and listen, how to monitor learning process, how to ask and answer the questions, how to support the student, how to effectively interfere into the process, reflections and many other related skills.

ICT resources for teachers compiled and provided by UNESCO Bangkok- Portfolio for Teacher ICT competence, Multimedia Resources, Directory of ICT resources for teaching and learning of Science, Mathematics and languages presented, samples for ICT based lesson plans are discussed with participants. Participants are provided with CDs of all UNESCO Digital Resources for teachers and students.
Top official of the Ministry of Public Education of Uzbekistan remarked success of this pilot training held in Samarkand, and invited to further scale up this initiative to other regions and schools of Uzbekistan.

With liaison of UNESCO Bangkok, UNESCO Tashkent office concluded an agreement with INTEL (UK) for provision of series of teacher training activities in different regions of Uzbekistan. Within this agreement teaching and learning resources will be translated and adapted into Uzbek language, and disseminated to schools. Also, on-going technical backstopping and financial support will be provided by the Asia Pacific Regional Bureau of UNESCO in Bangkok.

“Developing skills of students, youngsters necessary for 21st Century is our primary goal, and it is vital that our next Generation will be able to think critically, to work collaboratively, and to take right decision for our sustainable and peaceful future” – states Mr. Jorge Ivan Espinal, Head of the UNESCO Tashkent office in Uzbekistan. “It is good to note that the government of Uzbekistan is placing significant efforts for equipping schools with modern information and communication tools, however, preparing teachers who could make use of these tools for improving the quality and efficiency of teaching remains under main concern. Therefore, we, as UNESCO field office in Uzbekistan, are challenged to assist the Government for the preparation of new generation of teachers through dissemination of the global knowledge and best practices...”

Further information:

- [UNESCO Tashkent office](#)

Related links:

- [ICT in Education Teacher Training Modules for Developing Countries](#)

Previous issues of the e-newsletter:

- [UNESCO "ICT in Education” Announcement e-newsletter](#)
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Many countries unprepared to advance Non Formal Education (NFE) using ICTs

To fill the gap for comprehensive and comparative information about Information and Communication Technologies (ICT) and education, infoDev launched its “Survey of ICTs for Education in India & South Asia” on 21 April, 2010, along with five thematic essays.

One such essay, entitled ICT in Non Formal Education, investigates and analyzes examples of how governments and individuals leverage ICTs when planning for and providing NFE. This style of learning offers previously excluded adults and children the opportunity to reach educational goals outside of a traditional classroom setting. This essay examines current practices as a way to realize the ambition of truly living in a "knowledge society."

Summary of Findings

While the adoption of technologies, such as computers, among government entities has been widespread, the formulation of strategies to use these tools specifically for NFE is lacking. This essay identifies being people-driven rather than technology-driven as a necessary component for success in using ICT for NFE. Investing in technology must be complimented by an investment in people and an understanding of their needs. Other critical success factors include:

1. Need for a coherent policy.
2. Technology infrastructure and an understanding of emerging trends, like mobile (m)-learning, games-based platforms, and WiMax.
3. Effective planning and programme design.
4. Development of content that is relevant to the learners.
5. Planning for sustainability.
6. Ensuring multistakeholder partnerships.
7. Continuous monitoring and evaluation.

This essay also emphasizes the necessity of public-private partnerships. The full range of actors, including government, the private sector, civil society, and international and regional institutions, must be involved in order to reap the benefits of ICT for education. Without this collaboration, a holistic approach is not possible and gaps in understanding might occur because:
as of yet no standard coordinating body is responsible for the formulation of a country’s ICT in education policies
there is no standard repository for existing ICT in education-related national policies
successful policy requires consultation with a diverse group of stakeholders and the exchange of information related to successes and failures will encourage successful and sustainable models for ICT-enabled NFE

This thematic essay is one of five that accompanies the “Survey of ICTs for Education in India & South Asia.” By gathering and comparing on-the-ground information from eight countries, illustrating successes and challenges, and drawing out key lessons learned, this survey will help decision-makers to plan, coordinate, implement and evaluate successful ICT4E initiatives in India, South Asia and beyond.

Stay tuned for the four remaining thematic essays on capacity building, gender equality, ICT in primary and secondary education, and policy coherence to be released on the Survey website in the coming months!

Further information:

• Many countries unprepared to advance Non Formal Education (NFE) using ICTs

Related links:

• ICTs provide a platform for innovative education in India and South Asia
• ICT for Education in South Asia: Computer labs for kids are not enough
• Community radio connects, educates and entertains in rural India
• Why give knowledge away for free? The case for open educational resources
• Technology-based vocational skills training for marginalized girls and young women

Previous issues of the e-newsletter:

• UNESCO “ICT in Education” Announcement e-newsletter
India launches phase-II of African e-network project
India launched the second phase of pan-Africa e-network, adding 12 more countries to the New Delhi-aided long distance education and tele-medicine programme.

Speaking to senior ministers of 12 African countries via videoconference, External Affairs Minister S.M. Krishna underlined the importance India attaches to developing multi-faceted and enduring partnership with the African continent.

The tele-interaction lasted for nearly two hours and cut across the African continent covering countries ranging from Egypt in the north to Botswana in the south.

Other countries that formally joined the network included Burundi, Ivory Coast, Djibouti, Eritrea, Libya, Malawi, Mozambique, Somalia and Uganda.

Eleven countries included in the first phase of the project launched last year were Benin, Burkina Faso, Gabon, the Gambia, Ghana, Ethiopia, Mauritius, Nigeria, Rwanda, Senegal and Seychelles.

Read the full article on India edunews: [http://www.indiaedunews.net/Today/India_launches_phase-II_of_African_e-network_project_12332/](http://www.indiaedunews.net/Today/India_launches_phase-II_of_African_e-network_project_12332/)

Further information:

- [India launches phase-II of African e-network project (India EduNews)](http://www.indiaedunews.net/Today/India_launches_phase-II_of_African_e-network_project_12332/)

Related links:

- [ICTs provide a platform for innovative education in India and South Asia](#)
- [Symbiosis International Conference on Open & Distance Learning](#)
- [Accessible elements: Teaching science online and at a distance](#)
- [UNESCO-supported e-learning association launched in Middle East](#)
Education the winner as NICTA and ACS award Australian ICT student prize

NICTA, Australia’s Information and Communications Technology (ICT) Centre of Excellence and the Australian Computer Society (ACS) have awarded the inaugural Young Aus-Innovators National ICT Prize to a team of high school students from Newington College in New South Wales. The winning team of Harrison Collin, Brenton Curko, Shannon Kwan and Chao Man will receive a cash prize of $2,500 and a two-week internship at NICTA during the school holidays.

The team’s project proposal focused on improving household security standards. The students now have the opportunity to further improve their project at NICTA where a mentor will oversee their next steps.

The second prize of $1,500 was won by a team of students from Caroline Chisholm Catholic College in Victoria. The third prize of $1,000 was won by a team of students from Patrician Brothers College Blacktown in New South Wales. A team of students from North Sydney Girls High School in New South Wales was also recognised with a Highly Commended award.

“The standard of entries was very high,” said NICTA’s Director of Education, Dr Tim Hesketh. “I was encouraged by the variety of concepts the students presented, from sophisticated animation proposals and online games based on Arduino board programming, to the Bluetooth communications proposal that won first place.”

Bruce Lakin, ACS Chief Executive Officer said: “We are proud to be associated with NICTA on the Young Aus-Innovators National ICT Prize to help nurture the next generation of ICT
professionals. It is great that we have the support of leading schools to promote the prize to their students. ICT offers a diverse range of career opportunities for young people.”

“This is a fantastic achievement for Harrison, Shannon, Brenton and Chao and one that they should be very proud of. It is extremely pleasing to see that the boys are able to demonstrate some of the key principles taught within the classroom and apply these to the design and construction of their project. Computing at Newington College places a focus on innovation and using the computer as a problem solving tool. The boys’ project demonstrates this philosophy, for which they are to be commended,” said Mr Rodney Wood, Head of Computing Studies, Newington College.

The Young Aus-Innovators National ICT Prize, an initiative of the ACS and NICTA, was launched last year during the National ICT Careers Week. It aims to encourage high school students to consider careers in ICT. Now ubiquitous in our society, ICT careers can be tremendously rewarding, providing solutions to some of the most pressing problems of our time in areas such as communications, education, infrastructure, water resources, energy, sustainability and transport. NICTA is also involved in summer schools, both for students learning about research and for high school students determining their interests in ICT.

Source: NICTA

Further information:

- [Education the winner as NICTA and ACS award Australian ICT student prize](#)

Related links:

- [ICTs in Education Prize: call for nominations](#)
- [eLearning Awards 2010](#)

Previous issues of the e-newsletter:

- [UNESCO "ICT in Education” Announcement e-newsletter](#)
What do you think about this topic?

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New UK study looks for ways to spice up IT lessons
Several studies show how numbers of students studying computing are plummeting across the UK. Concerns over these declines and the constraints in the way that computing is taught in school are so great that an unprecedented range of organisations, including learned societies, professional bodies, industry corporations and higher education establishments, as well as school teachers themselves, has come together to launch a study of the issues and possible solutions today (5th August 2010).

It is believed that design and delivery of ICT and computer science curricula in schools is so poor that students’ understanding and enjoyment of the subjects is severely limited. The effects of this, coupled with dwindling student numbers, mean that, unless significant improvements are made, the deficit in the workforce numbers and capability could have a highly negative impact on the UK’s economy.

The new study, Computing in schools and its importance and implications for the economic and scientific wellbeing of the UK, is being led by the Royal Society, the UK’s national academy of science, with support from 24 organisations, including the Royal Academy of Engineering, BCS Academy of Computing, CPHC (The Council of Professors and Heads of Computing), Google, Microsoft Research and several of the UK’s leading universities.

Further information:

- Royal Society

Related links:
Submit your entry for the eLearning Awards 2010 competition today!
Since 2001, the eLearning Awards competition has been run by European Schoolnet and supported by key industry partners. Ten years after its launch, the eLearning Awards remain Europe’s leading competition to reward excellence for the best use of technology in education.

To celebrate the 10th anniversary of the eLearning Awards, European Schoolnet invites all schools and teacher training institutions from Europe and beyond to take part and register at http://elearningawards.eun.org, and to present their best projects making use of ICT for teaching and learning. In 2009, 700 teachers from 36 countries submitted their work.

The winners for each category, selected by an international jury of experts, will win thousands of Euros in cash prizes and ICT equipment. Also, following a successful launch in 2009, the 2010 edition will again be open to international competitors, from countries outside of Europe (see full list of eligible countries in the rules below).

Another recent feature: the top 50 entries submitted will be included in the Learning Exchange Resource library (http://lreforschools.eun.org), to give increased visibility to teachers’
innovative practices and encourage others to follow their lead.

To be eligible for the eLearning Awards, entries must be submitted by schools or teacher training institutions in EU member states, EEA countries, EU applicant countries as well as Switzerland, Israel and Georgia. For the category International cooperation entries are accepted worldwide. A gallery on the eLearning Awards website will showcase all contributions, which will be judged by a panel of experts. Entries can be made from now until 28 September 2010 via the website: http://elearningawards.eun.org.

Prize Ceremony
The prize-giving ceremony, which will be followed by a gala dinner, will take place in Copenhagen early November 2010, during the annual EMINENT conference. The EMINENT conference is a unique chance to meet and discuss with European ministries of education, global companies and key stakeholders in education.

Prize-winners will be given a trip to Copenhagen to attend the award ceremony.

Further information:

- eLearning Awards 2010
- ICTs in Education Prize: call for nominations

Related links:

- UNESCO "ICT in Education" Announcement e-newsletter

Previous issues of the e-newsletter:

- UNESCO "ICT in Education" Announcement e-newsletter

What do you think about this topic?
Programmes & Projects

Interactive Radio Instruction (IRI) improves Indian student learning

Interactive Radio Instruction (IRI) is the use of radio to bring curriculum and teacher training to classrooms – a tremendous resource for learning and dissemination. IRI, which only requires a radio and an adult facilitator, reaches large numbers of teachers and learners who are isolated by distance and poor infrastructure. It can be used in almost any setting, from formal classrooms to community learning centers to outdoor venues.

As part of the dot-EDU India Technology Tools for Teaching and Training (T4) project funded by USAID, Education Development Center (EDC) uses IRI to improving the quality of education at the elementary level in seven states in India, namely, Bihar, Chhattisgarh, Jharkhand, Karnataka, Madhya Pradesh, Rajasthan, and Delhi. The project has been active in India since October 2003 and aids education systems in India in attainment goals set forth by the Sarva Shiksha Abhiyan (SSA).

In T4, the Interactive Radio Instruction Program (IRI) has been found to have significant impact on improving student learning gains. Evaluation studies have indicated that IRI has an impact on the Comprehension and Speaking skills as well as the Math, EVS and Social Science knowledge. T4 has also been consistently building the capacities of teachers to engage students in effective and joyful learning.

Components of Interactive Radio Instruction Program

Working closely with the State governments, T4 develops IRI programs in a variety of subjects based on the curriculum and targeting the needs defined by teachers themselves. The IRI lessons engage students through local stories, songs and physical activities, while supporting teachers to develop student-centered teaching skills.

Group Teaching & Learning (GTL) Multimedia Software

The GTL software brings teachers and students together to conduct interactive activities around a single computer. The software allows students to focus on difficult science concepts in greater depth by providing over 10 hours of games and group activities. Students explore various science topics through a rich combination of learning resources for use both on and off the computer – songs, IRI programs, lesson plans, videos and quizzes. Current GTL titles include: “Animal Discovery”, “Ecosystems and Habitats”, “Sanitation and Hygiene Learning Game”, “What is Disease” and “Fun with Geometry”. An additional title on Physics is under production.

Digital Library (DL)
Hosted by the National Informatics Center (NIC) Karnataka, the DL is an on-line searchable catalog of learning materials in audio, video and print formats. The DL allows teachers to access all T4 learning materials as well as those produced by many government and private/public sector providers. Resources are available in English, Kannada, Tamil, Telugu and Oriya languages. The DL helps ensure that educational materials developed by international and national organizations and donors remain widely accessible.

Life Skill Audios
A series of interactive audio programs is being developed on selected “skills for life” topics geared towards middle-school youth as well as their teachers and parents. The underlying goals of the pilot series will be to “apply skills” “extend concepts” and “make connections”. The series will seek to reinforce skills already imparted by the other T4 media products (i.e., collaboration and cooperation, the scientific method etc) and extend it by bringing in new content relevant to middle-school academics, personal development and career planning. The presentation of drama/activity-based audio segments coupled with in-class/out-of-class activities will be innovative and unprecedented.

Life Skill Videos
The ten-episode, live-action series of life skills-themed fiction targets middle school-age youth in India. This series targets its audience with a plot, storyline and characters to which they can relate—full of the ups and downs of adolescence and the very real challenges youth face at home and at school. As they watch the characters encounter and learn from their trials and tribulations, they will find new and constructive ways to deal with their own life challenges.

Multimedia kits
The multimedia kit is aimed at higher primary schools targeting classes 6 to 8th. It aims at improving the learning gains in students as well improving the classroom transaction of teachers. It will comprise audio (cassettes or CDs) and video (cassettes or DVDs) materials that would be used off the air and supported by print guides. The off-air mode allows for pauses and repetitions while at the same not saturating the airwaves. The audio is being designed as a stand alone product, to enable teachers and students who may not have access to video technology to still benefit fully from the package The topics that are currently under production include Food, Cells, Numbers, Light and Force and Motion.

Results
T4 has already developed over 600 technology products designed to enhance student learning in Grades 1-5, complemented by extensive teacher training and monitoring. T4 project has been reaching out to 42 million students across 300,000 schools in eight partner states.

- Grade 1 and 2 Interactive Radio Instruction (IRI) learners in Rajasthan performed 12% higher on English speaking tests than students receiving traditional instruction.
• Grade 3 and 4 IRI students in Madhya Pradesh performed 24% higher on English speaking tests than their non-IRI peers.
• Grades 4 and 5 IRI learners in Madhya Pradesh perform 13% higher in math, 8% higher in General Studies, and 10% higher in Social Studies than non-IRI students.
• Students using T4’s Group Teaching and Learning multimedia software in Grades 4-6 perform an average of 9% higher than students receiving traditional instruction in Science topics such as Animal Discovery, Habitats and Ecosystems and What Is Disease?

IRI may have the greatest impact for the most underserved: Scheduled Caste IRI students in Rajasthan outperformed non-IRI students of the same caste by 8.3 points in English speaking tests and Other Backward Class students outperformed their peers by 14.2 points.

Author: Archana Nambiar / Educational Technology Debate

Further information:

• Interactive Radio Instruction (IRI) improves Indian student learning

Related links:

• Uses of radio and TV in education
• UNESCO and the government of Italy agreement on supporting the educational radio and television of Afghanistan
• Using ICTs for Education in emergencies and fragile contexts
• Community radio connects, educates and entertains in rural India

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Resources
Technology to the rescue - Can gadgets in the classroom enhance learning?
We sought the opinions of young people in the Asia-Pacific region on how information and communication tools can be used to promote literacy in a more fun and active learning environment.

QUEK RI AN, 24
Singaporean, Nanyang Technological University, Singapore
“It’s about engaging teenagers’ interests. So you’ve got to use something they use in their daily lives, which is basically SMS, iPhones, or Facebook. Facebook itself is actually a good resource to provide cross-cultural information and access to any types of knowledge they want. Another fun way is to write blogs because right now they are so popular. Maybe we can have teachers handing out assignments where students have to keep a blog everyday and just discuss various topics that encourage critical thinking.”

NAY LIN AUNG, 25
Myanmar, Assumption University, Thailand
“I would like to use Moodle software as an example. Moodle is an Open Source Course Management System. It can support learning in a classroom by uploading video files, audio files and course materials into it. For discussion, it can support chatting and forums. For questions, users can also ask questions, not only to the teacher but also to others. And, learners can check their level by taking quizzes and on-line exams. For each chapter or course, students can submit their assignments to their teachers and share them with others.”

LY SOKHENG, 25
Cambodian, Royal University of Phnom Penh, Cambodia
“ICTs help people to share feelings through chatting channels such as Facebook, Hi5, Yahoo and so on. All the information means should leave an open space for people to express themselves and leave comments about the news they read or listen to.”
JEONG JAEHOON, 26
Korean, Seoul National University, Republic of Korea
“Let me think about an e-learning system! If there’s a real-time lecture, we can let students share their ideas and questions through the web while they are having lectures, like on-line games let users exchange their strategies with the chatting function. They can give answers to each other, and the teachers in the lecture can give answers right after they check the questions. Also, teachers can introduce good answers at the same time.”

ABDUL HUSAIN, 19
Afghan, 12th grade, Ibn Sina High School, Kabul, Afghanistan
“There are no communication tools or computer labs in my school and I think very few schools in Afghanistan have such facilities. Anyway I think it would be really great to have such aid tools which would help in a better understanding of the lessons taught. I have a computer at home which I don’t use much because I have to work after school and I do my homework when I have some free time.”

LI XIEN YAP, 21
Malaysian, Sunway University College, Malaysia
“ICT brings learning into lives; for example small children are able to learn from the educational programmes on TV such as Dora the Explorer and Sesame Street. It may seem like a cartoon but these programmes use repetition and reinforcement to teach the alphabet, numbers, colours, shapes and basic vocabulary. This whole new way of teaching makes learning much more effective.”

Further information:

- UNESCO Bangkok ICT in Education Programme

Related links:

- Learning beyond the classroom
- What happens when *all* children and teachers have their own laptops
• Immune attack: Biology class in videogame form
• How to use blogs or digital cameras in teaching?

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What do you think about this topic?

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Where desert meets technology: Findings from ICT in Education initiatives in rural schools in Mongolia
This report acknowledges the many factors that influence the teaching and learning environment in schools and the effectiveness of ICT-in-education initiatives.

The report therefore aims to provide a comprehensive picture of the environment in which those initiatives took place, including country context (Chapter II) and education system context (Chapter III).

It also contains an overview of the ICT inputs—the specific activities and provisions made under IIREM, SEDP (Chapter IV), and this study (Chapter V)—and gives some contextual information for each participating school in Chapter VI.

Chapter VII is an overview of the study methodology applied, and as indicated above, in Chapter VIII, the report outlines and discusses the findings from the study.

This is followed by Chapter IX, an elaboration of the conclusions and recommendations for future research that are listed immediately above.

Read the report:
Where desert meets technology: Findings from ICT in Education initiatives in rural schools in Mongolia

Related links:

- UN ICT Hub publishes ICTD Briefing Note Series
- UN works with Mongolia to close the digital-divide

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- UNESCO "ICT in Education" Announcement e-newsletter

What do you think about this topic?

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Sustainable ICT in further and higher education
ICT is becoming ever more ubiquitous within further and higher education, for e-learning, in research, e-administration and other ways. This creates many benefits, including ones of direct relevance to sustainable development such as improving accessibility for disadvantaged groups, and reducing environmental impacts by substituting virtual for physical activities (as when conferencing substitutes for face-to-face meetings).

*ICT in UK further and higher education has a large environmental footprint*
However, the benefits of ICT are partially offset by ‘hidden’ environmental, and, on occasion, social costs. A scaling up of findings at the University of Sheffield, Lowestoft College and City College, Norwich, suggests that UK universities and colleges as a whole:

- Utilise nearly 1,470,000 computers, 250,000 printers and 240,000 servers
- Will have ICT-related electricity bills of around £116m in 2009, and
- Are indirectly emitting over 500,000t of carbon dioxide (CO2) emissions from this electricity use

The production, and disposal, of ICT equipment also involves the release of many hazardous substances; consumes large quantities of energy and water; generates large amounts of waste; and sometimes involves dangerous and exploitative working practices (discarded computers from UK universities have been seen, for example, at unsafe recycling sites in Africa).

There is a growing consensus amongst experts, leading ICT suppliers and policy makers, that the combination of rapid ICT growth and negative environmental impacts of the kind described, make current ICT practices and trajectories unsustainable. Several studies have suggested that ICT is already responsible for 2% of global carbon emissions, and that its relative share will increase further.

**Why further and higher education needs more sustainable ICT**

Although our project has identified (and highlighted through case studies) examples of positive actions for sustainable ICT within the sector, these are not representative, and more needs to be done. Almost all respondents to a survey we conducted felt that it is important to make ICT more sustainable, and three-quarters stated that it is very important. The reasons why include: demands from stakeholders; increasingly stringent regulation (such as the Carbon Reduction Commitment and EU Energy Using Products Directive); opportunities for financial savings and reduction of risk; opportunities for new areas of teaching and research; and enhancing the sector’s reputation.

**Taking action – integrating different time perspectives**

The Government has a long-term target of an 80% reduction in CO2 emissions by 2050, compared to 1990 levels, which requires radical changes in all areas of economic and social life. It is therefore probable that sustainable ICT in 2050, or even 2020, will be very different from that today. Devices may contain radically different materials; their environmental impacts may be tracked through all stages of supply so that it is easy to distinguish more sustainable variants; computing tasks could be related to environmental impacts; e reading may have replaced paper in many applications; cloud computing may be ubiquitous and demonstrably superior in environmental terms to current computing models; many data centres may be utilising renewable energy; and many meetings and learning sessions may be virtual.
In the short-medium term, however, the sector must work with sub-optimal technologies, inadequate information and poorly developed processes – and limited leverage with suppliers – in addressing ‘upstream’ environmental impacts. It therefore makes sense to focus initially on reducing the resource consumption (eg electricity, paper) of its own ICT activities as this is within its control, and can create financial as well as environmental benefits.

**Taking action – minimising ICT impacts**

Actions in individual institutions will depend upon organisational circumstances and IT configurations. It is important that sustainability is always considered fully when strategic IT decisions are being made as:

- ‘Thin client’ approaches are already reducing lifetime use of energy and materials, as well as providing other benefits, in a number of institutions, and should be considered for any applications that do not require large scale computing power
- There is great potential for distributed computing and/or outsourced/shared service solutions to increase the currently very low utilisation levels of PCs and servers, and
- Growing volumes of data mean that decisions (or lack of decisions) about storage have considerable energy implications – more rigorous information on life cycle management is needed, to eliminate storage of data that are no longer required, or to increase the proportion that utilises low energy storage, rather than ‘always on’ spinning disks
- There is enormous scope to create much more sustainable data centres through: purchasing servers with lower power requirements; increasing utilisation rates through consolidation and virtualisation; and by changing physical aspects such as layouts, cooling and power supply, so that their energy ‘overhead’ above that used by servers is only 20–30%, compared to the current 40–100%. In the medium term, greater use of renewable or low carbon energy supply is feasible. This could be facilitated by a move to shared service data centres if these enable more optimal choices of location for renewable energy and/or economies of scale in cooling

This study estimates that personal computing accounts for around 50% of ICT-related electricity consumption in universities and colleges. Much of this is wasted, because many devices: are energy inefficient; are often left switched on when not in use (eg at night or in holiday periods), or in more active states than they need to be for much of the time; are considerably under-utilised even when they are in use; and are often more powerful than is required for the activities they are undertaking.

A strategic approach to personal computing is required to reduce this wastage, and to meet student and staff needs in the most cost-effective and sustainable way possible. This requires a cross-functional team bringing together (at least) IT staff, users, and energy or environmental managers, and chaired by a relatively senior manager. Key elements of their work will be: auditing of the computing footprint within the institution; defining user needs and matching
appropriately; seriously examining low impact alternatives (such as thin client); and building awareness and support amongst users. Actions are also needed to:

- Purchase appropriate hardware and software, and especially models which are – at a minimum – Energy Star 4.0 compliant, and preferably exceed its requirements considerably
- Reduce energy consumption, for example, by increased powering down of devices, and
- Increase longevity through extending refresh cycles, and avoiding software-induced replacement

Electronic printing and copying accounts for at least 10–16% of ICT-related electricity consumption, and survey respondents were printing an average 224 sheets a week, or 10,000 annually. This sums to well over £1m of printing and copying costs in larger universities. Volumes, costs and environmental impacts are generally rising, and ‘out of control’ in some institutions. No more than half of those responding to the SusteIT survey were undertaking any of three key measures for sustainable printing: replacing single with multifunctional devices; setting duplex (double-sided) printing as a default; and use of 100% recycled paper. Other measures to reduce the energy consumption and environmental impacts of printing and copying include:

- Document and print management, including: development of a green printing strategy; maximising print substitution; effective document management; consolidation of devices; and building user support
- Purchasing appropriate equipment: involving careful definition of basic equipment needs, using relevant procurement standards, and assessing vendor commitment to sustainability
- Reducing energy consumption: by enabling and using power management, and by switching equipment off to a greater degree; and
- Reducing paper and consumables usage: by purchasing recycled and/or lighter weight paper, encouraging more paper efficient printing, and other means

**Taking action – maximising beneficial ICT applications**

A recent study has estimated that ICT applications could reduce global CO2 equivalent emissions in 2020 by 15%, and avoid approximately 5t of CO2 emissions for each tonne that they generate through production, use and disposal of equipment. It highlights the potential of two areas of relevance to further and higher education. The energy consumption of buildings can be greatly reduced by making them more intelligent. And ‘dematerialisation’ can substitute carbon-intensive activities such as meetings, or teaching sessions involving travel, with low carbon equivalents, such as videoconferencing. One study has found that distance learning courses reduced energy consumption and carbon emissions by 90% compared to conventional campus-based ones.
The sector has some examples of good practice with regard to buildings, and there is a high level of interest in taking more action. Our survey also found that 60% of respondents would like to do more work remotely, and that 77% felt that there was scope for more use of videoconferencing. The sector currently has a sophisticated videoconferencing infrastructure, which is under-utilised. Better marketing and other measures could create a considerable growth in uptake without excessive additional investment.

**Taking action – management**

Sustainable IT is not achieved overnight, but requires long-term commitment and change. This in turn requires its embedding into activities and systems, both within IT departments and in other areas of the institution. Our research identified a number of barriers – survey respondents felt that the most important were: time/staff resource constraints; lack of coordination between different parts of the organisation; budgetary constraints; lack of guidance on how to reduce environmental and social impacts; lack of information on environmental and social impacts of equipment/services; lack of choices on type of ICT equipment that can be purchased; lack of awareness of sustainable ICT issues amongst staff/departments; and lack of whole life costing or consideration of environmental impacts during the procurement process. Experience in other areas of environmental improvement suggests that overcoming these barriers requires:

- Clear organisational commitments, and effective implementation processes such as greater responsibility for energy consumption (our survey found that less than half of the respondents from IT departments were aware of the energy costs associated with their activities)
- A continuous improvement approach within IT departments, eg by setting up environmental and sustainability champion(s), and by more measurement, targeting and monitoring, and
- More effective measurement of total cost of ownership, as current procurement decisions often ignore or underestimate energy or other environmental costs

**Taking action – sector bodies**

Funding councils, JISC and other sector bodies must provide more support to institutions in their transition to sustainable ICT because: some relevant expertise or knowledge may be impossible for institutions (especially smaller ones) to develop in practice; some actions can only be accomplished at regional or national level (as with effective procurement agreements) or require a critical mass of activity in a number of institutions (as with videoconferencing); and many actions require cross-functional collaboration, which can be facilitated by ‘top down’ national initiatives involving relevant professional bodies. Such actions can be justified both by the importance of sustainable ICT, and also because they will be synergistic with other strategic drivers of further and higher education. For example:
- Moves towards whole life costing of ICT purchases, and greater budgetary responsibility for energy costs by IT departments, would contribute to the objectives of achieving greater value for money, and cost transparency in research and teaching.
- The potential capacity constraints created by high electricity consumption in data centres (and other areas) should often be an important aspect of institutional risk assessments.
- Some of the innovations to achieve greater energy efficiency could be best achieved on a shared service basis, and
- The capacity of work-related applications to provide better work–life balance and other personal and social benefits has many connections with the well-being agenda.

Table 10 (at the end of Chapter 6) identifies eight possible forms of support – strengthening capacity; providing funding; giving direction; strengthening grant conditions; strengthening coordination; strengthening sustainable procurement; funding exemplar projects; and financing relevant investigation and research – which could be provided by sector bodies, and makes detailed recommendations as to how they can be achieved.

Project details

The study took place between January and December 2008 and was based on: desk research; interviews with many practitioners and experts within and outside the sector; an online survey, which gathered 183 responses, from 49 institutions; and discussions at five workshops, which were attended by almost 300 people. It is accompanied by: three detailed reports on data centres, personal computing, and printing; over 20 case studies; a detailed audit of ICT use at the University of Sheffield; and two open source tools. One enables an energy and carbon footprinting of ICT use, and the other analyses the environmental and financial implications of thin client computing. During 2008 the project team made over 20 presentations, to almost 1,000 people, on their work and findings. They have also worked with the Environmental Association of Universities and Colleges to gain Scottish Funding Council support for a follow-on project, based on the footprinting tool, and with the Regional Support Centres to gain JISC funding for three sustainable ICT conferences in 2009.

Read the study:

- Sustainable ICT in further and higher education

Related links:
Global learning community centers for developing countries

This is a vision paper, based on interviews with a variety of domestic and international learning centers.

This paper outlines a map to develop a collaborative set of rural and urban, globally connected Community Learning Centers.

While vast sums of funds are invested in top-down eLearning portals, training programs and ITC projects, they often lack the ability for children or rural towns to find and utilize the information available.

There is a great division between these training programs and their integration to local communities. In addition, the redundancy and lack of collaboration between agencies and organizations at the local level is wasteful if not at times competitive.

According to the author, “we need a field facility that all government agencies, NGOs, private groups, local towns and people can use together. We need a place for the community where all of the fragmented programs can come together and be used as resources for the local people”.

This paper takes the US Community Learning Center model and expands it into something new for developing countries. It integrates the best practices of CLCs, libraries, adult learning programs, and field project management with the vast collaborative resources of the global Web into one community location.
Read the paper:

- Global learning community centers for developing countries

Related links:

- 7 things you should know about open educational resources
- Youth promotion through ICT – The Chawama Youth Project
- International children’s digital library project
- Putting technology in the service of global development

Previous issues of the e-newsletter:

- UNESCO "ICT in Education" Announcement e-newsletter

What do you think about this topic?

- Visit our on-line forum and discuss this topic

Geocaching makes walking fun for physical education classes

Walking is one of the best exercises for lifetime fitness. But let’s face it – plain old walking can be a boring proposition for students. As a result, the canny physical education teacher will find ways to make a walk more exciting.

Thanks to modern technology, there is now a fun activity that combines satellite navigation, orienteering, computer skills, treasure hunting…and walking. It’s a super cross-curricular game that your students will love.
Called “geocaching,” (pronounced “geo cashing”) it makes use of GPS units to find prizes hidden by other geocachers.

**WHAT IS A GPS?**

GPS stands for “Global Positioning System” and these handheld electronic units make use of satellites to pinpoint your latitude and longitude to within three meters. A GPS will help you navigate from your current position to another location using their built-in maps and instructions.

GPS units cost anywhere from $100 and up. As an alternative, some Blackberry units can be GPS-enabled. You can download “Geocache Navigator” for free for 60 days. For more information, see the “Blackberry.Geocaching” website.

However, the big surge in GPS use will come when regular GPS-enabled cell phones hit the market. It is estimated that 500 million such cell phones will be in use, worldwide, by 2012.

**Geocaching – how to get started**

To start a geocaching quest, log in to the “Geocaching” website. Enter the postal code of your area and you’ll see several local cache locations, each with a short verbal description, a level of difficulty and a location shown on the Google Map website.

To get your GPS co-ordinates, you must first register (it’s free). You can then receive the GPS longitude and latitude co-ordinates. An example might be N43o40.110′W083o23.378′

Your job as a geocacher is to enter the co-ordinates into your GPS unit, then follow the directions to the cache. This will involve a nice hike for your students.

Before embarking on your quest, you could give a cross-curricular lesson on latitude, longitude and satellites…not to mention the use of the world wide web.

**Once you find your location – what to do?**

Your GPS will get you within 6 to 20 feet from your target. You then have to search to find the cache, which usually will be a plastic container.

Most containers will contain a dollar-store item such as a plastic animal, pencil or measuring tapes. They will also contain a logbook that you can read, and then sign. Seeing who else has been to the cache is half the fun. Take the prize, then replace it with a prize of your own.

**Class logistics**

You can go geocaching with your entire class, or split into groups, as long as each group has a supervisor. Also, you could also establish a cache or two of your own, in a location you know to be safe and easily accessible.
The good thing about a GPS is that it’s hard to get lost when you have one in your hand. It will leave a trail of “bread crumbs” as you walk – little dots on the display screen that show you how to retrace your steps. However, it’s also good to bring a compass, just in case the GPS batteries die.

And the best thing about geocaching? It will get your students walking – and make it fun at the same time!

Source: MoSo Tech

Further information:

- [Geocaching makes walking fun for physical education classes (MoSo Tech Blog)](#)

Related links:

- [Google Earth Education Community](#)
- [E-tools for teaching and learning geography](#)
- [Toolkit for creating effective e-learning activities](#)

Previous issues of the e-newsletter:

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

What do you think about this topic?

- [Visit our on-line forum and discuss this topic](#)
**Tate movie**
The Tate Movie Project is the first of its kind – an animated film made by and for children. The Tate Movie Project is a uniquely ambitious project using great artworks to inspire 5-13 year olds nationwide to contribute their ideas to an animated movie.

Children will create every aspect of the film, from the hand-drawn characters and plot twists, costumes and comic sound effects. The website is a virtual film studio that forms the hub of the Tate Movie Project online community. Children can upload their pictures and ideas as well as voting on those already on the site. They can have a go at animation and be kept up to speed with progress on the movie by the animated characters who represent the professional Heads of Department in a film.

**Further information:**
- [Tate Movie](#)

**Related links:**
- [Learning beyond the classroom](#)
- [Animated Science](#)
- [Web 2.0 tools for teachers](#)
- [The Use of Film to Support Classroom Literacy Learning](#)

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