Highlight: ICT Indicators

Measuring ICT application in education: feedback and lessons from the SABER East Asia pilot
Given the high costs involved for investment in ICT and the need to measure the progress of ICT application in education, there have been several initiatives to develop sets of standardized indicators, including the work of the Working Group on ICT Statistics in Education led by UNESCO Institutes for Statistics (UIS) and the ICT4ED working group facilitated by the Korea Education and Research Information Service (KERIS).

UNESCO Amman Office hosts the launch of the ICT in Education Indicators for Arab States Project
UNESCO and the Talal Abu-Ghazaleh Organization launched a pilot project on ICT in Education indicators in Arab States at a meeting for ICT in Education Policy developers in Amman, Jordan.

Korean researchers publish new Indicators for ICT4ED (ICT for Education Development)
Researchers from the Korea Ministry of Education, Science and Technology (MEST) and the Korean Education Research Information Service (KERIS), recently published their initial report on global information communication technology (ICT) indicators in education. This report, “Analysis Report of Global ICT4ED Readiness”, outlines a framework for analyzing ICT for education (ICT4ED), provides preliminary data analysis, and sample templates for country-level reports and policy reviews.

News & Events
Project-based learning and telecollaboration enhances teachers’ confidence in Bangladesh
UNESCO Bangkok organized its 8th capacity building workshop on designing and implementing ICT-supported project-based learning in Dhaka, Bangladesh on 17-19 June 2011. The Workshop is part of a larger project, “Facilitating ICT-Pedagogy Integration”, funded by Korea Funds-in-Trust.

Asia-Pacific Education Deans Workshop: Technologies in Pre-Service Teacher Education
As part of Scaling Up the Next Generation of Teachers Project, funded by Japan Funds-in-Trust, this year’s Asia-Pacific Education Deans Workshop was held in Hong Kong, 7-9 June. Deans Forums’ are an important part of activities that orient education leaders and decision-makers to the need for relevant curriculum that fosters ICT integration skills in the next generation of school teachers, and teacher trainers.

UNESCO joins iTunes U
By joining iTunes U, a dedicated area of the iTunes Store that offers free audio and video content from leading educational institutions, UNESCO is reinforcing its efforts to reach out to young men and women around the world, providing multilingual audio, visual and printed materials in education, sciences, culture and communication.

UNESCO evaluation shows student achievement increases by combining professional learning, compelling interactive digital content and technology in the classroom
A Dell-developed, 18-month evaluation conducted by UNESCO in Latin America, showed a
20% improvement in participating middle school students’ math performance - 7 times better than a non-participating study group. According to the study, 44% of students said that lessons using technology became more interesting and 54% said the lessons encouraged interest in studying.

New broadband commission report seeks to bring high-speed connectivity to world’s poorest communities
Governments around the world need to rapidly formulate and implement national multi-sectoral broadband plans – or risk being seriously disadvantaged in today’s increasingly high-speed digital environment, according to a new report released by the Broadband Commission for Digital Development during its third meeting at UNESCO Headquarters in Paris.

Bytes after bullets: infoDev begins study of ICT in post-conflict reconstruction [project?]
Conflict currently affects around one quarter of low-income countries, but conflicts do end, and the challenge then is to bring relief and stability quickly, through good governance matched with rising living standards, in order to create the right conditions for nation building. A newly inaugurated infoDev research project will explore the ways that ICTs can have a transformative role in that process.

5th annual LearnX Asia Pacific Conference and Exposition
The non-profit foundation LearnX, in collaboration with The CyberInstitute, is hosting the 5th annual LearnX Asia Pacific Conference and Exposition from September 14th-15th, 2011 at the Brisbane Convention and Exhibition Centre in Brisbane, Australia.

Programmes & Projects
Singapore ‘Future school’ Project
In 2007, FutureSchools@Singapore was initiated to promote innovation and facilitate ability-driven education paradigm in school by integrating frequent use of ICT in students’ daily school lives. Through this initiative of digital learning, schools aim to equip students with essential ICT skills they need to become effective global workers in the fast changing digital age.

Resources
Directory of ICT for Development Training Institutions in the Asia-Pacific and Everyday ICT Terms for Policymakers and Government Officers
The publications are designed to help enhance understanding of everyday ICT terminology and to serve as a reference for those looking to identify institutions providing ICT for development (ICTD) training in the Asia-Pacific.

The NMC Horizon Report: 2011 K-12 Edition
This annual report provides a rich set of topics, examples and resources for use in considering new technologies that hold strong promise for K-12 institutions in the US and globally.

Young Masters Programme on Sustainable Development
YMP is a global web-based distance education on sustainable development, aimed at high
school students and their teachers. The course is offered free of charge to all schools worldwide. So far, over 20,000 students from more than 110 countries have been educated through the YMP-course.

Invitation to World Literature
This website contains a multimedia series introducing drama, poetry and novels from around the world in many times and cultures. It is an accessible introduction to richness and purpose of world literature hoping to inspire the reader.

Take care of your eyes
EVO is a free online application aimed at preventing or reducing the symptoms of a Computer Vision Syndrome by reminding users about systematical breaks. EVO, a friendly and cute robot is designed as user’s personal eyes assistant to take care of it.

Highlight: ICT Indicators

Measuring ICT application in education: feedback and lessons from the SABER East Asia pilot

The potential of the technology, including information and communication technologies, for improving the accessibility and quality of learning systems, is obvious. However, the evidence on how ICT is actually used and enhances the educational opportunities and the quality of learning outcomes is yet to be built in most countries. Given the high costs involved for investment in ICT and the need to measure the progress of ICT application in education, there have been several initiatives to develop sets of standardized indicators, including the work of the Working Group on ICT Statistics in Education led by UNESCO Institutes for Statistics (UIS) and the ICT4ED working group facilitated by the Korea Education and Research Information Service (KERIS).

Most recently, UNESCO Bangkok (Asia and Pacific Regional Bureau for Education) in partnership with the World Bank has conducted pilot surveys for System Assessment and Benchmarking for Education Results (SABER) in twelve countries in East and Southeast Asia to compare educational policies for improving student learning and system performance. Pilot surveys comprised eight policy domains, including the ICT-in-education. For this pilot, five indicators were selected out of over 50 core and supplemental (extended) indicators contained in the Guide to Measuring Information and Communication Technologies (ICT) in Education (UIS, 2009). These five indicators were:

- Learners-to-computer ratio
- Proportion of schools with Internet access
- Proportion of learners who have access to the Internet at school
- Proportion of ICT-qualified teachers in primary and secondary schools
- Proportion of learners enrolled at the post-secondary non-tertiary and tertiary level in ICT-related fields
Though these five ICT-related questions appeared basic, the data collected have not been promising. Of all policy domains surveyed, ‘ICT’ domain had the lowest response and completion rates. This proves that there are no systematic efforts to collect even those basic data related to the availability of ICT-related infrastructure in schools. Most countries surveyed reported that such data had not been collected by ministries of education, therefore not available.

On the other hand, survey data collectors reported that their countries have yet to define ICT-related terms and indicators or felt ill at ease with the questions asked. Examples included: “ICT-qualified teachers” (e.g. what does it take for teachers to be considered ICT-qualified?), “learners entitled to use computer labs” (e.g. what does “entitlement” mean at a school level? can it happen for learners in school not to be entitled to use computer labs that exist in their schools?), etc.

At the close of the SABER pilot survey, a few lessons have been drawn, including the following two:

• In most developing countries (such as: Cambodia, China, Lao PDR, the Philippines, Thailand), the ICT-related data have not been collected or reported, therefore related indicators are not available. ICT equipment and infrastructure are fast changing and it will take a while for these countries to reach a stable situation so that accurate data could be collected.

• The choice of the five indicators on ICT in the SABER pilot survey might not have been appropriate. In most cases, they were accessibility or infrastructure-related questions, while the purpose of this survey was to collect data on the policies responsive to the improvement of the learning outcomes. In the future SABER surveys, some more relevant indicators might need to be selected and asked, including those related to political commitment, curriculum issues and effective use of ICT in teaching and learning processes.

A conference was organized in Bali, Indonesia, from 5 to 8 June 2011, to take stock of the SABER pilot surveys and to briefly discuss the issue of ICT-in-education indicators. A few conclusions can be made. First of all, one will have to be realistic about the availability and accuracy of ICT-related data in most countries. Secondly, the mere existence of ICT equipment and infrastructure in schools does not guarantee that it improves student learning. Thirdly, the sets of ICT-in-education indicators so far defined and tested by major players will need to be carefully reviewed and refined in light of several experiences such as that of SABER pilot surveys.

Author: Gwang-Chol Chang, Senior Programme Specialist
Chief, Education Policy and Reform Unit (EPR), UNESCO Bangkok

Related links:

• Partnership for measuring ICT for development. Core ICT indicators, 2010
• The report on the status of ICT integration in education in Southeast Asia
• Learning from national ICT/education agencies
• Assessing the effects of ICT in Education: Indicators, criteria and benchmarks for international comparisons
• UIS has released the Guide to Measuring Information and Communication Technologies (ICT) in Education
• Observatory on ICTs in Education
• Korea hosts an international expert meeting on ICT in Education Indicators
• Seminar on ICT Measurement and Indicators concluded in New Delhi
• New ICT development index compares 154 countries
• Technology companies lead collaboration to improve global education assessments
• ITU Asia-Pacific Telecommunication / ICT Indicators Report to be released at ITU Telecom Asia 2008
• Indicators for policy makers
• infoDev releases report on state of ICT use in education in African countries
• Handbook on Monitoring and Evaluation of ICT in Education Projects

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UNESCO Amman Office hosts the launch of the ICT in Education Indicators for Arab States Project

UNESCO and the Talal Abu-Ghazaleh Organization (TAG.org) launched a pilot project on ICT in Education indicators in Arab States at a meeting for ICT in Education Policy developers in Amman, Jordan

Information and Communication Technologies (ICTs) play an increasing important part in the way we communicate, learn and live. Likewise, ICTs are being introduced into education systems worldwide through various initiatives such as ICT enhanced learning, application of Open Educational Resources, computers in schools.

Significant resources are invested in national ICT in Education initiatives, and key to developing and implementing such initiatives is the availability of appropriate, timely and reliable educational statistics on which policies can be based and progress measured.
UNESCO and TAG.org are cooperating on building capacity in Arab States by strengthening national capabilities to define ICT in education indicators for measuring the use and impact of applying ICTs in education, as well as to facilitate the ICT in education policy development.

The ICT in Education Indicators for Arab States project was launched in Amman, Jordan with an initial meeting of Policy Developers from Bahrain, Egypt, Jordan, Oman, Palestine, Qatar and United Arab Emirates.

The Amman meeting found that the application of ICT in Education varies significantly across the region, ranging from enhancing access to improving quality education as well as effective school management. However there is a common aspiration of taking full advantage of new ICTs both in effective school and learning management as well as to provide students with 21st century skills. The meeting further identified a series of top national issues with regards to ICT in Education.

While the monitoring of enabling conditions (e.g. political commitment, ICT infrastructure, public-private partnership etc.) remained a common primary concern for most countries in the region, some additional reoccurring issues were:

- The lack of quality contents in Arabic, and opportunities for their cost-effective sharing between countries (e.g. via regional open educational resources platforms)
- Teacher training and the incentives for change
- Leadership in applying ICT in education (including use of ICTs to improve school-based management)
- Research, monitoring and assessment of impacts to inform decision making
- Learning Management Systems as a source of relevant data if aggregated from individual schools to system level.

The project is part of a concerted effort by UNESCO’s Communication and Information Sector, Education Sector and the Institute for Statistics (UIS) to provide Member States with a comprehensive approach to developing, implementing and assessing national ICT in Education Master Plans.

Further information:

- [UNESCO Office in Amman](#)

Related links:

- [Partnership for measuring ICT for development. Core ICT indicators, 2010](#)
- [The report on the status of ICT integration in education in Southeast Asia](#)
- [Learning from national ICT/education agencies](#)
• Assessing the effects of ICT in Education: Indicators, criteria and benchmarks for international comparisons
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Korean researchers publish new Indicators for ICT4ED (ICT for Education Development)
Researchers from the Korea Ministry of Education, Science and Technology (MEST) and the Korean Education Research Information Service (KERIS), recently published their initial report on global information communication technology (ICT) indicators in education. This report, “Analysis Report of Global ICT4ED Readiness”, outlines a framework for analyzing ICT for education (ICT4ED), provides preliminary data analysis, and sample templates for country-level reports and policy reviews.

To develop these indicators, KERIS convened a working group of 14 countries from across Asia, the Middle East, Africa, Europe, and South America. These countries represent a wide range of ICT4ED capabilities and multiple levels of ICT4ED development. Using data from 11 of the countries, KERIS analyzed ICT4ED trends across Northern Africa, Asia, and South America to demonstrate how these indicators help policy makers at all levels close the digital divide in education.

In this paper, KERIS and MEST identify seven core domains of ICT4ED, based on Korea’s ICT programs: policy, educational infrastructure, educational content, educational information
standardization, human resources, education information services, and research for ICT in education. Within each of these domains, the paper identifies subareas with specific, measurable, indicators. For example, two of the indicators in the Policy domain are: percentage of total national budget spent on education, and existence of laws related to ICT in education.

Currently, these indicators are not consistently measured in all countries, resulting in significant missing data and making global comparisons difficult. Nonetheless, the country reports provided by KERIS and MEST are very thorough and are great examples of the detailed analysis that is possible as the data issues are solved in each country. The authors note that, as these ICT4ED measures become more widely adopted, the data and analysis it provides will become even more useful.

Today, the digital divide in classrooms is one of the most pressing issues. As the examples gap between the more developed and less developed countries widens, children lose more and more opportunities to engage our increasingly interconnected world. Thus, the development and implementation of cross national indicators to identify the digital divide and aid policy makers is crucial. In this paper, MEST and KERIS propose a set of policy-focused indicators and provide sample data from 11 countries along with examples of country reviews based on their data. Despite the preliminary nature of the findings, due to lack of data; this paper provides a much needed framework for further development.

For more information about the publication please contact Dr. Ki-Sang Song of Korea National University of Education via kssong@knue.ac.kr.

Related links:

- Partnership for measuring ICT for development. Core ICT indicators, 2010
- The report on the status of ICT integration in education in Southeast Asia
- Learning from national ICT/education agencies
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News & Events

Project-Based Learning and Telecollaboration enhances teachers’ confidence in Bangladesh

Bangladesh is one of the least developed countries. The number of computers per 100 inhabitants is 2.3 in 2008 and the number of Internet users per 100 inhabitants is only 0.35 in 2009 (compared to 23.9 of the world average in 2009), according to World Bank.

When it comes to training teachers on how to integrate ICT in their classroom teaching, a question pops up: how could the workshop be meaningful and useful when teachers don’t even have access to computers in their schools?

UNESCO Bangkok organized its 8th capacity building workshop on designing and implementing ICT-supported project-based learning in Dhaka, Bangladesh on 17-19 June 2011. The workshop is part of a larger project, “Facilitating ICT-Pedagogy Integration”, funded by Korea Funds-in-Trust. The previous seven workshops were held in China, Malaysia, Philippines and Thailand.

This time, the workshop was co-organized with British Council that has established Connecting Classrooms, an online platform for teachers and students to share resources and experiences and seek collaborative opportunities for project-based learning (PBL). Twenty-seven teachers from nine different areas in Bangladesh participated in the three-day workshop.

PBL is one of the student-centered learning approaches stemming from constructivist pedagogy. In PBL, students are seen as active agents, responsible for formulating their own questions, identifying appropriate methodologies and creating collectively constructed knowledge through collaboration. Teachers’ role in this PBL mode is facilitating student activities rather than knowledge transmitters often seen in the traditional classroom teaching. PBL has been widely used mainly in developed countries as an effective instructional approach to help students develop the 21st century skills, such as problem solving, critical thinking, collaboration, communication and creativity.
“We need to first enlighten teachers on the importance of student-centered learning. It is definitely the starting point before even getting them turn on the computers,” said Jonghwi Park, Programme Officer in ICT in Education of UNESCO Bangkok.

“ICT is just a means to facilitate and support student-centered activities. One of the most dangerous perspectives on using ICT in classrooms is to try to use ICT for the sake of using ICT. It’s worse than not using it because using ICT without pedagogical purposes only distracts students from learning,” she added.

Ms. Park ran the workshop with her Information Officer colleague, Hartfried Schmidt.

Reflecting this perspective on ICT-supported PBL, the teachers spent the entire first day of the Workshop re-thinking their current instructional approaches and exploring the potential of PBL. To allow them to have the first-hands experience in the effectiveness of active and collaborative learning, teachers were asked to team up in groups of six, three each from two different schools.

Starting from Day 2 on, teachers were guided step by step in designing and developing a PBL lesson plan, followed by mini presentation sessions on their progress at the end of every session. They were also asked to upload and share their lesson plan up to then in the Connecting Classroom website and give comments on other groups’ lesson plans. It was only towards the end of the workshop when the teachers were introduced to various ICT tools to integrate into their lesson plan to enhance student learning.

All the participating teachers received CD-ROMs, containing UNESCO ICT resources for teaching and learning, and enjoyed having hands-on practical sessions with these digital resources.

At the end of the three-day workshop, the result of the peer-evaluation on lesson plans were revealed and the first prize went to six teachers from Saturia Pilot Girls High School and Amtoil High School, who developed a project lesson plan on glorious history of language movement and liberation war of Bangladesh.

The workshop evaluation by participants indicated that the workshop was successful: a hundred percent of the participants agreed or strongly agreed that the workshop was useful and that they gained new insights on ICT-pedagogy integration.

“We knew that computers can be used as an internet tool but don’t know where and how to. This workshop helped us to understand this matter!” said a participant teacher in Dhaka.

UNESCO Bangkok and British Council will continue to provide technical supports through the Connecting Classrooms website in order for the participating teachers to successfully implement their PBL lesson plan in their classrooms.

It is still challenging to think of a clear answer to the abovementioned question on how to make the workshop successful in less developed countries like Bangladesh where teachers rarely have access to ICT. One thing clear, however, is that teachers should first come to the common understanding of how active and student-centered pedagogy can benefit their
students to function in the world of the 21st century. ICT is an enhancer for this pedagogical transformation.

“This workshop has enhanced my confidence and skills. So I am going to apply it [what I learned from the workshop] to help my students to meet the challenges of the 21st century,” said one participant teacher in Dhaka.

Further information:

- Facilitating Effective ICT-Pedagogy Integration Project

Related links:

- Connecting Classrooms
- UNESCO Bangkok supports Thailand’s second decade of education reform using project-based learning and ICT
- Capacity Building Workshop on Project-Based Learning and Telecollaboration, Chonburi (Thailand)
- 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:

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What do you think about this topic?
Asia-Pacific Education Deans Workshop: Technologies in Pre-Service Teacher Education

As part of Scaling Up the Next Generation of Teachers Project, funded by Japan Funds-in-Trust, this year’s Asia-Pacific Education Deans Workshop was held in Hong Kong, 7-9 June 2011. The Project aims to strengthen the institutional capacity of Teacher Education Institution (TEI) in integrating ICT with pedagogical approaches for pre-service teacher training.

Deans Forums are an important part of activities that orient education leaders and decision-makers to the need for relevant curriculum that fosters ICT integration skills in the next generation of school teachers, and teacher trainers. Past three regional and national forums have been organized in Perth, Australia; Colombo, Sri Lanka; and Bangkok, Thailand.

This year’s Workshop was co-organised with UNESCO, the Hong Kong Institute of Education, SEAMEO and Microsoft. It aimed to build the capacity of teacher education institutions in the Asia-Pacific region to prepare their pre-service teachers to teach and learn in 21st century schools and classrooms with ICT.

More specifically, this workshop intended to provide a regional platform for education policymakers, deans of education and presidents of education universities, teacher educators, international and regional organisations, and public and private corporations to 1) discuss and share effective technologies in pre-service teacher education practices and policies; and 2) develop a network of partners, including teacher education institutions, to work with other teacher education institutions and agencies in the region to enhance the use of technologies in pre-service teacher education.

Fifty-eight delegates from 17 countries participated in the workshop. The three day programme consisted of the following themes:

1) Day 1 (7 June 2011): Sharing promising practices

On Day 1, UNESCO and Microsoft presented ICT Competency Framework for Teachers (ICT-CFT) and an online tool developed under this framework (Teacher Education Institution Toolkit: http://www.ps-toolkit.com/). The Toolkit introduction was followed by a series of sessions where participants from six countries shared their promising practices in pre-service teacher education using ICT.

2) Day 2 (8 June 2011): Hands-on activities with Teacher Education Institution Toolkit

The second day was dedicated to the hands-on practices with the Toolkit. Under facilitation of Drs. Lim Cher Ping, Chai [will find first name] and Daniel Churchill, the three authors of the Toolkit, the participants experienced milestones of developing policy and plan for pre-service teacher education programmes with and for the use ICT.
UNESCO digital materials were also introduced to the participants, some of whom had never been aware of the available resources from UNESCO.

3) Day 3 (9 June 2011): Planning for scaling up

On the last day of the Workshop, groups of participants presented their plan and policy that they had developed during the hands-on session on Day 2. The plans developed by participants appeared to be well contextualized in their institutions and the ICT-CFT was helpful to frame the plans.

The last session of the three-day workshop was to discuss how to scale up the use of ICT-CFT and the Toolkit at the institutional and national levels. UNESCO and Microsoft presented their plans to follow up on this initiative and advised different channels that participants could access to the technical support.

The workshop was extremely well received. Thirty-nine participants responded to the evaluation forms designed by the organizers (87% response rate). According to the evaluation, all the nine sessions of the three-day workshop were rated as “Great (4)” or “Excellent (5)”, resulting in the average of 4.56 for the overall quality of the sessions. Comments from the participants include “Giving this opportunity I must thank all the sponsors and organizers; HKIE, MS, SEAMEO and specially UNESCO. I hope they implement the action together with my colleagues.”; “Excellent organisation; very important conversations taking place.”; “This is very useful workshop since all the leaders from Asia Pacific TEIs come to share & discuss on the important topic ICT in Education”.

Suggestions for the future workshop were also valuable, including: “Development from action plans (that participants made during the workshop)”, “More practice or case studies of ICT Implementation in various context from more developed countries”, and “Best practices in using ICT tools to design and implement constructive lessons/topic in pre-service training”.

Active participation and well-organized workshop agenda with diverse exposure to new tools, innovative practices and other resources synergized the effect of the Workshop.

Further information:

- [Next Generation of Teachers Project](#)

Related links:

- [Vietnam to develop Next Generation of Teachers](#)
- [Nepal develops Master Plan for ICT in Education](#)
- [Philippine Commission on Higher Education consult stakeholders on curriculum revision for Next Generation of Teachers](#)
- [Creating the next generation of educators](#)
UNESCO Bangkok kicks-off new ICT in Education project funded by Korean government
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UNESCO joins iTunes U

UNESCO joins iTunes U with a wealth of new educational material providing free access to UNESCO’s rich multimedia content.

By joining iTunes U, a dedicated area of the iTunes Store that offers free audio and video content from leading educational institutions, UNESCO is reinforcing its efforts to reach out to young men and women around the world, providing multilingual audio, visual and printed materials in education, sciences, culture and communication.

Collections containing several hundred movies, podcasts, and documents are available in three languages (English, French and Spanish), ranging from training support materials, to policy reports and journals, and lectures, interviews and documentaries which can be downloaded for free to a computer, iPad, iPhone or iPod touch. The collections will be regularly updated with new content from UNESCO’s programmes as well as from its 65 years of archives. Featured collections at launch will focus on UNESCO activities around Girl’s Education, Biosphere Reserves, Africa, and Heritage.

"UNESCO has an incredible wealth to share, and joining iTunes U is a fabulous way to do this,” UNESCO Director General Irina Bokova declared. “UNESCO has a long and deep
commitment to Open Educational Resources and to making knowledge widely accessible to all. We see this as a foundation upon which to build the ‘knowledge societies’ that we need today – where information is transformed into knowledge and contributes to the welfare of the whole of society, where none are excluded and all voices are heard,” she said.

Further information:

- UNESCO on iTunes U

Related links:

- Towards OER university: Free learning for all students worldwide
- The pedagogical enhancement of open education: An examination of problem-based learning
- 7 things you should know about open educational resources
- Open Educational Resources Center For California
- The impact of openness on bridging educational digital divides

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UNESCO evaluation shows student achievement increases by combining professional learning, compelling interactive digital content and technology in the classroom

Eight million jobs will go unfilled in Brazil in the next three years due to shortage of qualified workers. Dell invests in research and development with local universities to better prepare students for 21st century competitive workforce.

Evaluation indicates student achievement is enabled by the adoption of classroom technology, including digital content, combined with professional learning activities to the teachers and community support.

Technology, when integrated with interactive digital content, teacher training and community involvement, has a positive impact on student learning and performance,
according to the results of the "Interactive Class" project evaluated and released by UNESCO. Dell announced that it will extend research on technology's impact on teaching and learning in emerging and developed countries.

Participating middle school students improved their performance in math by 20 percent seven times better than a non-participating study group. According to the study, 44 percent of students said that lessons using technology became more interesting and 54 percent said the lessons encouraged interest in studying.

The 18-month evaluation initiated by Dell in partnership with the Secretary of Education of Sao Paulo State, and with participation from University of Sao Paulo and management from Eldorado Institute, evaluated the impact of professional learning, interactive content and technology in the classroom. The evaluation spanned 23 schools in Hortolandia, Sao Paulo, Brazil and included approximately 6,000 students and 100 teachers.

The evaluation also identified factors that have a critical impact on optimizing the degree to which technology can enhance student performance:

**Teacher interaction and professional learning:** The more teachers interact with students in the classroom, the greater the students' interest in studying, collaborating, sharing knowledge and taking initiative. Through more frequent use, teachers begin to develop and refine the skills they need to use technology and digital content to promote more attractive instruction, reducing the gap between students and teachers and promoting a collaborative learning environment in the classroom.

**Digital Content readiness:** Interactive lessons offer a great opportunity for creating autonomous material with new learning objects aimed at assisting students in developing the 21st century skills such as creativity and innovation, critical thinking and problem solving, communication and collaboration. The availability of classroom-ready digital content is a determining factor in a teacher's ability to integrate interactive learning methods into their curricula.

**Community Involvement:** Educational technology is most effective when communities, including parents and educational decision-makers, actively support the use and dissemination of educational technology, including digital content.

**Public Policy:** The "Interactive Class" project's lessons reinforced "a need for a public policy that effectively implements the use of ICT in the classroom." Policymaking that encourages the adoption of classroom technology is a key component of enabling skills and knowledge that prepare students for a 21st century workforce.

**Research details and project results**

In almost every Latin American country, governments have increased spending on education by building schools, adding teachers and enrolling more children. These efforts have clearly expanded the geographic reach of education, but the region continues to scores near the bottom on global achievement tests including the Programme for International Student Assessment (PISA).
The evaluation compared results from students in the participating schools to the results of non-participating schools. The way technology was introduced in alignment with pedagogical programs, interactive content development and teacher training, paired with an involved community; it generated both social and educational results:

- Increased opportunities for students to build their 21st century skills and competencies including collaboration, team work and problem solving.

- Improved student/student horizontal learning and student/teacher/student cooperation work giving room for different classroom initiatives.

- Increased opportunities for teachers to have a new pedagogical look, adhere to new languages and thereby strengthen their relationships and collaboration with students.

- Attracted students who felt they were digitally included by taking part in an innovative project thereby starting a new approach to obtaining knowledge because of the challenges of creativity and the use of technology; 44 percent of students said that lessons using technology became more interesting and 54 percent said the lessons encouraged interest in studying.

- Strengthened the disposition of teachers who already master these technologies and revealed to others how urgent it is to move towards utilizing more technology in the classroom.

- Improved performance - middle school students improved their performance by 34 percent in Portuguese and 20 percent in Math, results that are two to seven times better than the results obtained by the non-participating student control group. High school students also achieved better results than the control group. In addition it became clear that the more interaction in the classroom the teacher provided the greater the student's interest in studying.

Quotes:
Vera Cabral, teacher training school coordinator of the Education Secretary of Sao Paulo State "The Secretary of Education of Sao Paulo State believes that the proper use of technology in the classroom -- including equipment, content and training -- can change the reality of the educational system. The results from the experience in Hortolandia prove that we are on the right track, and it encourages us to study the expansion of the project on a larger scale."

Ana Maria Goncalves Rocha, Portuguese teacher at the Professor Paulina Rosa State School "This project shows that education in Brazil may have a solution. It is a starting point for a new way to teach - with innovation, interactivity and participation. I believe that this is the right path to take!"

Rebeca Cristina Silva de Oliveira, student at Manoel Ignacio State School "Now, I'm more interested in the classroom because it is more interesting and has more resources; I learn more because it is much easier to see and listen to what is being taught."
Further information:

- UNESCO evaluation shows student achievement increases by combining professional learning, compelling interactive digital content and technology in the classroom.

Related links:

- Celebrating best practices in the classroom
- WSIS Forum 2011: UNESCO strongly highlights the potentials of ICTs for building inclusive, open and diverse knowledge societies
- What is reasonable to expect from information and communication technologies in education?
- Asia and Pacific Database on Education launched - Giving policy makers and practitioners evidence for action

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- UNESCO "ICT in Education" Announcement e-newsletter

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Bytes after bullets: infoDev begins study of ICT in post-conflict reconstruction

Conflict, within and between countries, is a major cause and consequence of poverty. Conflict current affects around one quarter of low-income countries, but conflicts do end, and the challenge then is to bring relief and stability quickly, through good governance matched with rising living standards, in order to create the right conditions for nation building. A newly inaugurated infoDev research project will explore the ways that information and communication technologies (ICTs) can have a transformative role in that process.
Experience in a number of post-conflict countries has shown that mobile communication is one of the first sectors to contribute to economic recovery through increased foreign direct investment, better coordinated reconstruction, increased employment and expanded government revenues. Beyond the economic impact, ICTs can contribute to the development of social capital and trust. This study will seek to identify the specific ways in which this happens and how it might be improved.

In the first phase of this project, infoDev will lead the development of case studies about the role ICT had following conflict in Cambodia, Liberia and Sri Lanka. Cambodia conflict ended in the early 1990s and its transition has widely been lauded; it was also the first country in the world where mobile phones exceeded the number of fixed-line phones. In Liberia, years of civil war ended in 2005 when a newly elected government took office, but much remains to be done in laying the foundations for long-term development. Finally, Sri Lanka is a more recent example due to the May 2009 defeat of the LTTE. The World Bank has supported extensive e-governance reforms in Sri Lanka, allowing the research to explore the benefits of ICT in the public sector.

The diversity of experience in these countries will serve as the springboard for the second portion of the work that will develop high-level policy frameworks for using ICT as a tool for sustainable reconstruction in post-conflict countries. An important part of this will be a workshop that convenes policymakers and experts to discuss and disseminate the findings.

This research is made possible through the support of the UK Department for International Development (DFID).

Further information:

- Bytes after bullets: infoDev begins study of ICT in post-conflict reconstruction

Related links:

- Fostering culture of non-violence through ICT
- Mobiles and internet improve the livelihoods of the poorest
- Senior UN, private sector officials define vision for globally connected society
- Using ICT as a tool to promote peace

Previous issues of the e-newsletter:

- UNESCO "ICT in Education" Announcement e-newsletter
New broadband commission report seeks to bring high-speed connectivity to world’s poorest communities

Governments around the world need to rapidly formulate and implement national multi-sectoral broadband plans – or risk being seriously disadvantaged in today’s increasingly high-speed digital environment, according to a new report released by the Broadband Commission for Digital Development during its third meeting at UNESCO Headquarters in Paris.

Entitled Broadband: A Platform for Progress, the report advocates a coordinated, nationwide approach to broadband development that more closely resembles the development of national railway or electricity networks than the more laissez-faire, market-driven approach that has generally characterized the roll-out of mobile cellular technology.

“To optimize the benefits to society, broadband should be coordinated on a countrywide basis, promoting facilities-based competition and with policies encouraging service providers to offer access on fair market terms ... efforts should be coordinated across all sectors of industry, administration and the economy. Developing isolated projects or piecemeal, duplicated networks is not only inefficient, it delays provision of infrastructure that is becoming as crucial in the modern world as roads or electricity supplies,” the report says.

For emerging economies and developing countries, wireless broadband looks likely to be the platform of choice, bringing services like micro-banking, telemedicine and fast sharing of information in local languages to communities, no matter how isolated.

“Provided it is available to all and affordable for all, broadband-powered applications and content can be a powerful lever for achieving Education for All goals. Inclusive, universal and equitable broadband roll-out can be a tremendous accelerator for development and growth – one way to build Knowledge Societies and to share the wealth of the world’s cultural, linguistic and scientific resources,” said UNESCO Director-General Irina Bokova.

“However, access to broadband is only one part of the picture – developing human capacity is absolutely vital, to ensure that individuals have the skills to make the most of new technologies,” she added. “This means education, it means media literacy, it means ensuring that all marginalized groups are included. All actors – national, international, private and public – must work together to these ends. The case for this has been made. Now we must make it happen.”
The report makes a strong case for broadband as a driver of economic growth and new jobs, citing country case studies and reports by leading consultancies that point to increased employment opportunities, higher labour productivity and a strong stimulus to GDP. In low and middle income countries, for example, the report cites World Bank figures indicating a boost of 1.38 additional percentage points to GDP growth for every 10-percentage point increase in broadband penetration – and effect more pronounced than any other telecommunication service.

“History has witnessed many ‘declarations of independence’. But in today’s interconnected world we might propose a new ‘Declaration of Inter-dependence’ – a recognition that the economic welfare of each individual country increasingly depends on access to the rest of the world through broadband Internet,” said ITU Secretary-General Dr Hamadoun Touré. “This new Broadband Commission report indicates that improvements in broadband penetration directly correlate to improvements in GDP. Basically, the more available and cheaper broadband access is, the better for a country’s economy and growth prospects.”

Offering much more than faster access to web pages, broadband networks are a crucial element of the ‘Internet of Things’, by which ordinary inanimate objects communicate with one another using technologies like RFID, without the need for human intervention. Such networks are already revolutionizing inventory control and fleet management, and are set to play a growing role in key social sectors like healthcare, through e-health applications, education, through remote learning and teacher training, and environmental management through applications like smart grids, monitoring systems and smart buildings.

The cost of broadband remains a problem in many nations. Recent ITU figures show that while in the top 21 most wired countries, broadband access costs less than 1% of an average monthly salary, in the least wired nations – which include the world’s poorest countries – access to broadband can cost double an entire month’s salary or more. That prohibitive pricing means that while advanced markets enjoy broadband penetration of over 30%, most of the world struggles with 5% penetration or less.

Positive findings released by ITU last week show that, on average, consumers are paying 50% less for high-speed Internet connections than they were two years ago. However, this fall is mainly due to price decreases in developing countries, with steep declines often reflecting the extremely high cost of broadband in the developing world.

The top countries with the cheapest broadband prices relative to average national monthly income are all high-income economies: Monaco, Macau (China), Liechtenstein, the US and Austria. Customers in 31 countries – all of them highly industrialized nations – pay only the equivalent of 1% or less of average monthly GNI per capita for an entry-level broadband connection.

At the other end of the scale, in 19 countries, a broadband connection costs more than 100% of monthly GNI per capita. And in a handful of developing countries the monthly price of a fast Internet connection is still more than ten times monthly average income.
Despite encouraging trends, Africa continues to stand out for its relatively high prices. Fixed broadband Internet access in particular remains prohibitively high, and, across the region as a whole, still represented almost three times the monthly average per capita income. Only one out of ten people in Africa is using the Internet.

An overview of the new report can be downloaded here.

The full report (199 pages) and Executive Summary (14 pages) can be downloaded on the Broadband Commission website.

Further information:

- New broadband commission report seeks to bring high-speed connectivity to world’s poorest communities

Related links:

- Broadband Commission for Digital Development
- High-resolution photos of the 6 June Meeting
- Rural schools connected to ICT in southern Sri Lanka
- ITU estimates two billion people online by end 2010
- Advances in mobile services and broadband are transforming Asia-Pacific connectivity
- ICTs for development: Improving policy coherence

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5th annual LearnX Asia Pacific Conference and Exposition
The non-profit foundation LearnX, in collaboration with The CyberInstitute, is hosting the 5th annual LearnX Asia Pacific Conference and Exposition from September 14th-15th, 2011 at the Brisbane Convention and Exhibition Centre in Brisbane, Australia.

The conference is designed for anyone involved in learning for workforce advancement, in both public service and corporate sectors. Organizations seeking to implement or improve their learning initiatives and capabilities can come to the LearnX Conference to review and discuss best practices, strategies, technologies, tools, and services.

The forty-plus parallel sessions include topics such as: The 7 Deadly Sins of Online Training and How to Avoid Them; Moving the Needle: How eLearning Impacts Performance of Individuals and Organizations; How to Cut Elearning Project Costs; and Learning 2020 - Social, Transparent and Engaged.

Occurring simultaneously with the convention is the LearnX Exposition. Free to attend, visitors can meet with experts and learn about technologies for applying e-learning and training solutions to increase their organizational performance. Interested visitors have the opportunity to source new suppliers and innovations, win a selection of prizes, and attend free seminars.

LearnX also presents awards to e-learning and training professionals that have positively impacted workforce learning. The 2011 Awards program recognizes outstanding achievement in talent, practices, and service at both the individual and organizational levels.

Profits generated from the Awards program will be donated to the Humour Foundation and its Clown Doctor program in children's hospitals.

Registration and additional information can be found at http://www.learnx.net/2011/index.html

Programmes & Projects

Singapore ‘Future School’ Project

In 2007, FutureSchools@Singapore was initiated to promote innovation and facilitate ability-driven education paradigm in school by integrating frequent use of ICT in students’ daily school lives.

Through this initiative of digital learning, schools hope to equip students with essential ICT skills they need to become effective global workers in the fast changing digital age.

FutureSchools@Singapore are promoted by the Singapore infocomm companies and led by education technology research community partners to adapt traditional school learning into a holistic learning environment using ICT. Five schools were chosen at first to test out the result of this initiative.
The implementation of the project involves integration of technologies and innovative school designs to enable an efficient management in administration.

In addition, technologies are purposely utilized in educational programs to create a more interactive, engaging study environment. For example, in Canberra Primary School, students try and solve puzzles in spelling and science on a touch screen whiteboard and remote devices. And blogging is part of English lessons.

Upon reflection of the new way of learning, one student comments "People can type more words from other classes and then we can see what they are writing. We will learn more words which we don't know."

This innovative method of learning also proves to be environment-friendly since the schools rely on touch-screen whiteboards and tablet PCs instead of papers.

Teachers also seem to welcome to the new initiative, Kevin Cheng, an English Literature teacher from Hwa Chong institution, explains why the project is good for students and teachers, “How their work applies to a real world situation and not just rote learning or what they call scholastic, academic learning. So everything they learn has a direct and very pragmatic application in the real world context.”

The majority of funding comes from the government, however, to portion of funding depends on the ideas and directions school choose to implement the initiative.

As one government official explains, the project aims to be inclusive, hence before schools work out the details of their projects, government will see for the amount each school requires.

Further information:

- [FutureSchools@Singapore](#)

Related links:

- [Making the most of your interactive whiteboard](#)
- [The report on the status of ICT integration in education in Southeast Asia](#)
- [Singapore invests 610US$ million in ICT infrastructure for schools](#)
- [Singapore and Republic of Korea among the top ten in the Global Information Technology Report 2007-2008](#)

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

Young Masters Programme on Sustainable Development

Young Masters Programme (YMP) is a global web-based distance education on sustainable development, aimed at high school students and their teachers. Initiated in 1999, the YMP has been developed as an innovation project by the International Institute of Industrial Environmental Economics (IIIEE) at Lund University in Sweden.

The course is offered free of charge to all schools worldwide. Thus far, over 20,000 students from more than 110 countries have been educated through the YMP-course. The teacher network consists of 1,500 active teachers from all over the world. Since 2006 the programme has been growing at particular speed in China.

The pedagogy is built on an exploratory method for learning, where off-line studies of real-life facts alternate with on-line study, discussion and exchange in international virtual classrooms.

Through the YMP students gain knowledge of how sustainability challenges are interconnected globally. They are empowered to make a difference as individuals acting at the local level in a global context. This set-up also provides YMP with its huge potential for rapid growth, as many of the bottle-necks of traditional distance education can be avoided.

The vision is to develop YMP into the most exciting and comprehensive distance education on sustainable development in the world. Already now, the demand for YMP education is far greater than the capacity.

With funding from the Swedish International Development Cooperation Agency (SIDA) the YMP is currently undergoing platform development that will allow for a substantially larger number of students to participate by the end of 2011.

Further information:

- Young Masters Programme on Sustainable Development

Related links:
- E-course on social and economic policies
- ICTs and environmental sustainability
- Launch of climate change education web portal
- Sustainable development and education in the digital age
- Sustainable ICT in further and higher education
- A model for sustainable student involvement in community open source

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Directory of ICT for Development Training Institutions in the Asia-Pacific and Everyday ICT Terms for Policymakers and Government Officers

The publications are designed to help enhance understanding of everyday ICT terminology and to serve as a reference for those looking to identify institutions providing ICT for development (ICTD) training in the Asia-Pacific.

The Directory of ICT for Development (ICTD) Training Institutions in the Asia-Pacific provides ICT stakeholders with contact and background information of over 70 institutions from more than 30 countries in the region which are delivering training in the field of ICTD. The Directory is also designed to tap synergies by enhancing communication and networking in the field of ICTD capacity building in the region.

The Everyday ICT Terms for Policymakers and Government Officers provides officials working in the field of ICT with a better understanding of the ever growing list of ICT vocabulary through a glossary of over 400 key terms. The glossary provides clear definitions, using simple language that avoids technical jargon and details in order to ensure quick and easy comprehension.

Read the publications:

- Directory of ICT for Development Training Institutions in the Asia-Pacific and Everyday ICT Terms for Policymakers and Government Officers

Related links:
- Harnessing ICTs to alleviate poverty
- E-course on social and economic policies
- UNESCO online courses for educational planning and management
- ICTs for development: Improving policy coherence
- Delivering coherent ICT policies in developing countries

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The NMC Horizon Report: 2011 K-12 Edition

Education and technology leaders, policymakers and key stakeholders in educational institutions need forward thinking information addressing opportunities for teaching, learning and creative expression.

The NMC Horizon Report: 2011 K-12 Edition is a publication of the New Media Consortium. This annual report provides a rich set of topics, examples and resources for use in considering new technologies that hold strong promise for K-12 institutions in the US and globally.


The Toolkit is comprised of a Presentation (PPT) template, Facilitator's Guide and Discussion Activities, along with an overview video and short video clips highlighting emerging technologies identified in the Report. This Toolkit is available for free, but registration is required.

Both the Report and the Toolkit are made available through support from HP.

Read the report and toolkit:
Related links:

- Teachtoday – living with technology
- 2011 Horizon report on emerging technologies
- 5 ways ICT can support the Millennium Development Goals

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Invitation to World Literature

This website, Invitation to World Literature, contains a multimedia series introducing drama, poetry and novels from around the world in many times and cultures.

Centred around a half an hour video for each work, the videos feature a variety of writers, scholars, artists and performers with personal connections to world literature. In addition to the video component there is a “Read” section providing an excerpt and background information as well as an “Explore” section that extends the context of the work giving key points for discussion and further study.

The 13 texts explored are The Epic of Gilgamesh (Sumerian, 2600 BCE and older), My Name Is Red (Turkish, Orhan Pamuk, 1998), The Odyssey (Greek, ca. eighth century BCE), The Bacchae (Greek, Euripides, 405 BCE), The Bhagavad Gita (Sanskrit, first century CE), The Tale of Genji (Japanese, Murasaki Shikibu, ca. 1014), Journey to the West (Chinese, Wu Ch’êng-ên, ca. 1580), Popul Vuh (Quiché-Mayan, ca. 1550s), Candide (French, Voltaire, 1759), Things Fall Apart (English, Chinua Achebe, 1959), One Hundred Years of Solitude (Spanish, Gabriel García Márquez, 1967), The God of Small Things (English, Arundhati Roy, 1998) and The Thousand and One Nights (Arabic, ca. fourteenth century)

The purpose of this site is to introduce richness and purpose of world literature. It makes these literary treasures accessible and hopes to inspire readers to continue the exploration of literature from around the world.

Further information:
• Invitation to World Literature

Related links:

• LibriVox: What volunteers can accomplish
• International children’s digital library project
• Freereading
• Online public library aims to make literature accessible for all children

Previous issues of the e-newsletter:

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Take care of your eyes

For those who spend long periods of time staring at the screen and doing computer work, eyestrain or officially, Computer Vision Syndrome could be a common suffering. Over 70% of the population has eye problems because of work on a computer screen. Now, they may turn to EVO (protectyourvision.org) for help.

EVO is a free new online application aimed at preventing or reducing the symptoms of a Computer Vision Syndrome by reminding users about systematical breaks. EVO, a friendly and cute robot is designed as user’s personal eyes assistant to take care of it.

With the simple interface and guidance of EVO, users have the option to choose a break mode, which reminds after a certain interval of time, to have a rest or do eyes gymnastics before continuing with computer work.

Compliance of the 20-20-20 rule (every 20 minutes you should look at something 20 feet away for at least 20 seconds) and 60-5 rule (take 5 minutes break during every 60 minutes of work) are available for users to choose at the mood setting menu. Also, users may set their own break mode according to their own habits.
EVO also provides eyes gymnastics examples. By following every step of motion, users will find it simple and effective to remove eyes fatigue.

Further information:

- EVO - Protect your vision

Related links:

- Computer Vision Syndrome (CVS)
- Kids and Computer Eye Strain
- Computer Vision Syndrome and Computer Eye Strain

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