Highlight: Creativity & entrepreneurship

Inspiring Education: Creativity and Entrepreneurship

To examine and discuss the broad range of issues of how education can support and promote creativity and entrepreneurship, UNESCO is organizing the 15th UNESCO-APEID International Conference, Inspiring Education: Creativity and Entrepreneurship, in collaboration with the World Bank and the Ministry of National Education of Indonesia held on 6-8 December 2011 in Jakarta, Indonesia.

ICT education breaks through gender barriers in India

Education Development Center, Inc. (EDC), in partnership with Hewlett Packard, manages an information and communication technology (ICT) training program known as the HP Learning Initiative for Entrepreneurs (HP LIFE), which trains aspiring entrepreneurs to use ICT.

News & Events

Better policies for better use of ICT in Education

An International Symposium on ICT in Education: Potential and Lessons Learnt, was held from 13-14 September 2011 in Ulaanbaatar, Mongolia.

“Crowdsourcing – linking up to reach Education for All”

UNESCO teamed up with Nokia and the Pearson Foundation on 10 October to launch the Education for All (EFA) Crowdsourcing Challenge, an eight-month initiative - with prizes - to elicit suggestions on how mobile communication can help achieve EFA goals.

Open EMIS testing a new policy tool in Mongolia

Open EMIS may be the answer for countries seeking a simple but effective solution for establishing or strengthening their national system for collection, processing and utilization of education data. A pilot test was launched in May 2011 in Mongolia.

Launch of the NESPAP Open Platform eLibrary

On 8 September 2011, UNESCO Bangkok launched the new National Education Systems and Policies in the Asia-Pacific Region (NESPAP) Open Platform eLibrary. The eLibrary aims to support knowledge sharing by providing users with access to a specialized database of education policy, planning and management resources.

Information technology plays critical role in achieving UN objectives, says Ban

The United Nations must leverage the power of information and communications technology (ICT) to the fullest in its response to political, economic and environmental challenges and to improve the delivery of its services, says Secretary-General Ban Ki-moon.

Programmes & Projects

Interactive radio instruction – How cost effective ICT can have a remarkable impact

The International Development Division (IDD), a subdivision of the Education Development Center (EDC), is working with local partners in over 35 countries to improve education at a preschool, primary and secondary level. One of their projects is called “Interactive Radio
Instruction (IRI)”, where radio is used to bring curriculum and teacher training to the world’s least developed countries.

Resources

COL-UNESCO Basic Guide to OER
The Commonwealth of Learning recently published “A Basic Guide to Open Educational Resources (OER)” in collaboration with UNESCO. The book is a guide to understanding the use, potential and issues related to OER.

Information and communication technology for development: ADB experiences
This paper takes stock of selective ADB projects across sectors and countries that use ICT to help achieve project outcomes and development objectives.

Imagining future learning: Mapping major changes to education and training in 2025
This report presents the findings of a structured and targeted expert consultation exercise which aimed to identify, cluster and rate the main changes in education and training expected to occur over the course of the next 20 years.

ICTs for new engineering education
The shortage of qualified engineering work force is creating social and economical difficulties on a global scale. This document presents a five-layered model to set up a new, ICT-enabled vision for engineering education.

A 3D NASA exploration game
Moonbase Alpha is an online game which combines aspects of traditional formal education with game-based learning to teach science, technology, and engineering concepts to students.

Highlight: Creativity & entrepreneurship

Inspiring Education: Creativity and Entrepreneurship
Tributes poured in for Steve Jobs following his demise on 5 October 2011. The Apple co-founder is an iconic innovator who gave us the iMac, the iPod, the iPhone and the iPad.

Recognized as a visionary, creative genius and mentor, he advised Stanford’s graduating class of 2005 not to waste their time living someone else’s life, not to be trapped by dogma, not to let the noise of others’ opinions drown out their own inner voices, but to have the courage to follow their hearts and intuition.

The world has lost an inspirational leader, but Steve Jobs’ legacy lives on. It is vital for us to encourage, promote and emulate his creative and enterprising spirit.

Creativity and entrepreneurship have flourished throughout the ages and in all cultures and societies. They are traits found not only in geniuses and intellectual giants, but exist in everyone, expressed in various forms and manifestations. Joseph Schumpeter who
popularized the concept of creative destruction said that entrepreneurs are change agents, not just creators of business enterprises, and Steve Jobs was the consummate example.

Creativity and entrepreneurship can be harnessed and cultivated. In fact, the humanist mission of education compels educators to encourage and nurture the talents and aptitudes in their students in a setting that respects the human and natural environments, as well as diversity of traditions and cultures. Education is in itself an act of creativity, facilitating the individual to learn through any of their multiple intelligences – linguistic, logical-mathematical, spatial, bodily-kinesthetic, musical, interpersonal, intrapersonal and naturalist – as identified by Howard Gardner. The 21st century needs a variety of personalities, imaginations, talents and skills to deal with 21st century challenges. Culture and the arts are essential components of a comprehensive education to enable the full development of the individual through opportunities for imagination and discovery in all aspects.

Unfortunately, the educational system in many countries has been criticized for hampering, instead of fostering, creativity. Innovators such as Steve Jobs and other successful entrepreneurs who have dropped out of school or university to seek freedom and space for their own experimentation underscore their dissatisfaction and disenchantment with the formal and rigid system.

Where have we failed? How can we make it better?

Education has to adapt to changes in the nature of work in the 21st century and facilitate the development of useful and productive members of society. As resources dwindle and labour market competitions intensify, creative entrepreneurship has emerged as a frontrunner for boosting employment and job creation. Creativity and intellectual innovations are necessary building blocks to sustain tomorrow’s society.

To examine and discuss the broad range of issues of how education can support and promote creativity and entrepreneurship, UNESCO is organizing the 15th UNESCO-APEID International Conference, Inspiring Education: Creativity and Entrepreneurship, in collaboration with the World Bank and the Ministry of National Education of Indonesia. To be held on 6-8 December 2011 in Jakarta, Indonesia, the conference will provide a forum to:

- Increase understanding and knowledge of creativity and entrepreneurship;
- Showcase and promote innovative and educational approaches, projects and practices that enhance creativity and entrepreneurship;
- Encourage national, regional and global collaboration across all sectors and levels to improve creativity and entrepreneurship; and
- Facilitate networking and exchange of experiences among policy makers, researchers, educators, administrators, youth and private sector personnel.

Eminent speakers and paper presenters will share their rich experiences in linking theory to practice. Policy makers, educators, academicians, researchers, representatives from the private sector will be able to examine the broader concepts of creativity and entrepreneurship, and recognize their importance for both personal and economic development. Participants are encouraged to discover how they can optimize creativity and
entrepreneurship to nurture children, youth and adults to meet 21st century challenges with inspiration, passion and courage, at the same time instil in them honourable ethics, morals and values.

Please join us at the conference. For more information, contact:

UNESCO-APEID International Conference Secretariat
UNESCO Bangkok
920 Sukhumvit Road, Prakanong
Bangkok 10110
Thailand
Tel: (66-2) 391 0577
Fax: (66-2) 391 0866
Email: apeidconf@unesco.org
Website: http://www.unesco.org/education/apeid/conference2011

Further information:

• 15th UNESCO-APEID International Conference

Related links:

• USAID, Cisco & World Learning to promote entrepreneurship and ICT Education
• A call to arms: e-Skills book launch
• Learning beyond the classroom
• Malaysia: Vision 2020 for a digital workforce
• 2011 Horizon report on emerging technologies
• Fostering the use of ICT in pedagogical practices in science education
• 4th Netexplorateur Forum took place in February at UNESCO

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
ICT education breaks through gender barriers in India
By: Education Development Center, Health and Human Development Division, Asia

Education Development Center, Inc. (EDC), in partnership with Hewlett Packard, manages an information and communication technology (ICT) training program known as the HP Learning Initiative for Entrepreneurs (HP LIFE), which trains aspiring entrepreneurs to use ICT.

As one of the HP LIFE program’s local non-profit training organizations, the Self-Employed Women’s Association (SEWA) has trained 5,000 women workers from rural areas of India in core computer skills to find jobs, become self-reliant, and overcome traditional gender-associated constraints. SEWA’s ICT trainings have benefited the lives of many women and girls, including Varshaben Luva, who hails from the rural village of Kalol, India.

Luva is one of a growing number of women in India breaking through traditional gender roles by starting her own business. After attending an HP LIFE ICT training session at SEWA, Luva was able to combine her new technology skills with her background in agriculture to start her own text messaging business for farmers. Luva goes to SEWA on a daily basis to do online research of market analyses and prices of commodities. Farmers then pay her 50 Rupee (or just over U.S. $1) a month to receive daily text messages from her about current market prices.

Because of Luva’s new text messaging business, farmers can now decide whether it’s worth transporting their crops—mostly cotton and corn—to the market that day. With 88 clients in the Mehsana District of Gujarat State to date, Luva’s business continues to thrive. ICT education can make a significant impact on rural women and girls like Luva, who can use their new ICT skills to not only make a living for themselves, but also make a wider difference in their communities.

‘Luva’s business model can be replicated by other women to benefit farmers all over India,’ says EDC’s Yupaporn Boontid. HP LIFE is a global program that helps train students, aspiring entrepreneurs and small business owners to harness the power of ICT in an effort to establish and grow their businesses, create economic opportunity and improve the lives of their communities.

Further information:

- 15th UNESCO-APEID International Conference
News & Events

Better policies for better use of ICT in Education
International Symposium on ICT in Education: Potential and Lessons Learnt, 13-14 September 2011, Ulaanbaatar, Mongolia

The status and readiness of ICT in education varies greatly throughout the Asia-Pacific region. Accordingly, policy directions and implementation strategies have diverged, as well as their impacts. It is thus valuable to provide a platform for countries that share some common backgrounds to learn from successful practices and best achievements in redefining, adjusting and executing national policies, strategies and specific activities.

In this regards, the UNESCO Asia and Pacific Regional Bureau for Education (UNESCO Bangkok) and Tokyo Institute of Technology (Tokyo Tech), in collaboration with the Mongolian Ministry of Education, Culture and Science (MECS), jointly organized and hosted an international symposium on national policies and practices in the use of ICT in education, focusing on the countries in Central and Northeast Asia. The 2-day Symposium was carried out by the two main themes: ICT for management and ICT for teaching and learning. Experts and country representatives discussed the use of technology for improving policy formulation, planning and management of the education sector. They also presented current status of how ICT is used to improve teaching and learning and exchanged challenges and lessons learnt in implementing ICT-integrated education at the national
The symposium brought together over 50 officials and professionals representing six member states from Central and Northeast Asia (Democratic People’s Republic of Korea, Kazakhstan, Kyrgyzstan, Mongolia, Tajikistan, and Uzbekistan) and international partner agencies (UNESCO Bangkok, UNESCO Institute for Information Technologies in Education-IITE, Tokyo Institute of Technology, Ministry of Education, Culture, Sports, Science and Technology of Japan- MEXT, the Asian Development Bank and the World Bank missions in Mongolia).

The seminar provided a space for education policy makers, officials and professionals of participating countries to exchange information on the policy initiatives, good practices and lessons learnt. The symposium well served its purpose to provide member states in the region with a forum to discuss and identify policy options and potential solutions of common issues and challenges faced by education systems. Participants agreed to the proposal to establish an annual platform on ICT use in education for countries in Central and Northeast Asia and to hold this symposium next year in a country of the region. UNESCO Bangkok, UNESCO-IITE, Tokyo Tech and MEXT agreed to continue to support this initiative.

For more information, please contact: Gwang-Chol Chang (gc.chang@unesco.org). Jonghwi Park (j.park@unesco.org)

Further information:

- ICT in Education
- Education Policy and Reform (EPR) Unit

Related links:

- Policy makers re-examine implications and effectiveness of ICT use in education
- UNESCO, INTEL connect ICT in Education policymaker
- UNESCO-INTEL launch ICT in Education Policy Toolkit for India
- ICT in Education policy project
- ICT National policies & case studies
- Developing a national information and communications technology strategy for education in Pakistan
- Bangladesh begins initiative to develop its National ICT in Education Master Plan
- Bangladesh receives USD$81 million from the World Bank to build up higher education
- India launches a new scheme on ICT in Education, minister says
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

“Crowdsourcing – linking up to reach Education for All”

UNESCO teamed up with Nokia and the Pearson Foundation on 10 October to launch the Education for All (EFA) Crowdsourcing Challenge, an eight-month initiative - with prizes - to elicit suggestions on how mobile communication can help achieve EFA goals.

Crowdsourcing uses group collaboration to achieve a specific goal. Participants post ideas and other participants can vote for or against them, along with feedback and solutions. A unique element of crowdsourcing is the ability to connect people with needs or ideas with software developers who can address those needs or realize those visions.

The EFA Crowdsourcing Challenge is designed to enable people with similar interests to connect and collaborate on ideas to achieve EFA. It plans to develop suggestions emerging from the dynamic interaction between education experts, teachers, parents, students and software developers.

Each month will feature a separate EFA goal. The first month is devoted to finding solutions on how mobile communication can help achieve literacy.

Prizes will be awarded monthly to the best ideas, chosen by a panel of judges. Promising projects will be developed and implemented by Nokia or other participants after the challenge ends, on 31 May 2012.

Further information:

- Crowdsourcing – linking up to reach Education for All

Related links:

- Harnessing ICTs to alleviate poverty
Open EMIS testing a new policy tool in Mongolia

Open EMIS is formulated based on a generic EMIS framework, adaptable to various country contexts, and thus available to member countries without restricting further customization. Moreover, it can be installed down to the school level or if necessary at the sub-national level which proves useful for the decentralization of data entry tasks.

Open EMIS also includes an off-line feature which allows the system to operate with no internet connection - an option that most EMIS systems do not have. Though designed for collection of aggregated data, Open EMIS is also adaptable to handle individual registers. It offers an alternative to expensive privately developed EMIS solutions and at the same time allows appropriation by local actors. The pilot testing of Open EMIS started in 2009. Using a participatory approach to software development, interaction with various types of users has allowed continuous customization of the software.

The current pilot test was launched in May 2011 in the Bulgan region and one district of the capital city of Mongolia. It involves adapting Open EMIS to the Mongolian context and attracts strong support from the Ministry of Education Culture and Science (MECS). This
support is important in ensuring the tool is user friendly and builds future self-sufficiency. Challenges identified from this pilot test include financing for the next round of improvements and a nation-wide deployment in Mongolia to be scheduled next year.

Currently, Open EMIS is available in English, French and Mongolian. It can be customized and translated into more languages. No doubt Open EMIS is a customizable and affordable tool, and if paired with sufficient local analytical capacity, it may empower more countries to design effective evidence based education policies for their unique context.

For further information, visit the website openemis.codeplex.com or contact Pierre Chapelet (p.chapelet@unesco.org) or the EPR Unit at UNESCO Bangkok (epr@unescobkk.org).

Further information:

- Open EMIS testing a new policy tool in Mongolia

Related links:

- First large-scale survey of ICT in Europe’s schools under way
- EMIS development in a new era
- 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
- New ICT development index compares 154 countries
- Technology companies lead collaboration to improve global education assessments
- Indicators for policy makers
- Handbook on Monitoring and Evaluation of ICT in Education Projects

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
Launch of the NESPAP Open Platform eLibrary

On 8 September 2011, UNESCO Bangkok launched the new National Education Systems and Policies in the Asia-Pacific Region (NESPAP) Open Platform eLibrary. The eLibrary was co-launched by the Director, UNESCO Bangkok, Mr Gwang-Jo Kim, and the Executive Vice President, National Science and Technology Development Agency (NSTDA), Ministry of Science and Technology of Thailand, Dr Chadamas Thuvasetthakul at the UNESCO Bangkok offices.

The eLibrary, developed jointly by UNESCO and the Science and Technology Knowledge Services centre, an institution affiliated with NSTDA, aims to support knowledge sharing by providing users with access to a specialized database of education policy, planning and management resources. The eLibrary has the ultimate objective of promoting effective education policy by assisting policy makers, managers, and education professionals learn from the experiences, practices and innovations of their regional partners. The eLibrary plays host to a wide range of policy materials on issues as diverse as teacher education policy to aid effectiveness in education. In its initial stages, the database’s focus will be on materials relevant to the Asia-Pacific region, with a view to expanding the scope over time. Importantly, the eLibrary is highly interactive, enabling users who register to not only search but also to contribute resources to the database.

The eLibrary represents the first component in a broader initiative entitled the National Education Systems and Policies in the Asia-Pacific Region (NESPAP) Open Platform. This platform aims to support evidence-based education policy development in UNESCO Member States and to contribute to more effective international cooperation in education through the provision of a range of policy tools. In addition to the eLibrary, the Platform will support an education expert database, for use in finding and contacting relevant specialists in education related fields, and a set of education country profiles to assist in policy research and analysis.

UNESCO and NSTDA affirmed their commitment to continue the partnership, noting that this is just the first step in what both parties hope will be a useful initiative for policymakers.

For further information on the eLibrary and to gain access its resources, please click here. To visit the National Science and Technology Development Agency website, please click here.

Further information:

- Launch of the NESPAP Open Platform eLibrary
Information technology plays critical role in achieving UN objectives, says Ban
The United Nations must leverage the power of information and communications technology (ICT) to the fullest in its response to political, economic and environmental challenges and to improve the delivery of its services, says Secretary-General Ban Ki-moon.

Addressing a meeting at UN Headquarters on public-private partnership for ICT, Mr. Ban stressed that the world body must make the fullest possible use of ICTs in achieving its development goals and other important objectives.

“We already do a great deal, but we know we can do more… much more,” he said.

The Secretary-General noted that ICTs can help strengthen disaster risk reduction as well as the UN’s response when disasters do happen. Other important activities – from reporting on repression and human rights abuses and monitoring ecosystems to delivering public services, especially in health and education – can all be made more effective through ICTs.

The UN itself can benefit from development in this area, thereby heightening performance while increasing accountability, he added.

Mr. Ban said that the UN has made significant progress in using ICTs to improve the
delivery of its services since the establishment of the UN ICT strategy in 2009, and it was
done largely within existing resources. The ICT strategy is comprised of a vision, a
management framework and three strategic programmes.

“Yet the time has now come when we need additional financial and other support if we are
to achieve truly high-impact and better results,” he stated, adding that this is where the
public-private partnership on ICT can play a critical role.

“It can provide sound strategic guidance as well as resources for leveraging ICT to build a
better world,” said Mr. Ban.

“At the same time, I am convinced that your involvement will have a significant positive
impact for your own organizations. Contributing to global well-being will further reinforce
your position as socially responsible citizens of the world, doing their part to advance the
human condition.”

Further information:

- Information technology plays critical role in achieving UN objectives, says Ban

Related links:

- Ban welcomes launch of digital initiative to attain Millennium Development Goals
- UN chief spotlights broadband’s potential to accelerate development
- Senior UN, private sector officials define vision for globally connected society
- Information technologies vital to tackling climate change – UN Secretary General
- International cooperation vital to bridging digital divide

Previous issues of the e-newsletter:

- UNESCO "ICT in Education" Announcement e-newsletter

What do you think about this topic?

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Programmes & Projects
Interactive radio instruction – How cost effective ICT can have a remarkable impact

The International Development Division (IDD), a subdivision of the Education Development Center (EDC), is cooperating with local partners in over 35 countries in order to improve education at a preschool, primary and secondary level. They are working with youth, adult and out-of school learners in several projects.

One of their projects is called “Interactive Radio Instruction (IRI)”, where radio is used to bring curriculum and teacher training to the world’s least developed countries. The biggest advantage of radio is the small requirements of resources. Only a radio and an adult facilitator are needed to bring this device into the classroom. Furthermore this technology offers a huge range, so even students and teachers in remote areas have the opportunity to stay informed. IRI is a perfect example how cost-effective ICT can have a remarkable impact. Evaluation studies show that IRI has an effect on the comprehension and speaking skills as well as on math and social science knowledge. The World Bank Toolkit states that:

“There is consistent and significant evidence that IRI can increase learning across subject matter, age, gender, and rural or urban location. Students show progressively greater learning with time.”

But what is the difference between broadcast radio and interactive radio instruction? As the term already states, IRI is an interactive radio program. Teachers and students are required to follow the instructions. It is not about sitting in a classroom and just passively listening to the program. Instead the whole classroom comes to life, the students and teachers are singing, participating in question and answer activities and various types of physical movement.

Let us take a closer look some examples. In India IRI is used to improve the quality of education at the elementary level in seven states. The programs are developed depending on the needs defined by teachers themselves.

One of the programs is the “Life Skill Audio” which offers interactive audio exercises on selected skills for life topics. It is designed for middle-school youth as well as their teachers and parents. The idea of this project is to “apply skills”, “extend concepts” and “make connections”. It is linked to other media products, launched earlier by the Indian government.

From India we are going all the way to Zambia and the “Learning at Taonga Market”. Learning at Taonga Market is a delivery of the Zambian Basic school curriculum that infuses methodologies such as New Breakthrough to Literacy (NBTL) and Step Into English (SITE) with the IRI methodology. The lessons are written and recorded by the EBS.

One lesson consists of 30 minutes broadcast and aims at exercises the class has to complete before and after listening to the broadcast. Those activities help learners to review skills and information of previous lessons. The EBS offers 150 lessons at each level with 50 lessons for each term. In addition to that, teachers have to prepare themselves by listening to the five teacher/mentor training broadcast at the beginning of each term.
These mentor trainings assist teachers in three ways. Firstly, each guide explains how to use the radio-program. Secondly the mentor guide provides the teacher with all the necessary words and teaching methods - for example how to use puppets to visualize the content of the broadcast. Thirdly, the guide offers detailed lesson plans with activities and explanations to difficult concepts.

The project started in 2000 with a pilot exercise for Grade 1 only. By 2007 they extended their offer to Grades 2-7. It is planned that the students will complete seven years of education following the radio lessons and write the Primary School Leaving Certificate at the end. Those who pass have the opportunity to attend upper schools or distance learning programs. In the beginning there were only 22 IRI centers but in 2005, 897 basic education schools already used the radio program permanently. In between 2004 and 2005 the numbers rose 38 per cent.

IRI is a very ambitious and successful project but still has to face a lot of challenges. Schools often lack of the supply of adequate learning and teaching materials. In addition, the IRI centers are missing an honest and meaningful support by the communities or the government. But also the production of the mentor guides can be very inconsistent because of the long and lavish procedures.

All in all the IRI is a perfect example for the effective use of ICT in education. It gives students in remote areas access to basic education. But in the long run it can only survive with the support and funding of local communities and the Ministries of Education and governments.

Further information:

- Interactive Radio Instruction (IRI)

Related links:

- Emerging technologies in distance education
- Interactive Radio Instruction (IRI) improves Indian student learning
- 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

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

Resources

COL-UNESCO Basic Guide to OER

The Commonwealth of Learning recently published a “Basic Guide to Open Educational Resources (OER)” in collaboration with UNESCO. The book, which is available for download online, is a guide to understand the use, potential and issues related to OER.

A Basic Guide to Open Educational Resources (OER) is comprised of three sections. The first – a summary of the key issues – is presented in the form of a set of ‘Frequently Asked Questions’. Its purpose is to provide readers with a quick and user-friendly introduction to Open Educational Resources (OER) and some of the key issues to think about when exploring how to use OER most effectively.

The second section is a more comprehensive analysis of these issues, presented in the form of a traditional research paper. For those who have a deeper interest in OER, this section will assist with making the case for OER more substantively.

The third section is a set of appendices, containing more detailed information about specific areas of relevance to OER. These are aimed at people who are looking for substantive information regarding a specific area of interest.

The publication was prepared by Neil Butcher for the Commonwealth of Learning (COL) and UNESCO, and edited by Asha Kanwar (COL) and Stamenka Uvalić-Trumbić (UNESCO).

Read the publication:

- Basic Guide to Open Educational Resources (OER)

Related links:

- UNESCO joins iTunes U
- 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
Information and Communication Technology for Development: ADB Experiences

The role of information and communication technology (ICT) in an increasingly interconnected and interdependent world transcends geographical boundaries, economies, and sectors. Over the past decade, ICT has helped create the most rapidly growing industry sectors, driven efficiency in government and business operations, and developed the essential building blocks to a knowledge-based economy.

The ability of ICT to change the way people do things is either hidden in internal processes - such as how a government office manages data collection - or manifest in the end product - such as digital support for health care services in a remote province. While the level and nature of the benefits of ICT may differ for every stakeholder, there is a consensus of what ICT can help provide to governments, businesses, and citizens: faster access to relevant information, an efficient means for communication, an enhanced ability to make informed decisions, and a voice to otherwise unheard peoples.

As these cases from ADB would show, access to ICT alone will not result in significant, lasting change. It is the adoption of appropriate technology, paralleled with an enabling policy environment, a responsive and needs-based approach, improved individual and institutional capacity, nurtured partnerships with key stakeholders, leadership by local champions, effectively managed change, and sustained support that make the difference.

Further information:

- Information and Communication Technology for Development: ADB Experiences
Related links:

- Where desert meets technology: Findings from ICT in Education initiatives in rural schools in Mongolia
- Measuring ICT application in education: feedback and lessons from the SABER East Asia pilot
- Mobile and immersive learning for literacy in emerging economies (MILLEE)
- Global learning community centers for developing countries

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

**Imagining future learning: Mapping major changes to education and training in 2025**

This report presents the findings of a structured and targeted expert consultation exercise which aimed to identify, cluster and rate the main changes in education and training expected to occur over the course of the next 20 years. The exercise employed the group concept mapping methodology to generate, sort and rate more than 200 statements by a group of 13 experts.

To determine how education and training policy can adequately prepare learners for life in tomorrow’s society, we must envisage what competences will be relevant and how they may be acquired from 2020-2030. This report presents the findings of a structured and targeted expert consultation exercise, which aimed to identify, cluster and rate the main changes in education and training expected to occur over the next 20 years. The exercise employed group concept mapping methodology to generate, sort and rate more than 200 statements by a group of 13 experts. The objective of this study is to contribute to the development of imaginative visions and scenarios regarding the future of learning in order to support priority-setting for education, training and competency policies.

The emerging map of future changes to education and training was divided into a set of 12 thematic clusters, ranging from technological changes to shifting pedagogical concepts. Anticipated changes that rated particularly high in importance include learner-centred, flexible and personalised approaches to learning; the integration of learning into life and work; and the development and implementation of innovative pedagogical concepts. When comparing the cluster ratings on importance and feasibility, it becomes clear that, while experts are optimistic about the development of technology-enhanced learning
opportunities, scepticism prevails concerning the feasibility of implementing learner centred approaches in formal education and, in general, the ability of formal education systems and institutions to keep pace with change and become more flexible and dynamic.

Read the paper:

- Imagining future learning: Mapping major changes to education and training in 2025

Related links:

- What happens when all textbooks are (only) digital? Ask the Koreans!
- Singapore ‘Future School’ Project
- Malaysia: Vision 2020 for a digital workforce
- UNESCO Bangkok supports Thailand’s second decade of education reform using project-based learning and ICT
- HOW and WHAT to study in 21st Century?
- The future of learning institutions in a digital age

Previous issues of the e-newsletter:

- UNESCO "ICT in Education" Announcement e-newsletter

What do you think about this topic?

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ICTs for new engineering education

The shortage of qualified engineering work force is creating social and economical difficulties on a global scale. Two of the observable factors are the shortage of engineering school enrolment and the quality gap between engineering education and society’s needs on engineering talents.

To address these issues, it is necessary to reform existing engineering and technology education. This document presents a five-layered model to set up a new, ICT-enabled vision for engineering education.
ICTs can play an important catalytic role in the improvement of engineering education on a global scale. When educators and policy makers employ ICTs as a strategic instrument to enable student-centred learning activities on an Internet-wide scale, it would be possible to implement an improved engineering education paradigm that addresses the global engineering talent shortage problem.

Read the publication:

- [ICTs for new engineering education](#)

Related links:

- [Computing At School: Educate... Engage... Encourage… A Spotlight on CAS!](#)
- [New UK study looks for ways to spice up IT lessons](#)
- [Twenty eight European companies make a commitment to bring more women into technology industries](#)

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

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**A 3D NASA exploration game**

Moonbase Alpha is an online game which combines aspects of traditional formal education with game-based learning to teach science, technology, and engineering concepts to students.

In Moonbase Alpha, commercial-quality gaming technology is combined with accurate physics rendering and real NASA technology to provide a virtual world that can be used to deepen students’ understanding of key concepts and improve their teamwork skills.
In the game scenario, a meteorite strikes a lunar outpost on the Moon, disabling critical systems that supply oxygen to the astronauts' living quarters. Teams of students will be challenged to repair the damaged systems in order to restore oxygen production capability to the lunar outpost.

Learning about science and space may be more engaging for students. Throughout the game, students will learn about the moon, lunar exploration, gravity, energy, life support systems, and engineering. They will also use multimedia resources, such as interactive software with graphical interfaces, to demonstrate their proficiency in the use of technology.

Moonbase Alpha game is available for free download from the website, together with manual and educator guide.

Further information:

- [Moonbase Alpha](#)
- [Moonbase Alpha Educator Guide Vol.1](#) (PDF)

Related links:

- [Australian students take virtual school trip to NASA](#)
- [NASA World Wind](#)
- [Practical use of animations in teacher training](#)
- [WorldWide Telescope brings space exploration into the classroom](#)

Previous issues of the e-newsletter:

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

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