Highlight: ICT for ESD

Harnessing ICT to enhance Education for Sustainable Development
UNESCO Bangkok recently organized a workshop to introduce the principles of project-based learning and telecollaboration to teacher educators and teachers, and to encourage them to incorporate these pedagogies into their teaching practices. By working collaboratively on projects of common interest, they will be able to draw upon and learn from a larger community of practice to increase their knowledge of ESD, while improving their skills in using ICT to expand their networking opportunities.

ICTs in Education for Sustainable Development
Technology helps not only to develop awareness about the environment, but also to create a learning environment that uses dialogue, negotiation and reflection, which could eventually lead to actions for building a more sustainable future as stressed in this article.

News & Events

2011 UNESCO King Hamad Bin Isa Al-Khalifa Prize for Use of ICT in Education rewards projects from Germany and Republic of Korea
The Director-General of UNESCO, Irina Bokova, presented the 2011 UNESCO-King Hamad Bin Isa Al-Khalifa Prize for the Use of ICTs in Education to two winners: Internet ABC Project (Germany), represented by Jochen Fasco; Yuhyun Park, Co-founder and CEO of InfollutionZERO (Republic of Korea) at UNESCO Headquarters.

First workshop on effective ICT-pedagogy integration in Pakistan
British Council and UNESCO organized a 4 days capacity building workshop on “Effective ICT-Pedagogy Integration” at Allama Iqbal Open University (AIOU) Islamabad, Pakistan on 13 – 16 November 2012. The training was delivered to 38 participants from different areas of Pakistan including teachers, Head teachers, educators, policy makers from various public and private schools, educational institutes and offices.

UNESCO supports the Next Generation of Teachers: The 3rd Philippine Conference on ICT in Education
The 3rd Philippine Conference on ICT in Education was held from October 23 to 25, 2012 in Puerto Princesa, Palawan. The conference sought to continue building the institutional capacity of tertiary education institutions to rationally and effectively incorporate ICT tools and technologies into the learning environment.

The heart of education: Learning to live together

Advanced training course for school methodologists in Uzbekistan
Within its national education support strategy, UNESCO Tashkent convened a training course for school methodologists “Advanced Methodologies on Organization of School Learning Processes” on 2-6 October, 2012 in Tashkent, Uzbekistan.

Expanding internet access in developing countries can help achieve sustainable economies – UN official
Helping developing countries build their citizens’ access to the Internet is akin to giving them a tool that boosts their chances of achieving sustainable economic growth, a senior United Nations official told a global meeting on Internet governance that was held on 9 November in New York.

Programmes & Projects
Serious games for ESD
The Swedish International Centre of Education for Sustainable Development (SWEDESD) has recently started a new and exciting project: Games in Learning for Change (GL4C). This project will explore the potential of serious games in processes of learning for sustainable development. In the first instance, a new gaming tool to be used in school and non-school settings will be produced.

Technology for development: Why training trumps technology
This past spring semester, the author of this article led an entrepreneurship class at her university that focused on creating a Solar-Computer-Lab-in-a-Box designed for off-grid schools around the globe. And at a January 2012 conference that joins academia and industry, they pitched the concept to a representative of a large company.

Resources
How ICTs can support Education for Sustainable Development: Current uses and trends
This paper presents a brief history, and identifies current uses and trends for deploying ICTs, primarily in the formal Kindergarten to Grade 12 education system, with a focus on the online environment.

The eWaste of Development: What are the consequences of new technologies on the environment, and how can we act responsibly, starting now?
There has been some criticism on ICT in Education projects that focus first on hardware provision without sufficient consideration of how it will be used to improve learning, effectively wasting the investment. This article explains some strategies to solve this problem.

Digital technologies and inclusive schooling
The education of people with visual impairment in Spain hinges on the fact that students are mainstreamed in schools chosen either by the students themselves or their families. The introduction of digital technologies in schools poses a new challenge for visually impaired students.
Digital literacy across the curriculum handbook
This handbook introduces educators to the concepts and contexts of digital literacy and supports them in developing their own practice to foster the growth of digital literacy in the real classroom and school settings.

Stop disasters
‘Stop disasters’ is an exciting disaster simulation game developed by the UN International Strategy for Disaster Reduction (UNISDR).

TeachUNICEF - a portfolio of free global education resources
TeachUNICEF is a portfolio of global education resources intended for teachers, afterschool instructors and parents.

Highlight: ICT for ESD
Harnessing ICT to enhance Education for Sustainable Development
The Asia and Pacific region is one of contrasting realities – small and large countries, sparse and dense populations, poor and rich economies. It is also diverse in terms of historical and cultural backgrounds, political systems and stages of development. More than 4.2 billion people lived in the Asia-Pacific region in 2011, representing 60% of the world’s population. In 2010, 57% of the world population living in extreme poverty lived in Asia and the Pacific, a marked decrease from 71% in 1990. Limited natural resources, access to clean water, climate change, food security, rising costs of fuels, social and religious conflicts, and rapidly changing values are but some of the concerns that face many international organizations, donor agencies and national governments in the region.
These are challenges to the Millennium Development Goals (MDGs), Education for All (EFA), United Nations Literacy Decade (UNLD) and the United Nations Decade of Education for Sustainable Development (DESD). To meet the objectives of these initiatives, innovative approaches and concerted efforts are required.
In 2002, the United Nations General Assembly launched the Decade of Education for Sustainable Development (2005-2014). Education for Sustainable Development (ESD) is a dynamic and expansive concept that envisions a world where every person has a chance to benefit from educational opportunities and to learn lifestyles, behaviours and values necessary to create a sustainable future. UNESCO has been tasked to lead the DESD.
In the early stages of the DESD, the concept ESD was still evolving and not clearly understood. To increase understanding and awareness of sustainability, promote values closely linked to ESD, and communicate ideas, norms and standards, innovative practices and lessons learned, UNESCO Bangkok proposed a project to optimize the use of ICT to facilitate the sharing of information, networking, linkages and interactions among ESD stakeholders throughout the region. ICT also present multiple options for sourcing, synthesizing and sharing both verbal and non-verbal experiences, thus enabling the construction of knowledge based on valid and relevant information.

Unfortunately, the proposal was stalled. It eventually fell through the crack and was never seen again.

Still, with 1.1 billion internet users in the region, accounting for 49.7% of the world’s internet user population in 2011, the potential of ICT to share and disseminate ESD contents was harnessed by UNESCO and others, even without project funding. As we near the end of the DESD, we can see that ICT has been used in many ways to promote and support ESD throughout the region.

A simple Google search will show numerous websites related to ESD accompanied by links to e-forums, e-newsletters, RSS newsfeed and blogs. Commendable ESD practices can be viewed through many online videos and podcasts. Networks and alliances to promote and enhance joint ESD projects and activities can be mapped and found easily through the internet.

Amid concerns that the DESD goals may not be completely achieved by the time the Decade ends in 2014, UNESCO and other collaborating agencies would like to highlight that education about and for sustainable development should not be set by arbitrary timelines and will have to continue beyond the Decade.

With the support of the Japanese Funds-in-Trust, UNESCO Bangkok has developed a project on Reorienting Quality Teacher Education towards EFA and ESD to enhance the capacity of teachers who play a major role in transmitting knowledge, values, principles and skills to their students. One component of the project is to assist teacher educators and teachers to integrate ESD concepts and contents into their curriculum and teaching materials. Several workshops have been organized to provide teacher educators and teachers with in-depth knowledge of ESD themes, as well as introduce innovative pedagogies and tools to improve their teaching practices.

UNESCO Bangkok recently organized a workshop to introduce the principles of project-based learning and telecollaboration to teacher educators and teachers, and to encourage them to incorporate these pedagogies into their teaching practices. By working collaboratively on projects of common interest, they will be able to draw upon and learn from a larger community of practice to increase their knowledge of ESD, while improving their skills in using ICT to expand their networking opportunities.

The Telecollaboration Workshop on Reorienting Teacher Education towards EFA and ESD was held on 7-9 November 2012 in Bangkok involving about 60 participants from 17 countries. This workshop drew on the experiences of the Korean Funds-in Trust (KFIT) International School Project (KISP) implemented by the ICT in Education Unit in UNESCO Bangkok. Designed to increase the capacity of teacher educators and teachers to enhance student-centred learning, KISP enabled more than 500 students from Bangladesh, Canada, China, South Korea, Malaysia
and the Philippines to prepare and implement projects collaboratively between March and July 2012.

Participants from the Telecollaboration Workshop developed several joint-projects which will be implemented over the next six months. Examples of some of the projects include:

- Marine Life Conservation (universities from Malaysia and the Philippines)
- Food for Life (Mongolia State University of Education and Suan Suanadha Rajabhat University, Thailand)
- Plastic Usage Reduction: A School Campaign (schools in Indonesia, Malaysia and Philippines)
- Reducing Ecological Footprint (Malaysia, Philippines and Viet Nam)

The participants are linked together through the Education Community portal facilitated by UNESCO Bangkok’s ICT in Education Unit. As the collaborators proceed to implement their projects, they will communicate with their team members through various ICT tools and platforms. The plan is for everyone to share their progress virtually through the Education Community portal over the next few months.

For further information, please contact apeid.bgk@unesco.org.

Further information:

- ESD-Net and Teacher Education

Related links:

- Green Standards Week drives tech sustainability strategies
- Rio+20 recognizes essential role of ICT and broadband networks as catalyst for sustainable development
- ICTs for development: Improving policy coherence
- 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

Previous issues of the e-newsletter:

- UNESCO "ICT in Education" Announcement e-newsletter
ICTs in Education for Sustainable Development

By Prof. Vassilios Makrakis, UNESCO Chair ICT in ESD, University of Crete, Greece

The increasing rate of information and communication technologies (ICTs) development and their widespread implementation across all sectors of the economic and social life brings about radical changes in the way we work, think, learn and communicate. There is not, however, a universally accepted definition of ICTs due to the fact that concepts, methods and applications related to ICT are constantly evolving and can be contextually interpreted and applied. A broad definition of ICT is concerned with the distinction between “old or traditional technologies” (radio, television, video, DVD, telephone, computers) and “new or modern technologies” (video conferencing, e-mail, cellular telephones, weblogs, Web 2.0, and other social networking software). An “old or traditional technology” might be a driving force for change in the right context in the same way as a “new or modern technology” could be a driving force in another context. No matter what technology development is, educational systems, worldwide, face the challenge of preparing citizens who need to be equipped with the necessary skills and competencies to transform current unsustainable practices. In this context, teachers are increasingly called upon to switch from roles of being knowledge transmitters towards taking more active roles as curriculum developers, knowledge constructors and transformative learning agents.

Three of the major forces shaping and driving the 21st century education are: 1) the development and diffusion of Information and Communication Technologies (ICTs); 2) the increasing demand for new educational approaches and pedagogies that foster transformative and lifelong learning and 3) the reorientation of educational curricula to address sustainable development (SD).

The link between ICT, transformative learning and sustainable development is being addressed by extensive debates and research which recognize the challenge new technologies bring to the reorientation of education towards learning to live sustainably. ICTs can thus be a context for ESD as well as ESD can be a context for ICT. More specifically:

- ESD themes integrated into the school curricula could provide a worthwhile context for ICTs in education. For example, social, economic and environmental issues can provide meaningful and challenging contexts for developing a wide range of ICT skills.
- ESD methods are conducive with constructivist and transformative learning theories, which can provide a context and rationale for using ICT-based learning tools such as concept mapping, modelling, social networking.
When considering areas such as cultural diversity and intercultural understanding, health, HIV/AIDS, governance, natural resources, climate change, rural development, sustainable urbanisation, poverty alleviation, corporate responsibility and accountability, there is potential to assess the impact of ICTs in these key sustainable development areas. However, the so-called digital divide, especially for women and other disadvantaged groups, is still a problem that challenges educators and policy makers. Teachers have an opportunity to develop skills in problem definition and problem solving, to reflect on their students learning, knowledge and practices, and develop a deep understanding of the way students think and act on social and environmental issues. Some key questions that could be asked are:

- How can you use computerized graphic organizers to teach vocabulary relevant to environmental sustainability issues?
- Have you ever wanted to measure the effect you have on greenhouse gas emissions in your home and school?
- How can you use data handling tools (e.g. Excel) to construct knowledge and promote learning-based action on ESD local/global issues?
- How can you use computerized programs to assess your ecological footprint towards sustainable energy or water use, for example?

Let's take, for example, the last question set on the above list: “How can a teacher use ICTs to assess his/her students’ ecological footprint towards sustainable water use?” The teacher can use various computerised programmes available for free in the Internet to calculate the person’s impact on the environment. Using such tools together with social-dialogic teaching methods that could be also supported by new communication tools, such as chats and forums, the teacher activates students’ prior knowledge and behaviours. This leads to reflect on perceptions and behaviours about water use and waste and make comparisons with other students, as well as going deeper in analysing water uses/waste and the consequences on the environment. Questions such as: Why do people use water as though there is an unlimited resource? Are they aware of the water problems in the future, because of their current water consumption practices?

How personal water use and management of water can be addressed to avoid dramatic impacts on the environment, the economy and quality of life? In this way, technology helps not only to develop awareness about the environment, but also to create a learning environment that uses dialogue, negotiation and reflection, which could eventually lead to actions for building a more sustainable future.

Further information:

- [UNESCO Chair Information and Communication Technologies (ICTs) in Education for Sustainable Development (ESD)](http://www.unesco.org)
Related links:

- Green Standards Week drives tech sustainability strategies
- Rio+20 recognizes essential role of ICT and broadband networks as catalyst for sustainable development
- ICTs for development: Improving policy coherence
- ICTs and environmental sustainability
- Launch of climate change education web portal
- Sustainable development and education in the digital age
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What do you think about this topic?

- Visit our on-line forum and share your views

News & Events

2011 UNESCO King Hamad Bin Isa Al-Khalifa Prize for Use of ICT in Education rewards projects from Germany and Republic of Korea

The Director-General of UNESCO, Irina Bokova, presented the 2011 UNESCO-King Hamad Bin Isa Al-Khalifa Prize for the Use of Information and Communication Technologies in Education to two winners: Internet ABC Project (Germany), represented by Jochen Fasco; Yuhyun Park, Co-founder and CEO of InfollutionZERO (Republic of Korea) at UNESCO Headquarters on 20 November.

UNESCO chose the theme of “Educating Youth for Responsible Global Digital Citizenship,” for the 2011 Prize, so as to link the right to quality education to shared ideals and values of coexistence, equality, peace and tolerance. The theme marks a change in focus brought about by the arrival of a new generation of learners—sometimes referred to as “digital natives”—who have grown up in a world saturated with information networks; a shift from technology training to broad issues such as responsibility, ethics, credibility of sources and creativity.
The theme is also intended to increase young people’s awareness of how to use the internet safely and protect their rights in cyberspace. It reflects growing concern for issues such as privacy, the impact of pernicious material, and protection from cyber bullying and harassment. The US $50,000 annual Prize is to be divided equally between the two prizewinners:

**Internet ABC Project** promotes the use of technologies by children and adults through advertisement-free content of more than one million pages. Attractive and engaging animations for children aged five to twelve are designed to reinforce their knowledge of safe Internet use. The site also features an interactive discussion and opinion platform to help users develop a sense of responsibility on the Internet and build up content and knowledge. Internet ABC furthermore provides high quality educational materials for the classroom and a scalable, cross-cultural model that has been extended to Turkey and is applied to other countries as well.

**Dr. Yuhyun Park**, Co-founder and CEO of **InfollutionZERO** is rewarded for her leadership and initiative with InfollutionZero project promoting digital citizenship for children, youth and parents. InfollutionZero addresses the challenges of “infollution”—the harmful effects of unsafe digital “pollutants”—including cyberspace predators, bullies, abusive language, and technology addiction. The project features a highly engaging game-based, narrative approach that uses a fictional story-line to help children learn the meaning of cyber-risks through animated characters; an exhibit designed to increase awareness of “infollution”; and original research on virtual violence that adds to the understanding of “infollution,” and offers ways to ward off its negative impact.

The winners were selected by the Director-General of UNESCO on the recommendation of an international jury which examined 51 project submissions from 39 countries. Funded by the Kingdom of Bahrain, the Prize rewards individuals, institutions, or non-governmental organizations for projects and activities that demonstrate best practices and creative use of information and communication technologies to enhance learning, teaching and overall educational performance.

**Further information:**

- 2011 UNESCO King Hamad Bin Isa Al-Khalifa Prize for Use of ICT in Education rewards projects from Germany and Republic of Korea

**Related links:**

- Internet ABC Project
- InfollutionZERO
First workshop on effective ICT-pedagogy integration in Pakistan

“Technology liberates the teacher, just as the car brought new opportunities so effective use of ICT changes how we teach. But let me just say to those who still believed that there are myths, ICT doesn’t dumb down student, it doesn’t reduce skills levels or concentration spans, nor does it limit student’s ability to write essays - it increases skills, knowledge and Access.” Said by Peter R. Upton, Country Director British Council Pakistan.

It’s true we cannot live alone and cut off from rest of the world. The traditional and old style of education has faded away giving place to ICT. British Council and UNESCO organized a 4 days capacity building workshop on “Effective ICT-Pedagogy Integration” at Allama Iqbal Open University (AIOU) Islamabad, Pakistan on 13 – 16 November 2012.

The training was delivered to 38 participants from different areas of Pakistan including teachers, Head teachers, educators, policy makers from various public and private schools, educational institutes and offices.

The session covered these areas: The Status of ICT in Education in Pakistan, Understanding ICT in Education, British Council Schools online project, British Council English language programme, Educational Tools and Resources for Teaching and Learning, Planning ICT Tools in Teaching and Learning and Introduction to Collaborative Learning Approaches.

“UNESCO office in Pakistan is also pioneering mobile-based post-literacy project for neoliterate rural women in Punjab, Islamabad and Khyber Pakhtunkhwa under the public-private partnership between UNESCO and NOKIA,” Dr Nagata said. She further expressed that “ICTs have reshaped not only modes of delivery of lesson, but also transformed role of teachers”

Some of the participants shared case studies on effective use of ICT for international collaboration and cultural understanding. Lesson plans with integrated ICT tools were also
designed by the participants as advised by the training facilitators, which were reviewed and assessed by all the participants using the British Council Schools Online forum (PBL Pakistan 2012).

Expressing his views about ICT Pedagogy Sardar Shah Jehan, State Minister for Education, Govt. of Pakistan stated

“Information and Communication Technology (ICT) have brought revolution in our daily life, economy and working patterns; we are passing through an era which is dominated by science and technology which has reduced distances and increased speed and efficiency of our work many times.”

Visits to Centre of Instructional Design (CIT) and Institute of Educational Technology (IET), Allama Iqbal Open University (AIOU) Islamabad were also part of the programme where participants were guided about the various mediums being used by the University to ensure their reach to more than 10 million University students while using different mode of communication i.e. courier/postal services, CDs, emails, Radio, T.V and online resources through internet and email as well as the dedicated web portal.

Peter R. Upton, Country Director British Council Pakistan also stressed that “Schools are engaged in a learning revolution - it is one that redefines the role of the teacher and the learner. We can through the creative use of technology in our schools, increase literacy, expand access and more importantly learning quality and efficiency. The experience that we have seen is that technology is a key learning tool but it is one that needs teachers to embrace it and understand it.”

The event was a great success and to sustain the relation; UNESCO Bangkok and British Council Pakistan will hold a post-workshop meeting with UNESCO Islamabad for the consultations with the selected target groups as well as follow up with policy makers for institutionalization of ICTs in education system in Pakistan.

In an email to Mr. Muhammad Ijaz Khalil, Project Manager – Schools, British Council Pakistan, the Facilitators from UNESCO Bangkok (Jonghwi Park, Hartfried Schmid) said

We truly appreciate your collegiality, hospitality, patience and professionalism that you showed before and during our workshop, we will be happy to do another one on PBL specifically sometime next year.’ said by the facilitators in their email after the event.

The event was covered by Daily Times Pakistan and UNESCO Islamabad Education website.

Some of the participants’ views about the training workshop;

It was a very short period but we have learnt a lot. (Anwar Raja Govt. High School, 239-RB, Faisalabad)
We have learned much more new ideas and techniques and hope that we will apply these all new learning in our institutions for the benefit of our students. I have learned many things, which I did not know before this training. (Muhammad Wajih ud Din, Head teacher, Govt. JICA Model Primary School, Peshawar)

ICT workshop from 13 to 16 Nov was a very exciting and informative experience for me as a teacher. A lot of work has to be done in order to implement ICT in our traditional teaching institutes. A revolution is needed to do so in Government institutions. However it is our commitment to bring this revolution in these institutions. On my behalf i will do my best to use ICT in my lesson. (Shafiq Rehman, teacher, Faisalabad, Punjab)

Really learnt a lot from the very energetic facilitators and a very cooperative group of educators who shared their experiences and approaches to teach, which in the long run will prove beneficial for our students...who our main focus. (Sabah Faisal, Teacher, Islamabad Model College for Girls, F-6/2 Islamabad)

Further information:

- UNESCO Islamabad
- British Council Pakistan

Related links:

- Daily Times Pakistan
- UNESCO Islamabad Education website
- Teachers share innovative practices at UNESCO seminar
- Successful series of project based learning (PBL) and telecollaboration workshops continued in Bangladesh
- Project-Based Learning and Telecollaboration enhances teachers’ confidence in Bangladesh

Previous issues of the e-newsletter:

- UNESCO "ICT in Education" Announcement e-newsletter
UNESCO supports the Next Generation of Teachers: The 3rd Philippine Conference on ICT in Education

UNESCO Bangkok and Intel Philippines sponsored the Next Generation of Teachers: The 3rd Philippine Conference on ICT in Education organized by the Colleges of Education of De La Salle University-Manila, University of the Philippines-Diliman, Mariano Marcos State University and Knowledge Community, Inc. Held from October 23 to 25, 2012 at the Skylight Convention Center in Puerto Princesa, Palawan, the Conference was able to gather close to 300 educators from all over the Philippines. The Conference sought to continue building the institutional capacity of tertiary education institutions to rationally and effectively incorporate ICT tools and technologies into the learning environment.

The Conference, hosted by the Holy Trinity University and the Office of Mayor Edward Hagedorn, was graced by Undersecretary Yolanda Quijano from the Department of Education who provided updates on the K+12 implementation and Commissioner Nenalyn Defensor of the Commission on Higher Education who discussed the Higher Education Strategic Plan. Other plenary speakers included Dr. Molly Lee who discussed “ICT integration practices in Asia and the Pacific”, Ms. Shweta Khurana from Intel India who spoke on “Creating Effective Policies for Education Transformation” and Ms. Patricia Arinto who spoke on the “State of the Art of ICT in Basic Education in the Philippines”.


The Conference likewise featured parallel sessions with administrators attending presentation-workshops, and the faculty participating in UNESCO’s ICT Multimedia Integration for Teaching and Learning, a demo session on tele-collaboration, and Intel Corporation’s free online professional development courses for teachers, Intel@Teach Elements.

In addition, several of the conference’s corporate sponsors conducted technology demonstrations on the last day. Globe demonstrated Text2Teach, a joint program with Ayala Foundation and Nokia, which provides qualified schools with a special mobile phone that contains an application that teachers can use to download audio visual teaching materials. Power Mac demonstrated the potential use of the Apple iLife series for teaching and learning purposes. Pru Life UK presented their Cha-Ching Money-Smart Kids program, a multi-platform financial literacy program that seeks to teach public school children to manage money at their early age.
The participating colleges and universities also submitted their best practices in integrating ICT in education for the benefit of secondary and tertiary students, as well as the community. Four winners were chosen who each received a plaque of recognition and Php10,000.00 in cash from each of the corporate sponsors. Ms. Genevieve G. Kulong of Zamboanga City High School won the best practice award for ICT in pedagogy towards community development sponsored by Globe Telecom for her project entitled “Local Farming: A Documentary (Digital Diplomat)”. Mariano Marcos State University - College of Teacher Education received the best practice award sponsored by Power Mac Center for their project “Life with Technology”, for fostering long-term partnerships with different groups to implement innovative ICT in Education practices and for effective integration of ICT in Teacher Education at the pre-service and in-service levels. The College of Education of the Mindanao State University – Iligan Institute of Technology won the best practice award sponsored by Pru Life UK for fostering long-term partnerships with different groups to implement innovative ICT in Education practices and for effective integration of ICT in Teacher Education at the pre-service and in-service levels through their project entitled “ICT Integration in Education”.

Finally, Roberto R. Binag of Davao City National High School, received a best practice award sponsored by Metrobank Foundation for implementing a socially-relevant program with international and inter-disciplinary collaboration that made appropriate and effective use of ICT integration in Education under the project entitled TAO Project: Telecollaborative Learning Across the Curriculum.

Further information:

- Next Generation of Teachers: The 3rd Philippine Conference on ICT in Education

Related links:

- Teachers share innovative practices at UNESCO seminar
- Teachers discuss the future of ICT in education at UNESCO seminar
- The Best R & R
- Philippine Commission on Higher Education consult stakeholders on curriculum revision for Next Generation of Teachers
- Next Gen empowers teacher education institutions

Previous issues of the e-newsletter:

- UNESCO "ICT in Education" Announcement e-newsletter
The heart of education: Learning to live together

In 1996, the UNESCO International Commission on Education for the 21st Century released an inspirational report *Learning: The Treasure Within* which presented a vision of education based on four pillars of learning: learning to live together, learning to know, learning to do and learning to be. The report emphasized that the survival of humanity is highly dependent on learning how to live together, beginning by understanding and accepting other people and their history, cultures, traditions and values.

The world has changed in many ways since then. Much has been accomplished, but a lot more needs to be done to translate the idealistic vision of education into actions on the ground. The clamour for education to foster more humanistic and sustainable lifestyles has highlighted a need to better understand how education systems – from the curricula, pedagogies, school environment and settings, assessments and extra-curricular activities – can concretely bridge theories and practices.

UNESCO convened the 16th UNESCO-APEID International Conference, *The Heart of Education: Learning to Live Together*, in collaboration with the Ministry of Education in Thailand, the Asian-Pacific Network for International Education and Values (APNIEVE), Pearson Thailand and J.P. Morgan. The Conference aims to facilitate discussions on leading-edge thinking about learning, reflect on the linkages between learning and social development, explore approaches and tools to enhance learning, and identify enabling policies and instruments to promote learning to live together.

More than 250 participants from 30 countries all over the world attended the Conference that was held in Bangkok from 21 – 23 November. Keynote speeches and papers have been presented for the following subthemes:

I. Paradigms of learning to live together

- Delineating contemporary theories of learning
- Researching the context, content and mechanics of learning
- Reviewing intercultural and inclusive education for learning to live together
- Monitoring and assessing practices and outcomes to enhance learning to live together

II. Innovative practices of learning to live together

- Identifying innovative pedagogies, technologies and tools for learning to live together
• Promoting innovative practices in intercultural and inclusive education
• Enhancing professional development of teachers
• Designing environments and resources to promote learning to live together

III. Collaboration and learning communities

• Strengthening collaboration in teaching and learning about universal human core values
• Enhancing traditional and non-traditional schooling of the future
• Developing intercultural and inclusive education for mutual understanding and peaceful exchanges
• Encouraging peaceful resolution of conflicts through learning to live together

IV. Policies and instruments for learning to live together

• Formulating policies and institutional frameworks to promote learning to live together
• Strengthening leadership in learning for social development
• Devising financing and partnership models and mechanisms which promote learning to live together
• Designing indicators and measurement tools to assess non-cognitive learning outcomes

All keynote speeches, presentations and papers are available on our website for download.

Advanced training course for school methodologists in Uzbekistan
Within its national education support strategy, UNESCO Tashkent convened Advanced training course for school methodologists “Advanced Methodologies on Organization of School Learning Processes” on 2-6 October, 2012 in Tashkent, Uzbekistan.

School subject methodologists of the Republican Education Center, Head school methodologists from all regions of Uzbekistan are strengthen capacities and exchanged knowledge on organization of student-centered learning in schools through technology integration and project-based approaches.

This weekly training course is organized in cooperation with the Ministry of Public Education of Uzbekistan and in technical and financial assistance of Intel and Republic of Korea (KFIT).

Read more:
Expanding internet access in developing countries can help achieve sustainable economies – UN official

Helping developing countries build their citizens’ access to the Internet is akin to giving them a tool that boosts their chances of achieving sustainable economic growth, a senior United Nations official told a global meeting on Internet governance that was held on 9 November in New York.

“The Internet offers a lot of potential and opportunities for sustainable development,” said the Director of the Division for Public Administration and Development Management of the UN Department of Economic and Social Affairs (DESA), Haiyan Qian.

Ms. Qian’s remarks, delivered on her behalf, were addressed to more than 1,600 delegates from 128 countries at the conclusion of a four-day conference of the Internet Governance Forum (IGF) in Baku, the capital of Azerbaijan.

The Forum included the participation of governments, intergovernmental organizations, business representatives, the technical community, civil society organizations, as well as any individual Internet users interested in Internet governance issues.

The theme for this year’s Forum was ‘Internet Governance for Sustainable Human, Economic and Social Development,’ reflecting the increasing role of the Internet in the evolution of the various aspects of development, across all countries.

“We need to build capacities to address challenges and implement strategies, not only in our own countries and organizations, but also to assist others, especially those in developing and the least developed countries, as well as countries with economies in transition,” Ms. Qian urged.

The question of promoting sustainable development – which aims to meet human needs through resource-use that also preserves the environment – was central to the landmark UN Conference on Sustainable Development (Rio+20), which took place in Brazil in June this year. One of the main Rio+20 outcomes was the agreement by member States to launch a process to develop a set of Sustainable Development Goals, which will build upon the anti-poverty targets known as the Millennium Development Goals (MDGs) – set in 2000 for achievement by 2015 or earlier – and converge with the post-2015 development agenda.

In her remarks, Ms. Qian said IGF’s “inclusive, participatory and transparent governance process” plays a “critical role” in driving the growth of the Internet, which she said was “clearly” bringing new social and economic opportunities to so many people in the developing world.

“This session of the IGF has again provided the valued platform for continuous consensus building and learning opportunities for all,” she said. “I am sure each one of us will bring back
to our respective countries and organizations new ideas and approaches on how we can best deal with these crucial issues.”

The forum emerged after 2005, when countries attending the second of two conferences of the UN-sponsored World Summit on the Information Society asked Secretary-General Ban Ki-moon to convene a new space for dialogue on Internet governance policy. Though not a decision-making body, it saw its initial five-year mandate renewed for a further five years by UN General Assembly.

IGF noted that activist groups drawn from civil society had demonstrated an “appetite to drive (the) global Internet agenda by attending the Baku conferences annual meeting in relative force. “Civil society… was the highest represented stakeholder group at the forum,” IGF stated in a news release, citing others as Internet governance experts, government officials, international development representatives, academics, private sector representatives and other “inquiring global citizens.”

IGF said participation of women also increased significantly from previous years, and cited youth representation and activity as a “notable achievement” of this year’s meeting.

Several dozen experts and panelists participated in the gathering from remote hubs around the world – a development IGF said had become a “major strength” of the forum process. It also highlighted the rising use of social media platforms by delegates, noting that their use spiked “significantly” – enabling discussion to continue beyond the meeting rooms.

“There were thousands of ‘Tweets’ about the forum each day, which reached millions of others on the social information-sharing network,” IGF said.

The forum concluded on a day the UNESCOalso highlighted the importance of communications for advancing development.

The Paris-based agency did so in remarks delivered at UN Headquarters in New York to the UN General Assembly’s Second Committee, which deals with economic and financial matters. “UNESCO approaches the issue of communication-in-the-service-of-development from the vantage point of fostering an environment in which freedom of expression, independence and pluralism of the media can exist,” UNESCO’s Senior Public Information and Liaison Officer in New York, Suzanne Bilello, told the committee, which is open to all 193 UN Member States.

“Of particular interest to us therefore is the need to ensure that the communication-for-development agenda gives sufficient emphasis to promoting free, independent and pluralistic media, whether on radio sets, mobile phones or printed pages, and including access to communication channels, such as community media, and not forgetting, also, the importance of media and information literacy,” she said.
Ms. Bilello added that, without progress in all those parameters, “societies cannot advance more specific practices, like health or agricultural communication, to optimum effect and participation by poor and marginalized people.”

Further information:

- [Expanding internet access in developing countries can help achieve sustainable economies – UN official](#)

Related links:

- [Green Standards Week drives tech sustainability strategies](#)
- [Rio+20 recognizes essential role of ICT and broadband networks as catalyst for sustainable development](#)
- [ICTs for development: Improving policy coherence](#)
- [Australia escalates US$2.56 billion digital education revolution](#)
- [Information technology plays critical role in achieving UN objectives, says Ban](#)
- [ITU estimates two billion people online by end 2010](#)
- [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](#)
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Serious games for ESD

The Swedish International Centre of Education for Sustainable Development (SWEDESD) has recently started a new and exciting project: Games in Learning for Change (GL4C). This project will explore the potential of serious games in processes of learning for sustainable development. In the first instance, a new gaming tool to be used in school and non-school settings will be produced.

The increasing evidence of games as useful tools in learning contexts provides the starting point for this project. The aim is to link serious games to learning for sustainability. The project is a collaboration of SWEDESD, the Game Department at Gotland University and the International Research School of Game Design (IRSGD).

Initially, a game prototype on the theme of fisheries will be developed for secondary school students. This game will introduce students to ecosystem services and natural resource management in a way that emphasizes the interconnectedness of social and ecological and economic systems. It will help students to practice system thinking, a fundamental skill for real-world problem solving.

The new GL4C-programme will allow SWEDESD to explore uses and promises of game technologies and applications to ESD. In parallel to the development of the game prototype SWEDESD and co-partners will perform research on how the gaming experience can influence changes in perception and behavior.

The game prototype was planned to be ready during this summer. It was presented at the annual conference of the Environmental Education Association of Southern Africa in Grahamstown, South Africa, 11-14 September 2012 and at The Power of ESD conference in Visby, Sweden, 24-27 October 2012.

Further information:

- Swedish International Centre of Education for Sustainable Development (SWEDESD)
- The Game Department, Gotland University
- The International Research School of Game Design (IRSGD)

Related links:

- Green Standards Week drives tech sustainability strategies
• Rio+20 recognizes essential role of ICT and broadband networks as catalyst for sustainable development
• ICTs for development: Improving policy coherence
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Technology for development: Why training trumps technology
By Laura Hosman, Assistant Professor of Political Science and Associate Chair of the Department of Social Sciences at Illinois Institute of Technology

This past spring semester, I led an entrepreneurship class at my university that focused on creating a Solar-Computer-Lab-in-a-Box designed for off-grid schools around the globe. And at a January 2012 conference that joins academia and industry, my collaborator and I pitched our concept to a representative of a large company.

His reaction to the Solar-Computer-Lab-in-a-Box: “That’s fantastic! Wouldn’t it be great to test it out on some really isolated, remote island, where there’s no electricity, no communication with the outside world, and where people have never even heard of, let alone used, the Internet?”

Our response? “We can make that happen! We know the perfect place. Have you ever heard of Chuuk, Micronesia?”

Long story short, we are making that happen.

In August 2012, we launched the Pacific Islands Schools, Connectivity, Education, and Solar (PISCES) project. We are excited to bring our first Solar-Computer-Lab-in-a-Box—as well as
solar-powered Internet connectivity—to Udot Primary School, on Udot Island, Chuuk, in the Federated States of Micronesia.

The project is about far more than just technology: training, skill-building, and partnering are equally important components of the endeavor. We hope to demonstrate a complete, replicable model for bringing computers and Internet connectivity to underserved schools and communities in the Pacific islands and beyond, starting in Chuuk.

The first half of the project is a workshop in solar-powered, long-distance wireless connectivity at the University of Guam, which is (relatively) nearby. Micronesian college students—some of whom we hope to bring to Chuuk—will receive hands-on training directed by team members from Illinois Institute of Technology, Green WiFi, the International Center for Theoretical Physics, and the University of Guam. This training session consists of practical information and theory in a morning lecture, and hands-on activity and labs in the afternoons, culminating with the students establishing a permanent solar powered point-to-point WiFi link between two buildings on campus during the workshop’s final afternoon.

The project’s second half, in Chuuk, consists of the Solar-Computer-Lab-in-a-Box and solar long-distance WiFi deployment at the Udot School, as well as the team’s participation in a Chuuk Department of Education summer program for teachers and administrators from across the state.

The technology being deployed in Udot will allow the teachers at this rural, off-grid school to participate in an already-established technology-in-the-schools project that, up to now, had only been able to include—due to lack of electricity and Internet connectivity—a handful of schools on Chuuk’s main island.

The partners joining the project in Chuuk include the Department of Education, Pacific Resources for Education and Learning (PREL, which is leading the aforementioned technology-in-the-schools program), and iSolutions, a locally-based technology consulting company.

So, why so many partners just to install one computer lab and set up one Internet connection? Well, the role of the technology itself in its deployment to novel locations is actually quite small. In fact, we believe that the only possible path to long-term sustainability—which is how we define success for this project, or for any technology-for-development project—is that it become locally adopted, owned, managed, and maintained.

For this to happen, the technology must enable the people using it to meet a perceived need, and locals must develop the skills not only to use the technology, but also to be able to maintain, repair, install, and adopt additional previously unknown technologies. While we are excited to bring breakthrough technologies more appropriate and affordable to Chuuk, the main emphasis in the PISCES project is on the partnering and the carrying out of local capacity building and skills training, both in terms of the computer and Internet technology, but also vis-à-vis the
teachers’ use of computers in the classroom, as it will be their first time using either computers or the Internet.

The PISCES project attempts to incorporate what we believe are best practices, but it was born out of lessons learned, or one might even say, experiences of failure.

We learned from our previous work installing a macro-sized solar powering system at a primary school in Haiti that without true buy-in from the organization responsible for the schools—be it the Ministry of Education at a macro level or a faith-based NGO at the micro level—projects won’t be sustainable, supported, or successful.

I learned from worldwide visits at schools experimenting with different forms of computers-in-the-schools technology that computer labs are still effective in the teaching of technology to students. Teachers want computer labs not just so that a single technologist is in charge of the technology and the computers won’t disappear, break, or never return when children bring them home, but also because computers do not need to be involved in every single topic taught. Students should not be in front of computers all day, and teachers should not be forced to invent new computer-based curriculum to cover every subject.

I learned from my in-depth research in Macedonia that teacher training is paramount to the success of a computers-in-the-schools program. Yet, one-time training—no matter how good—is simply not enough. It takes years of follow-up support, training, and goal-setting to see long-term adoption of technology in the classroom and alignment with the curriculum.

Research also indicates that a top-down-only approach does not result in long-term project sustainability. This is why I’ve been focusing on partnerships for the past few years. I believe these partnerships must be formed at multiple levels and cover every area of expertise needed to address the challenges inherent in complex projects—such as those that bring technology to where it was previously unknown. These partnerships can adopt a model of top-down-meets-bottom-up to ensure that necessary feedback loops are established and to allow for the germination of creative ideas at all levels. To wit: though we were invited by locals to bring technology to schools in Chuuk to improve educational opportunities, other locals have since pointed out the life-saving possibilities of these same Internet-connected computer labs. For example, they afford the ability to report and communicate about missing boats and fishermen in the area—a real problem in Chuuk, and something my students and I back in Chicago hadn’t considered.

I’ve also learned that perhaps the most important factor in the success of such initiatives is the building of local capacities. This is why the training and skill-building of locals features so prominently in the PISCES project. I’ve seen a number of promising and successful technology-for-development projects, initiated by the United States Agency for International Development [USAID], whose initial successes withered once the projects ended (USAID projects always have an end date) and it was time to turn them over to be locally run and managed. This is not
necessarily the fault of the USAID projects: sometimes ministries believe they can do things better on their own than USAID did; sometimes there is a lack of local support for the projects in the first place, so they don’t continue; sometimes the skill-building did not take place and the local authorities simply don’t know how to run the projects on their own.

There have been countless failed attempts to bring technology to emerging regions in the name of development, and yet the interest in carrying out such projects seems only to be increasing. At least the failures are beginning to be acknowledged. FailFaires, intended to showcase failure in technology-for-development projects, began in New York City in 2010 and have grown exponentially in popularity. They are now being held regularly in Washington, D.C., London, and at major ICT4D [information and communication technologies for development] conferences, as well, in New York. The FailFaire at the ICT4D conference in Atlanta this past March was the best-attended (standing room only) and by far the most talked-about panel of the conference. This is undoubtedly a step forward. We learn more from our failures than from our successes—but only if the failures are acknowledged and an attempt is made to figure out what went wrong, why, and how to do better next time.

We should know by now, for example, that technology is no panacea for development. Far from it! Yet I still hear arguments being made along the lines of:

- “Helicoptering in laptops is sufficient; the state of education for the poorest of the poor will improve simply because children have laptops. (And since that hasn’t actually worked out so well, maybe tablets will work out better than laptops!)”
- “We cannot train enough teachers to solve the developing world’s educational challenges, so we need to rely upon technology to fill the gap: computers, tablets, mobile phones, and distance education are the new proposed solutions.”

These arguments are non-starters because they seek simplified, short-cut solutions to the complex, sociopolitical and economic challenges that are part and parcel of development. In fact, I’m not even going to attempt to define “development” here, precisely because it is such a messy, complex, complicated, multi-faceted undertaking. Development takes place incrementally over years and years, driven by hard work on behalf of those committed to seeing it through; there are no shortcuts, no silver bullets.

Unfortunately, there is an exceedingly strong historical precedent—on the part of development organizations, policymakers, project funders, and others—of looking for silver bullets, easy answers, quick fixes, shortcuts, and one-size-fits-all approaches to the challenges of development. And, of taking a top-down approach: of looking at the wealthy countries and what made them wealthy, then looking at poorer countries and attempting to determine which “Missing X-Factor” explains why they just weren’t developing.

The first Missing X-Factor was deemed to be Physical Capital, because that’s all that Western European nations were missing after World War II, and they managed to successfully
But somehow that didn’t prove enough for the poorer countries to develop, so the new Missing X-Factor was determined to be Too Little Government. That didn’t work either, so the problem appeared to be Not Enough Entrepreneurship. Then it was Too Much Government. Then not enough International Trade. Then not enough Skilled Labor. Then the Missing X was a lack of Good Governance. Now, it’s Technology’s turn to be the Missing X-Factor.

And technology might just be the most tempting of the silver bullet, quick-fix, Missing X-Factor approaches yet, given the pace at which technological innovation takes place and the corresponding mindset of always looking for the “Next Big Thing” technologically, the ability of technology to increase efficiencies for those who use it (and the corresponding shorter and shorter attention spans it may produce). . . . But helicoptering in technology will never address the complex sociopolitical, economic, or other non-technology issues actually at the root of development challenges. In fact, trying to apply simple, quick fixes to complex, long-term problems sets up such initiatives for failure, disappointment, and the wasting of already-scarce financial resources.

However, despite my argument against seeing technology as a quick-fix silver bullet, I remain extremely pro-technology! One point of view I’ve discovered everywhere I’ve traveled, among everyone with whom I’ve spoken, is that people want the ability to communicate with others, and to have access to information—they want their ICTs [information and communication technology]! The unprecedented global uptake of mobile phones is clear evidence: The International Telecommunications Union (ITU) estimates today’s global mobile phone penetration rate at over 85 percent—nearly 6 billion users!

Computers, tablets, mobile phones, and technology-enabled distance education are all great, but quick-fix shortcuts, they are not. My own experience in speaking with and surveying teachers around the world is that they overwhelmingly want computers in the classrooms and believe that this technology can improve educational quality and opportunity for students. Making this happen in resource-constrained conditions (including the lack of electricity and extremely limited funds) is both a difficult undertaking and only the first step. Developing the local human skills and ecosystem to be able to use the technology is a long-term challenge.

So, will the project in Micronesia be successful? We don’t know, but we’re giving it our best shot. We’ve made a plan that attempts to incorporate training and skill-building, as well as partnerships, to carry out the project. It will certainly take a long-term commitment by the partners involved. I’m very excited to be able to bring our Solar-Computer-Lab-in-a-Box and solar-powered WiFi to a remote, isolated island, but I’m even more excited about the local skills and capacity-building that our project includes: that’s the starting point of the long-haul effort. There are no shortcuts to development—not even with technology.

Further information:
• Technology for development: Why training trumps technology

Related links:

• Science in the Classroom: In defense of low-tech education
• Low-tech high creativity in the classroom
• ABCs and ICTs: Delivering scale and value with a whole class learning solution

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Resources

How Information and Communications Technologies Can Support Education for Sustainable Development: Current uses and trends

As part of the Canadian International Institute for Sustainable Development (IISD)'s involvement with Manitoba Education, Citizenship and Youth and the UNESCO Decade of Education for Sustainable Development, this paper written by Leslie Paas and Heather Creech of IISD presents a brief history, and identifies current uses and trends for deploying ICTs, primarily in the formal Kindergarten to Grade 12 education system, with a focus on the online environment.

It considers three main questions:

(1) Why do ICTs need to be considered as a critical tool in education for sustainable development (ESD)?;

(2) What ICTs are currently being used by educators and learners?;

and (3) What can we expect to see in the near future?
Read the full paper:

- How Information and Communications Technologies Can Support Education for Sustainable Development: Current uses and trends

Related links:

- Green Standards Week drives tech sustainability strategies
- Rio+20 recognizes essential role of ICT and broadband networks as catalyst for sustainable development
- ICTs for development: Improving policy coherence
- Australia escalates US$2.56 billion digital education revolution
- Information technology plays critical role in achieving UN objectives, says Ban
- ITU estimates two billion people online by end 2010
- E-course on social and economic policies
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The eWaste of Development: What are the consequences of new technologies on the environment, and how can we act responsibly, starting now?
By Sarah Pouzevara, Research Triangle Institute (RTI)

Source: Education Technology Debate

Over the past few years of activity on the Education Technology Debate forum, we’ve read many examples of how ICT in education projects have improved and innovated practice, making access to education more modern and accessible. At the same time much criticism has been focused on projects that, despite best intentions, focus first on hardware provision without sufficient consideration of how it will be used to improve learning, effectively wasting the investment.

Many of us have witnessed firsthand this kind of wasted investment—i.e., underutilization of equipment—but how many of us are still around to see the long-term consequences of high-input ICT projects, such as those designed to give every child access to computers, either through large computing labs, mobile laptop stations, or one to one computing?

- What happens when those computers reach the end of their lifecycle?
- Who is responsible for disposing of them when the project that purchased them is no longer active?
- How many projects today are integrating this type of foresight into their design and costs?
- What donors are requiring that type of planning from their implementing partners?
- Which client governments are requiring such action as part of international aid programs?

For the past three years, the ICT for Education and Training group at RTI International has been looking at these questions, and developing strategies and protocols for approaching ICT in education interventions with a focus on realistic, effective inputs for the present, while planning for the effects of those interventions in the future.

Why? Because although some may argue that informal electronics recycling—i.e., picking and sorting through piles of electronics at the dump—provides a reasonable income for some people (for example, a Kenyan can earn up to $3/day; in Guiyu China, about $8/day—much more than farming), the question is whether or not it is safe and adequate. In most cases, it is not. When we don’t properly recycle, there is human and environmental damage from direct contact with toxic substances, inappropriate methods for extracting raw materials, hazardous working conditions, etc. Additionally, we are ignoring the market potential for additional sources of sustainable and safe livelihoods, while losing raw materials that will have to be re-extracted (with all of the associated environmental problems that come with that.) Thus, the idea of e-waste for us is more than just a by-product of development projects; instead, it can become “the development project”, led by countries in an effort to spark new, safe, and sustainable economies. It is a human as well as environmental concern, both of which have long-term impact on development and improving the human condition, our key mission.
What can be done?

Recycling is just one possible approach to e-waste management, and a broad one at that. The least desirable approach to e-waste management is no management at all, but rather the direct disposal of unwanted equipment and materials using environmentally unsound practices, such as dumping and incineration, and bypassing all efforts to reuse or recycle. We talk a lot about how to use ICT in education, for good reasons. But we don’t talk enough about how the principles of “Reduce, Reuse, and Recycle” should be integrated into ICT in education projects.

Reduce
Purchase smaller devices—tablet computers and mobile devices, for example; purchase more energy efficient devices; purchase fewer but sufficiently powerful devices (i.e., Thin Clients); extend the lifecycle of the equipment that you have through effective preventive maintenance, proper handling by users, and repairs—this also provides an opportunity for vocational and technical training within the school, organization, or community.

Reuse
In addition to the preventive maintenance described above, when equipment can truly no longer function as its original purpose, it can still be reused or repurposed. For example: refurbish one new device out of parts from other non-functional devices; use non-working devices in vocational and technical training courses to understand parts and how, for example, a computer is put together; repurpose devices into totally different objects, for example computer chips and circuit boards have been “upcycled” into luggage tags, jewelry or art.

Recycle
Despite best efforts, there will always be parts of equipment that cannot be reused or repurposed. The key is to ensure that prior to disposal one considers all responsible recycling options: plastics can be ground or shredded and sold back to plastics manufacturers; parts can be sorted and resold for refurbishing purposes; metals, primarily gold and silver, are recovered by commercial recyclers. The recycling option should aim to create new, viable and safe sources of livelihoods in the community, such as sourcing, separating and sorting parts and then reselling them to appropriate manufacturers.

Examples of Success
In Egypt’s Manshiyat Naser district, also known as “Garbage City”, girls come one day per week to learn how to turn trash into income. With the help of a trained teacher, the girls break down non-working computers collected by the Zabaleen (garbage collectors) or donated to the association, and rebuild them into working computers. Each working computer can be sold for approximately $300 on the local market, with half of the proceeds going directly to the girls, and half funding the warehouse facilities and trainer. The parts that can’t be repurposed into a new computer are sorted for recycling, including the valuable gold and silver of microprocessors, motherboards and circuit boards.
Kenya is emerging as one of the leaders in e-waste management, having convened The National Stakeholders Workshop on Waste of Electrical and Electronic Equipment (e-waste) Nairobi 2010. They are also one of the first African nations to have a comprehensive-government-led e-waste policy and strategy and there are recycling facilities set up to handle it. Computers for Schools Kenya (CFSK) a non-governmental organization, dismantles computers into metals, wires, plastic, aluminum, copper, monitors and electronic boards which are then sold separately. CFSK also converts the monitors into television sets by replacing its boards with those of televisions.

An eWaste “code of conduct” for development partners?

When engaging in development activities, particularly ICT in Education projects that aim to introduce considerable amounts of technology infrastructure, we must act responsibly with regards to e-waste. There are many opportunities, or “entry points” to integrate responsible e-waste management into our projects.

At the proposal stage:

- Build e-waste considerations into the proposal, with budget (for example, budget for responsible export of e-waste, local recycling if possible, for training and advocacy events, etc.)
- Integrate partnerships with IT companies, private sector partners, community-based organizations, and waste management facilities
- Budget for a rapid situation analysis of government policies and procedures surrounding e-waste management.

During project implementation:

- Require eco-friendly materials, or manufacturer take-back agreements (‘producer pays principle’) as part of hardware specifications and evaluation criteria for large procurement contracts.
- Include in training programs strategies to help extend the lifecycle of computers, and clear instructions for what to do with non-functional equipment.
- Conduct advocacy and policy support by work with government counterparts to advise them on long-term considerations and collaborate on developing appropriate actions and solutions

At project exit stage:

- Ensure proper handover of used equipment—including project office equipment—to local organizations that have the capacity to restore, refurbish and recycle it.
• Insist on transparency in reporting to project donors, stakeholders, clients, etc. on both successful and challenging aspects of electronics recycling and ensure that they have a road-map for the future based on project experience.

However, e-Waste management cannot be externally driven in the long term. Therefore, our most critical responsibility is to support national governments to address this issue and to increase their own capacity for end-of-life processing of e-waste. We can:

• promote and support the establishment of recycling facilities as part of economic growth and workforce development projects.
• participate in and foster effective environmental lobbies in countries where we work so that citizens also put pressure on governments to create such facilities and enforce appropriate legislation.
• encourage governments to develop appropriate legislation to protect themselves and promote development; for example, by outlawing the importation and dumping of foreign e-waste.
• encourage the re-use of electronics through social programs that donate equipment to schools or hospitals, and subsidize recycling of e-waste when reuse is not possible.

Further research needed
As a community, we can make a larger impact faster by working together. First, we need more information on who is doing what, which donors and which governments have policies and procedures related to e-waste, and where we can find common ground. Some important questions remain from an institutional perspective:

• What is our e-waste “tolerance”?
• At what point does this become a clear “hazard” that cannot be ignored?
• What constitutes a “significant” amount of technology input in a project?
• Is this only relevant to ICT in Education projects?
• What about our project offices?
• Do we practice what we preach in our institutions both at home and abroad?
• Do smaller devices necessarily contain less e-waste per unit?
• Are donors likely to view e-waste considerations as a positive or a negative contribution to projects where it is not expressly requested?
• What about the health and environmental effects of the use of electronic devices even before reaching the disposal phase (i.e., increased electricity consumption and hazards related to long-term exposure to cell phones, wireless internet, etc.).
We welcome your contribution to this ongoing research, by sharing your experiences, activities and opinions at the Education Technology Debate.

Further information:

- The eWaste of Development: What are the consequences of new technologies on the environment, and how can we act responsibly, starting now?

Related links:

- Green Standards Week drives tech sustainability strategies
- Rio+20 recognizes essential role of ICT and broadband networks as catalyst for sustainable development
- ICTs for development: Improving policy coherence
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- Information technology plays critical role in achieving UN objectives, says Ban
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Digital technologies and inclusive schooling
The education of people with visual impairment in Spain hinges on the fact that students are mainstreamed in schools chosen either by the students themselves or their families. The
introduction of digital technologies in schools poses a new challenge for visually impaired students.

The ONCE Access to Educational Content Group (ACCEDO in Spanish) was set up to carry out research, training and assessment in the field of accessibility. The Group works both with ONCE’s own staff in its Educational Services for the Visually Impaired Teams and public and private entities.

In this article written by Ana Isabel Ruiz López, Director of Education and Employment, ONCE (The Spanish National Organisation of the Blind), you will find some useful information about the initial experiences and approach, the tools employed, the cost and impact of the project and the results reached so far.

The use of adapted digital technology by youngsters allows them to enjoy better access to information and educational resources; and is a powerful socializing tool, enabling children with disabilities to feel included in their environment.

Read the full paper:

- Digital technologies and inclusive schooling

Related links:

- UNESCO launches a meeting report on accessible ICTs for students with disabilities
- UNESCO evaluation shows student achievement increases by combining professional learning, compelling interactive digital content and technology in the classroom
- UNESCO publishes report on ICT for persons with disabilities

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Digital literacy across the curriculum handbook
This handbook introduces educators to the concepts and contexts of digital literacy and supports them in developing their own practice to foster the growth of digital literacy in the real classroom and school settings.

In the handbook, the first section explains the reasons teachers should be interested in digital literacy and how it is related to their subject teaching, as well as the importance of digital literacy in contributing to the students’ knowledge and engagement with technology. The second section discusses the components of digital literacy and how to promote them in classroom.

The handbook is supported by case studies of digital literacy in practice. Both of them can be downloaded in the website.

Further information:

- [Digital literacy across the curriculum handbook](#)

Related links:

- [Common Sense media - providing trustworthy information in a world of media and technology](#)
- [Microsoft Digital Literacy](#)
- [Promoting teachers competencies on integration of ICT in teaching and learning](#)

Previous issues of the e-newsletter:

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What do you think about this topic?

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Stop disasters

“Natural hazards (...) do not need to become natural disasters.” This quote gives a good overview about the idea behind [www.stopdisastersgame.org](http://www.stopdisastersgame.org).

Every year natural hazards occur all around the world: Tsunamis in Asia, hurricanes in the Caribbean and floods in central Europe. No matter where you live, natural hazards can happen. Ask yourself one question: “Do I know what to do in case of an Earthquake/Tsunami/Hurricane/Snow Storm?” Well, we may have to admit that the answer is most likely No.

The purpose of the ISDR (“International Strategy for Disaster Reduction”) is to inform how to reduce the risk and the impact of a natural hazard, so that it won’t become a natural disaster. This is achieved through a Global Platform, which takes place every two years, year-round campaigns and other initiatives. The ISDR also tries to involve children and young adults, by using boardgames (“Riskland”) and their online game (“Stop Disaster”), which you can find under [www.stopdisastersgame.org](http://www.stopdisastersgame.org).

The game starts in Central Europe, the Caribbean, Australia, Easter Mediterranean or South East Asia. You are, as the town planner, in charge of protecting a small village. Unlike the reality you are aware of when the hazard will take place and what kind of a hazard it will be. The challenge is to build dams against floods, trees against hurricanes or wave-breakers against tsunamis. Always keep an eye on the time and the amount of money left in your pocket.

It is also possible to “upgrade” already existing facilities: Installing a radio alert system, direction signs or a one-week-crash-course are only a few options. As soon as time or money runs out, the hazard begins. Getting a good or bad score depends on how many people died/got injured and how much damage the disaster did.

Playing this game gives you a slight idea what needs to be done to lower the impact of a natural hazard. Educators with access to the Internet can play the game together with their students, while trying to explain the impact of each measure they take. Those children might have better chances to save their lives during a real natural hazard. They are also our future decision makers, architects, doctors, and politicians. If they know what to do to reduce the impact of disasters, they will create a safer world.

Play the game:

- Stop Disasters
Related links:

- Japan Solidarity Project website
- 5 ways ICT can support the Millennium Development Goals
- UNESCO launches first computer game for young people on HIV and AIDS
- Rebuilding resources – Region devastated by earthquake raises educational standards
- National seminar on Role of ICT in Disaster Risk Reduction and Disaster Preparedness & Management
- Fishing communities learn to use ICT for poverty reduction

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- UNESCO “ICT in Education” Announcement e-newsletter

What do you think about this topic?

- Visit our on-line forum and discuss this topic

TeachUNICEF - a portfolio of free global education resources
TeachUNICEF is a portfolio of global education resources intended for teachers, afterschool instructors and parents.

Designed and collected by the U.S Fund for UNICEF’s Education Department, TeachUNICEF’s resources cover grades PK-12 and are interdisciplinary (social studies, science, math, language arts/English, foreign/world languages).

All TeachUNICEF resources can be downloaded for free with topics ranging from the Millennium Development Goals to water and sanitation. This website is a reservoir of engaging and academically rich materials.

Units, lesson plans, stories, and multimedia encourage the exploration of critical global issues impacting children worldwide and offer interested youth an opportunity to take action via service tips and information about U.S Fund for UNICEF sponsored activities. This resource is free on the web for the purpose of helping create well-informed global citizens.
Further information:

- TeachUNICEF

Related links:

- UNESCO Bangkok Teacher Training Series
- WatchKnow - finding and categorizing free educational videos
- Teachtoday – living with technology
- Never stop learning. Come Explore

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