Highlight
Digital textbook initiatives in Korea
This article describes the various steps taken to introduce digital textbooks in Korean schools since a pilot project was launched in 2007 to develop digital textbook prototypes for six subjects in thirteen elementary schools.

Developing digital textbooks – A publisher’s experience in the Philippines
As students become more technology-savvy, they demand that learning resources be available in their everyday tools like computers, tablets and phones, thus putting a pressure for publishers to go digital. However, developing digital textbooks brings a new set of concerns in practically every aspect of the book development cycle, including content development, editorial work, and distribution.

An update on the use of e-readers in Africa
What does it take to introduce e-books and e-readers into communities in low income countries -- and is this a good idea?

News & Events
Joint-workshop successfully trains educators in Vietnam on PBL and Tele-collaboration
On 14-17 March, VVOB Vietnam, in cooperation with the British Council (BC) in Vietnam, and supported by UNESCO Bangkok, invited 36 educators for a capacity building workshop in Hanoi on Project-Based Learning (PBL) and Tele-collaboration.

Key Players' Meeting on ICT in Education in Vietnam
On 16 March more than 30 key players in the field of ICT in education in Vietnam from more than 20 different organizations met in Hanoi. The objective of the meeting was to enhance dialogue on ICT integration in education in Vietnam and to facilitate key players to explore potential areas for cooperation.

UNESCO and NOKIA held workshop on mobile technologies for teachers
UNESCO and Nokia are preparing to launch four pilot projects to explore how mobile technologies can be used to support teachers in Mexico, Nigeria, Pakistan and Senegal. To finalize the project action plans, the Organization organized a workshop, “Mobile Technologies and Teacher Development”, in partnership with Nokia at its Paris headquarters on 29 and 30 March.

Regional ICT Centre in Bahrain organized two high-level workshops on ICT and education
Addressing the opportunities and challenges of effectively integrating digital technologies in 21st century classrooms, the Regional Centre for Information and Communication Technology (CICT) in Manama, Kingdom of Bahrain, hosted two regional workshops from 18 to 22 March 2012 on the use of ICTs in 21st century classrooms for policy makers from GCC Member States and Yemen.

Brazil hosts Latin America Open Educational Resources Regional Forum
The Latin America Open Educational Resources (OER) Regional Policy Forum was co-organized by the Commonwealth of Learning (COL) and UNESCO in Rio de Janeiro, Brazil, from 28 to 29 March 2012. It provided unique regional inputs to the draft Paris OER Declaration to be submitted to the World OER Congress, which will take place in Paris, France, in June 2012.

**eduLab at the Academy of Singapore Teachers helping to bring ideas into practice**

Singaporean Teachers will now have a “living lab” to experiment with evolving technologies before trying them out in their schools. Set to transform learning in the future, eduLab@AST will play a key role in bringing ideas to practice.

**Programmes & Projects**

**Mobile Science Project: Engaging students in science through mobile learning**

The Mobile Science Project aims to ingrain in students a sustained interest in science by nurturing the interest of students towards science subjects at a young age. Through the use of mobile ICTs – in this case, smart phones – the project implemented an inquiry-based approach to learning which would consequently develop students’ positive attitude towards science.

**Resources**

**Beyond Textbooks – Report on findings from phase 1**
In November 2009, the Virginia Department of Education launched a project to explore the implications of introducing traditional textbook alternatives into classrooms. This report shares findings from Phase I of the pilot project.

**Graduate employability in Asia**
In a rapidly changing world with diverse demands, governments call on universities to facilitate the shift to knowledge-based economy and high-technology to ensure a competitive edge of their graduates in the global market. The case studies from selected countries in Asia commissioned by UNESCO Bangkok with the support of Japanese Funds-in-Trust and UNESCO Jakarta give a better understanding of the current trends and challenges as regards employability of university graduates in Asia.

**New challenges in Technical Vocational Education and Training (TVET) teacher education**

The twenty first century presents a radically different economy and society, which is likely to have profound implications on Technical Vocational Education and Training (TVET). The TVET system must adapt to these key features which include Globalization & Sustainability, ICT Revolution, Emergence of Knowledge Society and Rapid Knowledge Obsolesces as stressed by the author of this article.

**Teaching with wikis: improving staff development through action research**

This paper reports on the use of action research in a case study involving two iterations of an online workshop implemented at two universities in late 2007 and early 2009 to prepare teaching staff for using wikis for student group work and assessment.
Interactivate - exploration in science and mathematics
Interactivate is a set of free, online courseware, structured around collections of activities, lessons, and discussions with the goals of creation, evaluation, and dissemination of courseware for exploration in science and mathematics.

Highlight

Digital textbook initiatives in Korea
By Hye-Kyung Yang, KERIS, Korea

In 1995, the Presidential Education Commission drafted an agenda which, for Korean policymakers still serves as the cornerstone for ICT in education development. Globalization and its effects on the future development of education have brought lifelong learning and open education to the forefront of the ongoing discourse taking place in national education planning.

The Korean Ministry of Education, Science and Technology established in 2007 the “Digital Textbooks Generalization Plan” which launched a pilot project aimed at developing digital textbook prototypes for six subjects in thirteen elementary pilot schools.

In the context of the Korean education system, digital textbooks can be defined as, “Textbooks that integrate the contents of the existing textbooks, supplementary books, workbooks and glossaries with multimedia and materialize them with various interactive functions for students to study according to their characteristics and academic levels” (MEST 2010 Adapting Education to the Information Age: 24).

The Digital Textbook initiatives in Korea pursue the ongoing policy goal of individualized learning based on the interests and aptitudes of learners. It aims to break away from limited knowledge in paper textbooks and to provide students with extended environments where they can have access to diversified and creative knowledge.

In 2011 the Korean government set the goal of building a powerful country with talented people and decided to pursue SMART education policies for the 21st century. SMART (Self-directed, Motivated, Adaptive, Resource free and Technology embedded) education is an, “Intelligent and customized teaching and learning system” (MEST 2011 Presidential Report). As the initials of SMART indicate, students are expected to learn with fun, motivated, and self-directed ways based on their level and aptitude in a resource-enriched environment.

The major five pillars of SMART education policy consists of incorporating digital textbooks into the school system by 2015; promoting online classes and assessment; improving the legal framework and copyright laws; developing the capacity of teachers; and constructing a
cloud computing-based infrastructure. Thanks to a cloud-based computing environment, digital textbook content can be readily downloaded so that students can access up-to-date information anytime and anywhere.

The overall strategy of developing digital textbooks has been formulated through stakeholder participation, advisory meetings, and pilot school field studies. Research on standard authoring tools and viewer development will be conducted for private sector reference.

Korea’s first SMART school opened on March 2 (2012) in Sejong Special Autonomous City, a special administrative district in Chungcheongnam-do (South Chungcheong Province).

Each student in the SMART school will be equipped with his or her own “smart pad” and can participate in classroom activities through the e-blackboard and smart pad. A total of 150 schools including 66 kindergartens, 41 primary schools, 21 lower secondary schools, 20 upper secondary schools, and two special schools will be open by 2030 in Sejong Special Autonomous City.

Hye-Kyung Yang, hky@keris.or.kr

Further information:

- KERIS

Related links:

- South Korea’s surprising stand-down on digital textbooks
- What happens when all textbooks are (only) digital? Ask the Koreans!
- Beyond Textbooks
- The liberation of textbooks
- Google Books
- Imagining future learning: Mapping major changes to education and training in 2025
- Technology adoption for use in instruction by secondary technology education teachers
- ICTs for development: Improving policy coherence
- Emerging technologies in distance education
- Next generation textbooks

Previous issues of the e-newsletter:

- UNESCO "ICT in Education" Announcement e-newsletter
Developing Digital Textbooks – A Publisher’s Experience in the Philippines

Adapted from the paper presented by Jose Lloyd Espiritu, Ph D
at the Project 2020 Vietnam Digital Books Conference, October 2011

Dr. Lloyd Espiritu of Vibal Publishing (Philippines) observed that as students become more technology-savvy, they demand that learning resources be available in their everyday tools like computers, tablets and phones, thus putting a pressure for publishers to go digital. However, developing digital textbooks brings a new set of concerns in practically every aspect of the book development cycle, including content development, editorial work, and distribution.

Vibal’s early attempts at digital publishing were not to replace the printed textbooks but rather to support them. These were in the form of supplementary CDs that contained audio recordings, videos, slide shows, drills and educational games. These were then followed by other digital content initiatives including an online library (filipiniana.net) and WikiPilipinas. Today, 48 of the 80 of the book titles released by the publishing house have supporting CDs as well as book sites where teachers and students can get additional support to the books they have adopted. There are also 26 digital textbooks that run on tablets. In addition, the house has 4 titles available to the public via apple Appstore and the Android marketplace. All the other 80 titles of the publishing house are now being migrated to an e-pub format by a subsidiary of the publishing house.

Developing digital books for the 21st century education

At first glance, converting printed books to digital form seems like a straightforward task. Books can be scanned and the scanned images (mostly in PDF) are displayed directly on screens. This approach, however, does not maximize the potentials of digital publishing. Users demand a richer experience than reading through static, facsimile copies of printed books. A printed book with static linear content does not fit today’s 21st century learners who read, view, listen, and interact with their learning materials.

Students do a lot of things using desktop and tablet computers. So, when a digital book makes its way to these devices, they are no longer treated as a regular book whose pages are simply read and flipped. Users expect digital books to be more than books to read. Given the stiff competition between textbooks and internet resources, students expect to use digital textbooks to give them the same experience they get from webpages.
Initial user response to a digital textbook is interesting, they first use them as books with real paper pages, hence a fancy animated page-turner interface is expected – although they very easily outgrow it. Other features that they want in digital books include shorter reading, rich-media (videos, animations, audio and images), easy access (indexing), hyperlinks, highlighting, bookmarking, and annotating. These require re-writing books and replacing textual content with rich media.

In addition, they want the functionality of typical webpages where the table of contents is hyperlinked to the chapters or pages in the book. They also want to be able to rapidly flip pages, not one page at a time. Remember that novels are read one page at a time, but textbooks are randomly accessed. To make things more complicated, they want photos and illustrations that they can zoom-in and text sizes that they can adjust. This is where the problems of dynamic layouts begin. Thus, simple conversion of printed text is no longer possible. At the very least, some dynamic formatting typical to HTML is needed.

Furthermore, a digital book used in a classroom takes on another dimension. It is typical for teachers to compel students to study (read) in advance topics or chapters of a book. It is also typical for many basic education textbooks to have drills and exercise or guide questions at the end of the chapter or lessons. Many of the so called workbooks or work-text books have pages where students write on the book itself. Similar modes and higher levels of interactivity are also expected in a digital textbook. Students must be able to answer the drills and be provided with some form of feedback from the teacher later. It will be awkward to print a page of the digital book, answer it, and submit it to the teacher. Every teacher would love to have those book exercises automatically evaluated and the scores sent directly to the teacher. Some teachers would even want to monitor if students have read the assignments from the book.

Based on these observations, developing a digital book today takes a lot more resources and raises a lot of issues in at least three areas:

1. **Content development.** Writing content for digital books requires planning not the content but how the content will be used.

   Text-based books come from simple manuscripts often done by a single author. Text is encoded and sometimes fitted with images or illustrations and then laid out for printing. Based on the amount of text and illustrations, the number of pages required can be easily estimated. Developing content for interactive media-rich digital books requires significantly more steps, talents/skills, and resources.

   Digital content development begins with a listing of topics to be included. From these, instructional designers plan how these topics can best be presented to a learner. It requires practically writing a script as to what words to use, what illustrations or images will enhance the understanding of the topic, what topics can best be presented as videos, what words need to be hyperlinked to provide further explanation, etc.
After all the planning, the real work of production begins. Depending on the requirements, the amount of work can vary from just text to full production of a video or a game. In most cases, a full multimedia development team is needed to work on photos and illustrations, audio recording and editing, video production and editing, animation, and even game-programming. All these are needed to produce the various media elements of the digital book.

Traditional manuscript preparation is instructional design in digital book publishing. Compared to a printed book, this is more expensive.

2. **Editorial Work.** Assembling the digital book is also quite different from designing a traditional book where text and illustrations are simply laid out.

One of the trickiest parts is identifying the various formats in which the digital book will be used: PCs, tablets, and handheld devices come in various sizes and orientations (landscape/portrait). It is very important to consider how each of the media elements is presented and how users will control these - text can be scrolled, enlarged, or selected; videos can be played and replayed; drills/activities are evaluated and appropriate feedback provided. The assembly of the non-linear contents of an interactive digital book requires a lot of logic and planning.

Other technical issues that must be considered include bugs, loading time, and other usability concerns like navigation, user control, and feedback.

Editorial work is multimedia authoring in digital book publishing. Compared to printing a book, this is more complex.

3. **Sales and distribution.** Perhaps the biggest issue with publishing a digital book concerns its sales and distribution.

One real concern is protecting digital content. Digital piracy is extremely difficult to control. Digital materials can be duplicated and distributed very easily. Further, there are still no standard royalty and digital rights management schemes being practiced in digital publishing.

Another pressing issue is the pricing of digital content. Web users are so accustomed to free content that many are not willing to pay the price proportional to the cost shouldered by the publishers in developing the digital book.

A real world issue with regards to students acquiring digital books is that it requires an online payment facility. Many students in developing countries do not even have credit cards.

Physical sales and distribution has gone virtual in digital book publishing. Compared to a paper-based book, this is more risky.
Designing, developing, and publishing digital books is definitely not as simple as scanning printed books and uploading/distributing these. Perhaps the top three questions we have to ask are: Are the Students ready? Are schools ready? Are the publishers ready? Dr. Espiritu’s personal views are: Yes, maybe, and maybe.

Further information:

- Vibal Publishing

Related links:

- Beyond Textbooks
- What happens when all textbooks are (only) digital? Ask the Koreans!
- The liberation of textbooks
- Google Books
- Imagining future learning: Mapping major changes to education and training in 2025
- Technology adoption for use in instruction by secondary technology education teachers
- ICTs for development: Improving policy coherence
- Emerging technologies in distance education
- Next generation textbooks

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

An update on the use of e-readers in Africa
By Michael Trucano, Sr. ICT & Education Specialist, World Bank

What does it take to introduce e-books and e-readers into communities in low income countries -- and is this a good idea?
Judging by the increasing number of inquiries we receive here at the World Bank on this topic, we are not alone in asking such questions. If you want help in trying to answer these and related queries based on evidence from pioneers in this area, you will most likely find yourself at some point in contact with the folks at the Worldreader NGO. Co-founded by one of the former senior executives at Amazon, Worldreader is working with its partners to "bring millions of books to underserved children and families in the developing world". Jonathan Wareham, a professor at ESADE in Barcelona who serves on the Worldreader - Spanish Foundation Board and collaborates with the organization on various research activities into the use of e-readers and e-books, recently stopped by the World Bank to talk about what Worldreader is learning from its work in Africa.

Those of us who work in the educational technology field are all-too-familiar with the phenomenon of locked computer rooms. Locking up the valuables didn't start with computers, of course. This phenomenon has its direct antecedents in the locked bookcase -- something one still encounters in too many schools around the world, especially those in very poor communities where books are seen as too valuable to use (except perhaps on special occasions), lest they get 'damaged'.

Worldreader is trying to fight against, and reverse, this phenomenon by increasing access to reading materials. Many groups donate books to Africa; some have done so for decades. In some ways what Worldreader is trying to do is a 21st century, digital twist on something that has been going on for quite a while.

The Worldreader presentation began by focusing on literacy. During the course of the presentation and subsequent discussion, it became clear that it is interested in a good deal more than this, but in today's funding environment, simplicity of message is often key for NGOs, and so it was perhaps not surprising that the presentation kicked with some general comments about the fundamental importance of literacy. That said, very few people need to be convinced of the social benefits of reading.

Worldreader is informed by a basic belief that, the fewer interesting things someone has to read, the less she reads. It operates according to a few core, simple assumptions, including: Kids will think it's cool to use e-readers and so will spend time doing so (this was labeled the "shiny gadget hypothesis"). And: Having access to lots of books on an e-reader will increase the probability that kids will find something interesting, and so makes reading more likely.

**Implementation**

Worldreader began its activities by wondering: What if we *only* influence the supply of e-readers, what will happen? To some people, this may sound a lot like the approach commonly associated (rightly or wrongly) with the One Laptop Per Child (OLPC) approach. Worldreader actually studied the OLPC experience quite closely before launching, hoping to learn from the lessons of that high-profile initiative so that they would not face some of the same challenges. One result is that they deliberately decided to complement the delivery of the devices with extensive engagement with local stakeholder
groups, did a lot of capacity building with teachers and trainers, and tried to help align what they were doing with what was happening in the formal education system.

Of particular interest to many readers of this blog (some of whom I know are planning for large e-reader pilots in various places, including at least two African countries) may be lessons being learned by Worldreader about some practical operational challenges that might be common to initiatives of this sort:

1. Theft
This has not (yet) been a problem. WR feels that extensive consultation with local community leaders has helped with this.

2. Power
Power has not yet been a serious issue. Just like you can find Coca Cola in pretty every market in the world, even some of the remotest places, people seem to be able to find enough access to sources of electricity to keep their mobile phones charged as well. Given the long battery life of e-reader devices (where charges last weeks, and not hours, as is the case with tablets), and despite the fact that, across much of Africa, the ‘digital divide is as much about access to electricity as it is about access to computing resources and connectivity, power has not been a real problem so far.

3. Dust
Dust, and other environment hazards, like water, on the other hand, are very real issues. Most e-reader devices were not designed with usage scenarios in rural communities in developing countries in mind. This can lead to ...

4. Breakage
Breakage is a very real issue. User education is one solution to this challenge, but Worldreader is finding that this will only go so far -- you also need sturdier devices. As it becomes more clear to device makers that there are (potentially large) markets for their e-readers in places where they don’t currently exist, one would expect that this would begin to change -- but it hasn’t yet.

One way around the dust and breakage issues is to utilize a device already in widespread use in the target communities. Until now, Worldreader has basically been a Kindle-centric project, but going forward one expects that it will be increasingly device-agnostic. One device with obvious potential to serve as an e-reader is the mobile phone, and last month a mobile phone app was announced to allow e-books distributed by Worldreader to be delivered to and read on mobile phones.

If you have a look at the Worldreader web site or at the great pictures included in their standard presentations, you will probably quickly note that all of the e-reader devices are Kindles. While known as the ‘Kindle NGO in some quarters, perhaps the most notable but underrecognized contribution from Amazon, Worldreader explained, was its help in finding a way to manage hundreds of devices at once (normally management is one user, one device, which complicates efforts to push lots of content to multiple devices at once). Back-
end issues such as this become increasingly important as initiatives grow beyond small pilot projects, and it may be in regard to things device management and content distribution that some of the most impactful lessons from the Worldreader experience of immediate relevance to other initiatives of this sort may be found going forward.

Content
All that is well and good, some might say, but what is actually being read on these devices -- especially if local curricular resources have not (yet) been digitized? There is of course no shortage of classic texts available (through things like Project Gutenberg) for download and dissemination on these sorts of e-reading devices. In addition, Worldreader has signed deals with a number of publishers to make lots of additional well known content (e.g. from Penguin, for the Roald Dahl estate) available. That said, there are very real concerns in some quarters that e-book initiatives from the 'West,' however well-intentioned, are potentially an important tool contributing to a subtle form of, for lack of a better term, cultural imperialism. Worldreader is apparently working on a platform for African authors and publishers to be able to distribute their works electronically, so that it will be easier for students to read books from local authors, consistent with the learning goals of local school systems. While not downplaying the difficulties of getting large educational publishers to make their content available digitally for use by students in Africa, this desire to help promote digital marketplaces for African reading materials is perhaps the most ambitious aspect to the Worldreader initiative. When they initially approached African publishers and authors about making their content available for free, they (not surprisingly) didn't always get the warmest reception. When they went back and asked, "what if content was digitized and made available at $1/book?", many people suddenly got very interested. (For what it's worth, Worldreader features about 240 or so digitized African titles right now, which they have co-published using the Amazon platform.) Who knows what (if anything) will eventually come of such efforts, but it is clear that many of the long-standing business models of large Western publishers are about to (if they have not already) face some large (and perhaps existential) shocks as a result of the move towards e-books. As in other areas where business as usual may not be viable going forward, perhaps some of the most compelling business models may emerge from so-called frontier or 'edge' markets (exactly the types of places where groups like Worldreader and scores of other tech-savvy firms and NGOs are active).

Impact
OK, you might say, we accept the importance of reading, we concede that reading will increasingly take place on portable digital devices, and we acknowledge that there are a great number of interesting implementation challenges that need to be solved along the way before this sort of thing can happen at any real scale in many communities in Africa. What do we know about the actual learning impact of doing this sort of thing?

A number of research efforts of various sorts are underway trying to help provide some tentative answers to this important question, based on Worldreader pilots. Most notable has been the iRead pilot in Ghana (here's an executive summary of the first independent evaluation commissioned by USAID [pdf]), which used a set of pre- and post- literacy tests to three groups: a control group; a group which received just the devices; and a group that
received the devices coupled with a number of 'pedagogical interventions'. Worldreader is encouraged by the results it is seeing so far -- the biggest effects are being seen around grades 4-5, a result that many of the literacy experts attending the Worldreader presentation did not find surprising, for a variety of reasons -- but they are not yet seeing the types of 'blockbuster results' it is hoping. Part of this may be due to the fact that the effects are best observed over the long term (I must confess, I am as a rule immediately skeptical of the claims of most of the NGOs and firms who regularly send me reports of 'astounding, unequivocal, and immediate impact' of their education programs); part due to the need to experiment more with their implementation models; and part due to the need to look for different types of impacts, using different measures, tools, and methodologies. Worldreader does appear serious and diligent in its approach, however, and so I look forward to receiving updates on the research output that I expect will emerge over time, which it plans to make available on part of its web site dedicated to "learnings". (Parenthetical note: Preliminary results from the World Bank's e-book pilot in Nigeria are expected later this year; background here, here, and here.)

**What's next?**

Based on preliminary successes and lessons from its first set of pilots, Worldreader is wondering, how do you scale initiatives like this exponentially so that they can have the broadest impact?

The first challenge in this regard is (as always) money. Here Worldreader is now starting to confront a phenomenon known to many who have worked in the ICT4D area for awhile. Finding funding support for small pilot projects, while not always easy, can be done. Large national educational technology projects are being funded in various countries around the world. But what about the in-between level, where you do things at a much larger scale so that you can learn about how best to scale when you do things at a really big, national level? Few funders seem able to provide support at this level. As a result, one approach being explored is a franchising model, combining both donor and local partner funding, and a prototype 'Worldreader-in-a-Box' solution for local implementing groups is being rolled out and tested.

Whatever path it chooses, Worldreader says that, at the grassroots level, there are a few things that need to happen if its work is to have any sort of real impact. They include:

1. **Support from local education officials** -- or there won't be the space to introduce new approaches and innovations

2. **Support from teachers** -- or the tools simply won't be used (effectively)

3. **A need to give reading a higher social currency in many local cultures**, especially those that have very strong oral traditions -- often, where there are few books, this leads to not a lot of reading, which leads to reading not being highly valued (a vicious cycle)

4. **Dedicated 'face time' in schools** -- important to keep momentum going
5. **Buy in from local support structures at the community level** -- without which, an initiative from outside the community may remain ‘foreign’, and thus less likely to be embraced

The first stage of Worldreader activities in introducing e-books and e-readers into a few small communities in Africa has convinced the organization and its backers that what it is doing is worth doing. *We no longer need to convince ourselves “if” we should be doing this, they say. Now the question is, “how?”*

Whatever conclusions you yourself draw in response to these questions, it will be interesting to learn from the attempts of Worldreader, and other groups doing similar things, in the coming years.

*By Michael Trucano, Sr. ICT & Education Specialist, World Bank*

**Further information:**

- [An update on the use of e-readers in Africa](#)
- [EduTech. A World Bank Blog on ICT use in Education](#)

**Related links:**

- [Beyond Textbooks](#)
- [What happens when all textbooks are (only) digital? Ask the Koreans!](#)
- [The liberation of textbooks](#)
- [Google Books](#)
- [Imagining future learning: Mapping major changes to education and training in 2025](#)
- [Technology adoption for use in instruction by secondary technology education teachers](#)
- [ICTs for development: Improving policy coherence](#)
- [Emerging technologies in distance education](#)
- [Next generation textbooks](#)

**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

News & Events

Joint-workshop successfully trains educators in Vietnam on PBL and Tele-collaboration
On 14-17 March, VVOB Vietnam, in cooperation with the British Council in Vietnam, and supported by the Asia and Pacific Regional Bureau for Education - UNESCO Bangkok, invited 15 teachers, ten teacher trainers and five key trainers from the departments of education and training (DOETs) of the five provinces, Quang Ninh, Thai Nguyen, Nghe An, Quang Nam and Quang Ngai and six teachers involved in the British Council Schools Online project, for a capacity building workshop in Hanoi on Project-Based Learning (PBL) and Tele-collaboration.

Vietnam is one of the six countries that UNESCO Bangkok selected for participation in the project on Facilitating Effective ICT-Pedagogy Integration, supported by the Korean-Funds-In-Trust (KFIT). In 2012, UNESCO Bangkok partners with VVOB Vietnam for the initial capacity building workshop and for follow-up and seminars in local Teacher Training Institutes (TTIs) and schools. VVOB works in 5 provinces in North and Central Vietnam. In each of these provinces VVOB partners with the local TTI and the DOET. All TTIs have a network of practice schools. In-service training of primary and secondary teachers is organized via the DOETs.

The objective of this capacity building workshop was to improve knowledge of and insight in developing and implementing PBL and the use of tele-collaboration tools to enhance different aspects of PBL. During the workshop the participants received input on PBL and ICT integration from experts from the Vietnam National Institute for Educational Sciences and Hanoi National University of Education. Resource persons from the British Council and VVOB provided rich illustrations and examples of PBL and integration of ICT. In each province, teacher trainers and key trainers from the DOETs supported the teachers from the practice schools in the development of their projects. By the end of the three and a half day workshop, six groups presented their proposal for PBL and completed a hands-on workplan for implementation. Throughout the workshop, participants were guided to upload their PBL planning documents and resources on the online portal of British Council Schools Online.

After this capacity building workshop teachers are expected to implement their plans. VVOB and the British Council will monitor, and teacher trainers from the TTIs and DOETs will offer guidance to the teachers when they get back to their school environments.

The six PBL proposals from the practice schools:

- Domestic garbage in the residential area (Quang Ninh)
- Preserving the school environment (Quang Ngai)
• The traditional handicrafts of Tam Ky City (Quang Nam)
• The Long Tong Festival, ATK, Dinh Hoa (Thai Nguyen)
• Designing the plan of the eco-garden in the lower secondary school (Nghe An)

Further information:

• Joint-workshop successfully trains educators in Vietnam on PBL and Tele-collaboration
• Facilitating Effective ICT-Pedagogy Integration Project
• VVOB Hanoi

Related links:

• Successful series of project based learning (PBL) and telecollaboration workshops continued in Bangladesh
• UNESCO Bangkok is kicking off the KFIT International School Project (KISP)
• Project-Based Learning and Telecollaboration enhances teachers’ confidence in Bangladesh
• Connecting Classrooms
• UNESCO Bangkok supports Thailand’s second decade of education reform using project-based learning and ICT
• Capacity Building Workshop on Project-Based Learning and Telecollaboration, Chonburi (Thailand)
• UNESCO launched project-based learning and telecollaboration in Chinese schools
• Next Generation of Teachers Project
• Vietnam to develop Next Generation of Teachers
• Nepal develops Master Plan for ICT in Education
• Creating the next generation of educators
• UNESCO Bangkok kicks-off new ICT in Education project funded by Korean government
• ICT in Education Teacher Training Modules for Developing Countries
• UNESCO Bangkok and Intel sign agreement to deliver Next Generation of Teachers Project in Asia-Pacific
• Next Gen empowers teacher education institutions
• Fourth Deans Forum – The Next Generation of Teachers Project
• Developing ICT curriculum for the next generation of teachers
• Next generation of teachers from the Asia-Pacific successfully trained in integrating ICT into teaching

Previous issues of the e-newsletter:
Key Players' Meeting on ICT in Education in Vietnam

On 16 March more than 30 key players in the field of ICT in education in Vietnam from over 20 different organizations from the public and private sector as well as development partners, met in the Army Hotel in Hanoi for a meeting on ICT integration in education. The key players’ meeting was organized by VVOB, in association with the Vietnam National Institute for Educational Sciences (VNIES), the British Council (BC) in Vietnam and UNESCO Bangkok. The objective of the meeting was to enhance dialogue on ICT integration in education in Vietnam and to facilitate key players to explore potential areas for cooperation.

Ten different key players presented their current and planned activities in the field of ICT in education in Vietnam and identified possible areas for cooperation. The ICT department of the MOET announced that the MOET is developing an ICT in education master plan for the period 2015-2020 and invited all key players to share their experience with and insight in ICT integration in education in Vietnam. All other presentations can be downloaded below.

To facilitate further dialogue and cooperation, VVOB introduced the framework of ten dimensions of ICT in education that were identified by the Southeast Asian Ministers of Education Organization (SEAMEO, 2010): (1) national ICT in education vision; (2) national ICT in education plans and policies; (3) complementary national ICT and education policies; (4) ICT infrastructure and resources in schools; (5) professional development for teachers and school leaders; (6) community/partnerships; (7) ICT in the national curriculum; (8) teaching and learning pedagogies; (9) assessment; and (10) evaluation and research. All key players have been invited to complete an online survey to share their opinion on the current status and targets for 2020 on each of these dimensions for Vietnam. VVOB will prepare a report based in the input received via the survey and organize a second survey round to prioritize identified targets.

By the end of the meeting key players showed a high interest in following up on this. The meeting can be the start of fruitful cooperation between different key players. To keep the momentum going, different working groups will be initiated to address different aspects of ICT in education in Vietnam. The results of the survey on dimensions of ICT in education can be used to direct possible cooperation.
Further information:

- Key Players' Meeting on ICT in Education in Vietnam
- VVOB Hanoi

Download the presentations:

- higher_education_students_and_ict_vnies_le_dong_phuong_en.ppt (ppt, 62.5 KB)
- ict_and_foreign_languages_2020_project_nguyen_ngoc_hung_vn.ppt (ppt, 2.85 MB)
- ict_in_education_programme_unesco_park_jonghwi_en.ppt (ppt, 4 MB)
- bc_presentation_british_council_john_orourke_en.ppt (ppt, 1.95 MB)
- icdl_springboard4vietnam_bui_ch_tai_vn.ppt (ppt, 1.39 MB)
- ict_in_education_in_vietnam_vvob_jef_peeaer_vn.ppt (ppt, 2.11 MB)
- ict_in_education_in_vietnam_vvob_jef_peeraer_en.ppt (ppt, 2.34 MB)
- schools_online_british_council_bkk_david_mathias.ppt (ppt, 945 KB)

Related links:

- Creating a new culture of teaching and learning
- Celebrating Innovative ICT in Education Practices: From Idea to Impact

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

UNESCO and NOKIA held workshop on mobile technologies for teachers
Mobile technologies have great potential to helping teachers, both in and out of the classroom. They can provide access to useful curricular materials, strengthen collaboration between educators and encourage exchanges about pedagogical approaches
UNESCO and Nokia are preparing to launch four pilot projects to explore how mobile technologies can be used to support teachers in Mexico, Nigeria, Pakistan and Senegal.

To finalize the project action plans, the Organization organized a workshop, “Mobile Technologies and Teacher Development”, in partnership with Nokia at its Paris headquarters on 29 and 30 March. Representatives from the four target countries participated, along with international experts in mobile learning.

The workshop aimed to ensure that the projects address the needs of teachers and advance Education for All goals in each country; to plan the main activities for each project and discuss implementation; to share mobile resources and applications that can help meet project goals; foresee the development of new resources and discuss evaluation methods.

Further information:

- UNESCO and NOKIA held workshop on mobile technologies for teachers

Related links:

- UNESCO joins hands with NOKIA for Mobile Education Program
- UNESCO Mobile Learning Week produces tangible results
- First UNESCO Mobile Learning Week
- Mobile learning and life skills
- Driving female literacy through connectivity in Pakistan
- From Illiteracy to mCommunity, Jokko Initiative Empowers Women with mLearning
- The impact of a mobile phone literacy program on educational outcomes
- Mobiles and internet improve the livelihoods of the poorest
- Africa: Mobile phones revolutionizing education
- Mobile learning: Transforming the delivery of education and training
- UNESCO to help community media with mobile content production
- Mobile phones make literacy real
- Mobile learning: Small devices, big Issues

Previous issues of the e-newsletter:

- UNESCO "ICT in Education" Announcement e-newsletter

What do you think about this topic?
Regional ICT Centre in Bahrain organized two high-level workshops on ICT and education

Addressing the opportunities and challenges in effectively integrating digital technologies in 21st century classrooms, the Regional Centre for Information and Communication Technology (CICT), a UNESCO Category II Centre in Manama, Kingdom of Bahrain, hosted two regional workshops from 18 to 22 March 2012 on the use of ICTs in 21st century classrooms for policy makers from Gulf Cooperation Council (GCC) Member States and Yemen.

The inaugural regional workshops have been organized by CICT in close collaboration with the UNESCO Regional Bureau for Science and Technology in Cairo, Egypt.

In his remarks to the inaugural session, Dr Majid Bin Ali Al-Noaimi, Minister of Education of Bahrain, underlined the country’s commitment to working closely with the GCC Member States and UNESCO in order to realize the objectives of the centre.

The first workshop, entitled “UNESCO ICT Competency Framework for Teachers”, is a 3-day event, which took place from 18 to 20 March 2012. This workshop focused on sensitizing policy makers to existing frameworks for teachers’ ICT competencies, as well as introducing the UNESCO ICT Competency Framework for Teachers. The workshop was facilitated by international experts from UNESCO, Global e-Schools (GESCI) and Imagine Education, who provided examples from relevant global initiatives, as well as up to date knowledge for contextualizing and adapting the framework with national standards.

The second workshop, entitled “Touch and Mobile Technologies for the Classroom”, aimed to address issues related to these technologies and beyond, and delve into the intricacies of the subject targeting high-level policy makers at the Ministries of Education in the Arab Gulf States. Beyond policy level discussions, the workshop tried to sensitize the participants to the issues of preparedness for this emerging transformation. Digital Content, Interactivity, Mobile Applications, Open Educational Content Standards etc. were discussed in detail.

The two workshops have been organized as precursors to the meeting of CICT’s first Governing Board meeting.

About CICT

The Regional Centre for Information and Communication Technology is a Category II centre under the auspices of UNESCO. The Centre strives to contribute to the development of the Arab region by harnessing the power of ICTs for creating capacity in knowledge sharing.
and acquisition through the establishment of a knowledge hub for the six Member States of the Cooperation Council for the Arab States of the Gulf (GCC) and Yemen by:

- fostering creativity, innovation and practical implementations of ICTs towards capacity-building and lifelong professional skills development;
- enabling design, development, effective production, and dissemination of knowledge products for sustainable development;
- promoting the creation and dissemination of Arabic digital content; and
- facilitating the consolidation of resources, know-how and private sector contributions towards ICT applications.

Further information:

- Regional ICT Centre in Bahrain organized two high-level workshops on ICT and education

Related links:

- UNESCO joins hands with NOKIA for Mobile Education Program
- UNESCO ICT Competency Framework for Teachers – Version 2.0
- Promoting teachers competencies on integration of ICT in teaching and learning
- Time to move to competency-based continuing professional development
- The contextualization and implementation of the UNESCO Teacher Competency Framework in Guyana

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

Brazil hosts Latin America Open Educational Resources Regional Forum
The Latin America Open Educational Resources (OER) Regional Policy Forum was co-organized by the Commonwealth of Learning (COL) and UNESCO in Rio de Janeiro, Brazil, from 28 to 29 March 2012. It provided unique regional inputs to the draft Paris OER
Declaration to be submitted to the World OER Congress, which will take place in Paris, France, in June 2012.

The Forum was held at the modern city campus of the Universidade Gamo Filho and attended by more than 80 participants including government representatives, civil society, academia, media and students.

There were seven governments represented at the Forum: Brazil, Chile, Costa Rica, El Salvador, Guatemala, Paraguay and Uruguay. In addition to many speakers from Latin America there were presentations from South Africa and the United States of America.

The objective of the Forum was to gather the unique Latin American contributions to the draft OER Declaration that will be presented at the 2012 World OER Congress in Paris, France, from 20 to 22 June. The Declaration calls on governments to support the sustainable development and dynamic use of OERs to achieve educational goals.

Claudia Costin, Secretary for Education of the Rio de Janeiro Municipality, opened the Forum with a comprehensive overview of education in Brazil, especially in the city of Rio. Ms Costin highlighted the Municipality’s Educopédia learning portal and explained how, based on a conversation with UNESCO three months earlier, the decision was made to transform the portal from closed copyright to open licenses with Creative Commons.

John Daniel, President and CEO of the Commonwealth of Learning, and Stamenka Uvalic-Trumbic, COL Consultant, provided an overview of the World OER Congress, the draft OER Declaration and the six worldwide regional Forums leading up to the Congress.

Experts from government and civil society from Latin America, South Africa and the United States of America presented OER initiatives with high-impact, stressing the importance of collaboration, capacity-building and appropriate policy frameworks for incentives and recognition.

The delegates split into two groups of government and non-government representatives to discuss the draft OER Declaration. Many substantial contributions were made during these discussions, including principles such as ‘respecting cultural diversity’ and the nuances of translating concepts such as ‘open’ and ‘free’.

On the second day of the Forum, participants listened to a second set of expert presentations. Federal representative of Brazil Paulo Teixeira spoke about the private OER Bill, currently before the Brazil Chamber of Deputies, which calls for government-funded educational resources to be made available as OERs. This presentation generated a lot of discussions among government delegates.

Abel Caine from UNESCO provided a brief overview of the context of the World OER Congress and the UNESCO OER Programme.
The Forum was closed with general comments on the draft Declaration, which will be uploaded on the COL website for comments within one week. The final version will be made available in English and French on the UNESCO main website, in Spanish on the UNESCO Santiago Office website, and in Portuguese on the UNESCO Brasilia Office website.

The Latin America OER Forum was the third in a series of worldwide regional consultations leading up to the World OER Congress in June. The next Forums are:

- Europe and North America: 17 April 2012, Cambridge, United Kingdom;
- Asia Pacific: 23-24 April 2012, Bangkok, Thailand;
- Arab States: 7-8 May 2012, Muscat, Oman.

The Forum was made possible with the generous support of the Municipality of Rio de Janeiro, Telefonica Foundation, Universidade Gamo Filho, Núcleo de Informática Aplicada à Educação (NIED), Universidade Estadual de Campinas and REA Brazil.

Further information:

- Brazil hosts Latin America Open Educational Resources Regional Forum

Related links:

- Open educational practices recognized through OPAL Awards
- OER reef and rainforest wiki in Marovo language
- Launch of the UNESCO Open Educational Resources Platform
- COL-UNESCO Basic Guide to OER
- 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
- Open Educational Resources Center For California
- The impact of openness on bridging educational digital divides

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

**eduLab at the Academy of Singapore Teachers helping to bring ideas into practice**

Singaporean Teachers will now have a “living lab” to experiment with evolving technologies before trying them out in their schools. Set to transform learning in the future, eduLab@AST launched by Mr Hawazi Daipi, Senior Parliamentary Secretary, Ministry of Education and Ministry of Manpower at the International Conference on Teaching and Learning with Technology (iCTLT) 2012 in March will play a key role in bringing ideas to practice.

eduLab@AST seeks to:

- Foster ideation and collaboration across schools in experimenting with technology in education;
- Promote adoption of successful use of technology in education; and
- Provide ICT infrastructure to facilitate technology experimentation for schools and MOE to assess potential solutions prior to adoption

eduLab@AST will showcase experiments trialed in schools. It will also partner schools designated as ICT Centres of Excellence to spread mature innovations and successful practices, by leveraging existing structures and teacher networks that have been established. New technologies will also be channelled to these schools to test-bed new or emerging solutions.

In turn, the experiences of these schools will be harvested and shared with other schools through eduLab@AST. Through this, eduLab@AST hopes to build a community where teacher-researchers interact with one another, and tap on research expertise from the National Institute of Education (NIE) and industry partners.

Since the eduLab programme was initiated in 2010, the programme has seen three ideas involving 20 schools (Please see details at Annex A.). Educators who visit eduLab@AST can learn more of how schools have infused innovative ICT practices into lessons and classroom activities. At the Project Highlights Section, school innovations as well as possibilities in the industry would be highlighted to schools for experimentation. Through these programmes, visitors will gain insights into ICT initiatives that educators have developed to scaffold students’ learning process. The Idea Workbench Section & Idea Pollination Section further allows educators to engage in collaborative discussion on how such ICT practices and solutions can be customised and adopted to best fit their school’s needs (Please see Annex B).

eduLab@AST is managed by the Ministry of Education (MOE) with support from the NIE, the Academy of Singapore Teachers, the Info-communications Development Authority of
Further information:

- eduLab at the Academy of Singapore Teachers helping to bring ideas into practice

Related links:

- Singapore ‘Future School’ Project
- UNESCO chief stresses need for innovation to ensure quality, equitable education
- Creating a new culture of teaching and learning
- TIGA awards celebrate ‘ICT for Education’ projects at eLearning Africa
- 2011 Horizon report on emerging technologies

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

Programmes & Projects

Mobile Science Project: Engaging students in science through mobile learning

The Mobile Science Project, one of several research projects under the Programmable Open Mobile Internet initiative of the National Science Foundation (USA), aims to ingrain in students a sustained interested in science. It intends to achieve this by nurturing the interest of students towards science subjects at a young age. Through the use of mobile ICTs – in this case, smart phones - the project implemented an inquiry-based approach to learning which would consequently develop students' positive attitude towards science.

For the project, participants were drawn from a public elementary school in California – thirty-two 4th and 5th graders who are performing well in school. The students’ initial attitude towards science had to be determined, as one of the objectives is to find out whether the project had an effect on the students' attitude, and to what extent it had an effect.
Information was gathered through a brief survey and a discussion, where “students were asked to share what they thought the definition of science was and to share what they thought a scientist looked like. The students were asked to draw a picture of a scientist; most of students drew the traditional image of a scientist (i.e., working in a laboratory, using test tubes, wearing a lab coat). Students were then guided through an interactive discussion in an attempt to demonstrate that science can be found in everyday life.”

Examples were mentioned to the students – familiar ones at that - to illustrate the presence of science even in the most mundane of activities. The students then took the cue and followed up with their own examples on the ubiquity of science.

After gathering baseline information, the student-participants were informed of their primary task, which is to investigate science at work in everyday phenomena. Students were assigned topics by drawing lots, where they either got to pick a pre-identified topic or to choose their own topic.

Some of the topics the students decide to investigate included: how LEDs are made, nature, the probability of life in space, why spinning around causes dizziness. In doing the activity, the students should be able to explain how science was at work in the topics, what methods they used for the investigation, and why the discovered science is important.

Each student was provided with a smart phone that would help them in their investigation. Installed in each phone is the eBookMaker app, an application that makes the creation of mobile portfolios easier. The app acts as a notebook which would help the students organize data – adding, removing, editing, multimedia data - throughout their investigation.

The students would not limit their investigative methods to online research, which could be easily done through the smart phones; students were also instructed to consult their peers (classmates) or adults (teachers, parents) and to conduct actual scientific experiments that would verify the information gathered from the Web.

The students were given two weeks to investigate on the phenomenon assigned to them. After completing the assignment, the students reported on their topics including how they conducted the investigation and what they have learned during the investigation.

With regard to the quality of the assignments: while there were a number of students who relied mostly on downloaded material from the Internet, there were also some who performed actual experiments to gain a deeper understanding of the phenomenon and make their findings conclusive. Interestingly enough, those who did not limit themselves from downloaded material produced the better output, and were awarded prizes.

A second survey was conducted immediately after the students handed over their assignments, to determine changes on how they perceive science and scientists. There was marked change especially among the girls when they were asked again to draw a scientist: the drawings indicated the scientist wearing casual clothing, no longer limited to working in a lab and more in an everyday setting.

1 Sharp, A., Kim, P., and Sunmi S. Mobile Science Project: Combining Inquiry-Based Learning and Mobile eBooks to Improve Attitudes towards Science, p. 10
Further information:

- **Mobile Science Project**
- **Download the paper on the Mobile Science Project** (pdf)

Related links:

- UNESCO joins hands with NOKIA for Mobile Education Program
- Help my hand write my future: Literacy project launched in Senegal in collaboration with UNESCO and Procter & Gamble
- Mobile learning and life skills
- SMS education in Pakistan
- Driving female literacy through connectivity in Pakistan
- From Illiteracy to mCommunity, Jokko Initiative Empowers Women with mLearning
- The impact of a mobile phone literacy program on educational outcomes
- Mobiles and internet improve the livelihoods of the poorest
- Africa: Mobile phones revolutionizing education
- Mobile learning: Transforming the delivery of education and training
- UNESCO to help community media with mobile content production
- Mobile phones make literacy real
- Mobile learning: Small devices, big Issues

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

**Beyond Textbooks – Report on findings from phase 1**

In November 2009, the Virginia Department of Education in USA launched a project to explore the implications of introducing traditional textbook alternatives into classrooms. In the 18 months since the launch, Beyond Textbooks has scrutinized cost-effective models that blend the vetted standards-based content and convenience of traditional textbooks with the engaging, dynamic, up-to-date content and resources afforded by the Web. Specifically, the
Department of Education has uncovered new ways to access, organize, and deliver high-quality content using various platforms and tools (e.g., e-readers, multipurpose portable computing devices) and to understand the conditions necessary for successful implementation in schools.

The goals of the pilot project have been to understand:

- How digital instructional materials can be used most effectively to increase student engagement and educational outcomes and to improve teacher practice
- The conditions necessary for delivering high-quality instructional materials for a lower investment
- The technical, social, and policy implications of replacing traditional textbooks with digital alternatives

The Superintendent of Public Instruction invited textbook publishers and other instructional-content providers, technology companies and interested parties to submit resources at no cost. Companies shared their ideas during a meeting in Richmond, and the Department of Education selected participants based on how well these strategies aligned with agency priorities. Of particular interest were the publications and supporting resources in the 2009 Recommended History and Social Science Textbook and Instructional Materials approved by the Virginia Board of Education.

This report shares findings from Phase I of the pilot project. Fifteen classrooms—representing four school divisions—participated in the pilot. Using a design-based research approach, evaluators collected data through formal and informal interviews, direct observations, Web site posts, and e-mail messages

Further information:

- Beyond Textbooks
- Year One Beyond Textbooks Report (PDF)

Related links:

- What happens when all textbooks are (only) digital? Ask the Koreans!
- The liberation of textbooks
- Google Books
- Imagining future learning: Mapping major changes to education and training in 2025
- Technology adoption for use in instruction by secondary technology education teachers
- ICTs for development: Improving policy coherence
- Emerging technologies in distance education
- Next generation textbooks
Graduate employability in Asia
In a rapidly changing world with diverse demands, universities face the challenge to produce human resources with the right capacities, skills and knowledge to meet society’s needs. Governments call on universities to facilitate the shift to knowledge-based economy and high-technology to ensure a competitive edge in the global market. Preparing young people to enter the labour market has therefore become a critical responsibility for universities.

Many economies are reported as not generating sufficient employment opportunities to absorb growth in the working-age population, a generation of young productive workers will face an uncertain future, unless this trend is reversed.

The case studies from selected countries in Asia commissioned by UNESCO Bangkok with the support of Japanese Funds-in-Trust and UNESCO Jakarta give a better understanding of the current trends and challenges as regards employability of university graduates in Asia.

Download the book:

- Graduate employability in Asia

Related links:

- A call to arms: e-Skills book launch
- Twenty eight European companies make a commitment to bring more women into technology industries
- Inspiring Education: Creativity and Entrepreneurship
- ITU launches Girls in ICT web portal
- High-level Debate of the ITU: Why are young girls rejecting careers in technology?
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

New challenges in Technical Vocational Education and Training (TVET) teacher education

Prof. Shyamal Majumdar, Ph.D.
Head, UNESCO-UNEVOC International Centre, Bonn, Germany
Former Director General, Colombo Plan Staff College (CPSC)

The twenty first century presents a radically different economy and society, which is likely to have profound implications on Technical Vocational Education and Training (TVET). The TVET system must adapt to these key features which include Globalization & Sustainability, ICT Revolution, Emergence of Knowledge Society and Rapid Knowledge Obsolesces. Globalization generates new demands, structures and systems requiring new skills and knowledge. In today’s global economy driven by knowledge, the foremost wealth of a firm is its human capital or knowledge assets. The Organization for Economic Co-operation and Development (OCED) estimates that already more than half the wealth of the advanced industrial society is derived from knowledge capital.

The Second International Congress on TVET organized by UNESCO points out that from economic growth to human development the bridge has to be built through the teachers who are well trained. The most important ‘agent of change’ in ‘Knowledge Society’ is the teacher. This has been highlighted by many development organizations such as CPSC and UNESCO-UNEVOC, arising from discussions on the need for innovations and quality improvement in training of TVET teachers to meet the challenges in a knowledge society.

Emerging paradigms in teacher education with focus on TVET surround three issues which this paper will focus on: 1) Globalization and Sustainability, 2) Emergence of Knowledge Society and ICT Revolution, and 3) Technology Obsolesces and Generic Skills.

While these issues are not conclusive, they provide timely, if not new, eye-openers on what could be considered as necessary foundations for shaping teacher education and refining the role of teachers and learners in the new, independent and engaging environment that has
been created for them. The familiar scenarios that have been existing for a few years now are looked into more closely in this paper in the context of their link with international mobility, sustainable development and financial crisis, as cornerstones of the new teacher education models arising in the knowledge-based society.

In the end, the expectation of knowledge economy and changing views about the nature of knowledge must be integrated in education and training, particularly in TVET, to be relevant for learners of the twenty-first century. Many of the 21st century scenarios mentioned in this paper are intended to provide logical shift in focus, content and response as part of the progressive pattern of teacher education development, and adaptation to the changing requirements.

Under this circumstance, an entirely new package of educational content, new set of skills and new methodologies for delivery are emerging as among the greatest shifts in paradigm in teacher education.

Read the article:

- [New challenges in Technical Vocational Education and Training (TVET) teacher education](pdf)

Related links:

- [UNESCO International Institute for Capacity Building in Africa (IICBA](
- [UNESCO-UNEVOC](
- [Information technology skills will boost women’s participation in crucial sector – UN](
- [High-level Debate of the ITU: Why are young girls rejecting careers in technology?](
- [Youth promotion through ICT – The Chawama Youth Project](
- [ILO launches community portal to collaboratively address the challenges of skills development and employability](

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](

30
Teaching with wikis: improving staff development through action research

This paper published by Robyn Benson, Charlotte Brack and Gayani Samarwickrema reports on the use of action research in a case study involving two iterations of an online workshop implemented at two universities in late 2007 and early 2009 to prepare teaching staff for using wikis for student group work and assessment.

Workshop participants were immersed in the experience of collaborating in a wiki as learners and then reflected on this experience as teachers. Experience of the pilot workshop suggested a need for more orientation, potentially by introducing a blended learning design.

The second iteration highlighted a need to develop the orientation session further and increase support strategies throughout the workshop, suggesting the value of offering it at faculty or department level if no “reward” is available for participation.

Outcomes from the two cycles illustrate the value of action research for iterative improvement of this staff development model and for implementing the scholarship of teaching and learning to develop and share professional knowledge in this emerging area. This paper outlines a staff development approach involving Web 2.0 applications on which others can build.

Read the paper:

- Teaching with wikis: improving staff development through action research

Related links:

- UNESCO Bangkok is kicking off the KFIT International School Project (KISP)
- OER reef and rainforest wiki in Marovo language
- Digital Research Tools Wiki

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

Interactivate - exploration in science and mathematics
Interactivate is a set of free, online courseware, structured around collections of activities, lessons, and discussions with the goals of creation, evaluation, and dissemination of courseware for exploration in science and mathematics.

The user interface of each activity is easy to navigate. The "Learner" tab gives background information that student may need in order to better understand the concepts being addressed. The "Help" tab tells how to operate the controls of each activity. The "Instructor" tab provides textbook and standards alignment for teachers, along with information how this activity can be used in an instructional context.

The Interactivate activities listed in the website are well designed. A number of these activities also allow users to select difficulty levels and specific problem types as well as to set a time limit, allowing for further tailoring of the assessment to their abilities.

For properly using the activities, you need to have JAVA installed on your computer.

Further information:

- Interactivate

Related links:

- explania – Explanations through animations
- WatchKnow - finding and categorizing free educational videos
- A 3D NASA exploration game
- Google Body browser – a 3D journey through your body
- Practical use of animations in teacher training

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