TOWARDS A FREE EDUCATION CURRICULUM BY 2015

An international group of thought leaders and practitioners met in Vancouver, Canada in April to discuss how to refine free software technologies to achieve a bold vision: to develop a free education curriculum by 2015. The Tectonic Shift Think Tank drew more than 30 participants to discuss how to improve Mediawiki software (which powers WikiEducator and Wikipedia) to widen access to education across the world.

The focus was the sustainable development of free cultural works for education in support of the achievement of the Millennium Development Goals. In particular, the meeting examined how to refine available technology to radically scale up the development of a free curriculum for all levels of education.

Some of the solutions that the group agreed to pursue are:

- Developing wiki-to-print technology so users can easily print off learning materials from WikiEducator.
- Making Rich Text editing possible on WikiEducator. This will lower the barriers to entry for teachers by making the technology more accessible.
- Facilitating export of content so educators can move learning materials directly to a learning management system.
- Introducing offline editing so authors who have limited Internet access can author content offline and then upload it to WikiEducator.

The Tectonic Shift Think Tank was co-chaired by Mr. Erik Moeller, a board member of the Wikimedia Foundation and the Chief Technology Officer of Stichting Open Progress, and Dr. Wayne Mackintosh.

PCF5 LAUNCHED IN LONDON

COL’s Fifth Pan-Commonwealth Forum on Open Learning (PCF5) was launched in London on 17 May 2007 in front of an invited audience representing education institutions, governments, development agencies and Commonwealth organisations. Conference Co-Chairs, Sir Graeme Davies, Vice-Chancellor of the University of London, and Sir John Daniel, President and CEO of COL, delivered remarks at the launch event. The keynote speaker was Professor Abdul Waheed Khan, Assistant Director General for Communications and Information UNESCO and a former Vice-Chancellor of the world’s largest educational institution, India’s Indira Gandhi National Open University.

PCF5 will explore how open and distance learning can help to achieve international development goals and education for all. The conference theme is “Access to Learning for Development”, with a focus on four key areas:

1. Governance, conflict and social justice
2. Health
3. Livelihoods
4. Provision for children and young people

CONTINUED ON PAGE 2
Tectonic Shift Think Tank
Continued from cover

COL Education Specialist, eLearning and ICT Policy. One participant, Mr. Steve Foerster, Director of Instructional Technology for the Free Curricula Center, announced that he would be moving the Center’s material to WikiEducator for further development. There was widespread agreement among meeting participants that collaboration has the potential to democratise education.

“There is simply not enough money to build the schools required to educate children in the developing world, nor will we be able to train enough teachers,” Dr. Mackintosh explained. “So we need to think about innovative approaches, even if that means the de-institutionalisation of education as we have come to know it in the industrialised world.”

The three-day meeting involved leaders in the “freedom culture”, including representatives from Wikimedia Foundation, One Laptop Per Child, CK 12 FlexBooks for Every Student, Connexions, UNISEF, MSU Global, Penn State’s World Campus, Wikia Inc. and the eXe project from New Zealand. In addition to the 22 participants who joined the meeting in Vancouver, nine people participated in the meeting from remote locations.

“The key outcomes of this meeting are that we have a common goal, a high level roadmap to get us there and a commitment by participants to collaborate on an ongoing basis,” said Dr. Mackintosh, who led the founding of WikiEducator.

The group is now focussing on refining technologies to support the development of free content. Educators are encouraged to register an account on WikiEducator and start developing content. The site now offers a set of tutorials to help people learn how to develop free content for education on the wiki. Next on the agenda is Learning4Content, a series of capacity building workshops in all 53 nations of the Commonwealth. By training teachers to convert existing free content into learning materials for WikiEducator, these workshops will take a significant step in equipping educators with an important tool to support learning for development.

WikiEducator Quick Facts
• WikiEducator was launched by COL in May 2006 and has since attracted many other users.
• Within one year, WikiEducator has become among the top eight percent of most-visited sites on the Internet.
• An Interim International Advisory Board governs WikiEducator. Once 2,500 users have joined the wiki, elections will be held to select a successor Board.
• WikiEducator’s technical infrastructure is supported by COL.
• WikiEducator is one of the tools being used to develop course content for the Virtual University for Small States of the Commonwealth.

www.wikieducator.org

Supporting ICTs for Development

COL recently undertook a review of information and communications technologies (ICTs) at the University for Development Studies (UDS) in Ghana. The study was conducted by Mr. Nicholas Kimoko, a consultant from Kenya; Mr. Joshua Mallet, COL Education Specialist, Learning & Livelihoods; Mr. Dele Omueti, COL’s IT Manager and Mr. Paul West, COL’s Director of Knowledge Management and Information Technology. The team travelled to three UDS campuses to examine issues such as using computers in desert conditions, how to make limited ICTs available to learners and how to expand bandwidth in the face of high costs. Their recommendations are aimed at helping UDS make effective use of funding from development agencies, which will lead to better delivery of open and distance learning.

PCF5 Launch
Continued from cover

The conference will be hosted by COL in partnership with the University of London as part of its celebrations of 150 years of external studies, a seminal event in the development of distance learning worldwide. PCF5 will run from 13-17 July 2008.

The purpose of the launch event was to encourage the education and development communities to engage in discussion about how open and distance learning (ODL) can help achieve international development goals and education for all. In his remarks, Sir John spoke about the conference’s ambitious sponsorship targets: the goal is to fully sponsor at least one in six delegates to PCF5. He announced that the University of London and the U.K. Open University have committed to sponsoring 40 delegates from sub-Saharan Africa, Asia and the small island states.

Some Connections readers will receive a poster promoting PCF5 along with this issue. If you would like to receive a poster, contact us at info@col.org.

www.col.org/pcf5
SINGAPORE WORKSHOP DEVELOPS MORE VUSSC COURSES

Educators from 22 countries attended an intensive workshop at the National Institute of Education in Singapore in March 2007. Their focus: learning how to develop learning content for the Virtual University for Small States of the Commonwealth (VUSSC). The three-week session was hosted by COL and the Government of Singapore, Ministry of Foreign Affairs, with support from the Commonwealth Fund for Technical Co-operation (CFTC).

This was COL’s second VUSSC boot camp. The first, in Mauritius in August 2006, developed learning content for entrepreneurship and tourism skills. The next workshop in Trinidad & Tobago in June 2007 will focus on life skills, followed by a fourth workshop in Samoa in November that will develop learning materials for disaster management and climate change.

It’s estimated that 80 educators will have participated in these VUSSC workshops by the end of 2007, creating a powerful diaspora for online learning around the globe. Each participant will continue to develop the learning materials initiated at the boot camps and train their colleagues. Once the courses are completed, they are freely available via the WikiEducator website for educational institutions to adapt and use.

The learning materials are not copyrighted. Rather, they carry the “Creative Commons BY-SA-3.0” license, which means anyone is legally allowed to download the materials, customise them and use them, as long as they acknowledge the source. COL and the VUSSC member countries are encouraging other countries to follow their example of creating and sharing learning content as free and open educational resources.

VUSSC is helping 28 of the smallest countries in the world to build development capacity and strengthen economies through improved education. It is facilitated by COL with financial support from The William and Flora Hewlett Foundation and CFTC. VUSSC continues to actively seek funds to support course development and more content development workshops for educators from other small states of the Commonwealth. Development agencies and others that are interested in pursuing this social investment opportunity are encouraged to contact Mr. Paul West, COL’s Director of Knowledge Management and Information Technology, at pwest@col.org.

GROWING RECOGNITION FOR VUSSC

A recent commentary in the Times of Malta titled “Virtual learning, real results”, praised VUSSC’s approach of teaching educators to develop learning content online:

“The intensive workshops organised by the Commonwealth of Learning rapidly raise the ICT skills of participating educators, preparing them to use ICTs and work in an online database networking environment known as Web 2.0. This allows education professionals to collaborate ‘virtually’ on international projects without prohibitive travel and time costs.

“Let us hope that the Ministry of Education will make a contribution from its admittedly limited resources to the success of the Commonwealth of Learning to which it is a signatory.”
MORE eLEARNING FOR INTERNATIONAL ORGANISATIONS

COL is expanding its offering of eLearning programmes for international organisations with several new courses.

- Editorial Skills for Editors in Sub-Saharan Africa. COL has been contracted by the World Bank’s Office of the Publisher as part of their Africa Publishing Initiative to develop a self-study CD-ROM-based course in editorial skills. The objective is to build capacity among editors, especially those working in small to medium-sized local enterprises producing school texts in sub-Saharan Africa. The course will cover the key areas of text and instructional design, editing and layout. Learners will be supported by tutors through the World Bank’s country offices, partner universities and organisations in the region, and the African Publishers Network. The World Bank hopes that a vibrant African publishing industry will provide valuable support for the Education for All initiative. The new Editorial Skills programme will be piloted later this year.

- Reading for the Workplace. This self-directed learning CD-ROM that focuses on effective reading was developed in partnership with the United Nations High Commissioner for Refugees (UNHCR). The learning requires eight to ten hours of reading, practicing and quizzes. The programme is also available to other institutions who can replace or change the writing samples to suit the needs of their organisation. For information about licensing the Reading for the Workplace tutorial, contact Ms. Angela Kwan, COL’s Learning Manager, International Organisations, at akwan@col.org.

- Operational Data Management. COL is partnering with UNHCR to offer a blended learning course to train the agency’s managers in effective practices for collecting, organising, presenting and storing data for management information and results-based management. Thirty learners (mostly in Africa) are taking part in this programme, which involves distance learning, a workshop and project work. They are being supported by e-coaching from Dr. Mike Robertson in Wales and Dr. Gajendra Naidu in New Delhi.

COL continues to deliver its award-winning “Writing Effectively” eLearning programme around the globe, now customised for the International Federation of Red Cross and Red Crescent Societies, the International Labour Organization, the Joint United Nations Programme on HIV/AIDS (UNAIDS), UNHCR, the World Bank and the World Health Organization. About 1,000 learners will take the course in 2007.

EVALUATING OPEN SCHOOLING BEYOND PRIMARY EDUCATION

COL has commissioned a study on open schooling for secondary and higher secondary education. The drive for Universal Primary Education among developing countries has led to increased demand for secondary education, which usually can’t be met with conventional schools due to the cost and a lack of teachers. While open schooling is increasingly seen as a solution for this need for universal secondary education, there has been little documentation of the successes and challenges of non-conventional methods of learning.

COL has commissioned two experts in the field, Professor Badri N Koul of India and Professor Greville Rumble of the United Kingdom to conduct this study. Focussing on the National Institute of Opening Schooling (NIOS) in India and the Namibian College of Open Learning (NAMCOL), they will examine issues such as:

- The cost efficiency, cost effectiveness and cost benefit of open schools,
- The student profile,
- How open schools can best complement the formal system,
- Learner success,
- The nature and types of courses offered,
- Course development, learner support and learner assessment systems,
- Planning and management systems, including monitoring and evaluation, and
- Quality assurance.

The study will be completed in late 2007. Professor Koul is also a contributor to this issue of Connections – see Safeguarding Quality in ODL, page 9.
MEDIA EMPOWERMENT FOR EDUCATION AND HEALTH

COL’s Media Empowerment (COLME) programme has been working with Ministries of Education in small states of the Caribbean and the Pacific to increase their ability to use radio and television to provide education. Starting in The Bahamas, COL Education Specialist Mr. David Walker has led the provision of technology and training in media production, as well as help with staffing and scheduling. He has also assisted with the development of the Bahamas Learning Channel, a television channel that will provide educational content throughout the country by a local cable provider. This enables the Bahamas Ministry of Education to create and broadcast educational programming that meets the specific needs of Bahamians.

In Barbados, COL worked with the humanitarian organisation CARE to support the development of a FM radio station that will open in July 2007. It will be operated by the Ministry of Education, and several staff members have been trained in audio and video production. In Dominica and St. Kitts & Nevis, COL has been working in partnership with the Ministry of Agriculture to develop a media unit to broadcast important agricultural information to farmers. In both countries, COL also helped the Ministry of Education open a media unit, supported by staff at the Ministry of Agriculture who have already received training in media production.

COL continues to support health promotion efforts in a number of developing countries in partnership with the World Health Organization. COL provides training, technology and technology updates for projects that provide education about health issues such as HIV/AIDS, malaria, reducing infant mortality and improving maternal health. To date, COL’s health initiative has provided support to Barbados, The Gambia, Guyana, India, Kiribati, Papua New Guinea, Sierra Leone, Solomon Islands, South Africa, Sri Lanka, Swaziland and Tanzania. www.col.org/colme

EXPANDING THE REACH OF RADIO

Teacher training by distance learning in Nigeria received a boost recently when the federal government granted a radio license to the National Teachers Institute (NTI). COL donated a 100-watt portable FM radio station that enables NTI to broadcast teacher education and training to students. In addition to helping teachers upgrade their skills, the Institute helps in-service teachers who do not have minimum teaching qualifications to gain certification by distance learning.

In addition to providing the radio equipment and training in audio and video production, COL’s advocacy for loosening licensing restrictions helped NTI gain their radio license. COL continues to work with governments in India and various African countries to encourage the granting of radio licenses for educational institutions and community groups. Regulations are often onerous, which deters groups from broadcasting and limits access to information and education in developing countries.

BUILDING CAPACITY IN LEGISLATIVE DRAFTING

Developing government legislation is an important skill that requires good writing ability, a solid grounding in law and understanding of the legislative process. In many parts of the Commonwealth, government staff receive little or no training in legislative drafting, which can lead to difficulty in having new laws drafted, passed or enforced. COL’s Professional Diploma in Legislative Drafting provides this training through open and distance learning in several regions of the Commonwealth.

Developed in collaboration with the Commonwealth Secretariat’s Legal and Constitutional Affairs Division, the legislative drafting programme is based on Commonwealth legal practice. The guided independent study course uses print materials and audio tapes, often supplemented by local mentor support. Learners gain practical skills in translating government policies into effective laws that can be understood and applied by a variety of stakeholders.

The legislative drafting programme is currently offered by the National Open University of Nigeria, the University of the West Indies (Trinidad & Tobago) and the University of the South Pacific. Athabasca University in Canada plans to offer the programme soon. In addition to legislative drafters, graduates have included a high court registrar, a police commissioner and a Member of Parliament. The cost is approximately half that of full-time overseas training.

Institutions interested in becoming licensed to offer the Professional Diploma in Legislative Drafting should contact Ms. Ruvani Amersekere, Programme Assistant at info@col.org.

HR ISSUES FOR OPEN UNIVERSITIES

Open universities face challenges in managing their human resources that are unique in their own way. While some of the challenges are similar to those faced by conventional universities, others stem from the different nature of the role of academics at open universities. These issues are explored in an in-depth article in the March 2007 issue EduComm Asia, published by the Commonwealth Educational Media Centre for Asia. To read this, as well as interesting articles about community radio in India and other initiatives in Asia, go to www.cemca.org.
CEMBA/MPA PROGRAMMES EXPAND

The Commonwealth Executive Master of Business Administration and Public Administration (CEMBA/MPA) programmes are now being offered in Ghana. The Kwame Nkrumah University of Science and Technology (KNUST) has signed on as a new partner university to offer the two executive degree programmes. More than 100 students are expected to enroll for the first intake, beginning in July 2007.

“The CEMBA/MPA programmes provide valuable learning opportunities for Ghana’s business leaders and working professionals,” said Professor Keshaw Singh of KNUST’s Department of Business Administration. Designed for senior and middle managers working in developing Commonwealth countries, the programmes are delivered through open and distance learning (ODL).

The CEMBA/MPA programmes will soon also be available online. COL is working with Allama Iqbal Open University (Pakistan), Bangladesh Open University and Wawasan Open University (Malaysia) to convert existing CEMBA/MPA courses into a suitable format for online delivery. The partner universities will decide on a common technology platform, roles and responsibilities for converting content, how to support learners and a timeline for further action. www.col.org/cemba

MEETING THE CHALLENGE OF CLIMATE CHANGE

Recognising that global warming and climate change will have far-reaching impacts on development, COL is focussing on this enormous challenge in several ways.

• A report on green issues is being prepared for the next COL Board of Governors meeting.

• The organising committee for the Fifth Pan-Commonwealth Forum on Open Learning (PCF5) is exploring how to make the forum as “green” as possible.

• The next VUSSC boot camp in November 2007 will focus on developing learning content related to disaster management and climate change.

• COL works with many of the countries that could be most affected by climate change. There is now a conscious effort to use education to help people prepare for and adapt to these changes.

• WikiEducator has set up an online space to help educators collect information on climate change for use in classrooms. The aim is to teach people about the risks and provide ideas about how to prepare for the changes and adapt before they have to leave as climate change refugees. This site is the place to post course materials and ideas on teaching about climate change. It will build a better understanding of what works and will share the information with the people most affected. www.wikieducator.org/Climatechange

LEARNING FOR LIVELIHOODS IN AFRICA

COL is working in partnership with the Commonwealth Association of Polytechnics in Africa (CAPA) to promote technical and vocational education and training (TVET) in Africa, particularly through the use of open and distance learning (ODL). COL and CAPA co-sponsored a policy awareness seminar on integrating information and communications technologies (ICTs) and eLearning into TVET in Freetown, Sierra Leone in May 2007. Representatives from 120 TVET institutions from 17 African countries attended the seminar, gaining valuable information about the potential for using ODL to improve livelihoods.

COL and UNESCO-UNEVOC hosted a TVET Africa Summit as a prelude to the eLearning Africa Conference in Nairobi, Kenya in May 2007. The summit focussed on how ICTs can be applied in TVET in Africa. Read more about the eLearning Africa Conference in the upcoming October 2007 issue of Connections.

EXCELLENCE IN DISTANCE EDUCATION AWARDS

COL is seeking submissions for the 2007-2008 Excellence in Distance Education Awards. These awards, which will be presented at the Fifth Pan-Commonwealth Forum on Open Learning in London from 13-17 July 2008, recognise excellence in four categories: the overall institutional level, the development of learning materials, a lifetime’s work as an educator and student accomplishment. The deadline for submissions is 31 October 2007. www.col.org/eda
The common challenges and constraints, info
What is actually happening on the ground
in education in Africa country partners are encouraged to embrace in
the practice of SWAPing for dollars that host
sides of the aid business. I’m here referring to
now seems like a century of angst – on both
times and no one even suspects that we are
away for weeks at a time. How else could we be
virtual work. We appear to have the supernat
thing along those lines.
lowed: those who know can feel it! Some
mentioning. But we can perhaps find an answer
post-knowledge worker are such that there’s
his or her office hours are is like asking a jazzist
what jazz is. If you have to ask, you ain’t got it.
The elemental primordialisms of the COL
post-knowledge worker are such that there’s
no simple answer to such speculative ques-
tioning. But we can perhaps find an answer
in the singing journalism of Jamaica. Take
the reggae legend, Bob Marley. He once be-
lowed: those who know can feel it! Some-
thing along those lines.
The COL Education Specialist is all about
virtual work. We appear to have the supemat-
ural feat of being at several places at the same
time. How else could we be away for weeks at
a time and no one even suspects that we are
not in our offices?!
This has helped to solve one major prob-
lem that has puzzled donor agencies for what
now seems like a century of angst – on both
sides of the aid business. I’m here referring to
the practice of SWAPing for dollars that host
country partners are encouraged to embrace in
draft country reports have been posted on WikiEducator, and comments are invited at:
www.wikieducator.org/ICT4AfricaEd/Country_Reports
The final report on ICTS in Education in
Africa is expected later in 2007.
www.col.org/ICT4AfricaEd
www.infodev.org/en/Project.7.html

COL IN ACTION

SURVEY OF ICTs IN EDUCATION IN AFRICA

COL is partnering with the Information for
Development Program (infoDev) to con-
duct a comprehensive survey of information
and communications technologies (ICTs) in
education initiatives in Africa. The study of
primary, secondary, higher and vocational
education in all countries on the African con-
tinent is exploring:
- How ICTs are currently being used, and
the strategies and policies related to this
use,
- The common challenges and constraints, and
- What is actually happening on the ground
and to what extent donors are involved.
Several researchers have developed re-
ports for each country in their region. These

DIARY OF A NEW RECRUIT WORKING THE ZONES: BEYOND THE KNOWLEDGE WORKER

Dr. Willie Clarke-Okah joined COL last year as Education Spe-
cialist, Higher Education and Policy Development. This is the
second instalment of his diary that shares his impressions of his first
year with COL.
After seven months on the job, I can say that I feel like an
old hand and a new hand at the same time as I try to unravel the organic phenomena
inherent in the ways and means of COL. I have travelled extensively – close to 43%
of my time has been spent on the road. I have worked globally, discovering in the process
that I’m no longer a spring chicken.

Asking a COL Education Specialist what
his or her office hours are is like asking a jazzist
what jazz is. If you have to ask, you ain’t got it.

The COL Education Specialist, more like a
development anthropologist, is constantly on
the road, keeping in touch with the realities
on the ground – picking up the latest intel-
lence on the ODL circuit, liaising with our
clients.

When governments and institutions can
count on you to not only listen but act in ac-
cordance with a shared vision and objective,
it is easier for them to take ownership of, and
drive, their development processes. It’s a win-
win situation.

But our work is not without challenges. One clear challenge lies in the possible risk
of creating too high an expectation without the requisite resources to meet those expecta-
tions in a satisfactory and timely fashion.
Demand on and for our services is very high.
And here we count on timely disbursements
of funding commitments by governments.

The COL Education Specialist is all about
virtual work. We appear to have the supemat-
ural feat of being at several places at the same
time. How else could we be away for weeks at
a time and no one even suspects that we are
not in our offices?!
This has helped to solve one major prob-
lem that has puzzled donor agencies for what
now seems like a century of angst – on both
sides of the aid business. I’m here referring to
the practice of SWAPing for dollars that host
country partners are encouraged to embrace in

fuggible currency sought after by institutions
as I travel across the Commonwealth. Very
gratifying. And it means working the zones
even harder to continue to respond timely
and qualitatively to our clients. Such response
ability is scaffolded by a spirit of strong co-op-
eration in which COL acknowledges that the
primacy of decision-making and ownership
rests with our clients.

The COL Education Specialist, more like a
development anthropologist, is constantly on
the road, keeping in touch with the realities
on the ground – picking up the latest intel-
lence on the ODL circuit, liaising with our
focal points, confirming the status of project
ideas, monitoring projects, proffering and
professing advice, meeting with government
counsellors, working a workshop, presenting a pre-
sentation, et al. All of this is designed to en-
gender meaningful partnerships.

The point is that the COL Education Spe-
cialist is always in touch and responsive to
the needs of his/her clients – institutions and
governments alike, even individuals. But the
safaris have their downsides as half the roster
of specialists could sometimes be away from
the office! That problem seems to have been
solved. There are No Travel Weeks in which
all staff members are required to be at the
Vancouver office for consultations, meetings
and program updates. The NTWs consist of
three weeks in the month and are scheduled
time four times per year – in January, April, July
and October.

When governments and institutions can
count on you to not only listen but act in ac-
cordance with a shared vision and objective,
it is easier for them to take ownership of, and
drive, their development processes. It’s a win-
win situation.

But our work is not without challenges. One clear challenge lies in the possible risk
of creating too high an expectation without the requisite resources to meet those expecta-
tions in a satisfactory and timely fashion.
Demand on and for our services is very high.
And here we count on timely disbursements
of funding commitments by governments.
When these lag, our plans drag, decisions
are staggered, reminders are flagged, devel-
oment stalls and our clients are perplexed.

Needless to say, at times like that, we feel
their pain. And we can only hope by simply
keeping hope alive.
PROMOTING A CULTURE OF QUALITY IN ODL

The rapid expansion of open and distance learning (ODL) globally brings with it many accompanying challenges. One of the primary challenges is promoting a culture of quality within ODL.

Quality can be defined as “fitness for purpose at minimum cost to society”. As applied to education, it means whether education systems are providing the education and training that students and society need. In developing countries where resources are scarce, it is particularly critical that these resources are directed towards institutions that are fulfilling important purposes.

Why Quality?

There are several compelling reasons to pay attention to quality in ODL including:

- **Competition**: In order to survive in an increasingly global and competitive marketplace, educational institutions must deliver quality education.
- **Learning effectiveness**: The quality of education provided has an enormous impact on learning, enrolment retention, graduation rates, employability and ability of learners to earn a livelihood.
- **Customer satisfaction**: Students demand value for the time and money they spend on education. In addition to providing quality teaching, educational institutions must consider the need to provide employable skill sets.
- **Accountability**: Quality is a monitoring mechanism that holds institutions accountable to its stakeholders.
- **Status**: A focus on quality will enhance the credibility, prestige and reputation of an institution.

The responsibility for quality lies with everyone in an educational institution. Assuring quality should be a continuous and ongoing process, and not a one-time activity carried out for accreditation alone.

The process for assessing quality includes:

- **Self evaluation**,
- **Peer review by a panel of experts**, usually including at least some external panel members and one or more site visits,
- **Analysis of statistical information and/or use of performance indicators or the best practices benchmarking**, 
- **Surveys of students, graduates, employers, professional bodies, and**
- **Testing the knowledge, skills and competencies of students**.


Quality Indicators for ODL

In ODL, good learning materials are considered a benchmark for quality education. But a learning experience involves more than just learning material. And the availability of information on the Internet cannot replace quality learning. The Institute of Higher Education has defined other quality indicators for ODL:

- **Institutional support**
- **Course development**
- **Teaching and learning**
- **Course structure**
- **Student support**
- **Faculty support**
- **Evaluation and assessment**

While business and industry focus on management of quality, educational institutions must focus on management for quality.

Quality teacher education is a pressing concern because of the impact on the quality of basic education provided to children. The calibre of teachers can serve as an indicator of development and progress for a country. The present standards for teacher education programmes in most Asian and African countries rest with government agencies that lack understanding of the profession. Their focus is on responding to the growing teacher shortage.

In fact, it’s not just the teacher shortage but the quality of teachers that is primarily responsible for quality in the school system. There is a need to address the core of the problem: the type of teacher preparation and training being provided.
Building Capacity in Quality Assurance

While many ODL institutions have implemented quality assurance measures, there is still a pressing need for capacity building in quality assurance. COL is contributing to this in several ways:

- **Educating educators and policymakers:** COL regularly hosts training workshops in developing countries, helping to build awareness and knowledge of quality assurance indicators, best practices and international standards. COL also worked with the National Assessment and Accreditation Council (NAAC) in India to develop a course on Quality Assurance in Higher Education, aimed at raising quality literacy among university and college teachers. This course is being adapted and adopted by Nigeria and Sri Lanka.

- **Online resources:** COL recently added a new Quality Assurance Micro-site to its website. This provides a single, convenient access point to existing resources in quality assurance in ODL. It is designed for institutions, researchers and governments seeking to establish benchmarks for quality provision and to all those who are interested in devising effective systems for the review and evaluation of ODL programmes. www.col.org/quality

- **Quality Assurance Tool Kit:** A Quality Assurance in Teacher Education and Development “toolkit” being developed by COL that will be made available to Ministries of Education and teacher education institutions in the Commonwealth later this year. The toolkit will include:
  - Quality assurance in higher education,
  - Quality assurance in teacher education and development,
  - Quality indicators for teacher education, and
  - Best practices case studies.

COL will introduce this toolkit through regional institutes for policy makers and administrators in educational institutions, starting in South Asia (Bangalore, India) and the Caribbean (Port of Spain, Trinidad & Tobago). It will also be featured at the Second Distance Education and Teacher Training for Africa (DETA) conference in Kampala, Uganda in August 2007.

- **Developing guidelines:** COL has worked in partnership with educational institutions to develop quality assurance guidelines that are being shared among countries.

- **Defining quality indicators:** COL partnered with NAAC in India to define elements of quality in teacher education and co-publish Quality Indicators in Teacher Education (QUITE). This handbook is designed for use by both teacher educators and teacher education institutions (self-assessment) and external assessors and accrediting agencies. Over 300 teacher educators from 12 countries in South Asia and sub-Saharan Africa have already been provided an orientation in using QUITE.

**Widening access to quality higher education is a route to sustainable development.**

- **Defining quality issues for higher education:** In 2006, COL co-published Quality Assurance in Higher Education: An Introduction with NAAC. This book introduces policymakers and practitioners to quality issues, models and best practices.

- **Partnerships:** In addition to ongoing collaboration with NAAC in India and other organisations in the Commonwealth, COL recently reached agreements to work with two UNESCO agencies in the area of quality assurance for teacher development: the International Institute for Educational Planning (IIEP) and the Teacher Training in sub-Saharan Africa (TTISSA) initiative.

The developing world needs appropriate quality assurance mechanisms to protect both systems and students. With the growth of cross-border education and eLearning, it is more important than ever to develop appropriate standards that will ensure that education being provided is quality education. www.col.org/quality

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SAFEGUARDING QUALITY IN ODL

By Badri N. Koul

Until recently, the prevailing view was that quality assurance concerns in open and distance learning (ODL) were best appreciated within a local context. The phenomenal growth of information and communications technologies (ICTs), their diverse and promising applications in education/training and the falling costs of the related equipment and services, however, are promising the reach of ODL operations to places and in ways hitherto unknown. Cross-border didactic engagements, trans-modal transactions and new learners including digital natives add new challenges to yesterday’s quality concerns globally. The signal of the present decade is that only quality dispensation can ensure institutional survival.

It is for these significant reasons that countries and institutions have moved to embrace a dual process of quality assurance – internal and external assessment. Internal assessment ensures horizontal and vertical collegial participation in the process of quality assurance, and also builds the institutional ownership of the outcomes. External assessment serves a broader purpose in the present market-driven economies and the context of mobile workforce. It is rated highly, for it appeals to employers, taxpayers and other stakeholders alike, as it is seen as objective, unbiased and therefore, dependable. Overall, the practice of integrating internal self-assessment with external evaluation is emerging as a major mechanism for assuring quality in education and training the world over.

The visibility, acceptability and the soundness of this mechanism notwithstanding, this combination of internal and external assessment has yet to be adopted universally. Its high costs and the immense and tiring paperwork that it entails mitigate against it in many developing countries, which are bogged down by educational deprivation and resource starvation.

Both internal and external assessment will serve the purpose of ODL as a system if they remain focused on the essentials of ODL: the core, systemic and resource dimensions.

The core dimension pertains to those factors that constitute the foundation of quality assurance in ODL. These are course materials and instructional design,
COMMONWEALTH CONNECTS SUMMIT

Bridging the digital divide to meet development challenges was the focus of the Commonwealth Connect International e-Partnership Summit in New Delhi, India in March. Participants from around the globe discussed ways of pooling information and communications technologies (ICTs) competencies and wisdom to develop knowledge products and systems to meet the needs of education, health care and e-governance.

Speaking at the opening of the summit, the President of India, Dr. A P J Abdul Kalam said the telecommunications revolution with digital technology, broadband connectivity, Internet and multimedia convergence, offers the key to realising socio-economic goals. The summit offered networking opportunities for ICT players to work together to enhance the use of modern technology for development in the Commonwealth.

Commonwealth Connects is a collaborative effort by the Commonwealth Secretariat, Commonwealth partner agencies and member nations to mitigate increasing digital fragmentation. The programme serves as a matchmaker for those who require ICT assistance and those that have the skills to provide them. The Commonwealth Connects portal offers advice and information about the use of ICTs for policymakers, educators, business owners and the public.

www.commonwealthconnects.net

NOUN CELEBRATES GRAND OPENING

The National Open University of Nigeria (NOUN) held a special convocation ceremony for the formal grand opening and commissioning of the headquarters at the University in Lagos in March 2007. Speaking at the event, the then President of the Federal Republic of Nigeria, Chief Olusegun Obasanjo said that the current investment in education and education reform are expected to reduce the illiteracy rate in Nigeria to five percent by 2020. President Obasanjo noted that NOUN has admitted 30,000 students, including him. He hoped that the university will soon become a mega university with over 200,000 students.

NOUN has been endowed with a UNESCO Chair in open and distance learning (ODL), the first of its kind in the developing world, said NOUN Vice Chancellor, Professor Olugbemiro Jegede. COL has been a partner since the university’s launch in 2001. Fifty NOUN staff members have received scholarships from COL through the Rajiv Gandhi Fellowship Scheme to study the Masters in Distance Learning.

The grand opening event was attended by many eminent Nigerians including four former Ministers of Education.

www.nou.edu.ng

INTERNATIONAL PANEL REVIEWING UNIVERSITY OF GHANA

The University of Ghana has set up a 16-member visitation panel to help shape the university for the next 10 to 20 years. Chaired by COL President Sir John Daniel, the panel is made up of distinguished scholars and business leaders. After reviewing academic programmes, infrastructure and resources, the panel will advise on additional resources required to enable the university to meet internationally-accepted standards.

The immediate task of the panel is to help restore the university’s academic integrity and credibility, said Sir John at a meeting of the group in Accra, Ghana. “Visits by panels like ours are becoming an increasingly frequent phenomenon in universities around the world,” he added.
REVISITING THE POTENTIAL OF FREE CONTENT

By Neil Butcher

Making content free will lead to better education, particularly in the developing world. Or will it? In fact, this assertion has not yet been proven. There are many issues surrounding free content that need to be discussed and explored.

Why is the concept of Open Educational Resources (OERs) so potentially powerful?
1. Because OERs remove restrictions around copying resources, they hold potential for reducing the cost of accessing educational materials.
2. The principle of allowing adaptation of materials contributes to enabling learners to be active participants in educational processes whereby they learn by doing and creating, not just by passively reading and absorbing.
3. OERs have potential to build capacity in developing countries by providing educators with access, at low or no cost, to the means of production to develop their competence in producing educational materials and completing the necessary instructional design to integrate such materials into high quality programmes of learning.

A key issue undermining this transformative potential is an increasingly heated debate around commercialisation of ‘free content’. This debate focuses on arguments about the Creative Commons licensing framework, and whether or not to impose a non-commercial restriction within the licence. It has emerged because, to many people, the concept of creating a non-commercial restriction seems intuitive in order to prevent unfair exploitation of ‘free’ content. However, as many commentators have argued, such a restriction can have several unintended consequences, preventing mixing of content with different licence conditions and creating unforeseen inflexibilities. These commentators observe that the Share-Alike licensing condition in the Creative Commons licensing framework serves effectively the same purpose as a Non-Commercial restriction by requiring derivative works to be released under identical licensing conditions as the original content on which the derivation was based.

Personally, I am convinced by the arguments that releasing OERs under a licence restricting commercial use of the content creates unnecessary restrictions and should be avoided wherever possible. Thus, where I am able to define or advise on the licensing conditions governing OER initiatives, I propose that a Creative Commons Attribution-Share Alike licence be used (see www.creativecommons.org for more information on what this means). However, caution is required.

Many proponents of this position push the virtues of freedom of content by making logical leaps of faith that are not yet supported by meaningful evidence and that can potentially be educationally problematic. Most notable amongst these is the conviction that making content free (i.e. both costing nothing and freely available for re-use, adaptation and commercial use without restrictions) in and of itself will lead to better educational delivery, particularly in the developing world. I too hope that this freedom in content will make a contribution to improving education; however, this thesis needs to be proven through demonstration and good practice, rather than bluntly asserted.

More importantly, it is critical to acknowledge that making content free to use and adapt is only one aspect of many required to ensure that the quality of education is systematically transformed and improved.

Sadly, the emerging dogmatism exhibited by opponents of non-commercial restrictions is serving to alienate those who are taking tentative steps towards freeing up restrictive licences governing their educational content. It may be more pragmatic to accept that a spectrum of licences is necessary to allow people and organisations a choice in deciding how best to begin contributing to the growing pool of available OERs. For example, if I am designing a course, and can distribute to learners a specific journal article free of charge, but am not permitted to modify its text, this seems preferable to me than not using it all. However, a degree of ideological determinism seems to have gripped some members of the OER movement, who argue that any restrictions bar those that they have defined as ‘legitimate’ should be resisted. I think we would do better to accept that, until business and educational models are established and tested around OERs, we will most likely progress fastest by retaining open minds and a spirit of compromise in engaging the interests of different parties seeking to open access to educational content.

Neil Butcher lives and works in his home country of South Africa. He is involved in several OER projects in South Africa, as well as across other parts of Africa. This is an abridged version of a longer article on the topic, which can be found at www.col.org/0706FairComment
Asia

Tamil Nadu Open University and COL recently hosted a workshop to review COL’s learning for livelihoods initiatives in South Asia and to plan for the way forward towards a sustainable socio-economic advancement and improved livelihood, particularly among disadvantaged communities.

More than 20 people from Bangladesh, India, Maldives, Pakistan and Sri Lanka attended the meeting in Chennai, India. Participants reviewed ongoing activities while proposing new ones through the use of open and distance learning for achieving the Millennium Development Goals.

Africa

Quality Assurance for West Africa

More than 20 academics from Cameroon, The Gambia, Ghana, Nigeria and Sierra Leone attended a workshop of Quality Assurance for Open and Distance Learning (ODL) at the University of Education Winneba, Ghana in February 2007. The event was hosted by the Regional Training and Research Institute for Open and Distance Learning (RETRIDAL) in collaboration with COL.

The workshop introduced important issues in Quality Assurance and ODL. Participants shared best practices and reviewed case studies of ODL Quality Assurance initiatives in West Africa. They discussed issues such as international standards, Quality Assurance indicators and Quality Assurance in ODL course development, delivery and learner support systems.

Strengthening Teacher Training

UNESCO’s Teacher Training Initiative for Sub-Saharan Africa (TTISSA) project held a two-day workshop on Quality Indicators for Teacher Education in Kaduna, Nigeria in February. The event was supported by COL, the National Teachers’ Institute, Teachers’ Registration Council of Nigeria, the Universal Basic Education Commission and the National Commission for Colleges of Education.

Fifty teacher educators examined the key areas of quality for teacher training, analysing their own situations against each quality indicator. Participants were asked to go back to their institutions and report on best practices, which will be compiled into a publication for other teacher education institutions in Nigeria. TTISSA is a ten-year project is working to help 46 sub-Saharan countries achieve Education for All and the Millennium Development Goals by improving national teacher policy and strengthening teacher education.

Africa

Consortium for Teacher Education

COL provided support for the West African Consortium for Teacher Education Development (WACTED) through a workshop in Ghana, held in collaboration with Teacher Education in sub-Saharan Africa (TESSA). The meeting at the University of Education, Winneba drew 20 teacher educators from Benin, Cote d’Ivoire, The Gambia, Ghana, Nigeria, Sierra Leone and Togo. The programme introduced new teacher education...
institutions to TESSA and WACTED, and provided a full session on quality assurance in teacher education. After two days in Ghana, the workshop moved to the University of Cape Coast for another two days. Initiated by COL five years ago, WACTED is being reactivated with a commitment of more involvement by members, with an aim to improving the quality of teacher education and address the severe teacher shortage in West Africa.

www.tessaprogramme.org

SAFEGUARDING QUALITY IN ODL CONTINUED FROM PAGE 9

teaching-learning transactions (including learner evaluation practices), learner support services and systemic research.

The systemic dimension pertains to those factors that constitute the system of ODL at the institutional as well as the national level:

- Policy makers must introduce, promote and sustain quality assurance regimes in ODL.
- Institutional leadership should motivate and foster an institutional commitment to quality.
- Management should be innovative (and innovation friendly), flexible, pragmatic and democratic, but strict on failing components.
- Long- as well as short-term planning and the execution of plans should be meticulous.
- Quality assurance mechanisms (in the form of quality assurance units) should be proactively involved in institutional affairs.

The resource dimension refers to factors such as technology, technical and academic expertise (including staff development activities), learning resources, physical infrastructure including ICT applications and cross-institutional collaboration.

Safeguarding quality along these three dimensions is the crux of quality assurance in ODL; do it the way you can!

Professor Badri N. Koul is a consultant and author based in India. He has pioneered many developments in distance education in former roles with the University of the West Indies, the Tertiary Education Commission of Mauritius and Indira Gandhi National Open University (IGNOU). An Honorary Fellow of COL, Professor Koul (with Professor Greville Rumble) is currently conducting a COL study on open schooling.

Dr. Munro has worked to increase access and improve quality of education and governance in remote First Nations communities and organisations in Canada, and with extremely poor communities in South Asia, most recently in Bangladesh. In addition to serving as a school principal and regional superintendent, she has acted as a senior advisor to the Canadian government and worked to achieve treaties for indigenous peoples in Canada. Dr. Munro holds a Ph.D. in International Education.

www.col.org/rmunro

NEW VP FOR WORLD BANK

Ms. Obiageli Ezekwesili has been appointed a Vice President of the World Bank. Most recently Nigeria’s Minister of Education, Ms. Ezekwesili will lead the Bank’s Africa operations, which lend about US$4.7 billion per year to the continent. As Minister of Education, she led reform of Nigeria’s education system.

Mr. Rod Tyrer returned to the UK’s Department for International Development in March when his secondment to COL ended. On joining in 2003, he focused on helping COL adopt the precepts and practices of results-based management. After his appointment as Programme Director in 2004, he coordinated the preparation of the 2006-2009 Plan, the most thorough exercise of its type COL had ever undertaken. His legacy to COL is a programme firmly aimed at development goals set within a contemporary logic model focused on outputs, outcomes and impacts, with performance indicators to match. The function of Programme Director has now been merged with that of Vice President.
COL’s Knowledge Series provides concise, topical, start-up guides to distance education practice and delivery. Four new titles are now freely available for use under the creative commons SA-BY, “some rights reserved” license (use and adaptation, share alike, with attribution).

**Acquiring Accreditation in Distance Learning**  
*Written and researched by Wendy R. Kilfoil, Director, Institute for Curriculum and Learning Development, University of South Africa*  
Accreditation certifies the credibility, integrity and achievements of educational institutions. Focused on distance education institutions, this guide explains accreditation options, the accreditation process, and the benefits and challenges of accreditation.

**Adapting Learning Materials for Distance Learning**  
*Written and researched by Dr. Clayton R. Wright, Distance Education Consultant, Alberta, Canada*  
While adapting courses for distance delivery can save time and resources that can be directed towards providing quality learning support, it requires the expertise of a course development team. This guide explores why and how to adapt learning materials for distance education, what expertise is required and case studies from around the globe.

**Designing Learning Objects for Online Learning**  
*Written and researched by Solvig Norman, Instructional Development Coordinator, Open School British Columbia, Canada and David Porter, Executive Director, BCcampus, British Columbia, Canada*  
Learning objects are content that is re-purposed for different learning situations. Increasingly, educators are saving expense and time while gaining expertise by sharing and re-using existing content in the form of learning objects. This guide explains learning objects, how they are managed, copyright and licensing implications, and how to design and implement learning objects.

**Knowledge Management Strategies for Distance Education**  
*Written and researched by Neil Butcher, Education Consultant, South Africa*  
If information and knowledge are to be of practical value, they must be effectively managed. This is particularly important in distance education, where information plays such a vital role in teaching and learning. Knowledge management is the focus of this guide, which examines how to develop and implement knowledge management strategies, investing in information and communications technologies, and learning objects and repositories.

COL’s Knowledge Series now contains 25 titles. They can be downloaded at no charge from www.col.org/knowledge. Single print copies of Knowledge Series titles are also available at no charge from COL and are included on COL’s resource CD-ROM (www.col.org/cdrom).  
www.col.org/knowledge  
info@col.org

**“LEARNING FOR DEVELOPMENT” SPEECHES**

The latest collection of speeches by COL’s President and Chief Executive Officer, Sir John Daniel, and colleagues is available on COL’s website. The booklet, entitled, *Learning for Development*, includes five presentations made from September 2006 to February 2007, plus Sir John’s “Reflections on a Career in Distance Education”. All speeches and accompanying visuals are also available individually on COL’s website.  
www.col.org/speeches

**COUNSELLING FOR CAREGIVERS**

COL’s guide for caregivers working with orphans and other vulnerable children and youth is now available online. *Counselling for Caregivers* is a set of self-instructional learning materials that provides caregivers with the necessary skills, knowledge and understanding to effectively support the healthy development of children and youth in their care. While it is written in the cultural context of Africa, the module can be used by caregivers anywhere in the world. *Counselling for Caregivers* can be downloaded at no cost from the COL website.  
www.col.org/CounsellingForCaregivers
LOW-COST ICT DEVICES

The developing world could be transformed by a proliferation of low-cost information and communications technologies (ICTs) devices such as laptop computers, mobile handsets and personal digital assistants (PDAs). Several countries have signed on to the One Laptop Per Child programme, which is developing a US$100 laptop computer. Meanwhile, India’s Ministry of Human Resource Development is spearheading an initiative to develop a $10 laptop. A wide range of similar projects are taking place around the world.

The Information for Development Program (infoDev) has published an inventory of known projects and programmes aimed at introducing affordable ICT devices in developing countries. “Quick Guide to low-cost computing devices and initiatives for the developing world” is available online at www.infodev.org/devices-list. infoDev is also posting links to news items about low-cost ICT devices to meet the development community’s enormous interest in increasing access to ICTs in developing countries.

infoDev is a partnership of international development agencies that is co-ordinated by a Secretariat housed in the Global ICT Department of the World Bank. Its mandate is to help maximise the impact of ICTs in global efforts to achieve the Millennium Development Goals. www.infodev.org/devices

OPEN SOURCE FOR STUDENTS

School children in Paris are becoming more aware of alternatives to proprietary software, thanks to a project that is providing a USB “memory key” loaded with open source applications to 175,000 students. The keys contain a portable office suite of software including an Internet browser, an e-mail client, and audio and video players that will work in the Windows environment. Students in Ile-de-France, a district in Paris, received the open source software keys earlier this year. The regional council is spending 2.6 million Euros on this initiative, which, through a small USB key, will give students full mobility of applications whether at school, at Internet cafés, at friends’ homes or at their own homes. Anyone with a large enough memory key can find similar software at www.portableapps.com.

LEARNING THROUGH VIRTUAL WORLDS

The growing popularity of virtual worlds is having an impact in many learning environments around the globe. Second Life is an example of an Internet-based virtual world that is built and owned by its residents. Since opening just four years ago, Second Life has registered more than six million accounts. “Residents” interact with each other through avatars, three-dimensional graphical representations. Using these avatars, Residents can explore, meet other Residents, socialise, participate in activities, and create and trade items and services from one another. Commerce is handled with Linden dollars, which can be converted to US dollars at online exchanges.

A number of universities, including Harvard, Stanford University, Ohio University and Vassar, are using Second Life to create virtual classrooms. Hundreds of other colleges and universities are experimenting with Second Life. Professors host lectures, discussions and project online. Students create avatars that can interact with other avatars while learning in the virtual world.

Residents can buy islands and buildings that serve as a gathering place. Large consortia recently purchased several islands that are serving as education-focused land. The land is then subdivided into smaller parcels and rented to colleges, universities and educational projects. The New Media Consortium’s NMC Campus includes many teaching islands and a range of educational tools, services, meeting spaces, a museum, library and planetarium. Learning islands like this offer participation to students and faculty within a learning-centered environment. While islands usually sell for US$1,675 for about 16 acres, Second Life offers a 50 percent discount to real world educators and academic institutions.

Other notable virtual worlds include Active Worlds, There and Entropia.

www.secondlife.com
www.activeworlds.com
www.there.com
www.entropiauniverse.com
INKJET PRINTERS PRODUCE ORGANIC MICROCHIPS

An Austrian company is producing organic semiconductors – chips made by spraying patterns of ink onto foil and polymer. These organic semiconductors won’t function as memory chips in computers or processors because they are slower and degrade over time. They will be used for one-time-only applications such as water purity testing. While a traditional factory would produce 40,000 square meters of silicon computer chips at a cost of US$1.3 billion and 5,000 employees, the Nanoident factory in Austria produces the same amount at a cost of about US$10 million and only 50 people.

Regular and organic semiconductors differ in how transistors get laid down. In standard chips, lithography machines sketch a circuit pattern, trenches are dug into silicon and the trenches are filled with metal through a complex series of chemical spraying and etchings. With organic semiconductors, more than 100 inkjet nozzles spray a pattern onto foil or polymer.

Another difference is size. Printed semiconductors have far larger features than silicon chips. Nanoident’s chips will have features measuring 10 to 100 microns wide, which is more than 100 times larger than the features inserted into silicon chips. Organic semiconductors can be as large as 1.5 metres wide. These devices may be used as sensors.

www.nanoident.com

FAXES, VOICE MESSAGES AND POSTAL MAIL GO ONLINE

The ever-expanding capabilities of the Internet now allow you to receive faxes, voicemail messages and your postal mail online. If you travel frequently or enjoy the flexibility of receiving faxes, messages and mail anywhere, anytime, these services can be useful.

A number of services will direct faxes straight to your desktop, laptop or mobile phone. They bill themselves as being faster, cheaper and more reliable than a fax machine. You receive faxes (delivered as an e-mail attachment) without having to maintain a fax machine or incur telephone costs. You can receive multiple faxes simultaneously without having to worry about paper jams, privacy or running out of paper. Some services, such as fax2email, are free, while others charge a fee ranging from US$3.95/month for Packetel to US$18/month for Myfax.

There are several advantages to receiving voice-mail messages as text. It allows you to scan long messages rather than listening to the whole thing, you can prioritise messages and you don’t have to scramble to write down a phone number or other information left in a message. Companies such as Simulscribe, SpinVox and Callware offer a growing range of services using voice recognition software.

If you’d like to access your postal mail from a remote location, RemoteControlMail is one service that will do that. First, you receive photos/scans of the unopened letters and parcels. You then decide whether you want the mail forwarded to where you are, opened and scanned for electronic delivery, recycled, shredded or stored securely pending your return.


NEXT GENERATION RESEARCH TOOL

Zotero is a powerful research tool that enables people to collect, manage and cite research sources. A free program extension to the open source Firefox web browser, Zotero combines the capabilities of older reference manager software with new software and web applications, including the ability to interact, tag and search in advanced ways. Since it’s located in the web browser, Zotero can easily transmit information to and from other web services and applications (such as Microsoft Word and Open Office Writer) when required by the user. Currently operating as beta software (i.e., not yet bug-free enough to be recommended for general deployment), Zotero is expanding into a full-fledged tool for digital research and collaboration. In February, the editors of PC Magazine voted Zotero one of their top picks for free software, singling it out as a must-have Firefox extension.

www.zotero.org