

Education, Technology and Digital Culture



EDGE Conference 2010

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Theme: eLearning: the horizon and beyond.

*Keynote address by
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Abstract

The 1948 Universal Declaration of Human Rights (UDHR) stated that all human beings are born free and equal in dignity and rights; adding that since they are endowed with reason and conscience they should act towards one another in a spirit of brotherhood. Sixty years of inventiveness and development have created a digital age accompanied by aspirations of digital freedom. Focusing on the developing world, the paper will explore how education can embrace the digital culture in order to narrow the gap between the ideals of the UDHR and the contemporary realities of life in a diverse but interconnected world.

Introduction & Plan

It is always a special pleasure for a Vancouverite to come to St. John's. It gives you pride in our country's motto *a mari usque ad mare* – and since I spent Thanksgiving weekend on Vancouver Island I really did cover the breadth of Canada yesterday. Flying for the best part of a day whole day makes you understand the scale of this country.

Thank you for inviting me to speak to you at this EDGE conference on the theme *eLearning: The Horizon and Beyond*. I have prepared these remarks with my colleague Trudi van Wyk, one of COL's nine Education Specialists. Her programme is called *Integrating eLearning* and she attempts to respond to what sometimes seems to be an insatiable demand for help with eLearning from nearly 50 developing Commonwealth countries. we shall explain later how she tries to cope!

We have entitled this talk *Education, Technology and Digital Culture*. Keynote speakers are meant to evoke ideals, principles and values, and we shall try to do that. Here is the plan.

We shall begin with the briefest description of the mission of the Commonwealth of Learning so that you can understand where we are coming from. COL's motto is *Learning for Development*.

We shall then recall that education is a human right. In principle, declaring education as a human right should be enough to ensure that governments treat it as such, but in practice reminders and stimuli are needed in the form of targets and statements of values.

COL interprets 'development' in 'Learning for Development' as an amalgam of two sets of targets set ten years ago in 2000, the Millennium Development Goals and the Dakar Goals of Education for All, infused by the Commonwealth values of peace, democracy, equality and good governance.

We also interpret development another way, following Amartya Sen in defining development as freedom. He considers that development is the process of expanding the real freedoms that people enjoy, and that includes the 'freedoms from', such as the freedom from arbitrary arrest, and the 'freedoms to' such as the freedom to be educated.

We shall then summarize briefly the current state of play in the campaign to follow through on the right to education and achieve education for all. There is a lot of unfinished business in education in the developing world. For twenty years the efforts of international agencies and national governments have been focused on achieving universal primary education, often to the neglect of other levels of education. The successes and failures of this campaign define the current educational agenda.

The success is that tens of millions more children are getting primary education. But this has created a surge of children and parents looking for secondary schooling and most of them will not find conventional secondary schools.

The failure is that there are still tens of millions of children who are not in primary school. Getting them into school will, above all, require more teachers.

Neither the shortage of secondary schools, nor the shortage of teachers, will be solved by business as usual. New approaches are needed and are already being implemented. They are both based on open and distance learning.

Every possible solution needs to be recruited to address the secondary surge, but an important approach is open schooling, which is the application of open and distance learning at this level. In teacher education there is a massive problem of supply – but also some serious questions about the type of training that is needed to raise the quality of education for all these children. Open and distance learning has provided answers to both challenges for several decades.

I have explored the challenges of both open schooling and expanding teacher education in my recent book *Mega-Schools, Technology and Teachers: Achieving Education for All*.

However, our focus here, which is also a preoccupation in the book, is what form of distance education should we deploy? We should perhaps remind you, since this conference is about eLearning, that the vast majority of the tens of millions of distance learners around the world still do most of their study with the conventional media of print, audio and video.

So the question is, can eLearning help to increase the impact of open and distance learning on solving these two major educational challenges, or is it an expensive distraction?

That is the plan – now let us fill in the picture a bit, starting with the Commonwealth of Learning.

COL

Commonwealth of Learning

In describing COL we say that we are small, successful and not in London. We are certainly small, with a total of only 40 staff in our HQ in Vancouver and our Commonwealth Educational Media Centre for Asia in New Delhi.

As an intergovernmental organization of the Commonwealth we measure our success by the support we get from the countries we serve. It is good to report that the number of countries supporting us has almost doubled in recent years.

Our mission is to help governments and institutions expand and improve learning in support of development using technology and new approaches. We do this in two general sectors: enhancing formal education and promoting informal education focused on improving health and livelihoods.

There are four initiatives in each sector, each headed by one of our international Education Specialists.

In Education these are Open Schooling, to which we shall return. Teacher Education, to which shall also return. Higher Education, where the focus is on quality assurance, and The Virtual University for Small States of the Commonwealth, an exciting collaborative eLearning project of the Commonwealth's 32 small states that is managed by the small states themselves.

In the Livelihoods and Health Sector we are working on Skills Development. The aim is to supply increments of learning that help people to improve their livelihoods, often in the informal economy. One successful application of this is Learning for Farming. One element of this is a system, developed with the University of British Columbia that links thousands of mobile phones to a Learning Management System. These women, who earn their livelihoods by raising goats, get several audio messages a day with a quiz afterwards. Their goats are measurably bigger and healthier since we started the programme.

My Canadian colleague Ian Pringle is putting the 'community' back into community media, especially radio, and showing the communities how to use them for health education. Then my co-author Trudi van Wyk has the eLearning tiger by the tail. To maximize her impact she is focusing on two aims: embedding frameworks for training teachers in the use of IT for pedagogy; and expanding the impact of Open Educational Resources. I'll come back to OERs.

COL is not a teaching organization – but there is one exception. We develop and offer eLearning courses tailored to the needs of individual international bodies such as the World Health Organisation and the World Bank. This reaches hundreds of people each year in over one hundred countries. We must be doing something right because these bodies keep coming back for more and new agencies are joining in.

Finally, our tiny operation in New Delhi is helping with the creation of 4,000 community radio stations in India. Last year it developed an educational laptop which retails for \$75 and is being used in a school in the Maldives.

So there is a brief account of what a small intergovernmental agency, based at the other end of Canada, is doing to harness technology to Learning for Development.

Challenges of Education in the Developing World

Let us now return to the bigger picture: the challenges of education in the developing world.

Education was declared to be a human right in Article 26 of the Universal Declaration of Human Rights of 1948. It stated that elementary education should be free and compulsory. Also, in a clause that is given less prominence by governments and international agencies, it affirmed the right of parents to choose the kind of education their children should have.

As former colonies became independent from the 1950s on, they took seriously the need to expand access to education beyond the modest levels of colonial times. However, with economic problems multiplying, progress began to flag in the 1980s and the international community started a campaign to ginger things up. We shall spare you the details, but the most important recent milestones were the Millennium Declaration of the year 2000 which listed eight Millennium Development Goals, or MDGs, that included Universal Primary Education and equality of access for girls and boys.

The same year an international forum focused exclusively on education was held in Dakar. This declared six goals of Education for All, which related to early childhood education, literacy and youth training as well as the two included in the MDGs. The subsequent campaign for Education for All or EFA, coordinated by UNESCO, is meant to address all six goals but in the event most of the funds and effort were directed to achieving Universal Primary Education. Indeed the World Bank uses the term EFA to refer only to primary education.

We must not underestimate the success of this campaign. 40 million additional children – more than the entire population of Canada, are now in school. Some developing countries have achieved in a decade something that took today's rich countries over a century.

The Secondary Surge

These children now want secondary education and it is important that they get it – not least because the secondary education of girls is the world's best weapon against climate change.

Unfortunately the size of the challenge is staggering with, on one estimate, 400 million children between the ages of 12 and 17 not in secondary school. They will never get secondary schooling with business as usual, not only because many countries have exhausted their resources in the drive for Universal Primary Education, but also because in those countries secondary schooling on the conventional model is relatively much more expensive, relative to primary, than here in Canada.

This leads Professor Keith Lewin to the depressing conclusion that these countries will never achieve universal secondary education by conventional means only.

All alternative possibilities must be deployed: private schooling for the poor, already a surprisingly widespread phenomenon because the public schools in poor areas are so bad, the use of ICTs, and open schooling.

Open Schooling is the application of the methods of Open and Distance Learning, or ODL, to secondary schooling. It already happens on a large scale. India's National Institute for Open Schooling has over a million pupils on its rolls and India has another dozen state open schools each reaching over 100,000 children.

In my book we define a 'Mega-School' as an open school with over 10,000 pupils. Open schools are not only important in big countries like India. Namibia is a country of only two million people yet the Namibian College of Open Learning, NAMCOL, with 'only' 28,000 pupils, accounts for nearly half of all secondary enrolments.

Open schools mostly apply similar ODL methods, although they may have somewhat different purposes, as we explain in the book. One of their strengths is that, apart from catering to out-of-school children of school age, they can blur the often unhelpful distinction between formal and non-formal education, build a bridge between knowledge and skills, and reduce inequalities. We note here that UNESCO now considers the inequalities in access to quality education, *within* rich and poor countries alike, to be as serious a problem as inequalities between countries.

That sets the stage for the challenge of the secondary surge. What interests you, of course, is the role of eLearning in the open schooling that we consider to be an important part of the answer.

Before we address that question let us outline the world's other major educational challenge, because the questions it raises about eLearning are much the same.

The challenge is to respond to the partial failure of the campaign for primary education to get all children into school.

Teacher shortage

Completing that campaign will require many more teachers: ten million more according to UNESCO. And teacher recruitment and training is a problem for rich and poor countries alike because of a massive wave of retirements and severe wastage from the profession in countries like the USA.

Once again ODL is a major part of the answer, and the use of ODL in Teacher Education has a distinguished history – not least in Canada. I give profiles of eight ODL programmes for Teacher Education in my book, including PERMAMA a programme on which I cut my teeth in distance education in the 1970s.

I believe that the impact of PERMAMA, which trained all Quebec's secondary school teachers in what was then called the 'new mathematics' is still felt in the superior performance of Quebec children in the PISA surveys.

The other reason for the importance of ODL in Teacher Education is that it is the best way to swing the focus of teacher education from theoretical pre-service courses to classroom focused in-service courses that really improve the quality of what teachers do in the classroom. We are referring to programmes like California's CalStateTEACH and the Teacher Education programmes of the Open University.

Generations of ODL

We have shown that ODL is a major part of the answer to the two biggest educational challenges that the world faces. But what kind of ODL is needed?

Scholars enjoy identifying different generations of ODL. Even though I've been in the field of ODL for nigh on forty years I tend to lose track of the number of generations they list and what they are. For today we shall simply distinguish between ODL in the technological culture and ODL in the digital culture.

These, of course, overlap. Education proceeds by evolution, not revolution. Most people who launched pure eLearning enterprises in higher education a decade ago either lost their shirts or quickly added some other media, such as books, to the mix.

What do we mean by a technology culture? It was well summarised by Adam Smith over 200 years ago and gave rise to the industrial revolution: division of labour; specialisation; economies of scale and machines (of which ICTs are a modern manifestation).

This technology culture is the basis for today's prosperous society. Compared to people in Adam Smith's time we enjoy goods and services that are better, cheaper and more abundant. The example that Adam Smith gave was the production of pins in a factory.

Education, of course is an exception. It is still largely a cottage industry locked in an Iron Triangle which prevents you doing any one of expanding access, raising quality or cutting costs without going backwards on the others. The key to breaking out of the triangle has been ODL, which does allow us to increase access, raise quality and cut costs all at the same time.

This is a true revolution based on the technology culture of division of labour, specialisation, economies of scale and machines. It also means that whereas in conventional education the teacher teaches, in ODL it is the institution that teaches, integrating the inputs of numerous teachers. This division of labour, specialisation and the use of machines makes possible the key outcome, economies of scale.

We hope that our account of the educational challenges of the developing world, the 400 million children out of secondary school and the 10 million missing teachers have convinced you that no new response is useful unless it is scalable.

So the key question is, what does the incorporation of a digital culture and eLearning add to ODL – and is it scalable?

The digital culture has not yet had a giant intellect like Adam Smith to clarify it for us but, appropriately perhaps for something essentially unstructured, the concepts of networks, connectedness, collaboration and community capture elements of it.

The advantages of eLearning, compared to conventional ODL, are easy access to diverse learning content and rapidity of feedback and communication. The snags are that most of the world's population is not well connected and, since eLearning tends to stimulate more interaction with tutors, it is less scalable than traditional ODL at comparable costs.

A key feature of digital ODL is that you can find content for learning everywhere. But education is not a do-it-yourself construction kit. In order for education to work within the larger structures of society, clear outcomes are still needed. Learners need guidance to digest the chaotic and ambiguous information climate created by networks

Most of those who write about digital education have jumped straight to it from the cottage industry style of classroom teaching without experiencing the technology culture of traditional ODL. They talk about the change from teachers ‘controlling a classroom’ to ‘influencing a network’, They leapfrog over ‘technology-culture ODL’ in which learners are not controlled and reach their own conclusions from learning materials developed by teams that present multiple perspectives.

Open Educational Resources

What can we do to incorporate some of the scale advantages of technology-culture ODL into digital ODL? Time only allows us to identify one very important mechanism, which is Open Educational Resources or OERs.

OERs are learning materials, of variable length, which are freely available for adaptation and use. The possibility of adaptation is vital. Content from elsewhere is never totally suitable for our own needs, but if we can adapt it to suit those needs then we can have the best of both worlds, content of world-class quality mapped on to local needs.

There is a splendid example of this in a programme for Teacher Education in Sub-Saharan Africa called TESSA. A consortium of 12 African universities, the UK Open University and international organisations, including COL, has produced a huge range of materials on classroom-focused in-service teacher education. They are available in Arabic, English, French and Kiswahili and were used by hundreds of thousands of teachers all over Africa last year, with a beneficial impact on the many millions of children they teach.

OERs are a beautiful synthesis of the technology culture and the digital culture. Their production relies on specialisation and division of labour across Africa, but because of their digital format and their adaptability they also achieve huge economies of scale.

We are pleased to say that COL is now facilitating a similar process of OER creation for the senior secondary curriculum. One hundred teachers from Botswana, Lesotho, Namibia, Seychelles, Trinidad & Tobago and Zambia have divided up the last two years of the secondary curriculum with each country team working on a particular subject. The OERs will be available in both print and eLearning formats.

We don’t pretend that it has been easy, because connectivity is a constant problem for the master teachers creating the materials. But we are getting there and since these are OERs the materials will, of course, be available to open schools and conventional schools all over the world, not just in the six countries directly involved.

Conclusion

It is time to conclude. There are many other things to say about how eLearning can allow digital ODL to achieve some of the scale advantages of technology-culture ODL. One aim should be to automate the interaction between students and tutors as much as possible, for example by referring students to a

website of frequently asked questions rather than dealing with each individually. Another approach is simply a matter of discipline. eLearning tempts teachers to revise material constantly, which has a dire impact on scalability and economics. Most courses do not need changing every six months and teachers would do well to adopt the principle of technology-culture ODL: do a really good job of developing the course and let it run for a few years rather than doing a skimpy job and revising it constantly. Use the interactive tutorial system to address new developments in the subject.

This talk has addressed developing world realities that are very different to those you experience in Newfoundland, Canada and North America. But we are one world and it will be a safer and happier world if we can complete the business of getting all children through primary and secondary schooling. eLearning can help, but only if it takes on board some of the assets of the revolution that an older generation of open and distance learning has built up.