

Mega-Schools and Technology: Lifelong Learning Systems for the 21st Century



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*Theme: Challenges and Opportunities for ODL in
Lifelong Learning in a Global Financial and Economic
Crisis*

*Sub-theme: Institutional Efficiency: New mission,
value, strategies and policies*

*Keynote address: Mega-Schools and Technology:
Lifelong Learning Systems for the 21st Century*

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Introduction

Colleagues:

It is an honour to be here. Let me first bring you greetings from my home city, Vancouver, which will host the Winter Olympics next year and hopes that they will be a worthy sequel to the magnificent Summer Olympics that you held here last year.

It is a pleasure to join you all in congratulating the CCRTVU on reaching the milestone of its 30th anniversary. This is a huge achievement and when I think of the tens of millions of people who have been empowered by higher education and training as a result of your work it puts our modest efforts in the rest of the world somewhat in the shade.

But having said that I am delighted that you have chosen to follow frequent practice elsewhere and refer to CCRTVU as the Open University of China. The first good reason for doing that is that tying the name of any educational institution to the teaching medium that it uses means that you will one day be

overtaken by the onward march of technology. That applies just as much to terms like ‘virtual university’, ‘online university’ and ‘eUniversity’ as it does to names referring to television and radio.

Let me stress that I strongly believe that television and radio have a very important role in distance education. At the Commonwealth of Learning we are making the promotion of community radio a major part of our work. We are using video as a means of promoting the Commonwealth’s agenda of respect and understanding among peoples.

But just as, 40 years ago, the UK Open University decided not to call itself the ‘University of the Air’, despite its use of broadcasting, so it is good that in choosing the term Open University, the CCRTVU is focusing on its purposes. I use the word purposes – in the plural – because ‘open’ is a noble word that can mean many things. Ease of admission to study is one; flexibility in the curriculum is another; and the ability to study wherever you are, through distance learning, is a third. The UKOU sums it up by saying that it is: ‘open to people, open to places, open to methods and open to ideas’.

It is a useful exercise for all open universities to state in what way they intend to be open.

Our theme is *Challenges and Opportunities for ODL in Lifelong Learning in a Global Financial and Economic Crisis* and the sub-theme of this session is *Institutional Efficiency: New missions, values, strategies and policies*.

Although we are celebrating 30 years of the China Central TV and Radio University, my co-author Frances Ferreira and I are going to address challenges and opportunities for ODL in secondary education.

Our title is: *Mega-Schools and Technology*.

We shall argue that expanding secondary education is – or soon will be – the key priority for many developing countries. We shall also note that in a time of economic difficulty countries need to strive for greater efficiency and observe that in many countries secondary education is not at all efficient. This will lead us to propose the expansion of open schooling, which is the application of ODL at pre-university level.

But we are not simply proposing the creation and expansion of open schools as a separate and distinct element within national school systems. We believe that open schools should be seen as catalysts for integrating all elements of schooling into an educational ecosystem fit for the 21st century.

We begin with the context.

Striving for Education for All

For twenty years a major aim of the work of international development agencies and the governments of developing countries has been to achieve Universal Primary Education. Not all countries are there yet and some will still not make it by the target date of 2015. However, great progress is being made. Between

1999 and 2006 the number of children attending primary school increased by 40 million.

Today the success of the drive for Universal Primary Education is generating a huge surge of children and young adults (estimates range from 200 to 400 million) who seek to continue to secondary education. Some children, like these are well catered for, but most of the coming generation is not so lucky.

It will not be possible to accommodate such numbers through the conventional provision of secondary schooling, skills training and adult education. Governments must encourage alternative approaches and foster providers that can deliver quality learning at scale with low costs. As well as extending conventional public school systems, governments should encourage the expansion of private schooling for the poor, draw lessons from projects involving ICT, and give special priority to expanding open schooling.

Developing and expanding open schooling are particularly promising alternatives that can also be integrated with other approaches to make them more cost-effective and cost-efficient. An integrated approach also holds the promise of providing education that is better adapted to the needs of the 21st century.

It can blur the unhelpful distinction between formal and non-formal education; build a bridge between knowledge acquisition and skills development; and has the potential to reduce the inequalities of access that blight conventional provision in most countries. Very importantly, open schooling is less expensive than conventional schooling and the differential is increasing.

The expansion of conventional public schooling at the secondary level faces major challenges of both cost and effectiveness in developing countries.

Professor Keith Lewin's research shows that if unit costs at secondary level are more than twice those at primary level, a country will never achieve universal secondary education. In most developing countries the difference is far greater than that, ranging from 3 to 6 and beyond in most African countries. Moreover, despite this expenditure, in some countries public sector schooling is losing credibility – and often pupils – as parents choose alternatives to schools plagued by decrepit facilities, uncommitted or absent teachers and a general lack of accountability.

Many assume that information and communications technologies can expand quality education cost-effectively. In a forthcoming book, *Mega-Schools, Technology & Teachers: Achieving Education for All*, we examine three major ICT initiatives in the developing world: One Laptop per Child; the Hole in the Wall; and the NEPAD eSchools demonstration project. We conclude that while computers do enrich and enhance learning, they need to be embedded within a wider framework if they are to make a systemic contribution to achieving EFA.

The essential challenge, which all of you as distance educators know well, is to develop learning systems that: a) can be conducted at scale; b) are inexpensive; c) deliver acceptable quality consistently; and d) can be adapted to diverse needs. You all use technology to scale up higher education by combining

division of labour with specialisation and appropriate equipment.

In large scale distance learning systems specialisation and the division of labour are usually identified with three sub-systems: administration and logistics; course materials development and student support. Open schooling carries these principles over into secondary schooling.

Open Schools and Mega-Schools

Fifteen years ago I coined the term ‘mega-university’ for large distance-teaching universities and set the threshold at 100,000 active students.

The number and size of mega-universities has expanded significantly since I invented the word. Secondary schools are usually much smaller than universities, so we define a mega-school as an open school with more than 10,000 active pupils. In the school sector this is an indication of useful scale, even though some open schools in high population countries much larger enrolments, exceeding a million in the cases of India and Indonesia. But even small countries can have mega-schools. The total population of Namibia is only 2 million, yet the 28,000 secondary students in the Namibian College of Open Learning (NAMCOL) account for 40% of the country’s secondary enrolment.

Open Schools: Ends and Means

Most open schools deploy distance learning methods in similar ways with the sub-systems I just mentioned. They carry out the three functions of administration and logistics, course materials development, and student support in much the same manner, even where they use different technologies.

Differences between open schools become apparent, however, when we examine the ends that they pursue through these means. Open schools can achieve various purposes. Any country seeking to establish an open school must decide on the priorities that they wish to pursue through it.

We noted at the beginning that the term ‘open’ may designate different types of openness when used in the term ‘open university’. It is the same with open schools. The degree and type of openness is a decision for those designing a particular open school. Admission may be decided on exactly the same criteria as the conventional schools or it may be more liberal. The curriculum may be exactly the same as in the conventional system – as it must be if both open and conventional schools prepare pupils for the same examinations – or more specifically adapted to the clientele.

However, given considerable dissatisfaction with conventional secondary school curricula in many countries, open schools present the opportunity to do something different. Too often the regular curriculum is geared to preparing a small proportion of pupils for access to tertiary education, rather than giving the majority a basis for lives and livelihoods in the 21st century. Because open schools usually reach out to those who do not have ready access to a conventional school they may serve them better by offering something different from the conventional curriculum.

Which Model: Complementary, Alternative or Integrative?

We distinguish between three models of open schooling: complementary, alternative and integrative.

Complementary open schools

Complementary open schools offer the same curriculum as the conventional schools to children who never had a chance to attend a regular school or had to drop out because their grades were too poor. The open schools in France, Botswana, Namibia, Indonesia and Mexico are complementary open schools. Each reaches a significant proportion of the national secondary-age population and enables its pupils to study for the same certification as those in the conventional schools.

Because they operate at scale, these open schools can invest in the production of better learning materials than the conventional schools could hope to develop. It is desirable to share these materials across the whole education system because lack of good learning materials often undermines the quality of conventional schooling.

What are the challenges facing complementary open schools? How can they improve their performance and contribute more fully to their national education systems?

The answer is a combination of closer integration with the wider educational system accompanied by greater autonomy in governance and management.

Closer integration – or at least better communication with ministries of education – is particularly desirable in the area of curriculum. By definition, complementary open schools teach to the national curriculum. But since good distance learning courses require significant lead times and investment to develop and produce, governments should involve their open schools in all curriculum revision processes from the earliest stages.

Governments should regard open schools as helpful allies in national curriculum development in the era of ICTs. The Commonwealth of Learning is facilitating a programme whereby open schools from six countries are working together to create secondary curricular materials in the form of open educational resources. These can readily be versioned for each country and at the level of individual schools. I shall say more about that in a minute.

Complementary open schools must do everything possible to improve the performance of their pupils. Since they teach to the same examinations as the conventional schools, the performance of the two systems can be compared directly. Open schools must continue to gain credibility by showing good results even though – or especially because – their pupils have a background of educational disadvantage.

Alternative open schools

Alternative open schools may cater to some of the same children as complementary open schools but they also aim to engage older youths and adults by offering programmes that are more vocationally oriented

and have a greater focus on life skills. India's NIOS, the Papua New Guinea Open College and, to some extent, Indonesia's Open School can be considered as alternative open schools although they have very different national contexts, mandates and governance structures.

Alternative systems that break new curricular ground are steadily becoming more attractive in comparison to complementary systems that simply extend the conventional programme at a distance. Clearly, however, adapting the school curriculum and the school year to meet the needs of youth who could not access the conventional school system – and who may be employed – poses a dilemma. How far should the system aim to produce the same results as the conventional secondary schools? Few parents and students wish to contemplate studies that do not hold the promise of certification.

Today this sounds too pessimistic. Both India's NIOS and the PNG Open College have shown that programmes that focus on life skills and work-oriented content are attractive to students and their parents. In these two cases, of course, the institutions provide their own certification, which is accepted at par with certification from the conventional system by employers and tertiary institutions.

The alternative open schools can claim considerable success. NIOS is not only drawing many school-age youth into its alternative route (74% of its secondary students are aged 15 to 20) but also has achieved parity of enrolment between male and female students in its vocational courses. To the extent that these young women see a greater sense and purpose in education that promises economic independence and a better life, NIOS is acting as an important agent of social change.

Integrative open schools

Integrative open schools are placed at the heart of the whole school system in order to improve and strengthen the quality and reach of that system, to be a source of innovation, and to act as a catalyst for reform.

For most educational authorities the pressing issue is to make the conventional system more effective and improve its quality. How can open schooling help? UNESCO conducted a thorough review of what makes for effectiveness and quality in schooling (UNESCO, 2004).

From this we can construct a list of desirable features that could be obtained more readily by having an open school as a resource for the whole school system:

- good learning materials
- focus on the curriculum
- regular, reliable, and timely assessment of learning
- pedagogical materials for teachers
- relevant content
- teaching of reading and writing
- structured teaching: direct instruction, guided practice and independent learning
- appropriate language of instruction
- larger classes if accompanied by better inputs (assistants, materials, etc.).

Open schools can help national schools systems with many of the items on this list. Having a source of good learning and assessment materials is a particularly important foundation of effectiveness that supports other elements of quality, such as focus on the curriculum and pedagogical materials for teachers.

Today learning materials can be produced and shared in a very modern way as open educational resources and, more generally open schools can be a haven for the entire school system. COL is helping countries collaborate in the production of learning materials.

The Collaborative Creation of Learning Materials

Open schools have to produce learning materials, usually in a variety of formats. These materials have always been useful to the conventional schools. Two developments have made the learning materials produced by open schools potentially even more useful to the wider school system.

First, most learning materials are now developed in digital formats, even though they may eventually reach students in the form of printed materials. Holding materials electronically has three advantages: they are easy to move around; they can readily be adapted and revised; and they can be converted to eLearning formats when online learning becomes a possibility.

Second, most of us are part of growing movement, inspired by the ideal that knowledge is the common wealth of humankind, to create a global intellectual commons in which learning materials are shared. This movement involves many thousands of teachers, at all levels, creating open educational resources (OERs).

The William and Flora Hewlett Foundation, which has supported various OER projects in higher education, is now supporting similar work in open schools through a programme that combines the professional development of teachers with the development of OERs. 20 sets of self-instructional learning materials on the secondary curriculum will be produced in six developing countries: Botswana, Lesotho, Namibia, Seychelles, Trinidad & Tobago and Zambia.

This material will be suitable for use in both open and conventional schools and will permit open schools to offer current and new subjects through print and online teaching.

The programme will create a pool of one hundred trained and experienced master teachers, who can train other teachers in their countries and support online materials development once the formal project is complete. These master teachers will also have been trained in the use of the Commonwealth of Learning's instructional design template and will have the skills to develop learning materials collaboratively online through a common Learning Management System, thus creating a new network of expertise in developing countries.

Computers for Children: Can Open Schools Help?

Open schools could also act as organising elements for the expansion of ICTs in secondary schools generally. In our forthcoming book we examined three projects that put computers in the hands of children.

The One Laptop Per Child (OLPC) and the NEPAD eSchools demonstration project placed computers in schools, whereas India's Hole in the Wall (HITW) experiment put them in playgrounds and public spaces.

Although the two projects involving schools gave disappointing results, especially to those who expected a revolution in teachers' pedagogy and students' performance, there continues to be a strong drive in most countries to get more computers into the schools.

Open schools could help whole school systems implement computing. Collaborative projects in OER curriculum development can help to create locally adapted eLearning materials of quality that are always in short supply. Moreover, since open schools have to be technologically savvy to take advantage of new developments for their own students they are a natural source of expertise for wider use.

Student assessment is an area of special relevance in this context. Regular, timely and reliable assessment is an important tool in securing students' attention to content and the curriculum. Bernard and his colleagues at Concordia University have shown that interaction with content – rather than with tutors or fellow students – is the most important way of promoting learning. Although reliable and regular assessment encourages students to focus on content, assessment is the element of their role that many teachers like least.

Because of their scale and flexible entry requirements open schools have to operate with large banks of assessment instruments (quizzes, examinations, etc.) for both formative and summative assessment. These are held as databases on computers so that they can be made available on demand. By strengthening this function of open schools governments could create an extremely valuable resource for their entire school systems.

Conclusion

It is time to conclude. We are seeing the beginnings of a process that will lead to much closer integration between open schooling and conventional schooling. Materials that are aimed, in the first instance, at the pupils of open school will very quickly find their way into conventional classrooms.

We have shown that open schooling can add value to national school systems in many ways. Some open schools are large, particularly those in developing countries, and we have used the term mega-school to designate those with more than 10,000 students that constitute a significant element of secondary provision.

Open schools can be embedded in national education systems in essentially three ways. Complementary open schools offer the same curriculum as regular schools in order to prepare pupils, who may have difficulty accessing those schools, to prepare for the same examinations. Alternative open schools usually serve a somewhat older clientele and design their own curricula and certification with more emphasis on vocational education and life skills. An integrative open school not only has its own student body but also strengthens the entire school system. It can do this by acting as a source of quality learning and assessment materials and a mechanism for introducing innovations, such as computing.

We urge that all open schools evolve towards greater integration with the wider educational system as part of an educational ecosystem for the 21st century that brings together ministries of education, communities, open schools and teacher education institutions to support the expansion and improvement of secondary schooling. In this way Universal Secondary Education will one day be a reality and not an illusion.