

# *Distance Education: Ends, Means, Opportunities & Threats*

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*UNESCO*

*Shanghai International Forum on Lifelong Learning*

*Shanghai*

*21 May 2010*

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*Commonwealth of Learning*

## **Abstract**

Once thought of as a second-rate form of instruction, distance learning now holds the key to an educational revolution that will see access expanded, quality enhanced, and cost reduced. After explaining the essential principles of technology and the basic methods of distance learning, the paper explores the opportunities presented by the new media but warns of attendant threats to cost effectiveness.

## **Introduction**

It is a pleasure to be able to combine this UNESCO event with the main reason for my visit to Shanghai, which is to speak at the celebrations of the 50th anniversary of the Shanghai Television University later today. It is also good to be in a UNESCO event again.

I much enjoyed my time as Assistant Director-General for Education from 2001-2004 and am delighted to continue collaborating with UNESCO under the work plan agreement between UNESCO and the Commonwealth of Learning that was renewed at the end of last year. May I also say how pleased I am that UNESCO has its first Chinese ADG/ED, Dr Qian Tang, seen here signing the agreement. I worked closely with him and I am sure he will do a wonderful job.

This morning I shall try to encapsulate in some 20 minutes what I have learned about distance education in the last 40 years. My title is *Distance Education: Ends, Means, Opportunities, Threats*.

## **Distance Education: The Ends**

I start with the ends – or purposes – of distance education. Why is this form of education, long regarded as second rate, now of such wide interest? I shall argue that it is not only of interest, but that it contains the seeds of a revolution that can sweep away the biggest obstacle that education has faced throughout human history.

## The challenges facing education

Ministers of Education will tell you that the challenge they face is to pursue three goals simultaneously. They want to widen access so that education and training can be available to all citizens that aspire to it.

Second, that education must be of good quality. There is no point in widening access unless education makes a difference to people's capabilities.

Third, the cost must be as low as possible. Governments and individuals never have enough money. It is morally wrong to make education more expensive than necessary, because low cost enables more people to take advantage of it.

But the challenge of achieving these outcomes simultaneously becomes clear when you create a triangle of vectors.

With traditional methods of face-to-face teaching this is an iron triangle.

You want to stretch the triangle like this to give greater access, higher quality and lower costs.

But you can't!

Try extending access by packing more students into each classroom and you will be accused of damaging quality.

Try improving quality by providing more and better learning resources and the cost will go up.

Try cutting costs and you will endanger both access and quality.

This iron triangle has hindered the expansion of education throughout history. It has created in the public mind – and probably in your own thinking – an insidious link between quality and exclusivity. This link still drives the admission policies of many universities, which define their quality by the people they exclude.

But today there is good news. Thanks to globalisation successive waves of technology are sweeping the world – and technology can transform the iron triangle into a flexible triangle.

## The revolution of technology

By using the technology of distance education you can achieve wider access, higher quality and lower cost *all at the same time*. This is a revolution – it has never happened before. This is what educational technology can achieve if used properly.

What is technology? I define it as the application of scientific and other organized knowledge to practical tasks by organizations consisting of people and machines, so it draws on non-scientific knowledge as well as applied science. Technology is about practical tasks rather than theory and always involves people and their social systems. Expanding and improving education is a very practical task. People and their social systems are at the heart of it.

But how does technology work? The fundamental principles of technology, articulated two centuries ago by the economist Adam Smith, are division of labour, specialisation, economies of scale, and the use of machines and communications media.

## An example: the UK Open University

Let me make this real by showing how the application of technology to higher education has achieved remarkable success. I take the example of the UK Open University.

With 220,000 students in award-bearing programmes the UKOU has clearly expanded access. Furthermore this is not just in the UK since 60,000 of its students are overseas, and there are a million students around the world taking UKOU courses embedded within local programmes.

Many of these courses derive from the Open Educational Resources on the UKOU's OpenLearn website. I shall come back to Open Educational Resources.

More surprising to you no doubt – and more embarrassing for some of the UK's other top universities, is the UKOU's performance in national comparative assessments of teaching quality. The Open University places above Oxford, where I once studied. Moreover, the government now conducts national surveys of student satisfaction with a very large sample of students and the Open University has come top three years running.

Finally, the last time costs were compared the cost per graduate of the UKOU was 60-80% that of conventional universities depending on the subject.

So the Open University has achieved the technological revolution of wider access, higher quality and lower cost. It has stretched the iron triangle.

How has this been achieved? It has been done through the combination of Adam Smith's technological principles. In the category 'Machines and ICTs' the UKOU offers a multi-media system of distance learning with strong student support.

This multi-media system includes some of the world's largest deployments of eLearning but the key issue is not the eLearning or any of the other media, but the focus on division of labour, specialisation and economies of scale. You could say that the UKOU divides the teaching and learning process into its constituent parts, gets different people to specialise in doing each part as well as possible and then puts it all back together again into an integrated system.

## Distance Education: The Means

This leads me naturally into my remarks about the means by which distance education is carried out. I talked about the purposes of distance education using the analogy of a triangle. For the means my metaphor will be a three-legged stool.

## Distance learning and remote-classroom teaching

But I begin by distinguishing two methods of conducting distance education.

The first is called remote-classroom teaching and used to be popular in the United States. The idea is to connect a teacher through an audio or a video telecommunications link to students in a series of remote classrooms. This allows a teacher to reach a larger number of students spread over a wide area. If the equipment is well designed and the instructor well trained useful interaction can take place between the students and the teacher.

However, I shall not talk further about this approach for several reasons. First, it tends to be expensive, because of the telecommunications links. Second, you can't scale it up beyond a limited number of remote classrooms so it does not stretch the iron triangle. Third, it still requires students to be in the classroom at a set time, so it does not give much flexibility. Fourth, the growth of connectivity has led most distance educators to move to forms of asynchronous delivery.

So I shall focus instead on the second approach to distance education, which I call distance learning. The aim here is to take to the individual learner, at home, at work, or travelling, whatever is necessary for effective and enjoyable study.

There are three ingredients, so you can think of distance learning as a student sitting on a three-legged stool. The first leg is good study materials. Today you can use lots of media for this, audio, video, print, the Web, CDs and DVDs, pen drives, the Internet and so on.

The second leg is good student support. Most students cannot succeed on independent study alone. They need support from teachers or tutors. Some of this can be provided by phone, e-mail or correspondence. Sometimes students get together physically in local groups.

The third leg is good logistics. Study materials are no use unless they reach the students. Examinations must be administered, supervised and marked. Often these operations have to be carried out on large scale – fifteen years ago I coined the term mega-universities for open universities with over 100,000 students.

If you operate on that scale even an administrative error that affects only 1% of students means more than a thousand unhappy students. In fact, at least three of the mega-universities today have over one million students, so such errors will now affect 10,000 students – which equal the total student numbers at Oxford University when I was a student there in the 1960s.

## Distance Education: The Opportunities

My third section is about opportunities. The good news is that each generation of technology improves the basic cost structures of distance education. Later I will mention the accompanying threat, namely that new possibilities like eLearning can lead us to take our eye off the iron triangle and relapse into the high costs of the cottage industry model.

We must remember that the basic reason for the competitive cost structure of distance education is the economies of scale that go with producing and distributing learning materials. Books already benefited from great economies of scale but broadcast media and the internet make volume production and distribution even cheaper. However, the cost of the brain power needed to produce the first copy does not come cheap.

That is why the trend to create a pool of open educational resources is such an opportunity. It means that each teacher does not have to reinvent the wheel. But it does **not** mean that each teacher has to use a

standard product because the key idea behind open educational resources is that each person can version them to taste.

Open Educational Resources are learning resources in digital formats that are freely available for adaptation and use by anyone. I find this notion of a global intellectual commons very exciting, provided that it is not perverted into an exercise in neo-colonialism. OERs are an opportunity to draw on resources from around the world, not an invitation to the rich to try to impose its own materials on the poor.

At the Commonwealth of Learning we are increasingly involved in OERs because they can contribute to our three objectives of scaling up quality learning at low cost.

For example my colleague Abdurrahman Umar is deeply involved in TESSA (Teacher Education in Sub-Saharan Africa), a consortium of 18 African universities and the UK Open University that has produced a huge range of OERs in Arabic, English, French and Kiswahili, for classroom-focused in-service teacher education at primary level. They are being used by half a million African teachers.

Closely related to open educational resources are a second application of eLearning that we have found useful – and which has made us think hard about the nature of open content – is wikis.

A few years ago our COL colleague Wayne Mackintosh created WikiEducator. It very quickly attracted tens of thousands of participants. With support from the Hewlett Foundation, he used it in a very original way to train thousands of people through face-to-face and online workshops. The deal is that teachers can learn wiki skills free provided they use those skills to contribute one lesson to the pool of OERs.

The Commonwealth of Learning is facilitating a project called the Virtual University for Small States of the Commonwealth, which is not a new institution but a collaborative mechanism that permits small states all over the world to work together on producing open education resources.

Here a dozen countries got together in Mauritius to develop courses on eco-tourism. This group of experts from 18 small countries worked together in the Maldives in March to develop a diploma course in sustainable agriculture for small states. Having returned to their countries they are now finalising the course by online collaboration.

Finally, under the heading of opportunities, let me say that although this forum is about lifelong learning, there are now massive opportunities at the secondary level. 400 million children between the ages of 12 and 17 are not in secondary education and they will be the world's greatest educational challenge for at least the next ten years.

For this reason I have followed up my 1990s book on mega-universities with a new book *Mega-Schools, Technology and Teachers: Achieving Education for All* that was published last month. It argues that we shall never achieve universal secondary education, nor train the teachers necessary to complete the drive to universal primary education, without massive recourse to distance education.

## Distance Education: The Threats

Finally, I come to the threats. The future looks rosy but there are risks.

To operate at scale with low cost and consistent quality all distance education operations, independent of the learning media they use, implement the principles of division of labour and specialisation. You can always identify the three organisational sub-systems of administration & logistics, course development and student support – and there are, of course, finer divisions of labour and specialisation within each sub-system.

Here is the potential threat. I believe that if you want to do eLearning well you must use these principles of division of labour and specialisation. But in higher education people often do not. Indeed, some say that one of the attractions of eLearning is that it does not require faculty to operate in a different way.

They can continue with the cottage industry approach, with each academic doing their own thing and taking care of every step in the instructional process. My fellow Vancouverite, Professor Tony Bates calls this the ‘Lone-Ranger’ approach to eLearning.

Earlier I cited Adam Smith’s list of the principles of technology. Some of you will have recognised it from his description of the pin factory, one of the classics of economics that you can find in seconds on the web. I recommend you read it.

His basic point was that when you make pins in a factory they are a lot cheaper, and of more consistent quality, than if one artisan makes them individually. I can safely assert that no one would dream of making pins individually today, but this inefficient, poor-quality approach persists in higher education. Worse, eLearning is often being used to embed it and make higher education less cost-effective than it was before, because it is simply an add-on to existing practice.

This may not matter in rich jurisdictions like North America where the monumental function of universities has always been more important considerations of cost-effectiveness. And, until now at least, such institutions have been able to raise their fees faster than the rate of inflation instead of trying to give the student better value for money.

I would love to be proved wrong. In many speeches, after raising this issue, I have begged people to send me any studies that show eLearning to have improved the overall cost-effectiveness of a higher education institution.

I make it clear that I’m not talking about the rather pointless studies that show ‘no significant difference’ in learning outcomes when eLearning is compared to classroom teaching. I want to know if the overall efficiency of the university or college has been improved, classrooms have been decommissioned and there has been genuine substitution of capital (i.e. technology) for labour. So far no one has responded with an example.

As I said, this may not matter in rich jurisdictions, but it matters a lot in the places I work where resources are scarce and access to education woefully limited. In such places the insidious links between quality, cost and exclusivity are balls and chains holding nations back. eLearning should be a liberating force not a throwback to the past.

Our aim must be to use the technology of distance education to stretch the iron triangle so that quality education is accessible to all at reasonable cost.