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ICT in Education: Pedagogy, Educational Resources and Quality Assurance

# *ICT and Open Education*

by

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Education Masters: DeTao Masters Academy, China

**Stamenka Uvalić-Trumbić**

## Introduction

It is a pleasure for Sir John Daniel and me to speak at this important conference on the subject of *ICT and Open Education.* Our presentation will be in four parts and we shall alternate in presenting them.

In the first part I shall set the stage by summarizing the new dynamics that are defining the development of higher education in this second decade of the 21st century. The 2009 UNESCO World Conference on Higher Education identified new dynamics in the evolution of the sector, often linked to the potential of ICTs. I shall explore these new dynamics further and then we shall give four examples of interesting developments in opening up education.

In the first, Sir John will examine the strange phenomenon of MOOCs – the Massive Open Online Courses that have become the higher education buzzword of 2012, most especially in North America. Are MOOCs just another flash in educational technology's pan or do they herald some lasting change?

I shall then return to talk about an original Chinese project in which we are both involved, the DeTao Masters Academy. DeTao's objective is to open up new curricular approaches to reposition China as a nation of original inventors rather than a workshop that merely manufactures to others' designs. After that, I will comment on the growth of Open Educational Resources through the lens of this year's UNESCO World OER Congress.

Sir John will conclude by noting a most exciting development in open education, namely the transformation of the China Central Radio and TV University into the Open University of China. He will observe that systems of quality assurance must adapt to these new trends in both pedagogy and content to ensure their credibility with learners.

## New Dynamics of Higher Education

That is the plan. Let me now return to the new dynamics that are defining higher education in this decade. I will focus particularly on massification and rising demand, the diversification of providers, cross-border higher education, and the role of ICTs.

*Massification*

The most striking new dynamic is the massification of higher education. There are over 165 million students enrolled in higher education worldwide. Age cohort higher education participation rates in the world as a whole grew from 19% in 2000 to 26% in 2007, although some consider a 40% Age Participation Rate as the springboard for development.

Globally, enrolments have increased fivefold in less than 40 years. It is now predicted that the global demand for higher education will expand from 97 million students in 2000 to 263 million students in 2025.

*Diversification*

It will not be possible to satisfy this rising demand, especially in developing countries, by relying on traditional approaches based solely on public universities. A multitude of new providers of higher education is emerging.

A major recent trend is the creation of so-called 'World-Class' Universities that feed on the mushrooming phenomenon of university rankings. While controversial, rankings are undoubtedly influencing governments.

At the other ends of the spectrum are transition programmes between schools and universities, such as community colleges; and continuing training programmes for high-level personnel such as the De Tao Masters Academy that I shall describe later.

*Cross-Border Education*

Another strong trend is cross-border education, which is the mobility of students, programmes and institutions. The diverse forms of CBHE include branch campuses, franchised programmes, twinning arrangements and courses delivered online.

International branch campuses (IBCs) are a distinct and the smallest part of the CBHE provision, but their numbers continue to grow. The number of IBCs has grown by 43% since October 2006. China has seen a 70% increase in the past three years, including a very recent branch campus that Sir John and I visited last week: the NYU-Shanghai University. Cross-border also takes the form of eLearning. Sir John will present a new and striking manifestation of this – Massive Open Online Courses targeting students worldwide.

This brings me to my final new dynamic, the stress that the WCHE put on the opportunities offered by modern technology. To quote the Communiqué:

*14.The application of ICTs to teaching and learning has great potential to increase access, quality and success. In order to ensure that the introduction of ICTs adds value, institutions and governments should work together to pool experience, develop policies and strengthen infrastructure.*

Let me now hand over to Sir John to talk about MOOCs, the first of our four examples of how ICT is opening up education.

**Sir John Daniel**

Massive Open Online Courses (MOOCs)

A MOOC is a Massive Open Online Course. Today I shall summarise a recent paper that I wrote about MOOCs entitled *Making Sense of MOOCs: Musings in a Maze of Myth, Paradox and Possibility*.

What is a MOOC? Earlier this year MIT, the Massachusetts Institute of Technology, offered its first MOOC. This course, 6.002x, *Circuits and Electronics,* attracted 155,000 registrations from 160 countries. Of these 155,000 learners only 7,157 passed the course as a whole. Anant Agrawal, who heads the programme, said the exam was 'very hard'. To criticisms of the extraordinarily high drop out rate of more than 95%, Agrawal replied, 'If you look at the number of passes in absolute terms, it's as many students as might take the course in 40 years at MIT'.

That's the present. Let's go back a bit.

The term MOOC was first used for an open online course at the University of Manitoba, Canada. The course, *Connectivism and Connective Knowledge,* was presented to 25 fee-paying campus students and 2,300 others who took the online class free of charge.

The course title and approach were inspired by Ivan Illich's book *Deschooling Society.* 'All the course content was available through RSS feeds, and learners could participate with their choice of tools: threaded discussions in Moodle, blog posts, Second Life and synchronous online meetings'.

These early MOOCs, now called cMOOCs (for 'connecting' MOOCs) are very different from the MOOCs we are talking about today. These are called xMOOCs after edX, the MIT-based consortium that is one group offering them. The cMOOC philosophy of connecting people is attractive, but today we shall focus on the very different xMOOCs because they are making the news.

We stress that xMOOCs are new. MIT announced MITx at the end of 2011 for a launch in spring 2012. Since then many other US universities have launched similar ventures. There is a herd instinct at work. Coursera, a for-profit company that helps universities do xMOOCs, now claims nearly 1.4m registrations and is presently offering 200 courses with 33 partner institutions.

But within the xMOOC movement there are differences in purpose and approach. Lloyd Armstrong, a reporter who interviewed some of the players and enrolled in a Coursera course himself, sees contrasting aims.

MIT's effort is rooted in a long-term strategy of using online learning to improve its teaching on campus. It considers that online learning is a disruptive technology and is using MITx as a laboratory to master it in order better to educate its on-campus students.

By contrast Armstrong observes that for some Coursera institutions xMOOCs are a sideline. In the course he took himself he found the pedagogy weak, concluding: 'it seems pretty obvious that no one who had any working knowledge of research in pedagogy was deeply involved in the creation of the course'.

Both the first MIT course and the Coursera courses have all had terrific drop-out rates, which xMOOC providers have been trying to defend, although the media and bloggers have given Coursera the rougher ride. Another reporter found that 'some classes were so rife with plagiarism that professors have had to plead with their students to stop plagiarizing'. One reason is that in order to handle the challenge of scale, Coursera asks students to mark each other's work.

*MOOCs in perspective*

Let us put xMOOCs in perspective. People have short memories. Today's reports do not mention the unhappy experience of some US schools with online learning as recently as the mid 2000s.

In her book *Unlocking the Gates,* Taylor Walsh records how universities such as Columbia, Chicago, the London School of Economics, Oxford, Yale and Stanford thought they could make money by offering non-credit courses online. In the event they lost plenty of money before shutting these ventures down.

By that time some other universities were taking a different route. From the late 1990s MIT had experimented with putting materials associated with its credit courses on the web for free. It was announced as the MIT OpenCourseware project in 2002. That same year, at a UNESCO Forum, the term Open Educational Resources was coined.

We now join Bates and Touve in exploring some of the myths and paradoxes that surround xMOOCs.

*Quality and completion rates*

Some myths in the xMOOC maze are about quality.

One is that university brand is a surrogate for teaching quality. It isn't. Most universities that are rushing into xMOOCs gained their reputations in research. Nothing suggests that they are particularly talented in teaching, especially teaching online.

Most countries now have quality assurance agencies for higher education and one of the criteria quality auditors use is the rates of course and degree completion. They take the view that students seek not merely access, but access to success, which institutions should do everything to facilitate while maintaining standards. In this context xMOOC

completion rates of less than 10% are a disaster. The problem is that xMOOCs universities have scarcity at the core of their business model. They measure institutional prestige by the people they do not admit, so they are relaxed about high drop out and failure rates.

*Certification*

This brings us to the central paradox in xMOOCs. In most xMOOC institutions, success in the course exam, which MIT called 'very hard', does not lead to credit, but to a certificate. Therefore what determines whether a student can get a degree is not their mastery of xMOOC courses, but the admissions process to the university for regular students. This is disreputable. My late Athabasca University colleague Dan Coldeway called this the principle of 'good little piggies in, make good bacon out'.

*Pedagogy*

Let's look at pedagogy. The reporter who took a Coursera course found it had little pedagogical input. Bates argues that having individual faculty develop online courses alongside their classroom offerings, which he calls the 'Lone Ranger' approach, is unlikely to produce course of quality. Good distance teaching calls for teams that support the academics with a range of skills. With such support xMOOCs are a great opportunity to develop new pedagogy. In a world of abundant content, courses can draw from a pool of open educational resources (OER) to provide better and more varied teaching.

Bates stresses that xMOOCs are not a new pedagogy. The teaching methods 'are based on an old and out-dated behaviourist pedagogy, relying primarily on information transmission, computer-marked assignments and peer assessment'.

x*MOOCs: for what purpose?*

The final group of contradictions around xMOOCs is why they are being offered. The tension is between the ideal of making knowledge the common property of humankind, and the need to make money. No one has a clear strategy for making money out of xMOOCs for the universities involved.

xMOOC providers clutch at straws when they claim that they are the answer expanding higher education in developing countries. One promotional video for xMOOCs showed this stampede for admission at the University of Johannesburg with the implication that xMOOCs are the answer.

Bates (2012) comments bitingly: 'these elite universities continue to treat xMOOCs as a philanthropic form of continuing education, and until they are willing to award credit and degrees for this type of programme, we have to believe that they think this is a second class form of education suitable only for the unwashed masses'.

*Possibilities*

Although we have been critical of the hype and the contradictions now associated with them, MOOCs, both cMOOCs and xMOOCs are a fascinating development. They could chart new paths for higher education by improving teaching and encouraging institutions to develop distinctive missions.

Although current xMOOCs pedagogy is out-dated, this will now change fast. Competition will produce a great diversity of approaches and much healthy experimentation. Soon the media, student groups and educational research units will start publishing assessments of xMOOC courses that will quickly be consolidated into quality rankings.

Placing courses in the public domain before a global audience will force xMOOCs institutions to pay more than lip service to importance of teaching and put it at the core their missions. This is the real revolution of MOOCs. MOOCs may also have the long-term effect of helping to cut the outsize costs of higher education, which in the US have increased by 360% above inflation since 1986. But that is another story for another day!

I now hand back to Stamenka to talk about the DeTao Masters Academy in China, where we are both Education Masters.

**Stamenka Uvalić-Trumbić**

MOOCs are an example of opening up access. Another dimension of openness is opening up the curriculum to new approaches and content.

The DeTao Masters Academy, China

This is what the De Tao Masters Academy, with which I am proud to be associated, is doing in China. It is one aspect of China's policy of diversifying its education and training systems with strong emphases on internationalization and lifelong learning. The aim of China's DeTao Masters Academy (DTMA) is to enhance China's cultural, economic and social development by increasing its capacity for innovation in business, industry and education.

De Tao brings eminent professionals and experts to China, where they share the tacit knowledge that brought them to world leadership in their fields with high-level Chinese colleagues. This new model for high-level knowledge transfer is a private-sector initiative that blends traditional wisdom with the latest knowledge. Sustained partnerships with enterprises and universities are a core element of its work.

Inspired by the creative excitement of the 2010 Shanghai Expo, George Lee, an eminent business leader, developed his vision for the DeTao Masters Academy: to assemble some of the world's top talent to help China recover its tradition of innovation. De Tao has already recruited over 100 recognised thought leaders (Masters), to pass on their 'tacit knowledge' to apprentices who act as bridges to larger Chinese professional and executive communities. Many of the first group of Masters are major international figures

in architecture, design and the creative industries. This span of professional expertise will broaden rapidly as the number of Masters grows to over 1,000.

For example, DeTao is working with the Shanghai Institute of Visual Arts at Fudan University to create a cluster of expertise in support of the region's creative industries.

Let me give some examples of these Masters, starting with two from the Film Industry: Sing-Choong Foo, a Master of Special Visual Effects and Nathan Wang, Master of Music. Both are of Chinese origin but live and work in California. They already have functioning studios in Beijing.

Also in the area of music is Anthony De Ritis, a composer and specialist in electronic music, who has made a special study of Chinese musical instruments with which he creates unique compositions by exploiting the possibilities of computing.

My next example is Haim Dotan, an architect who works in both the US and Israel. Professor Dotan is a man with a mission: to achieve low cost, ecological green cities and more socially focused and culturally authentic communities.

Matias del Campo, another architect, who designed the Austrian pavilion for the Shanghai Expo, took the unusual decision to build it entirely in China from 3D models. He considers that DeTao is the 'epicentre of an earthquake' in architectural training.

Rainer Maria Latzke is a practitioner of mural art and Frescography, from Germany. He intends to collect a world heritage of mural and ornamental art and make it available in his studio. He wishes to help his students become masters themselves, using 3D production techniques.

Roger Fidler, from the USA, has a background as journalist, designer, technologist, entrepreneur and information designer. In the early eighties, he forecast that digital publishing would be the future and conceived a 'tablet' that would be portable, lightweight, and easy to use but would respect the essence of newspapers - browsing. The tablet became a reality in Steve Jobs' iPad 30 years later and Fidler received one of the very first iPads from Apple in April 2010.

I end with Timothy Jacob Jensen, the son of renowned Danish designer Jacob Jansen, who is famous for a streamlining form language playing between light and darkness. He is an artist and also a businessman who has set up a design studio for China in the De Tao complex in Shanghai.

The De Tao Masters Academy is still a very new project, but by sharing the expertise of some of the world's top professionals, it could become a unique approach to fostering innovation and creativity and increasing professionalization at the highest level of industry.

Open Educational Resources

I will now make some remarks about Open Educational Resources, after which Sir John will give an update on the Open University of China and note the implications of all that we have talked about for quality assurance and recognition.

After observing the impact of MIT's OpenCourseware project, UNESCO held a forum in 2002 to assess its potential impact on higher education in developing countries. The term Open Educational Resources was coined at this Forum, which defined them as educational materials that may be freely accessed, reused, modified and shared. In the Forum Declaration participants expressed their wish 'to develop together a universal educational resource for the whole of humanity'.

In the following years most OER activity involved communities of OER producers, but in 2009 UNESCO's World Conference on Higher Education picked up the theme and urged that more attention be paid to the potential of ICT generally and OER in particular. The UNESCO General Conference later that year reinforced this message by urging greater advocacy about OER. Both Sir John and I have been involved since 2010 in two joint UNESCO and Commonwealth of Learning projects with this aim.

The first was aimed at educational leaders in developing countries. It involved workshops in Africa and Asia and the publication of two supporting documents: A *Basic Guide to OER,* and *Guidelines for OER in Higher Education.*

Last year our focus moved to governments.

With support from the Hewlett Foundation we were able to survey the world's governments about policies and uses of OER. The results were analysed by Sarah Hoosen in South Africa who reported that:

*"There appears to be great interest in OER across all regions of the world, with several countries embarking on notable OER initiatives. Indeed, the survey itself raised interest and awareness of OER in countries that may not have had much prior exposure to the concept."*

We also commissioned Neil Butcher and Sarah Hoosen to do a report on the business case for OER. This revealed that the idealism that motivated the early work on OER is now supported by solid economic arguments.

We also held regional policy forums around the world in order to encourage dialogue about OER between governments and practitioners, to promote the World OER Congress, and to develop, in a consultative and iterative way, a Declaration on OER to be submitted to the Congress. We held these forums in all UNESCO regions and they produced some good discussions and very helpful proposals for the Paris Declaration on OER. A final draft was presented to the Congress and approved by acclamation. The Congress also allowed governments and practitioners to share experience of OER on a worldwide basis.

We shall not take you through the Declaration, which is on the UNESCO and COL websites, but simply note the last recommendation, the punch line if you like, that encourages the open licensing of educational materials produced with public funds. Declarations such as this one are not binding on governments but experience shows that they have significant influence on government policy making.

To conclude on OER we can say that thanks to the efforts of practitioners and governments worldwide the idea of open licensing is rapidly gaining ground for both idealistic and economic reasons. Governments will be major beneficiaries of open licensing thanks to the potential of OER to improve the cost-effectiveness of their large investments in education.

**Sir John Daniel**

The Open University of China

Our final example of ICT and Open Education is probably the most important open and distance learning project underway in the world today, namely the transformation of the China Central Radio and TV University system and its affiliated provincial RTVUs into the Open University of China.

The origins of China's TVU system go back over 50 years and it has been through several phases during that time, reflecting the evolution both of technology and also of China itself. When I did a case study of the system for my *Mega-universities* book in 1995 it was already the world's largest distance learning system, although I had difficulty calculating just how many millions of students were enrolled with it.

Today it is undergoing a thorough makeover as the name 'Open University' replaces 'Radio & TV University' for the central operation and those provincial RTVUs that engage with the reform. We think it is fair to say that for a long time the RTVU system was regarded as a second-class system by the government itself. However, a look at the Strategic Plan suggests that is changing now that lifelong learning has become the priority in China's educational agenda.

Stamenka and I were privileged to visit the new headquarters of the Open University of China two weeks ago and last week I took part in a meeting in the UK between the leadership of the OU of China, the UK Open University and Chinese officials to develop a new phase of collaboration.

Time only permits us to give highlights of the Strategic Plan here. OU China is clearly an institution on the move under dynamic and determined leadership. As always in China the numbers are staggering. OUC is a key plank in the government policy of growing the number of jobholders receiving non-degree education to 35 million by 2020 and the number receiving degree education to 4.5 million.

The OUC will combine degree and non-degree education and make full use of contemporary information technology in developing an ultra-modern distance education system through an 'open flexible multi-functional online platform' that can reach every household. It has established a National Digital Learning Resource Centre and 109 regional sub-centres, which have accumulated over 18,000 high quality courses and 40 tera-bytes of learning resources.

To do this it will make alliances throughout Chinese society and create a national learning supermarket, a credit bank that integrates different styles and levels of education and training. I am sure we shall all be watching with great interest as the Open University of China undertakes this audacious transformation over the coming ten years.

New Challenges for Quality Assurance, Accreditation and Recognition

Let us end with a few sentences about quality assurance, recognition and accreditation.

Not many years ago, in a speech about the multiplication of quality assurance agencies around the world Judith Eaton, President of the US Council for Higher Education Accreditation, described it as 'the spread of the familiar' and worried that there was not enough variety in approaches to QA and accreditation.

The four examples of new ways of opening up education that we have described show how right she was. Each calls for new types of quality assurance, recognition and accreditation. We leave you with the question: can the systems in place adapt to these new demands and, if not how can we develop systems that do?

To progress this work the US Council for Higher Education Accreditation, CHEA, has recently created an International Quality Group in which Stamenka is centrally involved.

Thank you.