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**Making Sense of MOOCs:  
The Evolution of Online Learning in Higher Education**  
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Introduction

It is a pleasure to be in Cyprus again. Thank you for inviting us to this important event. I have prepared this communication with my former UNESCO colleague Stamenka Uvalić-Trumbić. Sadly she cannot be with us because of family commitments but she sends you her warm greetings. Our title is *Making Sense of MOOCs: The Evolution of Online Learning in Higher Education*.

To make sense of MOOCs and understand the evolution of online learning in higher education we must go back to times long before the Internet was invented. Only in this way can we understand the gradual evolution of open, distance and online learning in higher education and avoid over-excited talk about sudden revolutions.

We shall look first at the evolution of methods for teaching at a distance and then at how the choice of the content of learning has increased. We shall conclude by commenting on what constitutes quality in online learning.

The Evolution of Distance Teaching

We shall start right here in Cyprus because there is a link between this island and the origins of distance learning. That link is Saint Paul. He came here with Saint Barnabas, a Cypriot Jew who is now the patron saint of this country. We have no evidence that Saint Paul wrote a letter to the Christians here in Cyprus, but his letters to other young churches around the Mediterranean were an early form of distance learning using letters and donkeys as the media to carry the message.

Priests would read out the letters in church and provide commentary, perhaps with discussion. Saint Paul's system was open. There were no barriers to attending church and engaging with his thinking – unless you were discouraged by the danger of being thrown to the lions during one of the periodic Roman crackdowns on Christianity. His programme of distance learning had a massive impact. We can argue about Saint Paul's importance to the worldwide spread of Christianity, but his early system of correspondence education is one reason that membership of the Christian churches today makes the numbers of people taking MOOCs look trivial.

Before we move away from Cyprus let us urge you to take advantage of being here to appreciate what a crossroads of civilisation this island has been. This second century Roman mosaic of a peacock, right here in Paphos, symbolises perfectly the way that cultures have merged here. The peacock was important in Greek mythology, for the

Romans it was a symbol of abundance and for Christians it was a representation of the resurrection.

Saint Paul's technology of correspondence education gave the Church doctrinal consistency. But then a new technology created doctrinal controversy. That new technology, printing, came over a millennium later. The fastidious hand copying of manuscripts was no longer necessary. The written word came directly into the hands of ordinary people. By giving the written word to individuals, printing introduced another important concept in the evolution of education across space and time: independent study. People could now make up their own minds about what a book meant, which led to the upheavals of the Protestant Reformation and less deference to authority.

There is a charming Korean saying that there is no nicer sound than the rustle of turning pages as someone reads a book late at night. The broad impact of printing was a first example of the truth of the famous statement by Marshall McLuhan that 'the medium is the message'.

The next key technological advance made the medium of print much more powerful. This was the development of railway networks in the nineteenth century. You could now move print rapidly and reliably over distance. Postal services were transformed. When postal systems allowed documents to be exchanged more readily, education reacted quickly. The Penny Post, the first universal postal service, was introduced in Britain in 1840. Isaac Pitman exploited it immediately to teach shorthand by correspondence. He launched the commercial correspondence education industry, which defined distance education for more than a century.

In the 20<sup>th</sup> century various new technologies came and stayed: radio, film, television, computing and computer assisted learning. Enthusiasts predicted that each new medium would revolutionise education. In 1940 the motion picture was hailed as the most revolutionary instrument introduced into education since the printing press. In 1962 programmed learning was the first major technological innovation since the invention of printing. Not long afterwards it was the impact of computers.

Note that these prophets all took printing as their touchstone, not the previous technological marvel. Wise practitioners conclude from this story that there is no magic educational medium and doubt that there ever will be. No single technology is revolutionary but a combination can be. By the 1960s, the blending of technologies had begun to create a rich communications environment.

At the foundation ceremony of the UK Open University in 1969 the Chancellor, Lord Crowther, captured this in these words:

"The world is caught in a communications revolution, the effects of which will go beyond those of the industrial revolution of two centuries ago. Then the great advance was the invention of machines to multiply the potency of men's muscles. Now the great new advance is the invention of machines to multiply the potency of men's minds. As the steam engine was to the first revolution, so the computer is to the second."

It is hard to overstate the impact of the UK Open University. Established with strong political support, it created a new synthesis of the technological, pedagogical and ideological strands of distance learning. This novel combination attracted worldwide

attention. The OU slogan ‘open as to people, open as to places, open as to methods and open as to ideas’ encapsulates this. ‘Open to people’, means that there are no admission requirements for undergraduates. Today the Open University has 250,000 enrolled students.

Yet despite its size it ranked 5<sup>th</sup>, one place above Oxford, in national assessments of teaching quality until the elite universities, which did not like this form of assessment, pleaded successfully with the authorities to stop it! This table is nearly ten years old because that was the last time teaching quality was assessed. Note also that the Open University came top in the 2012 nation-wide assessment of students’ satisfaction with their universities and has never come lower than third in this annual survey.

We conclude from this first, that you can deliver high-quality education to large numbers using technology and, second, that using media in education is an evolutionary process.

The Open University has not changed its mission of openness to people, places, methods and ideas. However, between 1970 and 2010 the way that it expressed and implemented those values steadily evolved. C.S. Lewis once wrote: “Humanity does not pass through phases as a train passes through stations: being alive, it has the privilege of always moving yet never leaving anything behind.” That is an important principle in the use of media in education.

A great strength of the Open University is that ‘it is always moving on yet never leaving anything behind’. In the 1970s it revolutionised correspondence education and used broadcast TV and radio to fulfil its mission. Today it is the largest presence on iTunesU, with 60 million downloads of its material in the last five years, one sixth of them in China. The large majority of its 250,000 students engage in online learning leading to academic qualifications. 60,000 of those students are outside the UK, but there are also a million students around the world who are taking courses from local institutions that include Open University content – such as items from iTunesU.

### Choice of content

Let us now examine how easier access to learning content has contributed to the development of online learning.

We shall look at three strands of this. The first is the idea that students can design the content of their courses and programmes themselves. The second is the development of the open content movement. The third, which draws on both these concepts, is the phenomenon of MOOCs.

#### *Design your own programme*

Let’s start with letting students design their curricula. In the 1970s, at the same time that the Open University opened, the great American educator Ernie Boyer, then Chancellor of the State University of New York, set up Empire State College with the aim of opening up the curriculum. It allowed students to work with mentors to invent their own courses of study, captured in its slogan ‘my degree, my way’. With sound mentoring students could design credible programmes and courses for themselves.

In the last ten years the tools available to students for doing this have expanded dramatically. One reason is the emergence of the open content movement. The principle

of openness has gained ground steadily in recent decades. Three key steps were the open sources software movement, the campaign to give open access to the results of research conducted with public funds and, most recently the Open Educational Resources movement.

### *Open content and MOOCs*

The notion of making academic content freely available for re-use and adaptation made news in the late 1990s when MIT started putting its lecturers course notes on the Web. UNESCO held a forum in 2002 to explore the implications of MIT's initiative for developing countries. The Forum coined the term Open Educational Resources (OER) and defined them as educational materials that may be freely accessed, re-used, modified and shared.

Ten years later UNESCO held a World Congress, which approved the Paris Declaration on OER. Its key recommendation is to encourage the open licensing of educational materials produced with public funds. Some governments are already taking the Paris Declaration and the economic benefits of OER seriously. For example, my home province of British Columbia will now offer free, online open textbooks for the 40 most popular postsecondary courses. Clearly the open availability of so much quality academic content makes it much easier to achieve Ernie Boyer's dream of a world where students engage more actively in designing their own curricula.

Now a global mechanism to facilitate this is emerging, the Open Education Resource university. This is a partnership of like-minded institutions committed to creating pathways for OER learners to gain academic credit through the formal education system. The original set of founding partners is steadily growing. Newer members are giving it increasingly global coverage and its launch event will take place in Canada at the end of next month.

Finally, on the theme of opening up content, let me say a word about MOOCs. This could be a whole talk in itself because higher education is still obsessing about MOOCs, so let us be brief and pithy.

The question 'what's a mook?' was asked in Martin Scorsese's 1973 film *Mean Streets*. For years, "mook" existed in English as an obscure slang term referring to "a foolish, insignificant, or contemptible person". Asking the question in the film led to a punch-up in the bar. The re-emergence of the term MOOC as an acronym for Massive Open Online Courses may not have led to a punch-up among universities, but it has certainly created competition as institutions rush to join the MOOC herd.

MOOCs have generated more media interest in the use of technology in higher education than any development since the Open University. Being massive, open and free they recall Saint Paul's letters! But we believe that the question for us today is how MOOCs will contribute to the development of online learning generally. Already, as institutions around the world pile into MOOCs, the definition of a MOOC has become much more fuzzy. One wag commented that every word in the acronym is now negotiable! Let's recall a little history.

The term MOOC was invented in Canada in 2008 to describe an open online course at the University of Manitoba. The course, *Connectivism and Connective Knowledge*, was presented to 25 fee-paying students on campus and 2,300 other students from the general public who took the online class free of charge.

The course was inspired by Ivan Illich's philosophy, in his book *Deschooling Society*, that an educational system should: 'provide all who want to learn with access to available resources at any time in their lives; empower all who want to share what they know to find those who want to learn it from them; and, finally furnish all who want to present an issue to the public with the opportunity to make their challenge known'.

In this spirit '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 courses were a logical development of the Open Educational Resources movement. Those early MOOCs, which are now called cMOOCs (for 'connecting' MOOCs), are very different from the next phase of MOOCs that hit the headlines last year.

These are called xMOOCs after edX, an MIT, Harvard and UC Berkeley consortium that offers them. Those first xMOOCs had nothing to do with Illich's liberal educational philosophy and little relation to the pioneering cMOOC courses. Someone said they represented the intersection of Wall Street and Silicon Valley. However, MOOCs are now evolving rapidly, leading to some blending of the cMOOC and xMOOC approaches.

Exactly a year ago I spent a month as a visiting fellow at the Korea National Open University in Seoul. They asked me to write a research paper so I gathered together some of the early commentary on MOOCs – the phenomenon was too new to talk of research. I gave my essay the title: *Making Sense of MOOCs: Musings in a Maze of Myth, Paradox and Possibility*. How do we think of MOOCs a year later?

The reason that MOOCs hit the headlines was that they were offered by prestigious US universities. After all, many institutions have offered distance-learning courses to very large numbers of students for years. Open universities in India and China have enrolments in the millions. But those are open universities. The first universities to offer xMOOCs were elite universities, which have always severely restricted student access. The paradox of seeing these universities with highly selective admission processes suddenly offering open enrolment intrigued the media.

Putting it another way, it was a surprise to see institutions with scarcity at the heart of their business models suddenly embracing openness. The key paradoxes about MOOCs stem from that fundamental contradiction. Last year no universities gave credit for the successful completion of a MOOC. They expressly did not want to decrease the rarity value of their credits and degrees.

This leads to some silly situations. MIT's first MOOC received a lot of scrutiny. There was much criticism of the enormous dropout rate. Less than 5% passed the course. Anant Agrawal, who was the course leader and now heads the edX MOOC consortium, confirmed that the final exam was 'very hard'. He pointed out that although very few people passed, it would take 40 years for that number of students to pass the course on campus.

Reporters also discovered that among the 340 people who got a perfect score in the exam was a 15-year old Mongolian boy. When I was at MIT in June for a conference on MOOCs I discovered that he has been admitted to MIT to start this year. I asked if he would be given credit for the course in which he had gained full marks and was told that he would have to take it again. Perhaps you find that reasonable, but it seems ridiculous to me.

All MOOCs have high dropout rates and very low pass rates. The figures may improve somewhat over time as the novelty wears off but it remains a serious problem. Of course, a key reason for these dismal figures is that the courses are open and free, so, in the early days particularly, they attracted a lot of ‘tourists’ from other institutions looking to see what the fuss was all about.

Nevertheless, another reason for the figures was that in contrast to the cMOOCs, which were all about student participation and connectedness, the early xMOOCs adopted an old-fashioned uni-directional behaviourist pedagogy based on short videos and quizzes. As one reporter noted: ‘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’.

An important reason, of course, was that constructing the courses like this with little videos and quizzes made fewer demands on the busy faculty members at these research universities. Producing good distance learning courses and supporting the students who take them is a lot of work. It was not the intention of the xMOOC universities to launch serious distance learning operations because this would reduce the scarcity of their degrees.

A final point to make under the heading of paradoxes is that there is, as yet, no business model for MOOCs. They cost money to produce, even when done on the cheap. Universities have to pay to put them on robust servers, since the systems required to manage tens of thousands of learners simultaneously are beyond the capability of most institutions. Yet since MOOCs are offered free there is no direct revenue stream for the universities concerned. The elite universities that began the MOOCs craze have large endowments and deep pockets, but even they – and to an increasing extent their academic staff – are beginning to ask why are doing MOOCs. Professor Tony Bates, an astute observer of the educational technology scene, predicts a shake out in 2014.

So where will MOOCs lead higher education? Will the direction be positive or negative? There is good news and bad news. Positive aspects are that the press coverage of MOOCs and the involvement of elite institutions have created greater public awareness of open, distance and online learning. We may also be seeing the slow emergence of a new pedagogy to replace lecturing. The bad news is that few people complete MOOCs successfully and even they do not get credit. Furthermore, without a revenue stream, the universities involved have little incentive to raise their game.

These upsides and downsides bring us back to the fundamental contradiction of MOOCs, which is the tension between offering online learning openly and recruiting regular students selectively. The key to getting a degree from elite institutions is to be admitted. It is more difficult to secure admission than to exit with a degree. For such institutions to adopt the opposite open-university principles of open admission and rigorous exit requirements would require a tremendous paradigm shift.

We stress that this shift is purely an issue of mentality, not of media, technology or practicalities, because the open universities have shown that degree-credit programmes can be offered successfully to thousands of students using online methods.

So what is the way out of the MOOCs maze? It seems to us very simple – and indeed it may already be happening. MOOCs should be seen as a precursor – a test run – for the offering of regular credit programmes online at scale. This practice has been growing steadily for years and has been well documented by Tony Bates in his annual surveys of the scene. He believes that 2013 is a breakthrough year for both the volume and the quality of regular online offerings.

It is hard to get precise figures for the numbers of students taking courses online because many universities do not report them separately. However, since it is forecast that 80% of US students will take some of their courses online in 2014, it may well be that worldwide, the number of students taking regular courses online already outnumbers those taking MOOCs, despite the fact that the MOOC numbers attract all the hype.

I noted that the transition from MOOCs to regular online courses might be happening already. New players are joining the MOOCs space and some claim to offer something a bit different. Most are close mouthed about their plans but let us list some of these players.

*FutureLearn* is the ambitious British MOOCs play that will be launched any day now. It claims that it will draw on the experience of the Open University and the BBC to bring much better pedagogy to MOOCs. It says that it will give credible recognition to student learning.

*OpenUpEd* is a venture of the European Association of Distance Teaching Universities and offers 60 courses in 12 languages.

*Schoo* is a Japanese MOOC platform, funded with venture capital, which aims to capture one million learners by the end of December.

*Open2Study* is a partnership of eight Australian universities offering an eclectic range of courses.

*Veduca*, in Brazil offers a MOOC from the University of Sao Paulo and curates educational videos from the US, adding subtitles in Portuguese.

*Iversity* offers ten MOOCs in Germany and offers prizes for the best proposals.

*NPTEL*, in India, brings together the prestigious Indian Institutes of Technology and Science (IITs and IISc). It already offers 200 courses, has 1,000 planned and will certify students on a large scale.

### Quality in online teaching and learning

So let us end by asking what must happen if MOOCs are to stimulate rapid developments the teaching of regular programmes on line? The deceptively simple answer is that universities must develop policies for doing it and execute them determinedly.

Nearly all universities that offer MOOCs do so with a partner, either a commercial organisation (e.g. Coursera) or a non-profit body or consortium (e.g. edX. FutureLearn). The main, but not the only reason for this is that operating at the scale of MOOCs requires IT systems that exceed the capacity of any single university, with the possible exception of the larger open universities.

When an institution offers regular programmes online with course enrolments in the thousands rather than the tens of thousands such partnerships may not be required for the purpose of maintaining IT systems but may be desirable anyway. A number of organisations offer partnerships for such purposes and we are advisors to one of them, Academic Partnerships or AP. We took on this role because AP's vision of increasing access to quality higher education while reducing its cost resonates with our own values.

AP's aim is to lead students into online award-bearing programmes and have them graduate at rates at least as good as those of their fellow students on campus. The foci of AP's contribution, when it partners with an institution with this aim, are quality and viability. This refers to the quality of the transformation of courses into online formats, the quality of the organisation of student support, and the viability of the model of lower tuition fees and larger enrolments.

In that context we worked earlier this year with two South African authors, Neil Butcher and Merridy Wilson-Strydom, to develop a *Guide to Quality in Online Learning*. Academic Partnerships published it in June in both English and Chinese.

We are especially pleased that both versions are Open Educational Resources under a Creative Commons CC-BY-SA license. We have made hard copies available free at this conference and hope that you will find them useful. The Guide draws on examples from all over the world and aims to help the process of bringing online learning into the mainstream of higher education. We hope that MOOCs, despite their current contradictions, will prove to be a catalyst for that process.

#### Reference

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