

Old Wine in new Bottles?: Exploring MOOCs



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It is a real pleasure to be here at the University of the West Indies after my previous visit in 2011 when my distinguished predecessor Sir John Daniel gave a public lecture at this campus. I am very grateful to Prof Clement Sankat, the Campus Principal who also represents the Caribbean on our international Board of Governors and chairs our Audit Committee for inviting the Commonwealth of Learning colleagues and our Focal Points.

But first a word about the Commonwealth of Learning. As you know, the Commonwealth of Learning, is an intergovernmental organisation established by Commonwealth Heads of Government in 1987. We are based in Vancouver, Canada, have a regional office for Asia in New Delhi and funded by voluntary contributions from Commonwealth Member States. You will be pleased to know that Trinidad & Tobago has been a regular and consistent provider of both financial and intellectual support.

What does COL do? We help Commonwealth Member States and institutions to harness the potential of educational technologies for expanding access to education and training. Our slogan is 'learning for development'.

Last year we celebrated twenty five years of service to the Commonwealth. COL has constantly reinvented itself to address the priorities and needs identified by Member States.

My topic today is 'Old Wine in new Bottles? Exploring MOOCs'. Let us first look at the context of higher education today and review the different developments that have emerged over the years to respond to the challenges of access, quality and costs. I will then look at the MOOC effect and will conclude with a review of implications that MOOCs have for transforming higher education especially in the developing world. This will help us answer the question whether MOOCs are old wine or a new brew.

Let me briefly touch on 3 factors that impact HE today: the unprecedented demand, the escalating costs and the unimaginable pace of technological change.

In 2007, there were 150 million tertiary students globally, a 53% increase over 2000. We find that the number has increased to 165 million in 2012 with an estimate that this is expected to rise to 263 million in 2025.

What does this mean in real terms? If we are to accommodate the children who will reach enrolment age between now and 2025, we will need to build four universities with a capacity of 30,000 every single week. How many new universities were built in the Caribbean in the past year?

There has been a substantial increase in tertiary enrolments in the Commonwealth countries of the Caribbean and this trend will continue especially in the context of the CARICOM target of 60% APRs for the region.

In spite of this huge expansion in Higher Education, the APRs in the developing world are far below those in the OECD countries. For example, in the Caribbean the APRs remain at about 26% while in South Asia and sub Saharan Africa the percentage drops to below 15.

Second, the costs of HE have risen exponentially. An article in *The Economist* asks whether higher education is still worth it? The costs of higher education have risen way above inflation rates in the past three decades, making HE increasingly unaffordable. This may be the American situation but quality HE is still beyond the reach of many in the developing world.

Government funding for HE has increased globally. In the US, federal funding for HE has grown from \$56 billion in 2000 to \$153 billion in 2010, a threefold increase when the number of students grew by only 33%. This is prompting policy makers to seek more accountability and value for money in the US.

Has this increased investment resulted in better quality higher education? A 2011 study found that 36% of college graduates in the US did not show any significant cognitive gains over four years and that half the employers surveyed said they had trouble finding suitable graduates to hire.

At the Time Summit on Higher Education last year, the US Secretary of Education, Arne Duncan called for more accountability through the development of a university ratings system—one factor of which would be the earning power of an institution's graduates. So we note that as both the demand and costs increase, there will be an increased need for quality and relevance in higher education. Do we know how much our graduates earn?

As governments and policy makers seek to expand the coverage of higher education, reduce costs and improve standards, it is clear that alternative approaches are needed. In the current economic climate, traditional brick and mortar solutions will not be possible. There will be a greater focus on the use of technologies.

Yet there is a digital divide between the different regions of the Commonwealth. Compare the internet access of over 80 % in Europe and North America with the 30% in the Caribbean with even lower figures for Asia and Africa.

However, mobile devices are proving to be a game-changer. While broadband access remained stable in the Caribbean over the past decade, the number of internet users has increased, thanks to the phenomenal growth of mobile telephony.

The unanticipated and rapid rise of cell telephony and affordable tablets, are making a contribution towards turning the digital divide into a dividend. As of June 2013, more Tablet computers and powerful and affordable smartphones were bought than laptops and desktops.

The issues of demand, affordability and access to technology have all come together to generate a response in the form of MOOCs, something which was not possible during the days of the dotcom boom, just a decade ago.

But even when technologies were not so advanced, higher education has found the ways and means to reach out to newer constituencies. The University of London, or the People's University, opened up education to people who would otherwise never have had the opportunity. It introduced the notion of higher education without boundaries in 1858—not just geographical boundaries, but also boundaries of social class, aspiring to reach the 'shoemaker in his garret'.

Its first external exams in the Caribbean were held in Queen's Royal College, Port of Spain in the 1870's

The External Degrees became an influential model for the foundations of many universities in the colonies and led to the establishment of the University College of the West Indies in 1945.

At the same time access to higher education was being opened up through correspondence course institutes. Until the second half of the 20th century, correspondence education brought great benefits to large numbers of people in the Caribbean. In this model the primary technologies were print and post.

The UWI is no stranger to open and distance learning and its various bodies from UWIDITE, which used audio-teleconferencing to UWIDEC and the Open Campus have evolved and grown with developments in technology.

Forty years ago, the Open University, UK was launched to open up education to large numbers of people. That was when the term 'open education' became popular and the model captured the imagination of policy makers around the world. The success of the British Open University led to a huge expansion in open universities, particularly in the developing world.

There are 28 open universities in the Commonwealth and the new wave of growth is emerging in Africa. Asia alone has over 70 open universities and the numbers continue to grow.[1] Interactivity was a key aspect of open universities with a higher level of personalisation through the use of ICTs leading to more flexible and blended approaches.

Why are open universities so popular with policy makers? One reason is lower costs. The annual cost per student at the Korean National Open University is \$ 186 as compared to nearly \$3000 for a campus student. Similarly the costs for STOU students are one third compared to a campus university.

A study by the National Knowledge Commission, India, shows that mega-universities, which achieve economies of scale cost substantially less than campus institutions. Pakistan's AIOU costs 22%; China 40%; India's IGNOU 35% and the OUUK, 50% as compared to campus universities.

What of quality? In 2012, the Open University of the UK ranked first in student satisfaction. In addition the UKOU ranked fifth among the 100 universities surveyed by the Quality Assurance Agency (QAA) in the UK and was one rank higher than Oxford University.

With more access to technologies, there is an increasing trend towards online learning, especially in the developed countries. In 2012, nearly seven million students were taking at least one online course accounting for nearly 33% of all US Higher Education students.

While the aggregate growth rate is 7.6% globally, interestingly, Asia has the highest growth rate at 17.3% with **Vietnam** and Malaysia leading the continent in elearning. Latin America is not far behind at nearly 15 per cent with Brazil and Colombia registering the highest growth.

And in 2008, came the MOOCs. According to the evolving definition on Wikipedia ‘... a MOOC is a type of online course aimed at large scale participation ... MOOCs are a recent development in the area of distance education, and a progression of the kind of open education ideals suggested by OER’. We can see a natural evolution here from the early days of the external degree.

MOOCs are at an early stage of development. Several terms are still used in a flexible way. This slide shows a number of frequently used terms and their broadly accepted meanings in practice. A key characterization relates to scalability or community networking. Emphasize scalability and you get xMOOC; with the emphasis on community one talks of cMOOCs. There is no particular definition of what is massive. We see it more as the theoretical capacity of a MOOC platform to handle large to very large numbers of sign-ups, in thousands if not in tens of thousands.

Three well-known MOOC platforms are the edX, Coursera and Udacity, all operated from the USA. FutureLearn, launched last year, is designed and operated by the OU UK. It is interesting that MOOCs are being led by technologically well-endowed research institutions rather than Open Universities with a few exceptions.

An Observatory of Borderless Higher Education report sums up that MOOCs are usually free of charge; designed for large numbers; designed to encourage peer to peer learning and meant to award completion certificates rather than course credits. This was in 2012—some of these elements, such as the awarding of course credits are already beginning to change. This is such a rapidly evolving terrain that its difficult to generalize.

Stanford University offered a free course in artificial intelligence which registered 160,000 students from nearly all countries of the world, of which 23,000 completed the course. This is a 15% pass rate. The general trend has been that MOOCs have registered low pass rates of 10-15%.

The MOOC effect is unexpected in some sense. 270, 000 people signed up for the Computer Science (CS) course offered by Udacity which is much larger than the total number of learners who aspire to do CS courses in nearly 3000 degree granting institutions in the USA.

A study in early 2013 in IRRODL surveyed MOOCs in 2012 and summed up the distribution of subjects covered. The Science Technology and Business topics were predominant and the survey showed that the maximum number of learners came from the US and from European countries.

In a recent article in Nature, it is interesting to note that of the learners signing up for the big three MOOC’s, while the US leads in terms of numbers, developing countries such as India and Brazil contribute about 14 percent of the sign ups. While MOOC’s may not yet have caught up in Africa, their

viability for emerging economies is becoming clearer. It is significant to note that China is not yet present in a significant way, possibly because of the language barrier, ie English.

A more up-to-date examination of subject matter of MOOC courses (July 2013) shows that about 28 percent belong to arts and humanities. Predominance of STEM and Business topics is along the expected lines and the presence of a significant number of arts and humanities courses is worth noting. This shows that there are no subject-related barriers to MOOC offerings.

What of MOOCs in the developing world? Tsinghua University, which is one of the top research universities in China is offering MOOC in cultural studies in Mandarin and these courses are free and meant for self-enrichment rather than certification

The NPTEL project in India is led by the government to provide job-related skills to young people in the STEM subjects. These are free and students only pay about \$35 if they appear for an exam towards certification.

MOOCs have so far been offered in HE. What about MOOCs in Learning for Development (L4D), which is COL's core business? To explore this, COL in partnership with IIT-Kanpur offered a MOOC on mobiles-for-development, covering technology as well as agriculture, mobile learning, inclusive finance and banking. This interdisciplinary open course attracted 2282 registrants from 116 countries, 62% of whom were active participants. The six-week course was completed by over 400 participants.

Interestingly, the majority of learners surveyed indicated that they would have taken the course even if no certificate was offered this is very similar to the experience of the MOOCs offered by the big three.

What is the business model if the institutions do not charge fees? Even when fees are charged for exams, they are minimal. What emerges is that venture capital or generous endowments are required to build and launch MOOC services on scale. In the absence of published revenue information, a few models are emerging. From the big three MOOC companies that have recently developed, fees are being charged for services, the costs are being shifted from the student to the institution or to future employers.

Will MOOCs transform the way we teach and learn? The question of pedagogy in MOOC based learning has generated a great deal of discussion. Critical observers have made a distinction between xMOOCs and cMOOCs. xMOOC's focus on scale, present the teacher as expert and are behaviorist.

cMOOC's can be thought of as connectivist, relying more on student-student interaction. Both methods have their own advantages.

A significant difference that is often cited in MOOC-based learning is the emergence of the flipped classroom as the standard practice. But is this not standard practice in ODL institutions? Another significant development contributing to teaching is the availability of huge masses of learner data that can be analysed for continuous improvement and better outcomes. This also allows a teacher or mentor to personalize the interaction with a learner.

Credentialling is still an open concern in this early stage of MOOC's. Some options available are presented. While badges might suit certain types of courses, credit might require invigilated examinations.

HE institutions are divided about offering credit to MOOC learners. A survey conducted by the Chronicle of Higher Education asked the professors running the MOOCs if they believed that students who succeed in their MOOCs deserve course credit from their institution, 72% said no. What does this say about the quality, rigour and perceptions of the MOOC offerings?

Since MOOCs are offered globally and to a diversity of learners, the question is can one size fit all? What of student verification and academic integrity? Is a peer reviewed assessment acceptable? Is there a delinking of the institutions which teach and the institutions which credential? Will this result in the rise of Degree Granting Bodies or DGB's?

Finally, are MOOCs old wine in new bottles or a new brew?

The technology is new. MOOC platforms today provide for excellent online networking opportunities among the learners and between the learner and the tutor. In addition, good quality OER can enhance the learner-content interaction. The free and open source platforms like Open edX can be configured to enhance the learning experience of large numbers through peer to peer and teacher-learner interactions. George Siemens, an advocate of cMOOCs says, 'What we found that in a MOOC, instead of the classroom being the center, it becomes just one node of the network of social interactions'. The emphasis is on learner-learner interaction and on facilitating the learner to become the producer rather than the consumer of content. Is that not one of the aspirations of the OER movement?

The use of Learning Analytics, a component of the MOOC platform, can improve teaching-learning by providing more customized learning pathways. The data generated through the Learning Analytics can develop effective and flexible systems for credit transfers and the recognition of qualifications.

Learning analytics can help us to collect and analyse data about how learning is taking place. Because of this, predictive systems can be developed to identify potential dropouts and provide the necessary support to help them overcome their difficulties. It can also highlight those areas where many students struggle so that the tutors get the feedback to take remedial measures. The advantage is that this creates a more personalized learning experience by providing continuous feedback and has resulted in improved outcomes.

At the moment we have the big three MOOC companies and there is a scramble for joining the movement. However, there is NO compulsion for developing world institutions to rush into any consortiums. Any University can set up its own or shared platform based on Cloud services or reliable local hosting services. OER can be used, wherever possible to lower costs, and provide high quality content.

The use of MOOCs can introduce a higher degree of openness to higher education institutions. Open platforms, open content and open interactions across the globe can make education truly open.

HE institutions can 'unbundle' their services and offer smaller more needs-based options. There is a division of opinion among the faculty regarding the value of MOOCs—will only the rock stars of academia be able to offer successful MOOCs or will the average faculty member ride the MOOC wave to stardom? Either way, what will count eventually is the quality of the teaching-learning experience and will separate the 'best' from the 'rest'. However, at the moment, the MOOCs space is largely dominated

by elite North American research institutions and ‘star’ professors. Most developing world institutions would find it a challenge to compete with these global ‘brands’. But instead of allowing this to deter them, the institutions in developing countries must separate the ‘brand’ from the ‘technology’ and seize the opportunity to harness the power of the platform to offer needs-based programmes in niche areas of their competitive advantage.

A recent research conducted by the university of Illinois on the MOOC pedagogy adopted by Coursera and Udacity by Karen Swan et al (Nov 2013) concludes that ‘while Coursera courses followed a format that resembles the traditional lecture/text – testing routine of traditional university courses spread over multiple weeks with hard deadlines, Udacity courses all followed a format that resembles nothing so much as the programmed learning approach developed by B. F. Skinner (1954).’ Is this not the pedagogy that we have been familiar with for years?

The second recent development referred to by Harvard academics as ‘post-MOOC’ is that of the ‘SPOC or the small private online courses’, a refined version of its massive predecessor, offered by the Kennedy School of Government at Harvard. It is still free, delivered online, but restricted to smaller numbers, possible 500, through a selection process which includes a written assignment and submission of academic credentials. The smaller class size will allow for more rigorous assessment. We can see the potential to reach diverse constituencies that open education has always aspired to reach.

ICDE convened a Think Tank to develop concrete ideas relating to building the foundations for MOOCs and practical suggestions for their use. The recommendations relate to equity and social inclusion; diversity and contextual aspects and innovation and quality. Sounds familiar to distance educators?

Stephen Downes, one who first offered a MOOC with George Siemens at Manitoba, outlines the design principles of MOOCs: autonomy; diversity, openness and interactivity. These are the principles that academics learn when they first enter the field of distance education.

To conclude, let me say that contrary to what Thomas Freidman says, MOOCs are not a revolution but an evolution of existing principles and practice—of access, costs, quality and equity. At present, MOOCs are being used for continuous professional development and training in the developing world and have the potential to offer lifelong learning opportunities for all. The MOOC technologies provide us with the opportunity to transform our pedagogic practice and finally, MOOCs will complement and supplement rather than replace existing higher education institutions.

With that, thank you for your kind attention.

References

[1] C Latchem & Insung Jung: Distance and Blended Learning in Asia, NY London: Routledge, 2009, p.xiii