Universities in an Era of Open Education

Keynote Address

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by
Professor Asha Kanwar
President & CEO
(co-written with Dr. Venkataraman Balaji)
Commonwealth of Learning

It is an honour to speak to such a distinguished audience and I am very grateful to Prof Grace Alonso, the Chancellor for the invitation. Dr Patricia Arinto has been a very meticulous programme chair and her regular communications were most helpful. The University of the Philippines Open University has been designated the National Centre of Excellence in Open Learning and Distance Education in recognition of its pioneering work in opening up education to the many who otherwise would never have had the opportunity. So it is appropriate that UPOU is taking the lead in organising this conference.

My topic today is 'Universities in the era of open education'. 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 impact of recent developments such as Open Education Resources or OER and the Massive Open Online Courses or MOOCs and will conclude with a review of the implications that these developments have for transforming universities, especially in the developing world.

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?

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 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.

Have the increased costs 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.

We have seen an unprecedented growth in technology. 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. The unanticipated and rapid rise of cell telephony and affordable tablets, are making a contribution towards turning the digital divide into a dividend.

As governments and policy makers seek to expand the coverage of higher education, reduce costs and improve standards, it was clear that alternative approaches were needed. Traditional brick and mortar solutions would not be enough.

Over forty five 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.

Asia alone has over 70 open universities and the numbers continue to grow.[1] The new wave of growth is emerging in Africa.

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 estimated to be $ 186 as compared to nearly $3000 for a campus student. Similarly the costs for STOU students are one third compared to a campus university.

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.
The founding chancellor of the Open University of the UK, Lord Crowther defined openness in relation to people, places, methods and ideas. This forms the basis of what we mean by open education. Open education is a philosophic construct that advocates the removal of constraints and barriers to learning.

With more access to technologies, both campus and distance learning universities are embracing 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.

This trend is not restricted to North America alone. Interestingly, Asia has the highest annual growth rate at 17.3% with **Vietnam** Malaysia and Philippines leading the continent in elearning. Of the top ten countries with the highest elearning growth rates globally, you can see five are from Asia.

Let us look at two developments that have emerged over the previous decade.
With the rise of social media, there has been a global movement towards collaboration in the development and sharing of content and we have seen the rise of Open Education Resources or OER. The fundamental principle is that any materials developed with public funds should be made available free to others.

Several major Asian initiatives have emerged. Some of these are OER Asia, the China Open Resources for Education Initiative, Vietnam's Open Courseware and Japan Open Courseware Consortium. Our host the UPOU is leading discussions on policy and practice in this field.

Can OER help cut costs? As we know textbooks are a costly proposition. A study in Brazil found that for 75% of students studying at the University of Sao Paolo, the cost of acquiring textbooks was higher than a family's monthly income. Likewise the government of South Africa has decided to opt for OER textbooks.

In the USA, according to David Wiley, 31% students don't register for a course because of textbook costs. But initiatives such as the Utah Textbooks project have demonstrated that it is possible to use OER to get a zero cost online textbook or a $5 printed copy.

The province of British Columbia, where I work, has a Textbook Zero Program—which means that students don't pay for the OER based textbooks. What lessons can we draw from this project? One, that if you wish to implement OER textbooks, you would need systemic change within the institution. Two, senior level champions are essential to make this happen. Three, faculty would require some capacity building support and four, the staff must take ownership.

There is also the issue of quality in the use of OER. Since anyone can adapt the content, who is responsible for the quality of the repurposed material? How do institutions ensure the integrity of their credentials?

For OER, quality dimensions of content such as accuracy, relevance, currency, pedagogic effectiveness in terms of learning design would apply just as they would to any educational materials. However, areas in which quality measures would be different would relate to reusability and openness. Our Asia office, CEMCA has developed Guidelines for Quality OER and these are available for free download from our website.

COL has developed the Virtual University for Small States of the Commonwealth (VUSSC), a consortium of institutions from 31 small states of the Commonwealth which have come together to develop needs-based courses which are freely available, as OER. What makes VUSCC particularly important is that it focuses not only on collaborative content development, but also on capacity building, and on creating communities of practice. It's not simply about cutting costs but also about improving the quality and effectiveness of higher education. Collaboration and partnership is key.

COL maintains an online directory service for OER from the Commonwealth countries. Looking at the data from these countries, we find that universities from developing countries are publishing large quantities of OER. While UK is the top producer, India, Nigeria, South Africa and Pakistan are significant producers. Open Universities are especially large producers: for example, OU UK and NOUN. Interestingly, the presence of well-known research universities in this space is not significant at this point.

If we review the OER situation in 2014, we find that the number of institutions making their courses available as OER has increased substantially, Developing countries have emerged as major players. India, a large Commonwealth country and Antigua and Barbuda, a small island state, have recently developed national OER policies.

What are the implications for higher education? OER have the potential to open up access, improve quality and reduce costs to all levels of education.

The second major development is MOOCs. Many universities in the developed world felt compelled to join MOOCs in one form or another . The big three MOOC platforms edX, Coursera and Udacity, all operated from the USA. FutureLearn, launched last year, is designed and operated by the OU UK.

In Asia, notable MOOCs are being offered by China, India and Pakistan. 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. Tsinghua University, which is one of the top research universities in China is offering MOOCs in cultural studies in Mandarin and these courses are free and meant for self-enrichment rather than certification. UPOU has also started delivering skills development courses through MOOC platforms.

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.

What is the profile of the typical MOOC registrant? A recent Harvard study shows that this was likely to be a male with a bachelor's degree and over the age of 26. 35% of those who enrolled never engaged with the content and only 5 % completed the courses.

It is interesting to note that of the learners signing up for the MIT-Harvard MOOCs, 72 % were from outside the US. The University of Pennsylvania MOOC drew 15% from the BRICS—

Brazil, Russia, India, China and South Africa. While MOOC's may not yet have caught up in Africa, their viability for emerging economies is becoming clearer. MOOCs are giving universities a global profile and more and more learners from developing countries are enrolling.

But are we really reaching the unreached? According to Sreenivasan, at the moment MOOC weren't reaching the unreached in Africa but those on Wall Street through a course on Financial Engineering and Risk Management. Vignare says that so far MOOCs have only reached those with degrees. How can we reach the millions who aspire to enter higher education and earn degrees?

An article in *Nature* examined the subject matter of MOOC courses (July 2013) which 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.

Why do universities offer MOOCs? Recent research shows that extending their reach is one driver, while building the brand is another. It is significant that universities are investing in MOOCs to lead innovations in teaching and learning.This is an important and welcome development as the focus is on good teaching rather than only on research.

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. What did we learn? It is important to provide high quality materials combined with good teaching. Keeping the learners engaged is essential and the IT platform must be reliable. This can be achieved without branded platforms and quality can be delivered at lower costs.

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

What are the implications of these developments for universities? Let us look at the impact on three areas: pedagogy, services and credentialing.

Will MOOCs transform the way we teach and learn? A significant difference that is often cited in MOOC-based learning is the emergence of the flipped classroom as the standard practice. There is a greater emphasis on peer-to-peer learning.

The use of Learning Analytics, a component of the MOOC platform, 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.

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.

MOOC is a highly media-centric platform; it is also an event management platform. Faculty who are more used to the print medium or TV/radio in some Open Universities will need a fair amount of support to adjust to the requirements of handling the new medium. Working in teams with people of different skills will be essential. They also need to appreciate that an effective hour of MOOC learning material delivery requires 10-20 hours of authoring and production effort. On a six week course with about 25 hours of delivery, the investment required would be about 500 hours.

Service provision is an integral part of MOOC management. MOOC developments provide new ways to solve older concerns. One of them is to be able to assign a unique ID to a learner, who can be identified across courses- something paper-based procedures are not good at yet. MOOCs also offer tested and affordable techniques to manage learner and mentor records which can be moved across platforms when necessary.

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 by providing access to a library of supplementary learning materials. 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 MOOCs 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.

Increasingly, MOOCs are viewed as not just knowledge enrichment opportunities. Carefully designed assessments are now demanded by learners who are keen to be certified as well. Proctored exams are thus becoming regular in many MOOC offerings, such as Udacity, or in the NPTEL-India courses. Considerable expertise in exam center management is called for. Companies like Pearson are emerging as key players globally.

Credentialling was not a consideration when MOOCs where launched. However, it is a serious consideration now. A number of approaches are being deployed. The practice of "badges" which allows a learner or mentor to accumulate credit and reputation is gaining currency. Invigilated exams and certificates derived from them are also becoming more current because widespread recognition of Badges does not yet exist. This is clearly an important area where rapid changes are taking place and universities will need to find flexible and open ways in which this can be done.

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?

But 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?

Open Universities are well placed to engage with both OER and MOOCs. They have been strong in both contemporary pedagogy and services management. Their experience in content design and development can easily lead to effective adoption and adaptation of OER. Student support services can be strengthened by adapting MOOC technologies.

The FutureLearn, a private company of the OU UK is a consortium of over 35 universities and provides a model of what other open universities could initiate.

Universities can 'unbundle' their services and offer smaller more needs-based options. We can see a delinking of the institutions which teach and the institutions which credential? It will be possible for learners to construct their own courses based entirely on OER. But who will provide the qualifications? Will we see the rise of new Degree Granting Bodies or Open Courseware Accreditation Agencies? How will the quality and credibility be ensured? Universities need to grapple with these questions as they offer parallel pathways to making universal access to higher education a distinct possibility.

To conclude, 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.

Thank you for your kind attention.

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