

ICTs in Higher Education: Who Stands to Gain?



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Introduction

It is a privilege to speak to such a distinguished audience and I'm very grateful to UNESCO, Bangkok, the World Bank, KERIS and the government of Huangzhou for giving me this opportunity. I represent the Commonwealth of Learning, an intergovernmental organisation based in Vancouver Canada. Our slogan is 'learning for development' and we help Commonwealth Member States and institutions to harness the potential of educational technologies for expanding access to education and training.

My topic today is ICT in Higher Education: Who Stands to Gain? Information and Communication Technologies (ICTs) have pervaded every level of education around the world. Higher Education, particularly, has seen an unprecedented growth in the use of ICTs in teaching, research and extension activities. Who has really benefitted from this phenomenal expansion? Is it the governments who are determined to increase the Age Participation Rates (APRs) in Higher Education? Or has the introduction of ICTs improved the productivity and effectiveness of institutions of higher learning? Is it the teacher who is increasingly faced with the challenge of dealing with a diverse student body? Or is it the student herself? These are some of the questions that I shall explore in this paper, and I shall offer suggestions about how ICTs can be effectively harnessed to serve these constituencies. Finally, I will conclude with a brief exploration of the question: who really stands to gain?

I. Governments

Participation in higher education today is at a record high. Analysts of current educational trends estimate that by 2020, 40% of the global workforce will be knowledge workers, with a need for tertiary qualifications.

The World Bank is of the view that for countries to achieve sustainable economic development, the Age Participation Rates (APRs) in higher education must be in the region of 40 to 50%, but APRs are less than 10% of the relevant age group in most of South Asia and Sub Saharan Africa.

Many developing countries have extraordinary ambitions for growth. Malaysia plans to raise its APRs to 40% by 2010, while Jamaica, wants to raise it to 30% by 2015. India has set an ambitious target of lifting the APR to 15% by 2012.

But can the existing institutions cater to the rising demand? Dhaka University, Bangladesh, could only enroll 10,000 of the 80,000 applicants in 2000, while in Kenya only 9,000 of the 40,000 qualified students could be accommodated in the public university system. Building more brick and mortar institutions to cope with such demand is not a viable option for most countries. Open and distance learning emerges as a viable option as countries struggle to improve access, enhance the quality and cut the costs of higher education.

Forty years ago, the British Open University was launched to bring education to the homes of people in the UK. The success of the British Open University led to a huge expansion in open universities, particularly in the developing world.

Including our hosts with their China Central Radio and TV University, which has now been renamed as the Open University of China. By the end of 2008, there were 3 million active distance learners in Chinese open universities. Many of these institutions are mega-universities, with enrolments exceeding a 100,000, a term coined by my President, Sir John Daniel, whom many of you know as a former ADG, UNESCO.

In 1994, there were eleven mega-universities in the world with a collective enrolment of about 3 million students. Today the number of mega-universities has doubled and student enrolments have tripled.

If we look just at the Commonwealth, we can see a phenomenal growth in the number of open universities between 1988 and today. Asia alone has over 70 open universities and the largest number of adult distance learners in the world.¹

Governments have always faced the challenge of breaking the iron triangle of quality, access and cost. If access is increased, there is the danger of lowering quality. If this is to be avoided, then the costs would have to be raised. Distance education allows us, through division of labour, specialization, and economies of scale, to reconfigure the access-quality-cost triangle.²

Have the governments gained from the continuing proliferation of technologies? The answer is yes, and no. What can governments do to optimise the benefits and minimise the challenges presented by technology?

First, governments can elaborate enabling policy frameworks for ICTs in Education; secondly, implement rigorous quality assurance measures so that the qualifications attained through alternative means such as distance learning are recognised and thirdly, invest in appropriate technologies and infrastructure. Distance education has always been driven by technology—but it is the technology of print and audio video that many of the distance education institutions are still using in the developing world.

II. Institutions

We have witnessed the growth of more new institutions in the last twenty-five years than previous generations have seen over the whole nine hundred year history of the university, as we know it. Today we have all manners of institutions - corporate universities, virtual institutions, offshore providers, twinning and franchise arrangements, dual and multi-modal institutions.

What are universities using ICTs for ? A recent OECD report (2009) lists four principal uses: i) institutional PR to attract more students through the internet; ii) management, administration and funding; iii) research using digital libraries; and iv) teaching and learning using learning management systems. The report concludes that ‘Universities seem to have made impressive progress in all these domains, with the exception of teaching and learning.’³

Where are the opportunities in this regard?

Professor Bob Bernard of the Educational Technology group at Concordia University, Montreal, and his colleagues carried out a meta-analysis of hundreds of studies in which distance education students were treated in different ways. They distinguished three types of interaction: student – content; student – student; and student – teacher. They then analysed all the studies to find which type of interaction made the greatest difference to student performance when it was increased.

The results were very clear. Increasing *student – content* interaction had much the greatest effect; with *student – student* interaction coming next and *student – teacher* interaction last. Within this context, the importance of content cannot be underestimated.⁴ What implications does this have for the teacher-centred paradigm within which we operate?

III. MIT Open Courseware

The last ten years have seen tectonic shifts in how technology is being used in education. The Open Education Resource or OER movement is one such groundbreaking initiative. OERs are materials that are i) free and freely available; ii) suitable for all levels of education; iii) reusable and i v) online.

However, the notion of OERs has evolved and changed over the past decade. The MIT Open Courseware (OCW) can be seen to mark the first generation of OERs, in which teachers placed their lecture notes online for free use. Teaching was being shared and opened up as never before. The UK Open University’s Open Learn project marks the second generation in which existing self-instructional materials, are placed in online format. Here it is the learning which is being shared. The third generation⁵ sees the convergence of both teaching and learning in the experience of the VUSSC, an initiative led by the Commonwealth of Learning. Here courses are developed collaboratively using an authoring tool, the wikiEducator and shared freely by all stakeholders.

In Africa, for example, one of the most successful collections of OERs is those developed and disseminated by the Teacher Education in Sub-Saharan Africa (TESSA) Consortium. It has 18 member-institutions in nine African countries. TESSA has developed a wide variety of audio and text materials (online and print) that provide support to primary school teachers and teacher educators in Africa.

OERs are seen as a major breakthrough in expanding access to education in the global south. Some of the advantages include:

1. since course development is so resource intensive, OERs help developing countries save both course-authoring time and money;
2. OERs foster the exchange of global knowledge;

3. online collaborative OER development supports capacity building in the developing world thereby bridging the digital divide;and
4. the availability of high-quality OERs can raise the quality of education.

However, despite their huge potential, so far the promise of OERs has often not translated into concrete and tangible results. First, there are not enough data yet to substantiate the claims listed above. Second, the flow of OERs has so far happened mainly in one direction, that is, from the global north to the global south. Most of us have heard of OER initiatives such as the MIT OpenCourseWare, Rice University's Connexions. It is true that OER initiatives are beginning to emerge in the developing world but how many of us have heard of the China Open Resources for Education Initiative or Sakshat in India?

Even though there is a great paucity of quality content in the developing world, why are higher education institutions in developing countries not rushing to adopt, adapt and use the freely available materials? Some of the reasons are: lack of awareness, no ownership of the content and the limited capacity to use them.

What can institutions do to benefit from the OER movement? First, develop an institutional policy that requires teachers to search the web for open content before developing fresh materials as is the case in Athabasca University and Asia eUniversity. Secondly, provide incentives to faculty by recognising the development, adaptation and use of OERs as a legitimate academic activity that could be counted at par with publications towards promotions. Thirdly, in order to benefit from the OER movement, institutions need to define their copyright policies.

IV. Teachers

Confucius said that the teacher's job was to transmit knowledge and to be a role model. By making knowledge a free universal resource, technology has changed expectations about the role of a teacher. The most important challenge to the teacher in a digital world is the 'new student'.

Today's student is a digital native. In an influential 2001 essay 'Digital Natives, Digital Immigrants', Mark Prensky claimed that the digital natives effortlessly took to new technologies while their teachers, the 'migrants' had to adapt to a new environment created by technology.

Now, consider the position of the "digital immigrant", the teacher who has to change and adapt to the new technologies. A European survey concludes that university teachers fall within the following categories:

12% are enthusiasts who claim to spend 3 or more hours a day publishing online course materials

58% pragmatists who are comfortable with technology use and see the value of ICTs for teaching and learning

17% sceptics who are reluctant to use technology or could even be against its use.⁶

While teachers are using the internet to access up-to-date information and using Learning Management Systems to cater to the new learner, according to a Becta study (2008), most teachers still do not use Web

2.0 technologies such as wikis, blogs and social networking sites. The study also shows that there is a tendency for teachers to merely replicate the old pedagogies with the new tools.⁷

What is the state of ICT use in Higher Education Institutions in developing countries? A KENET report on the situation in Kenya (2007) concludes that HEI's are i) not ready to use ICT for e-learning; ii) ICT is not yet a strategic priority for HEI's; and iii) ICT strategies have not yet been aligned with the educational/developmental goals of the HEI's.

How can teachers operate effectively in this technological environment? One, by using technology to develop innovative pedagogic practice; two, by involving themselves in collaborative research on how to craft this pedagogic practice and three, through continuous professional development in the educational uses of technology.

V. Learners

The characteristics of the twenty-first century student have changed. Half the world's population (6.5 billion) is under twenty. In countries such as Malaysia and Pakistan, approximately 65% of the population is under the age of 30, while over two thirds of the higher education students in Singapore are over the age of 25.⁸ Today a university student may be anywhere between 18 and 50 years of age. There are relatively more women in higher education today. Ghana, Kenya, Uganda, and Tanzania offer incentives for women candidates by offering lower admission cut-off points. To cite one example, in Brunei Darussalam, women at the tertiary level outnumbered males by 32% in 2004 and the trend continues.

Obviously, the 'new learner' belongs to a very diverse constituency and has a range of needs that cannot be catered to by the traditional institutions that we have known so far.

VI. Profile

What are the profiles of this diverse group of learners in the use of technology? The OECD/CERI report characterises them as:

1. 50%--'the digital mass' or heavy internet users but do not produce digital content
2. 20%--neo-analogical—produce some content but use less internet than the 'digital mass'
3. 30%--'inter-activated'—heavy internet users and frequent producers of content.⁹

Media is inseparable from the lives of 8-18 year olds in today's world. Surveys carried out by Highfield (2005), Pew (2005) and Woods (2005) show that 87% of teenagers in the USA use the Internet, 81% play games online and 76% get news online. The intensity of engagement with the media also suggests that young people are adept at using more than one medium simultaneously, leading to the development of "multi-tasking" skills.¹⁰

The 2009 OECD/CERI report concludes that 'students in higher education are heavy users of digital media' and want 'technology to improve teaching and learning, not to change it radically'. The study notes that while the students value the benefits of technology, they still prefer traditional teaching where

technology improves current practice.¹¹; It is interesting that a BECTA study also shows that even though students play computer games, it does not necessarily follow that they would like to learn through gaming methods. Interestingly, they like to draw a distinction between how they learn and how they play.

Meanwhile let us look at the use of computers and internet worldwide.¹²;

Regions/Country	Computers Per 1000 People	Internet Users Per 1000 People
South Asia	18.00	31.00
Africa	32.41	39.0
Latin America	84.58	185.83
Western Europe	522.67	552.67
USA	760.0	690.0

Asia has 18 computer users per 1000 as opposed to 760 per 1000 in the US. Even Bill Gates points out that computing cannot benefit 2 billion of the world’s poorest people.¹³;

On the other hand, Asia has 1 billion of the world’s 2.7 billion mobile users. Within this context does the future lie with m-learning? At one Japanese university, all students had mobile phones and on an average each student sent 200 messages per week for study purposes, as opposed to seven voice mails per week. Only 43% used PCs sending only 2 messages per week.

VII. Who Stands to Gain?

While all the above constituencies stand to benefit, the real beneficiaries are the learners. Never before in the history of education has so much emphasis been placed on the learner and their learning styles. Technology has shifted the focus from the teacher to the learner.

The learner is the focus of all the efforts being exerted by the governments to enhance the development of human resources.

Institutional efforts too focus on the learner—never before have institutions responded to the needs of learners in terms of their marketability and social productivity, their requirements in terms learning facilities.

Similarly, in spite of the 17% sceptics among them, conventional teachers are continuously in the process of reshaping their mindsets to address the needs of new-learners – preparing study materials in multi-media formats for diverse uses, providing learner support services, and developing new assessment tools for measuring student success.

The expression ‘new learner’ used in this paper became popular in the early 1980s to connote the adult learner who looked for new education, training and/or skills for personal development, promotion, change in career, and/or enhanced job requirements.

More recently, the expression ‘digital natives’ has become popular to describe the technology savvy learners, usually young school-leavers.

It should not be difficult to foresee the emergence of a still *newer* learner that displays the features of both the ‘new learner’ of the eighties and the ‘digital native’ of the twenty first century – the ‘ultimate learner’ who is groomed right from his/her pre-school days through the school years and the portals of higher education to be a lifelong learner not only equipped to handle all that ICT has to offer, but also bestowed with a mind-set that motivates learning in diverse circumstances and environments.

ICT is certainly transforming the institution of education today. This transformation, though manifested in diverse ways at various levels of our social structure, is focused on the ‘*ultimate learner*’, who it is in the process of creating, nurturing and sustaining. Our collective efforts should converge to facilitate this process – the only means of establishing a learning society and a knowledge economy for all.

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