

How ICT can Support Teacher Training

Keynote

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Our session today will examine how ICT can support teacher training. I have prepared these remarks in collaboration with my colleagues Dr Jessica Aguti and Dr K Balasubramanian

I represent the Commonwealth of Learning, an intergovernmental organisation that promotes 'learning for development' .

We work in 53 Member States of the Commonwealth that cover all regions of the globe. I will share some concrete examples of how technologies are being used to address the challenge of teacher training.

I will take up the three questions raised by the organisers. First, I will briefly examine the context of where we are at followed by a discussion of the knowledge gaps that persist in relation to our understanding of how ICTs can contribute to more effective teaching and learning. Finally, I will look at what is being done to support teachers to make the paradigm shift from teaching to facilitating

But first the context.

It is clear that we need to make the transition from education in the industrial age to education in the information society. In the industrial age, the teacher was the initiator of instruction, the fount

of all knowledge and taught the whole class in a shared space. The teacher was also the evaluator of her students. The information society requires that this role changes from teaching to facilitating so that the teacher is able to help the student find a more individualized learning path, guide the student to become an independent learner as well as an evaluator of his/her own performance. It also requires that the students engage in more collaborative learning activities.

We also know that the students require a different set of skills to equip them to succeed in the twenty first century. The global citizen that we prepare in our schools must be analytic, innovative, ethical, disciplined and respectful, who proactively promotes peace and environmental sustainability. Which means teachers need to teach cognitive and non-cognitive skills to help students to become lifelong learners in a rapidly changing world.

But can we do this if we continue to use the old tried and tested strategies? As Albert Einstein put it 'Insanity is doing the same thing again and again and expecting different results'

In which ways can technology help us make the transition to new ways of teaching and learning? We have seen the phenomenal growth of technologies, especially in mobile devices, in the last decade. In fact the recent [Broadband Commission for Digital Development report reveals that more than 40% of the world's 7 billion people are already online.](#) How can we harness appropriate technologies to make this transition?

Lets now come to the second question—where are the knowledge gaps?

The first relates to which technologies or combination of technologies to use for the best results in the different contexts without widening the existing digital divide between the global north and south.

The second relates to how ICTs can contribute to effective learning—the jury is still out on this. It is still not quite clear which technologies or combination of technologies will produce the best results in different contexts; and we all know that ICT is not a silver bullet that will solve all educational problems.

ICT by itself will not lead to a paradigm shift in moving the teacher from teaching to facilitating. ICT demands a paradigm shift. If this shift is to be achieved, we need to transform the way in which we prepare teachers, how we support them, how we influence them to change their mindsets and build their capacity to harness appropriate technologies. Needless to say that one size will not fit all and cultural variations will be required for different contexts.

We find that teachers are still not changing as fast or as substantially as the challenges demand. Why is this so? Is it lack of awareness, lack of resources, inadequate support, too much work, or simply fear of change? How can we reach these unreached constituencies?

So let's take up the third question of what can be done.

As we all know, it's not just about access to ICT. There are the other related issues of capacity, relevant content in the local languages and culture, which determines who can/not have access such as women and marginalized communities, the culture of the classroom, and connectivity.

Let us take the capacity building first. In order to address the challenges related to teacher development and retention, the government of Guyana elaborated an ICT Professional Development Strategy for Teachers in 2011 to provide a comprehensive framework for the effective use of ICT in teaching and learning. The UNESCO Competency Framework for Teachers (UNESCO-CFT) became the guiding document to develop core competencies among teachers. These relate to technology literacy, knowledge deepening and knowledge creation.

My organization, the Commonwealth of Learning, developed additional resources to facilitate the implementation of the UNESCO-CFT and the development of the core competencies as part of our joint work plan.

COL developed the Commonwealth Computer Navigators Certificate to support technology literacy. The Commonwealth Certificate for Teacher ICT Integration or CCTI is an advanced course for teachers and school leaders in integrating ICT into school management and teaching and learning. This was localized for Guyana and consists of in-service and pre-service courses. These were developed using OER and are available as OER. The real strength of the Guyana experience is that we now have a replicable model that is being used in other regions.

What did the CCTI/CFT implementation achieve? There are more trained teachers in ICT within the Guyanese system. The teachers are using OER, which saves both time and money. Participation in the project led two institutions to review and align their teacher education curricula. Finally, it encouraged collaboration externally and within the country.

COL in collaboration with the National Council for Educational Research and training in India offered a Massive Open Online Course (MOOC) on '*Using OER to enrich teaching and learning*'. This was initiated on the Teachers Day in India, which is 5th September. We have also announced another MOOC for teachers on '*Integrating ICTs into teaching and learning*' to coincide with the International Teachers Day and will be offered with the African Virtual University. MOOCs can be an important platform for offering CPD for teachers at scale.

What lessons did we learn from offering MOOCs? Meticulous planning is key and 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.

Lets look at the second dimension—content. Open Education Resources or free content provide teachers with an opportunity to access and share quality content as was the case with the OER for English Language Teaching. This material was used to train master trainers in ELT in Kenya this year and now these master trainers are training other teachers.

What were the benefits? Teachers had access to quality content at low costs, were aware of a new approach to teaching language which resulted in improved outcomes for their students.

Another successful example of the use of OER is the Teacher Education in Sub Saharan Africa or TESSA. This partnership between the Open University UK and institutions in 13 African countries has developed OER for teacher training in four languages: English, Kiswahili, Arabic

and French. These materials were used by 320,000 teachers in one year alone, and the free materials as well as the sheer numbers of users have radically reduced the costs of providing quality school-based training to teachers and teacher educators.

The preliminary research on the impact of TESSA shows that for teachers this has resulted in a diverse set of teaching practices and increased teacher preparation. Teacher educators have reported an increased awareness of the potential of OER; the changing role of teachers and improvement in skills and personal learning .

The Organisation of Eastern Caribbean States agreed to work with COL to develop open textbooks. COL commissioned the development of a prototype for developing open textbooks--open maths textbooks are being piloted in Antigua and Barbuda.

The benefits are: more trained teachers; better use of ICT for teaching and learning and innovative pedagogic practices.

What about connectivity? The Commonwealth of Learning developed Aptus or the Classroom Without Walls to bring connectivity to students under this tree. It is developed by using open source software and the total cost is less than \$ 100 in all

Aptus does not require power from the mains. We can use solar chargers instead. It does not require any connectivity. We use a wireless router. All this enables teachers and students to access good quality digital materials through this device. As of now, learners can access the Wikipedia for schools containing over 6000 articles and the 2000 odd Khan Academy videos, covering topics relevant to learners in primary schools or high schools. A whole library of free books is also available. Students can use their mobile devices to download these materials.

To supplement all this, local content can be generated and added quite easily. As Dennis Pack from Kiribati writes, 'I was very impressed with the speed at which the resources loaded...if we add our own content, I can visualise the Aptus featuring as the main technology on many of our island primary and secondary schools'.

Let us now look at the impact of ICT on the culture of the classroom or the impact on teaching and learning. Research on the use of Khan Academy materials in schools has resulted in teachers becoming facilitators, who encourage students to become self-directed learners and are able to give individual attention to the different learners in the class through the flipped classroom model.

This means that the students access the lectures at home and the class time is devoted to discussion and higher order thinking tasks. Students receive support from the teachers and their peers.

Today we have various technology options and access to free quality content as never before. What can be done? One, we can adopt and adapt the existing models and resources eg Open Textbooks. Two, Integrate OER into ICT in Education policies rather than develop separate policies. Three, take a holistic approach to technology adoption--align policy and capacity

building before making ICT decisions. Four, invest in technologies that are available, affordable and accessible.

As we have seen, ICTs enable change; they add value to development process; but by themselves they do not create the development process. ICT strategies are only effective, sustainable, and worth the effort if they are integrally linked to broader, more comprehensive development, education and poverty reduction strategies.

As we know, knowledge is a social product emerging as an interface of machine, individual, society. Learning is a process of knowledge creation rather than information consumption and the learner can be an active producer rather than passive consumer of content.

How can we support teachers to deliver education that excites curiosity, develops creativity and instils confidence?

Happy Teachers Day!