

# *Teachers, Technology and (Re)Training*

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*Teachers, Technology and (Re)Training by Professor Gajaraj Dhanarajan, President and Chief Executive Officer, The Commonwealth of Learning*

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## **Transcript**

1. It does not need yet another person, least of all someone like me, to say that the contemporary, social, political and economic pressures are making more education a mandatory obligation for governments. In most parts of the developing world, the desire to provide universal access to basic education as well as the increased use of information and communication technologies (ICTs) in education and training has meant a rapid increase in establishing infrastructure facilities. Unfortunately, supported by international donor and lending agencies, the capacity of governments to build more classrooms and place more computers in those classrooms seems to have far outstripped their capacities to produce qualified teachers to work in those classrooms with their machines. One estimate states that there may be as many as 1.8 million teachers needed by the low-income countries alone to meet the under supply of teachers in primary schools alone. A further study by Coldevin and Naidoo goes on to say that even where teachers are available, on a global scale, close to 30% still remain untrained both professionally and academically in the primary sector alone. That figure will be much higher if the other sectors, besides primary, are also included. While many of the APEC economies may not be in this dire state, statistics that are being published about teacher-readiness and their capacities to work in the new technologically enriched environment, seem to indicate that these economies will also be confronted with a similar situation of under-trained personnel, if they want to avoid using yesterday's teachers to educate tomorrow's children.

2. Ladies and gentlemen, I understand your meeting is about this challenge and your desire to look at some collective solutions that your economies may wish to undertake. I am honoured that the organisers invited me to make this presentation. Let me first make a confession and that is - I am neither a teacher trainer nor an expert on learning technologies. However, the last 15 years of my career has brought me

into close contact with both these aspects for which I singularly do not have a formal qualification. On the basis of this experience, it allows me to reflect with you on what it means to teach and (re)train to be professionally competent in this new world of ones and zeroes.

3. In advocating and promoting the use of distance education since around the mid-seventies, it has often amazed me how lukewarm the teaching fraternity and its administrators have been in applying educational innovations in their own field. No doubt the reasons for this reticence may be based on sound professional reasons. Notwithstanding, given the magnitude of the task of training and retraining, especially in the use of ICTs for teaching and learning, the erosion of budgets, the expectations of learners to be active and participatory in their training, and a newly discovered sensitivity to disruptions of the professional and social life of potential trainees, I am pleased to note that teacher trainers all over the world are at least taking a second serious look at the use of distance education and associated technologies to meet their needs. This discovery of learner rights and requirements could not be happening at a better time especially in economies such as the ones you represent. The rich learning technological environments that have been created by your member governments will allow you to put training programmes faster, make them more flexible, allow for customisation and even achieve greater economic efficiencies than ever before. It would also allow training to be more relevant to individual circumstances than ever before. However, in pursuing this strategy you no doubt will be confronting similar if not identical issues that many others who have used distance education have confronted and overcame. I hope it is not out of place to revisit some of those issues in the context of teacher training and retraining applying ICTs.

4. The application of distance education or technology in mediating the delivery of education and training evokes strong passion among those who speak in favour of it and those who are against it. The advocates, and I am one of them, believe that the strategy allows for economies to be achieved, is learner sensitive and centred, provides great flexibility, is particularly suited to reach those who otherwise get marginalised for a variety of reasons; enforces a serious concern for pedagogical issues, respects experiential learning, treats learners as individuals and brings greater planning to the learning and teaching transactions. Those who dislike the use of distance education will speak of the de-humanising nature of the relationship between teacher and learner, loss of academic freedom and autonomy, erosion of academic creativity, fear of commoditising a noble human endeavour of long standing tradition; loss of quality and an absence of opportunity for debate, discussion and collective reflection on which good education is founded. Having already shown my hand and my leanings, all I can say is that while there is some truth in what opponents say are weaknesses in a system of remote learning, these are fears founded on past practices of commercially-driven correspondence education. The practice of distance education that has been evolving over the last 30 years especially, has changed the nature of the 'trade', and the practices that we will see emerging in the next 30 years will see an even greater improvement in the design, development, delivery, support and assessment of curriculum to learners who will be mostly part-time, off-campus, independent and mature. To ensure that these changes take place, policy makers such as yourself may wish to take into account the climate that is crucial for good practice to prevail. This climate will ensure the following:

- **Learner characteristics:** A clear appreciation of the learners, their learning habits, their prior learning experiences their work and life experience and their access to technology are all important aspects of good design. There is every reason to believe that those participating in such

learning opportunities will present a heterogeneous profile. Good design recognises this heterogeneity and makes provision for the differences.

- **Learning support systems:** A major difference between correspondence and distance education lies in the comprehensive learning support provided to the students by the latter. As in any good learning environment, interaction between the student and the teacher is necessary. Distance education design should allow for this. Especially in a profession like 'teaching', a whole range of professional experiences have to be incorporated for the process to receive professional acceptance and respect. Teacher training done through distance education (as in the case of the Open University of Hong Kong) should ensure that this is done. Studios, libraries, laboratories, supplementary learning materials, mentors, peer learning should and can be built. There is likelihood that not all students will want to use these systems, but that is not a reason for not having such support in the first place. Increasingly, those who deliver on-line courses are also beginning to appreciate the need for sensitive support systems and are attempting to put them in place. Environments where the connectivity are well provided for this, works well; where such connectivity are expensive and unreliable, the levels of frustrations by participants are also high.
- **Learning materials:** The design and subsequent development of good learning materials is one of the first and most important requirements for distributed training. It has always been a concern for many that those institutions which are especially rushing to be part of the bandwagon using ICTs, are not placing sufficient importance to and investment in creating materials that are well designed instructionally, recognises and addresses potential student learning behaviour and styles; takes note of learners study circumstances and life experiences and user friendliness. Developing these materials requires a good team of highly skilled talent. Training people for such skills is increasingly becoming necessary, given the small supply available internationally.
- **Quality Assurance:** For all us in the education and training business, quality assurance has become a most important consideration. This is especially true of ventures where mediated teaching and learning take place. While, in the main, measures of quality and the means taken to secure them are the same as, or very similar to, those adopted for conventional programmes, there are also differences in the way success is measured in technology mediated arrangements. Training courses mediated via technology have to ensure that the materials, learner support systems, access to and confidence in the working of the technologies used, administrative arrangements, all are crucial elements requiring careful monitoring. A weakness in one part of the system can have consequences on all the others. Many would argue that those wishing to use distributed learning using technologies need to apply the rigor of industrial quality control systems with the softness of quality assurance in the hospitality industry.

5. Your workshop is specifically convened to focus on the application of ICTs in teacher training and, even more importantly, on improving the skills of teachers in using ICTs in their work. Any rearrangement in the training of contemporary teachers can neither ignore skills development in learning technologies in the curriculum nor a role for learning technologies in the delivery of that training. There are many reasons why this is so, but a few stand out as immensely important. They are:

- **The short supply of talent:** On one hand, the APEC community is one filled with a large supply of highly skilled and talented human resource in all matters relating to ICTs. On the other hand, it would also be fair to say that not a lot of that talent is easily available to train and retrain teachers in the field. If the community wishes to design and deliver ICT training to the millions of teachers in the system, it may have to look at capturing the talent of the few to support training of the many. The tools of technology will permit us to design, develop, deliver and assess large numbers of trainees with no more than a few trainers. The open universities of the world seem to have amply demonstrated how small the trainer to trainee ratio can be. In-service teachers, by the very nature of their profession, must have good learning skills. Distance learning arrangements would suit their needs and that of their employers as well. However, this can happen if there is courage and a willingness to use the technological tools of today.
- **An unmet demand:** As I remarked earlier, on a global scale, in excess of a few million teachers may have to be targeted. No country is immune to this challenge where teachers are often overlooked in the rush to get technology into schools: In the process of equipping new students to learn with Technology, a valuable - perhaps the most valuable part of the education equation has been virtually overlooked: the teacher . . . Despite over a decade of investment in educational hardware and software, relatively few of the nation's 2.8 million teachers use technology in their teaching (Technology and Teaching: Making the Connection - report of the Office of Technology Assessment, USA, 1995. The report did not explicitly mention teachers and their unpreparedness to function effectively in the new environment. Conventional systems of educational delivery cannot meet this volume at an acceptable level of cost or within the required time frame. Using technology may provide a judicious solution to mass retraining.
- **Changing patterns of learning:** Full-time training within the time-tabled constraints of the classrooms is only accessible to the few; for many who are already in service and wish to embark on professional training, (it) will have to occur at a time and place of their choice. Delivering that training through technology is an option that must be considered.
- **Just-in-time training:** The rapid changes that are taking place in the workplace will require training to be delivered quickly. Such training needs to be high speed, low cost and should reach small and large groups. Traditional ways of delivering training is time consuming, labour intensive, socially disruptive and costly.
- **Information explosion:** It is said by those who study these developments, that the total amount of information that becomes available doubles every four to five years. Stating it another way, the total of all human knowledge that was available to an undergraduate in 1997 will be less than 1% of what will be available to a student in the year 2050. Teachers have to become experts in helping learners navigate through this sea of information rather than pretending to be effective transformers of that information into knowledge for their students. Students must be trained to bring about that transformation. Those who survive this information explosion will be able to deal with it effectively, even more importantly, turn it into knowledge.
- **The ever-changing nature of learning technologies:** The technologies that are emerging and predicted to emerge are friendlier, faster, cheaper, more accessible and will have greater

capacities. Programme developers need not possess complex computing skills - the machines will. Willing teachers, supportive administration and motivated learners can together create a learning environment that is open, interactive and challenging.

6. Advocating the use of technology to deliver training will require some fundamental changes in the way things are done. These changes will challenge institutions that provide the educational service; they will test user capability of such services and question government policies and regulations pertaining to the facilitation of that training. The following may be important for serious consideration:

- The first challenge is the re-orientation of our trainers and the pedagogy they apply to their vocation. The fraternity still has to come to terms with a new type of learner and a learning environment that encourages the student to be independent. Whether it is a radio or television programme, print or web-based instruction, there is the recognition that individuals are capable of self-learning if provided with cleverly and sensitively designed instruction, but poorly equipped to utilise the technology imaginatively and non-mechanically.
- The second challenge is to change the nature and structure of our 'teaching' organisations. Their traditions of teaching and their views on learning have resulted in organisational structures that are almost and completely centred on the trainers. From the design of the curriculum to its transformation into learning experience; from decisions relating to assessment of prior learning to elements of exit standards; from administrative arrangements to academic governance; and from delivery systems to learning schedules, trainees and not trainers seem to govern the nature of the practice currently.
- The third challenge is to remove the 'time' driven element from today's training institutions. These are ruled by time, prescribing when, in his/her life, a student can or is ready to learn and the length of time required for learning. As a task force report to the International Council for Distance Education recorded: "The instructional paradigm, therefore, holds learning prisoner to time constraints applied by an arbitrary force or by the preferred work schedule of a faculty member. In the desired (new) learning paradigm, learning becomes the primary driving force and, since learning can occur at anytime and at any place 24 hours every day, the constraints of time are removed. The technologies allow those who provide education to break the rule of time."
- The fourth challenge is the appropriateness of the curriculum. Those who provide educational services, whether of the formal or informal kind, cannot continue to behave as though their services and the knowledge products that they develop have little relevance to the world of work and living. The real world has been going through a dramatic change - learning and training are needed by people who will function in a globalised economy and the information age. These learners need to understand themselves through an understanding of the world. The Delors Report to UNESCO's International Commission on Education for the Twenty-first Century elegantly describes the framework of a new curriculum, which it calls the "four pillars of education".

7. It is unlikely that in a learner centred, flexible, technology driven system of teacher training, where the student can be located anywhere in their own countries or on the globe, institutions can operate on their

own and be immune to the pressures and influences upon them from their governments and, more importantly, clients. Partnerships, mergers and consortiums, of one kind or another, may have to be considered for many reasons, but more notably for reasons of:

- Economy: the development of learning resources, establishment of support centres for learners, infrastructure for the delivery of courses are all up-front high capital costs which can be saved by shared use.
- Changing enrolment patterns are common features of flexible and modular learning; no institution committed to user centred curriculum can fulfil learner demands; cross sharing of courses to meet programme aims and objectives better achieve student demands without causing enormous costs and presenting risks to individual institutions.
- Funding patterns, which are uncertain and non-sustainable, require alliances and strategies to reduce risks, and in a field such as ICT, the challenges of socio-cultural aspects to curriculum development are much reduced.
- Curricula itself will demand a variety of academic talents to transform them into learning materials. Such academic talent may be needed for short periods during development. Partnerships will allow for the sharing of such resources for short periods of time without long-term resource exposure.

8. All of these actually provide a strong incentive to build partnerships in a number of areas - from the very mundane such as developing new learning materials to the excitement of sharing students, courses and credits. But partnerships in your areas of interest will also be useful in looking into:

- Information exchange.
- Research.
- Capacity building.
- Co-financing.
- Monitoring and evaluation.

9. The next decade will witness, I am certain, the emergence of a number of pan-global partnerships that will work on these and other related issues. Such partnerships must go beyond the ordinary and look at facilitating the movement of students, courses, learning materials, credits and staff. Like me, many of you in this audience may have knowledge of such discussions that are already taking place. If this is so, it is a welcome sign; if not, people such as you are in a unique position to make it happen. I wish you well as you consider this and other related issues during the next few days of your conference.

Thank you.