

The Challenge of Access to and Quality of Distance Learning

Keynote Address

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I. The Challenges

As we enter the 21st century, countries, institutions and individuals are faced with significant shifts in the global environment characterized by four challenges:

1. Changing patterns of trade and competition and technological innovation,
2. Exponential growth of knowledge,
3. Worldwide social concerns for freedom and general quality of life, and
4. Global demand for education.

First challenge- The world has entered a period of significant shifts in its economy characterized by changing patterns of trade and competition, and technological innovations. Together, these changes are producing a new worldwide economy that is global, high speed, knowledge driven, disciplinarian, and competitive. Countries can no longer rely on a low-wage edge. They have to meet the competitiveness challenge in terms of agility, networking and learning, and to arrange production to achieve quality, productivity and flexibility. The good news is that, with the potential of human development and advanced technologies, countries can leapfrog. The bad news is that this process is not automatic. On the contrary, unless conscious efforts are made, countries are unlikely to be able to adapt to the demands of a globalized economy and run the risk of becoming further marginalized. They may even experience, on one hand, displacement of workers who lack the necessary skills and the prerequisite general education to learn new skills rapidly, and, on the other hand, a shortage of qualified workers for the new industries and modes of production.

In order to minimize the risk of functioning at the periphery of the global economy, countries need to prepare:

- a workforce that has the foundation to enhance the quality and efficiency of product development, production and maintenance, and the flexibility to acquire the new skills required for new jobs; and
- a cadre of highly-trained scientific, technological and processing personnel, including some with sophisticated research skills, who can fully understand developments in the material, scientific, technological, managerial and social areas and who can take the lead in their assessment and local applications.

Second Challenge: Knowledge, both basic and applied, is being generated very fast and is growing exponentially. More new information has been produced within the last three decades, than in the last five millennia. We should be poised for dramatic technological advances and break-throughs in the macro-frontiers of the universe on the one hand, and microscopic secrets of the human body on the other hand – and everything in between.

But not all generated knowledge is at the sophisticated levels, we should expect similar developments in areas related to everyday life and to the marketplace. In fact, all facets of society are becoming knowledge dependent. Moreover, participation in a modern technological world necessitates a significant level of scientific and technological understanding. This applies to all areas of everyday living, including banking, business transactions, health services, transportation vehicles, home appliances, utilities, communication and information exchange. Without the essential knowledge and skills for modern living, people will remain on the margins of society, and society itself will lose their vast potential contributions.

As rapidly as knowledge is being generated, there are growing means by which to disseminate that knowledge through printed, audio, video and electronic media. Unfortunately, though, most developing countries are behind on both counts.

This situation poses serious questions for education strategic planning. How can countries link with world information and knowledge? What role can local institutions play in the generation of knowledge and in what areas? Can the school remain as the main channel of knowledge and cope with such boom?

Third Challenge: Economic globalization is going hand in hand with a broadening of concerns for social development, democratization and peace. There is a growing consciousness all over the world about issues of democracy, citizen empowerment, freedom of communication, culture, civic participation, gender equity, human rights, civil justice, peace and general quality of life.

One of the major challenges for education in the face of potential strife, exploitation and human rights violations, is to instill in the minds of citizens, at all levels, the principles of tolerance, democracy, human rights, responsibility, accountability and peace - among countries, within countries, and among people. Obviously schooling per se does not do it; only a certain kind of education, over the lifetime of individuals, can be effective.

Fourth Challenge: There is now a solid recognition among decision-makers and beneficiaries alike that education is crucial for economic development, human welfare, societal advancement and environmental protection.

We have already entering the 21st century with a basic education deficiency gap of an estimated 100 million children out of school and about 875 million illiterate youths and adults. Equally pressing will be the demand for higher levels of education, triggered by more completers of first-level education, higher ambitions of parents and students, and more sophisticated requirements of the marketplace. Moreover, the fast changes in knowledge and skills will require further education, upgrading, and reorientation of a significant segment of the population. In two regions of the world, Africa and the Middle East, the demand for education is further compounded by demographic trends that further tax the limited resources.

II. Implications for Education

These four dramatic challenges pose serious questions for education and training planning and force a rethinking in the way education is perceived and managed and in the priorities, scale, size and speed of education development. A linear projection of past progress indicates that business as usual will not achieve desired targets within reasonable time. This may place some countries at risk of not developing their human capital to a threshold necessary for poverty reduction, and economic and social development. Such countries may find themselves marginalized in an age of globalized economy and knowledge. Moreover, it is not sufficient anymore to raise the efficiency of the existing systems of education and improve the quality of their components. Even the most efficient of them could be serving another set of demands for another age.

Where does this leave Education Development? There are five far-reaching implications:

1. *Holistic Education Structure.*

The workforce of the future will need a whole spectrum of knowledge and skills to deal with technology and the globalization of knowledge. It will also need to be agile and flexible, to adjust to continuous changes, both economic and social. This means that countries must embrace a holistic approach to education, investing *concurrently* in the whole pyramid of basic education, secondary education, skill training, and tertiary education. Since each level in the structure has its own importance, and one cannot be traded for another, the question is not whether to provide it but how, how fast and through what mechanisms.

2. *Focus on Learning Acquisition and Outcomes.*

The objective of education is no longer simply to convey a body of knowledge, but to teach how to learn, problem-solve and synthesize the old with the new. To have these results, education must be engaging and authentic. Engaging in the sense that the student is involved in the learning process, and not viewed simply a "receptacle" for knowledge; authentic in the sense that what he/she is learning has meaning to him/her as an individual, a member of society, and a worker in the market place.

3. *Promoting Equity.*

Effective basic education for all allows the whole population to engage in national economic, social and political life, thus reducing disparities and opportunities for educational and social mobility. Similarly selective opportunities for higher levels of education must reflect equity concerns so that historical disparities by gender, region or social groupings are not propagated.

4. *Broadening the Scope and Means of Education.*

To cope with the diversity, complexity and changing demands for education services, delivery must extend beyond the face-to-face institutional modality to include distance education, enrichment mass media and non-formal settings.

5. *Extending the time dimension of Education.*

Learning is not restricted to the time spent in school. It begins at birth, occurs in and outside educational institutions and continues thereafter. The economic and social challenges require a system that provides opportunities for lifelong learning to help individuals, families, work-places and communities to adapt to economic and societal changes, and to maintain a door open to those who have dropped out along the way.

III. A New Paradigm

It is going to be very difficult - if not impossible - for countries to meet the objective of: *effective learning, for all, anywhere, anytime*. Our inability to meet this challenge, though, is self-inflicted because we tend to think of linear scaling, that is, using the same model of education (a school constrained by space and time) but more and on a larger scale. What we really need is to think radically and "outside the box." The model of education that was developed for the industrial age cannot effectively achieve the educational empowerment in the information age. With the tools of information and communication technologies (ICTs), we should be able to evolve the components of the conventional model

<i>From</i>	<i>To</i>
A school building	A knowledge infrastructure (schools, labs, radio, television, Internet, museums...)
Classrooms	Individual learners
A teacher (as provider of knowledge)	An available tutor and facilitator, in some location
A set of textbooks and some audio-visual aids	Multimedia materials (print, audio, video, digital,..)

Education will not be a location anymore but rather an activity: a teaching/learning activity.

This is the *raison d'être* of distance education. Imagine a highly interactive, synchronous and asynchronous, multimedia learning experience between distant locations over vast national and international networks, providing learners with an ability to obtain simultaneous distance learning services from their geographically dispersed organizations, schools and other colleagues.

In this new paradigm, distance education is not necessarily a substitute for schooling. It is one integral element of this new model of education - supplementing and enriching traditional institutions, delivery systems and instructional materials. Distance education contributes to the whole system of knowledge dissemination and learning in four ways:

1. *Reaching large audiences (access)*

The potential of distance education to reach large audiences was initially tapped in the late 1800's, when correspondence courses became an alternative way to provide education for individuals who could not attend regular schools due to geographical, social or cultural barriers. Experiments with radio broadcast started in the early 1900's. In 1924, the British Broadcast Corporation (BBC) began to air educational programs. Since then, the use of radio has been instrumental to reach scattered populations, and maintain some educational normalcy in countries ravaged by war and natural disasters.

Although experiments with televised broadcast began in the 1930's, it took another twenty years for television to become popular. Two of the most prominent examples are Telecurso in Brazil and Telesecundaria in Mexico.

Computer-related technologies began to make inroads 30 years ago and are rapidly changing the concept of time and space.

2. *Including the excluded (equity)*

Distance education expands opportunities to populations that have been traditionally excluded from education due to geographic, cultural and social barriers: minorities, girls, rural populations and the elderly.

3. *Promoting Efficiency:*

Distance education promotes efficiency of conventional systems. Let me illustrate:

Technology's capacity to reach learners in any place and at any time has the potential to promote revolutionary changes in the educational paradigm. It eliminates the premise that learning time equals classroom time. To avoid overcrowded classrooms, a school may adopt a dual shift system without cutting the actual study time for their students. The students attend school for half a day and spend the other half involved in distance education activities at home, in a library, at work, or in another unconventional setting.

For places with low population density, multigrade schools become viable alternatives with the injection of high quality programs prepared by the best teachers miles away, and transmitted or transferred electronically to these schools.

Another illustration of efficiencies is the domain of virtual labs. All school systems want to provide labs because science is empirical. But few schools have them, fewer have them equipped and fewer yet are willing to risk using them. Technology allows for video and digital demonstrations as well as digital simulation of lab activities in a very real manner - but without the risks and costs associated with lab experiments. Simulations will not totally replace hands-on activities. They rather make the learner ready for conducting real-life experiments - in the same manner that flight simulations prepare the student-pilot for test flying.

4. *Enhancing Learning*

Distance learning multimedia packages are excellent instructional aides to engage students in the learning process. They provide opportunities for independent pursuit of knowledge - on demand. They can connect learners with other learners to exchange information and perform collaborative programs. They may be the most cost-effective (and in some cases the only) means of bringing the wide world into the realm of the learner.

IV. Quality of Distance Learning

Distance learning is not about distance - its is about learning. We can have bad education at a distance. If we have bad educational materials and methodologies, technology will help us package them efficiently and distribute them effectively.

Thomas Edison, in 1922, predicted that "the motion picture is destined to revolutionize our educational system and ... in a few years it will supplant largely, if not entirely, the use of textbooks." Similar claims have been made about radio, teaching machines, and now computers and the Internet. If information and communication technologies have the potential to significantly improve the teaching/learning process and revolutionize the education enterprise, in the same manner that they revolutionized business and entertainment, how come that we have not experienced such drastic effects? **If these technologies are the solution they claim to be, then where is the problem?** Experience points to six prerequisite boundary conditions for success:

1. *Is the educational philosophy right?*

Technology is only a tool. No technology can fix bad educational philosophy and practice. In fact, if we are going in the wrong direction, technology gets us there faster. Likewise, distance education is not about distance; it is about learning. We can easily have bad education but at a distance. Therefore, educational choices have to be made first in terms of objectives, methodologies, and roles of teachers and students before decisions on the appropriate technologies can be made.

2. *Is Distance education a replica of conventional classrooms?*

Classrooms are constrained environments. If distance education programs are taped classrooms, then we are missing on the tremendous potential of technologies that can animate, simulate, capture reality, add movement to static concepts, and extend our touch to the whole universe. Movies and TV programs are not replicas of theater - not distance theaters. They tell the same story in a more dramatic and multifaceted manner. So should distance education. With it we can steal the thunder and touch the lightning!

3. *Are the people involved well oriented and trained?*

People involved in the integration of technologies into the teaching /learning process have to be convinced of the value of the technologies, comfortable with them and skilled in using them. So a program of orientation and training of ALL CONCERNED STAFF in the strategic, technical and pedagogical dimensions of the process is a necessary condition for success.

More importantly, do learners have the necessary skills to benefit from distance learning programs? It is necessary but not sufficient to provide avenues to information and knowledge. What is more important is to empower people with appropriate educational, cognitive and behavioral skills and tools to:

- access the information avenues efficiently, effectively and wisely;
- acquire knowledge, internalize it and apply it to new situations and to the real world;
- upgrade their knowledge continuously and systematically.

Building these skills requires three measures:

- First, adults need to have a minimum level of basic education including literacy. Technology should not blind us to the fact that there are still millions of adults who cannot read or write and, because of that, they cannot use educational programs offered through information technologies, or even through classical correspondence.
- Second, schools should provide training in “learning skills” – how to search, assimilate, define problems, apply knowledge to problem solving, etc.
- Third, technology literacy - the ability to use technology hardware and software – should be part of basic education and a pre-requisite for adults to make good use of information technology.

4. *Is the technology appropriate?*

There is a temptation these days to equate technology with computers and Internet. There is still an important place for other technologies, such as interactive radio, broadcast TV, and even correspondence courses. The application of each technology falls over a wide spectrum from the simplest to the most sophisticated. It is important therefore to identify the most appropriate, cost-effective and sustainable technology and level of application for the different educational objectives.

5. *Is appropriate content-ware available?*

This is one of the most forgotten areas. Yet when you think about it, it is the most crucial component. Introducing TVs, radios, computers and connectivity into schools, workplace and homes without sufficient curriculum-related content-ware is like building roads but without making cars available.

6. *Are distance education programs grounded in reality?*

There is a temptation that distance education programs create a world of virtual reality for the learner, a world that is not well connected to the natural everyday world. Learning activities and exercises must force the learner to connect with the real world through observation, exploration and application.

V. The Future of Distance Education

Final question: Can Distance Education succeed? There are the believers, the skeptics and the agnostics.

Believers think that under the right conditions distance learning can have a monumental impact the expansion of learning opportunities to wider populations beyond the confines of teaching institutions, and over the lifetime of the individual. Also e-learning can improve the teaching/learning process, enhance higher levels of cognition and facilitate institutional management.

The *skeptics* have at many times before been told that certain technologies, from filmstrips to tape-recorders to television, would remake their world? Why is it any different this time?

The *agnostics* are not sure. They have an open mind but do not think that there is enough evidence to make changes.

There is some truth in all three positions. Consequently, decisions must be bold but not reckless, cautious but not slow, and calculating but not static. Above all they need to be grounded in solid knowledge and enlightened by world experience, so that the wheel is not invented over and over again - especially when the wheel is square!

One final thought:

Distance education is not about delivery and technology; it is about knowledge and learning. The challenge of access to and quality of distance learning is enormous. But so is the potential. The incentive for distance education is human need and societal survival. But the sky is NOT the limit. The limit is human imagination and societal creativity.