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UNESCO PRINCIPAL REGIONAL OFFICE FOR ASIA AND THE PACIFIC

Asia-Pacific Centre of Educational Innovation for Development (ACEID)

Second Regional Symposium on New Media and Learning Technologies
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Paper Presentation: Harnessing Technologies for Effective Learning

by

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and

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(Paper presentation delivered by Mr. Philip Bergstrom, on behalf of Victor Ordonez and Rupert Maclean)

Mr. Chairperson,
Distinguished Speakers,
Participants,
Ladies and Gentlemen,

On behalf of the UNESCO Principal Regional Office for Asia and the Pacific in Bangkok, and also on my own behalf, I would like to say that UNESCO is both proud and happy to be associated with this important and timely regional symposium on new media and learning technologies.

Not only has the Asian Media Information and Communication Centre in Singapore chosen the theme so well, but it has also picked a
perfect time and place to discuss this theme. We are meeting at the end of
the second millenium, when all of us are wondering what innovative new
media and learning techniques are going to emerge during the new, third
millenium. In addition, we are meeting in Singapore, an exciting laboratory
of not only economic, but also social and educational developments that
have taught them, and us, both what works and what does not work,
particularly when it comes to most effectively harnessing the new media and
learning technologies to improve access to, and the quality and effectiveness
of, education and schooling.

In this presentation, I will mainly take the new technologies to refer to
the computer and related communication equipment and software that enable
one computer to “Network” with other computers; and to innovative forms
of TV satellite communications, such as interactive TV: indeed all
interactive media. Emerging challenges for teaching and learning are
certainly posed by the introduction into education of such new information
and communication technologies.

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It is worth pondering for a moment the characteristics of the Asia-
Pacific region in order to establish an appropriate context for examining new
media and technologies, with particular reference to technologies for
effective learning.

The region of Asia and the Pacific, which is home to 63% of the
world’s population of almost six billion, is outstanding for the vast range of
diversities which encompass almost all aspects of life, whether it be geographical, socio-economic, cultural, political or developmental.

There are in the region countries of vast land masses (China, India, and Australia) and also island countries lying in vast ocean areas (the Maldives, and the Pacific Islands). Countries with the largest populations (China – almost 1.3 billion; India – almost 1 billion), and the most rapidly growing mega-cities, are to be found in the region, as are countries with relatively small populations (Bhutan in South Asia, 600,000; Niue in the Pacific, 1,800).

The levels of economic development also vary widely, with some of the richest countries (such as Japan) and some of the poorest countries on earth (such as Bangladesh).

The region also faces some of the major problems facing mankind at the current time. For instance, there are estimated to be currently a total of 625 million illiterates in the Asia-Pacific region: 71% of the world’s total, of whom 64% are women and girls. By 2000 it is estimated that there will be 74 million out-of-school children in the 6-11 years age group in developing countries in Asia-Pacific region.

Some of the wide disparities that exist in Asia are particularly disturbing. For instance, in South Asia the literacy rate is 42% compared to 72% in East and Southeast Asia; while in South Asia, life expectancy is 10 years lower than for those living in East and Southeast Asia.
This diversity in demography, economy, geography, ecology and culture within the Asia-Pacific region presents challenges for international aid agencies such as UNESCO. However, despite such challenges and diversity there is a common thread in that all countries in our region believe that in order to achieve poverty eradication, sustainable human development, justice and equity in all respects, there is a need to make greater efforts to improve the quality, effectiveness and relevance of education and schooling. Nowhere is the challenge facing countries and international aid agencies (such as UNESCO) in the Asia-Pacific region greater than when it comes to harnessing the innovative new media and technologies, in a cost effective way, to achieve effective learning.

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Technology is a favourite topic of columnists and paper writers. Interestingly much of this writing, and much of the reaction to technology, especially by older generations, has been emotional rather than rational or technological. For our purposes, let me look at the three implications of all these comments on education. Because of technology:

- information is now available in vast quantities not imagined before;
- not only the amount of information, but the manner in which it is transmitted has changed drastically;
- most importantly, technology has changed not just the content or the transmission, but the nature of the learner himself or herself.
The amount of information must change the very paradigm of school and teacher. Whereas once the learner was in a desert of ignorance looking to the school or teacher as the oasis of information and knowledge, now the learner is in a veritable ocean of information, and the teacher is no longer a main source, but merely a fellow passenger with the learner in the same boat on that ocean, and the teacher must recast his or her role from source to guide, filter or facilitator. So also universities and schools are no longer the only “knowledge store” in town, but merely one alternative in a mega mall where specialized boutiques of distance education, company training, and the omnipresent worldwide web are increasingly availed of in a quickly de-credentializing society.

The way information is transmitted must change the way learning occurs. Once research involved painstaking and slow efforts of library hunting and correspondence; now with a keyboard at one’s fingertips, one can tap into the greatest libraries, data bases, and discussion groups of the world. The emphasis on research is not looking for information, but on filtering and analyzing it.

But the aspect to be explored with you in more detail today is the impact of technology on the way a learner will think and thus learn, especially the learner of the future. Let us take one specific example to illustrate this: the matter of instantaneity. As Robert Levine wrote in a recent article in the New York Times:

"Instantaneity rules, on the screen and on the networks as in our daily lives; instant reply, instant coffee, instant intimacy"
and instant gratification. The changing pace of media from films to TV commercials from broadcast news to music videos, both reflects and conditions a changing pace in our psyches. No wonder we complain — yet we have chosen this, as individuals and as a culture, and perhaps we thrive on it more than we admit. We are filling a hunger. The faster we jump from scene to scene or from channel to channel, the more we get — if not more quality then at least more variety.

Contrast this with Indonesians who watch the same puppet shadows plays time after time, the Sherpas who eat the same things daily. They are perfectly satisfied. But will they spurn instantaneity? Is the accumulation of speed, along with the accumulation of variety, along with the accumulation of wealth, a one-way street in human cultural evolution?"

The implication of all of this is that technology is changing the nature of the learner himself/herself in a way that needs further analysis. Perhaps even more important than the changes in content and process are the changes in the way the learner thinks, reacts, and responds behaviourally; this has not been getting the attention it deserves.

In the first place, if learners in the vastly different cultures of Asia think, react and behave differently, speak different languages and have different paradigms, then the culturally sensitive learning experiences in different areas must be structured differently.
And if cultures vary with place, they certainly vary with time. If future generations are raised in an environment substantially different from ours, it must be assumed that they will think, act, and be motivated in ways substantially different from us.

The learner of the future will be from a generation raised in an environment of information overload, where instant gratification is the goal and quick response the norm, where global competitiveness engenders a me-first mentality, where messages are packaged in 30-second sound bites or video clips, and where sustained attention is replaced by successive MTV-type bombardment of images, where the printed world, and indeed the logical thought process, are replaced by the colourful image. We need to more carefully draw out the implications of this on how future generations will think, will be motivated, and thus will learn.

If you ask students who their favourite teachers are, who had the most influence on them, they would identify, not those who know the subject matter best, or those with the latest pedagogies, but those who knew them best, those who understood their problems, the way they thought, the ones who spoke their language, saw their dreams, listened to their music.

We realize of course, that vast areas of the globe are not yet affected by technology as the youth in our urban centres are. Fully 600,000 villages around the world do not even have electricity, much less television or the Internet. But individuals and communities in these cultures do have a viable environment of their own, and if we must understand how the urban youth thinks if we are to be effective teachers to them, then all the more so must
we understand how rural, ethic, or tribal peoples think and live before we can hope to be effective. This raises basic questions, not only for the Yalees of Irian Jaya; the Kalingas in the Philippines; the nomadic clans in Rajastan and Mongolia, but for several thousands of communities around the globe: how do they think? What can we meaningfully teach? Should we for example replace their workable and complex cosmology with ours; teach them the big dipper and the Ursa Minor when they have a reading of the stars that bear directly on their agricultural patterns?

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For UNESCO and many countries in our Asia-Pacific region, as we peer into the next century, the new media and information technologies are attracting special attention due to their potential impact on the quality and effectiveness of learning and teaching (e.g. Birch and Maclean, 1998), in ways that have been already been referred to earlier in this paper.

What have these new information technologies to offer for those living and working in the large and diverse Asia-Pacific region? Are these technologies just as useful and appropriate for those living in the poorest countries in the region as they are for those living in the richest countries? And, what impact can and will these technologies have on helping to achieve greater equity, poverty eradication, and sustainable development in the region? There are some that say that one impact of these technologies is that they will contribute to a widening of the gap between and within countries, between rich and poor, the haves and the have-nots, and between the empowered and those who are marginalized. And what is the potential
impact of the new information technologies in helping to improve the quality, effectiveness and relevance of education and schooling, in poor and rich countries alike?

There are many possibilities of harnessing information and communication technologies for the achievement of “education for all” goals, and other aspects of education and schooling, and there are signs that these technologies could eventually have radical implications for conventional teaching and learning processes, and therefore for the work of teachers and teacher education. However, according to the 1998 World Education Report (p. 78), the educational potential of these new information and communication technologies has, as yet, barely been tapped. What is clear is that, as is the case with other sectors of the wider economy and society, education (and in particular teachers) will need to come to terms with the new technologies, in both the less developed and more developed countries. Special attention and assistance in this regard is required for countries to ensure that the poorest countries do not fall further behind, nor the rich-poor gap widen in developed and developing countries alike.

Some examples of the ways in which the new information technologies are being harnessed in less developed countries include the following:

- **In Bangladesh:** UNICEF aims to put the Internet into every school that has electricity since the planners believe this is the most effective way of improving the quality and effectiveness of
schooling, and of enhancing in-service teacher education programmes.

- **In India**: a pilot study is under way on expanding the use of computers and the internet in primary and secondary schools, and in rural communities.

- **In Bhutan, China, Viet Nam**: There is widespread use of satellite communications for in-service teacher development courses.

- **And, in remote parts of China, Cambodia, Pakistan, and India** there is widespread development of literacy programmes at the village level using satellite TV with particular reference to adult literacy programmes.

Although much more needs to be learned about the educational potential of the new technologies, it is clear that they are likely to have major implications for teachers and teaching. For example, with regard to teaching and learning materials, available evidence (e.g. Birch and Maclean, 1998) suggest that books will be increasingly complimented by multi-media software and there will be greater use of computers in classrooms. However, a major constraint remains cost; there is a problem with regard to the production of software both in terms of who should produce what software and the production of enough software to meet the demand for it; there is the issue of local development as against that which is imported (especially from the U.S.A.); and there is the problem of the access to new
technologies of the poorer countries and poorer communities within countries.

With regard to teaching methods and approaches, many existing school buildings and classrooms were never designed to accommodate the use of the new technologies which often require using available classroom space in a very different way. For example, it is no longer appropriate to have a classroom design where the teacher is always out front, as occurs in conventional classrooms. Given the ways in which the new technologies are being used, the role of the teacher in the classroom changes to that of a “learning coach” or “facilitator”.

Over the years, there have been some who have believed that with the advent of increasingly sophisticated technology, machines can replace the teacher. Teaching machines were all the range in some countries back in the 1960s, the view being that students could most effectively be taught by machines rather than teachers, the teacher becoming a technician who programmes the machines. With the advent of computers and the Internet, and their increasingly widespread use in classrooms, there has been further speculation that they may eventually replace the teacher.

Despite such speculation about the use of machines and other educational technologies in classrooms, evidence (e.g. World Education Report, 1998; Birch and Maclean, 1998) suggests that while technology will have an increasingly important role to play in schooling, it is unlikely to replace the teacher. Rather, the teacher will draw upon a wider repertoire of technology when going about her or his work, but maintain a central role as
facilitator and co-ordinator in the educational environment. Hence, teachers need to learn how to use the new information technologies, in order to utilize these technologies to improve the effectiveness of their own teaching. They should also assist their students in the use of these new technologies, where the latter have not already such competencies.

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In conclusion, it may be said that the rapidly emerging new media and technologies will without doubt have a mammoth impact on learning and teaching, including on the nature of the learner himself and herself. The major challenge facing us all is to ensure that the potential impact of the new media and information technologies in helping to improve the quality, effectiveness and relevance of education and schooling, is fully realized in both poor and rich countries alike.
References
