

# Old Technology, New Technology or the technology?

While the digital revolution offers real opportunities for education, information and communication technology is a costly investment. There is still much to be said for using a mixture of appropriate technologies, including the less costly "old reliables", radio and television.

The global spread of computers and the Internet is changing the way people communicate and do business. Yet there is considerable disagreement among experts over what the impact of the digital revolution will be on education, particularly in developing countries. Despite the enthusiasm of many proponents, new technology is unlikely to be a "magic bullet" capable of solving problems educationalists have been struggling with for years. On the contrary, it may aggravate existing inequalities. Mark Malloch Brown of the United Nations Development Programme (UNDP) reminds us that "even as science and technology continue to create new wealth in rich countries, the conditions in developing countries are in many instances worsening". Professor David Johnston of Canada's Information Highway Advisory Council (IHAC) is an enthusiastic proponent of information and communication technology (ICT). IHAC's national connectivity strategy has already linked over 15,000 schools and 3,000 public libraries to the Internet, as part of a public-private partnership. Johnston explains that its goal is to prepare for a world in which "globalisation is pervasive, the information highway is reshaping business and markets, there is a shift to knowledge workers in every sector of the economy and innovation is the source of value-added growth". The promise that ICT holds for education in such a context is undeniable.

Maris O'Rourke of the World Bank identifies three other ways in which ICT can make a difference: it can include the excluded, by developing open and distance learning options; it can decentralise education administrations and increase community involvement; and it can be used to teach about the technology itself, helping people acquire the skills and competencies needed for the future. "A nineteenth-century education is not going to get us a twenty-first century future," she remarks. Programmes such as IHAC require massive resources beyond the reach of most developing countries. The critical question is whether such programmes are appropriate anyway. A thematic study for the EFA 2000 Assessment by the International Research Foundation for Open Learning assesses the feasibility

of applying ICT in the poorer countries of the world. It concludes that, whatever the technology used, the imperative to build, maintain and staff primary schools must remain a financial priority. As for secondary and higher education, ICT has perhaps great potential but costs are high.

Clearly, new technology presents both threats and opportunities for education. One of the opportunities is the enormous scope for co-operation among developing countries. Malloch Brown believes that the South is perfectly capable of finding its own solutions to the challenges of change. He cites the Republic of Korea's experience in promoting state-of-the-art research and development, the policies that have worked for India in establishing its "Silicon Valley" in Bangalore and the emerging software industry in Costa Rica. All these initiatives, says Malloch Brown, can provide adaptable blueprints for development. One of the threats is that the "digital divide" between those who have access to computer skills and the Internet, and those who don't, may actually widen, rather than narrow. Indian software specialist Venkatesh Hariharan points out that because only 10 per cent of India's population (of one billion) speak English, some 900 million Indians are effectively excluded from the "digital revolution" for the foreseeable future. This is the case for speakers of minority languages everywhere: the dominance of English on the

Internet is in many ways as much a barrier as the high cost of equipment.

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Putting a computer in every classroom, besides being extremely costly, may not necessarily be the best policy for a developing country. The cost of delivering interactive educational radio programmes has been estimated at somewhere between \$3 and \$8 per student per year, while the equivalent cost for computers in schools is between \$18 and \$63 per person per year. The EFA study lists alternative strategies for providing computer access: "the use of mobile units, the sharing of computer facilities with other agencies and mediated access where a third party seeks information through computer networks on behalf of learners". All were "under-emphasised in early planning", claims the report. Many initiatives combine new and old technologies in imaginative ways to deliver educational content. Chulie de Silva of Lanka Academic Network (LANet), explains how an interactive radio programme offers Sri Lankan villagers the possibility of requesting Internet searches on subjects they are interested in. Telesecundaria in Mexico has been offering television-based secondary education for children in rural areas of the country for the last quarter of a century, and educational television looks set to continue for some time yet. Some people question the way in which the technology discussion is being framed. Jan Visser, president



of the Learning Development Institute, claims that proponents of the new technology often tend to see education as a delivery process. He calls for reassessment of traditional assumptions: the nature of pedagogy, the role of learners and of those who facilitate learning, and the relationship between school and community. The uncertainties about the impact of ICT on education will take time to be resolved. "Out with the old, in with the new" is a stark choice: it is perhaps more useful to frame the debate not in terms of old or new technologies, but of appropriate technologies applied in a cost-effective way to the task of delivering education for all.

## Writing off Debt to Fund Education

The impact of foreign debt is one of the principal reasons education budgets suffer. While investing in education yields major long-term benefits, governments face pressing short-term demands for resources to service foreign debt payments. Falling into arrears has an immediate negative effect on a country's ability to raise credit or pay for its imports. Yet at the global level, there is a strong cost-benefit argument to be made for writing off at least some international debt and using those resources to invest in education, at a time when overseas aid from rich to poor countries is declining.

The 1996 Heavily-Indebted Poor Countries debt relief initiative supported by the World Bank and a group of wealthy countries acknowledged the social cost of structural adjustment policies. The G8 meeting of some of the world's richest countries in Cologne in 1999 widened its scope. Yet many argue that debt relief is still moving too slowly, is too bureaucratic, and is too restricted by special conditions.

Has the role of overseas aid changed? Another thematic study prepared for the EFA 2000 Assessment, by the Overseas Development Institute, notes that aid to education, as a proportion of overall bilateral aid, has remained fairly steady at 15 per cent throughout the decade, despite the downward trend for overall bilateral aid. Multilateral commitments to education rose to an annual peak of US\$2 billion in 1994, falling back to US\$1.3 billion in 1998.

The study detects a move away from conventional delivery systems, such as projects and programmes, towards a sector-wide approach or "policy dialogue and partnership to ensure that aid is used in accordance with host government policy priorities".

## Who Pays for Education?

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Has education financing changed over the past decade? Almost all the current financial models in the world bring a variety of different partners together. Good education depends at least in part on the quality of those partnerships. In other words, it is not just a matter of how much money is spent, but how well it is spent. Maris O'Rourke of the World Bank admits that the World Declaration on Education for

All did not fully recognise the need for a plan to mobilise resources a decade ago.

"There is a widespread understanding now that no country is ever going to pull itself out of poverty or have social or economic growth without educating its people," she comments, highlighting the "remarkable strides" made in this field by countries such as Brazil, China and India. However, as she puts it, "there was never an overall researching framework or a real understanding of how much finance would be needed to reach the goal." Globally, around 63 per cent of the cost of education is met by governments, with the second largest contribution, 35 per cent, coming from the private sector: a combination of students, parents,

employers, non-governmental organisations (NGOs), and commercial enterprises. The final 2 per cent comes from overseas aid programmes.

The central role played by government is clear. "You can't get past the sovereignty of governments to allocate their budgets," says O'Rourke. A thematic study on partnerships prepared for the EFA 2000 Assessment identifies a key point: In developed countries with better tax systems, governments simply have more money to put into education; in poorer countries other partners have to play a more significant role.

According to UNDP, tax revenues represent 26 per cent of gross domestic product (GDP) in industrialised countries and less than half that in developing countries. In Cambodia, only 12 per cent of the funding of the "public" education system actually comes from the government. Households and communities meet 60 per cent of the bill, NGOs and foreign aid account for 18 per cent and politicians donate 10 per cent.

Often, the collapse of central government leads to alter-native, non-formal arrangements. During the civil war in El Salvador, for example, communities realised they could not expect help from the government and hired their own teachers for schools that had been closed because of the fighting. This was the birth of EDUCO, a communal education movement, which, after the war ended, received government assistance.

A different example of non-formal education is the Bangladesh Rural Advancement Committee (BRAC) which operates parallel to government primary schools and serves around 1.2 million children. "NGOs have shown themselves to be enormously cost-effective in education delivery. They often use highly unconventional approaches to difficult subject areas where traditional methods have failed", says Gordon Naidoo, who heads a South Africa-based NGO.

