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Article abstract

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Technical Evaluation Report

65. ICT-based Distance Education in South Asia

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Abstract

This report provides an update about innovative uses of information and communication technology (ICT) for distance education and training in South Asia. Particular focus is given to ICT initiatives in India, Sri Lanka, and Bhutan, at university level, and in non-formal interventions. Lessons learned from these countries are of value to any developing nation that wishes to address the improvement of educational and living standards of its people. The report stresses current uses of ICT serving the distance education needs of rural populations, and concludes that in all three countries the traditional media, including radio and TV, must play an important continuing role to ensure that education is accessible to the widest possible range of students.

Keywords: Appropriate technology; traditional media; e-learning; community development

Enabling Hardware

Distance education (DE) can be an important building block in the improvement of social and economical conditions of poor people, particularly in developing countries, given their large rural populations. A review of distance education (DE) approaches in South Asia indicates a wide range of innovative technologies under development for DE purposes in major universities and non-formal rural programmes. The current section stresses educational uses of ICT in India and Sri Lanka. The innovative spirit and importance of these initiatives may be viewed in the light of the basic development indicators of these countries: e.g., urban/ rural population, Internet and cell phone penetration, and gross domestic product (see Table 1).

Table 1: Key indicators for Bhutan, India and Sri Lanka (UNDP, 2005)

	GDP	Urban	Population	Internet (per 1000)	Cell-phone (per 1000)	Literacy
Bhutan	$1,325	11.1%	600,000	39	59	47%
India	$3,452	28.7%	1.1 billion	55	82	61%
Sri Lanka	$4,595	15.1%	19.1 million	14	171	91%

An interesting hardware development in India is the *Simputer*, a simple, inexpensive multilingual computer originally designed in 1998. It was conceived to allow illiterate people to use computer facilities such as the Internet and email, via facilities such as handwritten text comprehension and audio. Factors limiting its potential are the Simputer's dependence on batteries, and its cost which, at between US $240 and $480, is contained but still excessive for poor people (Purbo, Chin, Hague, Kaminura, Koanantakool & Pandey, 2005, p. 53).

Several versions of the *Simputer* were produced. The shared version is intended for village chiefs and for use in central points where members of the community can employ their own smartcards. Fonseca and Pal (2003) indicated that the *Simputer's* design needs to be improved if it is to overcome the substantial training required by new computer users, and that the device is rapidly losing competitive advantage over commercial mobile devices. The Indian government has invested in *Simputer* development, though has not been able to provide sufficient investment for research and design functions. Despite its drawbacks and the likelihood that it will never become a popular device, the *Simputer* is a prime example of the technical sophistication of India's efforts aimed at benefitting unprivileged people, and of the inadequate contribution of the private sector in such initiatives (Fonseca & Pal, 2003, p. 17).

The *corDECT* wireless local loop standard is another technological innovation from India. Unlike the *Simputer*, however, it has been utilised extensively in India and other developing countries including Argentina, Kenya, and Iran (Purbo et al., 2005, p. 51). Sponsored by the Indian Institute of Technology in Madras, corDECT is best implemented within an advanced phone-line infrastructure, with the addition of radio-signal features for Internet connectivity. The system is particularly useful in rural settings, where it can cover approximately 10 km, easily extendable to 25 km, and is considered one of the best connectivity solutions available in this situation (Rahman & Pipattanasomporn, 2002).

Educational Programmes

Based on innovative technologies such as the above, India and Sri Lanka have developed sophisticated educational systems using extensive DE approaches. Sri Lanka has given education a high priority ever since gaining its independence in 1948, and has achieved literacy for over 90 per cent of its people, the highest level in South Asia (Country Studies, 2007). Its government has enforced rigorous policies at all levels of education, has strengthened the public school system, and has set a high priority on providing adequate educational funding. Thanks to external donors and strong government policy, Sri Lanka has initiated several e-learning projects at university level – for example, in the Bachelor of Information Technology programme at the University of Colombo; and the Open University of Sri Lanka uses a broad range of DE approaches and local study centres (Jamtsho, Rinchen, Khan, Sangi, Ahmed, & Samaranayake 2007, p.23). In addition, a major ten-year project devoted to Distance Education Modernization was launched in 1999 with multi-million dollar grants from external donors, though its outcome has not yet been clearly evaluated and documented. In Sri Lanka generally, research on the precise effects of educational technology has so far been scarce *(*Karunanayaka & Wijeratne, 2005).

India has not given basic education as high a national priority as Sri Lanka, although its open university network, led by Indira Gandhi National Open University (IGNOU) since its inauguration in 1985, is an ambitious attempt to provide “education for all” (Sharma, 2001). IGNOU (well covered over the years in this Journal) usually imposes no entrance requirements, so students from all backgrounds and social groups can study at a low cost subsidised by the government. Most courses use printed text, accompanied by audiotapes, videotapes and other

technology. Some courses use teleconferencing, lessons on TV/ radio, CDs, Web-based content, and interactive radio counselling, and learning centres located throughout India to provide supplementary learning aids and support services. IGNOU has grown substantially since its establishment in 1985, and in 2006 had 1.4 million students and over 1,500 study centres.

An educational radio station in India, *Gyan Vani* (Voice of Knowledge), opened in 2002 using the infrastructure of the centrally controlled Air India Radio (AIR). Gyan Vani broadcasts to learners of all ages from primary school to university level. It serves a wide range of community needs, using innovative radio formats involving two-way communication (Chandar & Sharma, 2003). Agrawal (2005), however, claims that Indian learners generally prefer TV technology and that several educational projects which have used broadcast radio have not been pursued to completion. India has over 40 years of experience using broadcast TV at primary to university levels, including interactive TV programmes using teleconferencing via dedicated educational channels. Stations such as the public *Gyan Darshan* and the private *Zee TV* provide round-the-clock educational broadcasting. Evaluations have indicated a generally positive audience response (Agrawal, 2005).

To promote the use of e-learning at IGNOU, telecentres have been created throughout India, equipped with computers and Internet connections. Despite the rapid growth of these programmes, Sharma (2001) points out a number of teething problems: the absence of teacher interaction, the unavailability of the programmes outside the major cities, and a "polemical privatization" of some of the telecentres. Agrawal indicates that, in general, e-learning initiatives in India have benefited privileged and urban students.

In general, India has been innovative in its uses of diversified DE technology to provide university- level education. Agrawal (2005, p. 20) has indicated however, that "[d]espite 40 years of educational broadcasting, it is difficult to determine its role and scope in the context of Indian education," and that educational technology in India has widened the gap between those who have educational access and those who do not. Despite its attempts to explore diverse DE approaches in university level education, India has not adequately addressed the issues of primary and secondary education. Fozdar, Kumar and Kannan (2006), in a study of student dropout from IGNOU's Bachelor of Science programme, have indicated that DE institutions, such as IGNOU, should also seek to improve their low rates of student retention. The most common reasons for dropout involve the unmanageable distance from students' residence to the nearest study centre, and hence a lack of academic support and interaction with fellow students. Suggestions for improving student retention include increasing the number of study centres nationally, and providing additional student support.

Neighbouring Bhutan is in a good position to learn from its two southern neighbours – from their failures to provide basic education and to reach out effectively to rural areas, and from their successes in establishing study centres to democratise education and to widen its accessibility, and in applying diversified educational delivery methods (i.e., interactive audio, video, radio and TV, etc.). The Royal University of Bhutan (RUB) is made up of ten colleges and institutes and currently has a relatively small student body of 4,000 students (Royal University of Bhutan, 2007). Its use of distance learning is so far limited, and its exemplary case is the Distance Teacher Education Program (DTEP), a five year Bachelor of Education programme for primary school teachers offered by the Samtse College of Education. Started in 1995, the DTEP is delivered primarily via printed text with a month-long residential school on a yearly basis.

In 2003, to improve its accessibility for students located in rural and inaccessible areas of Bhutan, an Internet-based component was added to the DTEP, using learning management system methods, computer-mediated conferencing and email. Recent self-reports of these tests have been candid in describing the lack of satisfaction with Web-based methods (Jamtsho & Bullen, 2007). Students appreciated the additional support and references found on the course website, though lamented the constantly poor, even worsening, Internet connectivity issues they encountered. Jamtsho and Bullen have concluded that, "traditional educational media should be used more intensively to enhance instructor-student and student-student interactions" (p. 157). In summary, e-learning has been found to be premature in Bhutan, an inappropriate transfer of technology to a developing country; and it has been shown that the traditional media are likely to have an ongoing importance in formal educational programmes for the foreseeable future, just as in India and Sri Lanka.

Rural Projects

In non-formal distance education and training, new ICT methods are playing a substantial role in the development of emerging countries. Both India and Sri Lanka have made dramatic strides in using ICTs to reach out to their rural populations. For example, the M.S. Swaminathan Research Foundation (MSSRF) in India is a non-profit, grassroots organisation funded by government and UN agencies, and private donors (MSSRF, 2007). The Foundation practises a participatory, bottom-up approach to its development projects in rural settings, and has been a strong stakeholder since 1997 in the implementation of Virtual Knowledge Centers (VKCs) equipped with computers and Internet access, and communication systems for farmers and fishermen including the use of loudspeaker systems.

Managed by local communities, these centres play an important role in defining local learning needs. As stated on the MSSRF website, "[t]he main aim . . . is to empower vulnerable people in order to make better choices and achieve better control of their own development and to build skills and capacities of the rural poor with a view to enhancing livelihood opportunities." In a similar initiative, an extensive non-governmental organisation (NGO) in Sri Lanka, *Sarvodaya*, has established 15,000 rural telecentres equipped with computers and Internet access. These too aim to develop local training programmes, and create knowledge networks based on local needs.

As indicated in the previous edition of this Journal (Berman, 2008), informal rural learning in India is also provided by community radio. This movement combines radio transmission in rural areas with local face-to-face discussions. In Pasatapur, *Deccan Development Society* is an NGO devoted to assisting illiterate and marginalised women. Village associations have emerged from the community work of local radio stations (UNDP & UNESCO, 2004). Radio programmes include talks, interviews, discussions, and songs. The work has resulted in improved knowledge of agricultural techniques, and women have learned about health issues, and tasks traditionally done by men. Community radio in India shows its role in raising social consciousness and knowledge exchange. Meanwhile, Sri Lanka has participated in the World Bank's Global Distance Learning Network (GDLN), an ambitious initiative designed to encourage developing countries to develop local learning programmes. Practical usage of the GDLN, however, is expensive and requires proprietary hardware. Sri Lanka has also made lower-technology efforts to use computer- and Internet-based methods in rural education, using, for example, a bus to tour the country with basic educational materials (Jamtsho et el., 2007, p. 28).

Conclusions

The above examples represent only a cross-section of the innovative uses of ICT and knowledge centres developed in South Asian education in recent years. Distance educators in India, Sri Lanka, and Bhutan have employed original means of providing distance education at the university level and in rural situations, and have concentrated on harnessing technologies which are easily accessible to their users, including radio, TV, and even buses. To date, their approaches have been sophisticated, if not perfectly tuned. Common weaknesses are a need to ensure adequate outreach to rural areas and provision of primary and secondary education. Technologies such as radio, which are far-reaching and effective for isolated peoples, have not received the attention that they deserve, whereas the up-and-coming technology, the Internet, which primarily benefits the privileged strata of society, has received widespread attention. Initiatives have lacked essential ingredients including the commitment and support of government, external donors, and strong teaching methods embracing a wide range of appropriate DE technologies.

The unfortunate conclusion is that DE technology in South Asia has so far been largely dictated by the needs of the more affluent, urban learners. More research and development is needed to assist South Asia in gaining policy-making insights in this respect. Nonetheless, as Baggaley and Ng (2005) have indicated, DE technology in Asia "is a 'hot bed' of research and development from which DE designers in the rest of the world stand to learn much.

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