COMMUNICATION

Using Technology for Quality Improvement of Teacher Education in OUSL : Problems and Possibilities

CHANDRA GUNAWARDENA
Open University of Sri Lanka, Sri Lanka

Abstract : *The author discusses the use of technology for quality improvement in the distance education programmes of OUSL. The study is based on data gathered for teacher education programmes, which has impiications for other open universities too.*

"There exists today a global arena in which whether we like it or not, the destiny of mankind is to some extent played out. Worldwide economic, scientific, cultural, and political interdependence dictated by the opening up under the pressure of free trade theories... is becoming even more securely established" (Delors, 1996). Even the smallest, the most distant or remote society will fail to escape the needs of worldwide interdependence and globalization in the 21st century.

One major force which has quickened the evolution of the 'global village' is the advances in the new information and communication technologies. ERT Ed. Policy Group (1994) specifies the technologies that impact on education:

- computers of all sizes and sophistication,
- cable and satellite TV and broadcasting,
- multimedia equipment,
- interactive exchange systems including electronic-mail and on-line access to libraries and public data bases,
- computerised simulations, and
- virtual reality systems.

The potential of these technologies for extending education and for enlivening and improving the quality of education provided in educational institutions is unlimited. Especially in the context of South Asian societies where large percentages of population

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still remain illiterate and where drop out and repetition is high due to the poor quality of teaching, these technologies also bring the school closer to real life situations and can satisfy the increasing and diversified demands of education, by making it possible to design individual learning paths along which each pupil can move at his or her own pace. Slow learners can be better motivated through new technologies. Interactive media can make students active learners. Teachers also, on the other hand, can organise the rapidly accumulating information more systematically using computer disc technology. 'Computeracy' a fourth type of literacy is pointed out as a prerequisite for proper understanding of the real world today.

Use of new technologies is particular significance in distance education which caters to large numbers of students geographically spread far and wide, having limited time available for study, being saddled with work and family responsibilities.

Delors (1996) highlights the corresponding change in the role of teachers that will take place in the wake of increased use of new technologies in education: "In an information society, teachers can no longer be regarded as the sole repositories of knowledge that they have only to pass on to the younger generation: they become as they were partners in a collective fund of knowledge that is up to them to organise, positioning themselves firmly in the vanguard of change." It is argued that 'computeracy' should be an essential component of initial and in-service training. The International Commission on the Education of the 21st Century thus advocates that 'the use of the new technologies in education is a matter of financial, societal and political choice that should be central to the concerns of governments and international organisations.'

Teacher Education Programmes of OUSL

OUSL conducts three teacher education programmes — a Certificate in Pre-School Education, a Bachelors Degree in Education (Natural Science), and a Post-Graduate Diploma in Education. The Certificate Programme in Pre-School Education is a two credit programme of one year's duration. The B.Ed. degree programme offered jointly by the Department of Education and the Faculty of Natural Sciences, has a duration of four academic years. The first two of the four years are devoted to the teaching of science and the latter two to courses in Education. It is an eight credit programme and the undergraduates are required to acquire two credits at each of the four levels of study. The Post-Graduate Diploma enrols only university graduates, the predominant majority of whom are practising teachers. It is a four-credit programme and is offered at two levels within the duration of two academic years.

All three programmes include a compulsory component of teaching practice and methods of teaching in addition to the normal pedagogical courses. The duration of practice teaching in the degree and the post graduate diploma is ten weeks.

Using New Technologies in OUSL Programmes

Similar to the distance education institutes in some other developing societies, OUSL also places more emphasis on print media as the basic delivery mode in its programmes of study. Audio-video technology and broadcasting, however, are gaining increasing

importance while efforts are underway to introduce audio conferencing into the teaching system. It is useful to discuss each of these types in a little more detail here.

AV materials from an integral component of all programmes of study even though they may not be available to the desirable extent. A state-of-the-art Media House, fully equipped with sophisticated equipment (a generous gift from Japan) has enabled OUSL to develop AV materials of a high quality for use by its students and teachers. The students can use these materials at the regional centres and in the Audio-Visual Resource Centre of the Central campus.

Broadcasting has been used to supplement the print material from the inception of OUSL. As the potency of broadcasting for distant learners specifically and for dissemination of knowledge to the general public is being recognised, negotiations are afoot with the Sri Lanka Broadcasting Corporation to extend its use.

The Educational Technology Division of the university has been regularly conducting workshops for training staff in AV production during the last two years. The academic as well as the technical aspects of AV production are dealt with in these workshops of one week's duration. Each staff member who undergoes training in these workshops is expected to produce an audio or a video programme.

The staff use some of these materials in their Day Schools for skill development when relevant, for example, in the Post-Graduate Diploma in Education and Bachelor of Education programmes. Video material is used to orient student teachers to effective teaching strategies in the classroom. These video are viewed and the teaching portrayed is critically evaluated to identify the teaching techniques that should be emulated and the shortcomings that should be avoided. They are also used to illustrate and clarify complex theories of educational psychology and pedagogical science and thus complement Day Schools.

The equipment for audio conferencing, donated by the Commonwealth of Learning has now been installed and will be ready for use in the current academic programmes. This facility once it is inaugurated will be available for use in the Colombo, Matara and Kandy Regional Centres. Electronic mail is widely used but CD-ROM and internet have only recently been installed. Recent publications on different disciplines, for example, distance education, are available through E-mail, while ICDL is accessible on CD-ROM.

Constraints on the Use of Technology in Teacher Education Programmes

Constraints that affect the use of new technologies in the OUSL programmes in general and in its teacher education programmes in particular, stem mainly from economic and socio-cultural factors.

A major factor that determines the use of new technologies at OUSL is the level of economic development. The percentage of the GDP allocated for education has been increased from 2.5% to 3.0% at present, but the percentage devoted to higher education is only 0.4%. There is intense competition within the education sector for this limited amount due to the need to expand facilities, to improve existing provision, and due to

increase in costs as a result of inflation. Thus the investment in the provision of equipment and infrastructural facilities needed for the use of new technologies has not been adequate at university level. It is noteworthy that in 1993, 71% of the national education budget was spent on the payment of salaries and 26% for student welfare programmes, leaving only 3% for inputs such as essential technical materials, school supplies and school maintenance (World Bank, 1996). Some provinces spend as little as 1% of their budgets on quality inputs.

It is pertinent to note that new technologies especially due to the rapid advances in the field would necessitate adequate funding for maintenance and upgrading of equipment.

The Faculties and the Departments of Education in Sri Lanka's universities, including OUSL suffer from a death of persons with required technical skills to utilise the potential of new technologies fully. This is due to the fact that the training of teacher education has mainly been academic and not sufficiently comprehensive.

Moreover, the exposure of the student teachers to technology in their own educational careers is limited. The limited exposure in turn leads to negative attitudes which hinder acquisition of technical skills even when opportunities are provided. Table 1 reveals the poor utilisation of educational technology even to the limited extent to which it is provided, by student teachers, who were resident in remote and distant areas.

Table 1 : Utilisation of student support services (%)

Facility	Used	Not Used	No Response
Audio cassettes	19.0	71.4	09.6
Video cassettes	49.5	40.0	09.5
Computers	04.8	85.7	09.5

Source : Gunawardena and de Zoysa (1995)

At the same time, the use of new technologies, especially interactive media, is facilitated if the student teachers have access to equipment required. Table 2 prepared for the same sample of teachers indicate the situation to be extremely disadvantaged. In the extremely deprived communities which has access only to postal services all types of electrical and electronic media are shown to be beyond the reach of student teachers, in their homes or schools.

Table 2 : Availability of facilities to use different media (%)

Medium	Often	Sometimes	Rarely	Never	No Response
Radio	09.4	21.0	14.3	50.5	04.8
Audio Cassettes	01.9	03.8	09.5	78.6	06.2
Video Cassettes	00.00	01.0	27.8	68.6	07.6
Telephone	01.9	07.7	15.2	69.8	05.4
Postal Services	61.0	13.3	08.6	13.3	03.8
Computers	00.0	00.9	00.9	92.8	05.4

Source : Gunawardena and de Zoysa (1995)

It is relevant to inquire into the reasons for this reluctance to use available technology. One probable reasons is the gender-base socialisation which has an impact on children's subsequent choices of educational streams and occupations. Thus in 1994, women comprised about 80 per cent of primary and 60 per cent of secondary school teachers and averaged over 70 per cent of teachers at all levels (World Bank, 1996). At OUSL, influence of this gender-based socialisation is evident from Table 3.

Table 3 : Student enrolment in selected OUSL programmes by gender (1996/97)

Programme/Course	Male	Female	Total	%	% of total students
Foundation course in Engineering	3866	1205	5071	23.8	51.8
Diploma in Technology	258	60	318	18.9	3.3
Bachelors Degree in Technology	1949	259	2208	11.7	22.5
Post Graduate Diploma in Technology	68	5	73	6.8	0.8
Post Graduate Diploma in Education	748	1362	2110	66.8	21.6

Source : Data Processing Unit, OUSL.

Directions for the Future

It is native, however, to expect that any of the forces identified above, economic or socio-cultural, can keep the new technologies away from the educational institutions — Schools, institutes and universities, in today's societies which have become information societies. In some societies like India, they are already firmly established with innovations such as the Satellite Instructional Television Experiment (SITE).

Following suit, OUSL with support from UNESCO is now attempting to link teacher education with telecommunication technologies. The proposed project will institute a Chair in Teacher Education and Information Technology, to act as a focal point for activities connected with the fast expanding field of IT in education. The Chair will be created at OUSL in order to place emphasis on IT applications in teacher training/ distance education in Sri Lanka. One of its objectives will be to conduct research and development related to the use of IT in education including the use of hi-tech equipment and the adoption of appropriate teaching methods. A working group has been appointed to plan and implement the information technologies as relevant to distance education in the country.

As pointed out before, new technologies cannot be imposed on an underdeveloped infrastructure. The government's present effort to extend access to telecommunication to the remotest corner of the country and the entry of the private sector into the field on a competitive basis offer hope for a more dependable telecommunication network in the near future which can be profitably utilised by distance education institutes.

Even when essential financial outlays in new technologies come in the form of donor assistance, continued support is necessary for maintaining the momentum of these initiatives. Scarce resources have to be used to the optimum and the questions of outreach

and the individualised access will need to be decided upon after an analysis of costs and benefits and economics of scale. The collaboration of the other major distance education institution in the country, the National Institute of Education (NIE) in the UNESCO project should increase cost effectiveness.

Within the Open University, action has already been taken to develop a Master of Teacher Education Programme which would provide local training to teacher educators. It is envisaged in addition to the professional and academic components to upgrade the respective competencies of teacher education to include computer technology and educational technology as courses in the proposed programmes. The course on Educational Technology will strengthen the inputs of AV Workshops which are already in force. It is assumed that the initiation into new technologies will spur the teacher educators to make better use of interactive media and the benefits will filter down to the level of the schools through the teachers trained by universities, National Institute of Education and the Colleges of Education.

This programme will complement the work of the Computer Education Department of the NIE which is already training teachers in computer technology from 30 computer centres in different educational districts. Already 150 teachers have been trained and a future batch of 100 will be trained and appointed to 10 additional centres. These computer centres conduct programmes in computer technology to students awaiting the results of the GCE (O/L) and (A/L) examination.

In view of the possibility that the teaching profession will continue, even in the 21st century to be feminized, parallel to the popularization of new technologies, sex stereotypes regarding suitable educational options and careers also need to be broken down. The need to do so has already been recognised and at school level subjects like Life Skills attempt to offer common activities for all children, boys and girls.

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[**Professor Chandra Gunawardena** is Dean of Education. *Correspondence*: Faculty of Education, Open University of Sri Lanka, Nawala, Nugegoda, Sri Lanka. Fax: 94-1436858]