

2.1 Technologies for Educational Network (1995)

Abstract

The open and distance education system has now been accepted by our planners and policy-makers and an important channel of education which has great potential and feature.

We may broadly categorize the transformation of the non-formal education into three phases, depending on the use of communication technologies - a) Correspondence education, b) education with the help of radio and television, and c) education with the help of information communication networks.

It is very essential for the survival and development of the Indian educational system to have a national educational network that will allow flow of data, voice and images. (By : CGV)

1. Introduction

It is great pleasure to welcome you all to the Seminar on 'Technologies for Educational Networking' IGNOU has completed ten years of its life, and hence the seminar is one of the activities organized for the decennial celebrations of IGNOU.

2. Development of Open & Distance University Education

2.3 The open and distance education system has now been accepted by our planners and policy makers as an important channel of education which has great potential and future.

3. Concerns of DE System :

3.1 Dependent model

At present D.E. institutions rely heavily on the local expertise of academic counsellors to help learners in their self-study. The limitations and inadequacies of the counsellors is often a hindrance to the learning process of the learners . At present DE system , is heavily dependent on print materials and uses audio-video as a minor supplementary part. For guidance students have to come to towns where SCs are located. The SC staff working on part time basis is often less responsive to the wider problems and queries of the students. We hope that modern technologies will ensure direct interaction of the students with the best experts who may not necessarily be located at nearby places.

3.2 Disadvantaged learners

At present the major disadvantage of the learners is geographical and economic. The rural students have to attend counselling or seminars at SC/WC thereby making their education

more costly. Often modern technologies are quite costly and to recover maintenance and user costs from the students, will certainly make education unaffordable to the majority. The seminar may help us in identifying a proper mix of technologies that can offer economic solutions for delivery to distance learners.

3.3 **Education at the Doorstep** of learners is the goal of the open university system. Only the modern technologies can help us in achieving the goal.

3.4 **Democratization of education** is one of the cherished goal of the DE System and this means offering education to millions. Communication technologies alone can suggest appropriate models for this purpose.

These are some of our major issues which, we believe, can be revamped through the educational networking of all the resources and services.

4. Three Phases Of Non-formal Education At University Level

4.1 We are all aware of the **development of non-formal education** in the university system since Independence. It all started with extra-mural education, continuing education, adult education, etc., with an objective of taking the knowledge confined within the four walls of the educational institutions to the common people through various programmes. The development and use of communication media in various walks of life is having its impact on the patterns and channels of education. We may broadly categorise the **transformation of the non-formal education** into **three phases** depending on the **use of communication technologies**.

4.2 The facility of postal communication gave rise to the correspondence course institutions which is the first major addition of non-formal education to the formal university education system. **Correspondence education** heralding the first phase of non-formal education relied exclusively on print medium, used mainly postal communication; and offered class-room or face-to-face courses to off-campus or distant learning students. The expectation of the Education Commission that the correspondence courses should succeed in enrolling about 1/3rd of total students after two decades did not materialise for various reasons, and could reach only upto about 5% by 1984-85.

4.3 The large scale use of radio and television brought in the second phase in non-formal educational system leading to distance education. The Distance Education system started using multi-media, i.e. audio, video and print media as distinct and separate components, with print dominating the instructional materials and the learning process. The domination of print materials is obvious for its portability and personalised use. However, with the wider use of audio and video tapes, their utility is increasing very fast. At present, the concern is how fast can we use audio-visual media and raise their role and importance as instructional materials, thus making them appropriate and effective in the process of self-learning,

4.4 We are, however, currently facing a new change brought about by the communication technologies, namely, **information communication networks** that can transmit **data**, voice and images; and **the** development of multi-media, rather **digital multi-media (to distinguish the term from its conventional use in Distance Education)**. The **modem**

computers and technologies are enabling us to develop digital multimedia in which text, voice, pictures, simulations, etc. can be integrated and learning materials can be **offered** through computers as an interactive learning package. The new communication technologies and networking are slowly enabling us to develop what is often called, virtual class-rooms, virtual conferencing, virtual laboratories, virtual field-work, etc. Though these ideas are at present at the initial stage and appear vague, they **reflect the** applications of artificial intelligence and may soon become a virtual reality in **the** field of education. Though not an expert in computers, but as a student of science, I can visualize a great change and transformation in the field of education within the **next few** years. We are certainly marching towards the next change i.e. the third **phase of** non-formal education, i.e., **networked educational system**.

5. Globalization-challenge To Indian Education System.

- 5.1 Many universities, particularly DE universities from the developed countries, are **offering** in India educational programmes through Internet and multi-media use. Their **fees are** obviously high. Only students from the rich strata of society can afford such **education**. Also the attraction of foreign degrees, and the preference of multi-nationals to hire students with these foreign degrees, the Indian Education system is now directly **facing** a competition.
- 5.2 Due to various technology adoption in our living and working life, we, as a society, **are** getting transformed into the **post-industrial** or **information or learning society**. According to Daniel Bell " Knowledge and information are becoming the **strategic and** transforming agents of the post-industrial society." We are and will be **experiencing** explosive changes in our personnel working and social life during the period.
- 5.3 Access to knowledge through **education or knowledge network** is going to **divide** countries and societies into info-rich and info-poor. This will obviously create **another** divide, it is, therefore, a tremendous task before the scientists, technologists and educational planners how not to allow this division to develop by devising education technologies that will give access to all the learners in India. Offering economical and cost-effective education for all by employing communication technologies is, I believe, a major challenge before all of us.

6. Direction

Distance education in India is getting organised under the Distance Education Council (DEC) of IGNOU. DEC is currently developing a consortium of all the open universities in India for :

- (a) developing a common pool of programmes well assessed for their quality.
- (b) establishing norms for sharing the common pool programmes by the members of the consortium and maintaining their quality in delivery to students.
- (c) developing a common credit system, so that students' mobility is easier and that they may take programmes of their choice simultaneously from more than one university.
- (d) maintenance of standards and quality assurance in open and distance education in India.

The consortium of open universities will be expanded to include 46 correspondence course institutions in its fold from the 9th plan period.

7. Open Education Network (Openet)

- 7.1 One of the ambitious programmes envisaged is the development of a network for open and distance education institutions.

Indian Space Research Organisation (ISRO) has established for IGNOU and other distance education institutions, a tele-conferencing system with one-way video and two-way audio, whose teaching-end conference room is located at the IGNOU Campus hi Delhi, and the receiver-ends are located at nearly 100 places in India, out of which 23 belong to IGNOU and its sister universities. At the receiver end students can see and listen to the experts and teachers on the TV Screen and ask questions simultaneously through telephone or fax. This is a **virtual class room** now getting established in India. Common pool courses as in management, education etc., would be learnt by hundreds and thousands of students through class-rooms spread all over the country. The present facility is a **broadcast network** and can be extensively used for training and developmental activities.

- 7.2 **Physical network** can be established by sharing the facilities and educational services of the open universities through their Regional and Study Centres which number around 1,000. **Computer network** is also proposed to be established by linking all the open universities and their Regional and Study Centres in a phased manner, so that **students** can be served academically and administratively with efficiency and promptness.

- 7.3 There are, however, many deficiencies in the present set-up of the Network which we are trying to establish with our limited resources:

- (a) The network has to use existing telephone lines. But considering their present reliability and cost, a common student will not be able to pay the cost of the network use.
- (b) Talk back at the user ends will be located only at the district places or in big cities where our Regional and Study Centres are located. The geographically disadvantaged students living in rural or hilly areas will not be able to use this knowledge or education network.
- (c) We are using the extended C-band transponder which needs special dish antenna. At present they are installed at 100 places. Even if they are multiplied 10 times the whole country will never be covered. **What is therefore needed is a** dedicated educational channel available 24-hours and accessible on general TV channel to every viewer.
- (d) Teaching-end facility is now located only at one place and needs uplink facility which costs around Rs.3.00 crore. If education is to be made accessible on a mass scale, such uplinks and teaching-ends have to be established in every state for every major Indian language.

- (e) The total cost of establishing the network is quite high and cannot be borne by the educational institutions. Initial investment by the Government to create infrastructure is therefore necessary. Later on, commercial use of the network can be generated in such a way that it can be made operationally self-supporting.

7.4 By considering the global competition in which outside universities are likely to swarm the Indian educational scene,' particularly for higher end courses in the areas of management, technology and communications, it is very essential, for the survival and development of the Indian educational system, to have a national educational network that will allow flow of data, voice and images. Over the years, the Indian educational system has proved its quality and standards, easily seen from the contributions our graduates are making in developed countries. Now it is a question of quality education on our soil Every university has now to come up with high quality assurance in all its educational programmes. The modern communication technologies are enabling us to transmit a wide range of courses of high quality to reach students separated from the university campuses The communication technology edge for better competitiveness and quality, therefore; needs to be acquired by the Indian education system. Open and distance education institutions are struggling to get it.

8. Concluding Remarks:

8.1 This conference is organised with an objective of getting a perspective on the technologies available for educational networking and their appropriateness to the distance education system in India. All of us are aware of the tremendous scientific and technological development that has taken place in India. The technologies could be used for developing appropriate network for educational purposes. We are not interested in having separate Open Educational Network (OPENET) but any independent network available that fulfils our needs will serve our purpose. However, accessibility of the network to our disadvantaged and economically poor learners should be ensured.

8.2 We are now entering into the era of globalisation with worldwide communication networks connecting all. Recently a workshop organised by the ESCAP (Economic and Social Commission For Asia & the Pacific) and the UNESCO proposed development of network of educational institutions and their resources for ensuring better cooperation amongst countries of the region and for dissemination of Education For All. Recently UNESCO has adopted **Learning Without Frontiers** as its goal and a policy to support such activities in all regions particularly amongst developing countries, The workshop proposed development of educational network of open universities and distance education institutions and organisations in the region at three levels:

- (a) Network at National Level;
- (b) Network at Sub-Regional Level, and
- (c) Network at Regional Level.

If the communication network is established in India for networking educational resources of the country we have good chances of taking a leadership role in the sub-regional and regional development of educational networks.

(The Seminar, I am sure, will come out with many useful ideas and suggestions for successfully tackling the challenges before the open and distance education system in the country.)