

Educational Television in India

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The Beginning

Television constitutes an important medium widely used to disseminate information to its viewers. It has the unique feature of combining audio and visual technology, and thus considered to be more effective than audio media. It serves multiple purposes of entertainment, information and education. Besides performing motivational function it helps in providing discovery learning and cognitive development of its viewers. Because of its better accessibility, it can bring learning materials to the masses in more direct, effective and personal way than other educational media. Although every media have some strengths and weaknesses, much more depends on how the media is used. The researches carried out by Bates (1981, 1983, 1987, and 1988), Salomon (1979), and Olson and Bruner (1974) suggest the television differs from other media in the way it can represent knowledge, and such differences have certain pedagogic implications.

Use of television as an instructional medium was first reported in 1932 by State University of IOWA in USA on an experimental basis in a world fair. Later on, due to the World War II the introduction of television was slowed down; and as a result by 1948 there were very few educational institutions involved in using television as an instructional medium in spite of great interest in television by the educationists. Realizing the power of television for educational purpose, "the Federal Communication commission in USA reserved 242 frequencies for educational broadcast on no profit and non-commercial basis in 1952" (Magnuson, 1965).

By the late 1950s, 17 programs used television in their instructional materials. The use of educational television tended to grow slowly but by 1961, 53 stations were affiliated with the National Educational Television Network (NET) with the primary goal of sharing films and coordinating scheduling (Hull, 1962). The number of educational television stations grew more rapidly in the 1960s and, by 1972, 233 educational stations existed (Carnegie Commission, 1979). Ohio University, University of Texas and the University of Maryland were among the earliest universities to create networks reach for both on-campus and off-campus student populations (Brientenfield, 1968). Some other universities also started considering on how to bring distance learning to select student populations with the help of television.

Hizal (1983) enumerates various functions of television in delivering education through distance mode, like supporting and enhancing teaching; instructing; explaining, clarifying; motivation and encouragement; imposing study speed (determining rate of study); presenting a reference to large masses; changing behavior; and presenting unreachable facts and events. Television can be an effective tool as distance education delivery system. It can be integrated into the curriculum to provide information either on a single lesson, or a specific unit or even full course. The instructional television can be interactive (allowing the viewers to interact with instructor or other students live) or passive (airing pre-recorded programmes). Lochte (1993) described an experiment using two-way television with two-way audio wherein all students could view and interact with the teacher, and simultaneously the teacher could view all participating students through the cameras at

remote sites.

Walker (1995) also favored television for its audio and visual effects and reported that it can be used to demonstrate processes or physical skills; to show movement; to show visuals that reflect on the colour depth cues and motion of the object; can be used for those who lack reading skills; help make distance learning more personalized; make teaching learning live, attractive and dynamic; and is useful for skill development. In addition to the advantages, he highlighted some of the limitations of television of its being primarily a one-way communication medium; broadcast is difficult to integrate with other media; both production and transmission of programmes are costly; production process is very lengthy; and it is restricted within the effective range of the transmitter or satellite.

Satyanarayana & Seshratnam (2000) reported on the utilization of the instructional power of television by The U.K Open University, the pioneer of distance teaching learning system, from the very beginning. The main area of usage of TV in the Open University was in experimental situations; to bring to students primary resource material, i.e. film or video recordings of actual situation; to record special events, experiments, species, places, people, buildings, etc. which are crucial to the content of units, but may be likely to disappear, die or be destroyed in the near future; and to demonstrate the use of tools or equipment, or the efforts of tools or equipment.

The Indian Beginning

Television first came to India [named as 'Doordarshan' (DD)] on Sept 15, 1959 as the National Television Network of India. The first telecast started on Sept 15, 1959 in New Delhi. After a gap of about 13 years, second television station was established in Bombay in 1972 and by 1975 there were five more television stations at Shrinagar (Kashmir), Amritsar (Punjab), Calcutta, Madras and Lucknow. For many years the transmission was mainly in black & white. Television industry got the necessary boost in the eighties when Doordarshan introduced colour TV during the 1982 Asian Games (<http://www.indiantelevision.com/indianbroadcast/history/historyoftele.htm>). The second phase of growth was witnessed in the early nineties and during the Gulf War, that foreign channel like CNN, Star TV and domestic channels such as Zee TV and Sun TV started broadcast of satellite signal. This changed the scenario and the people got the opportunity to watch regional, national and international programmes. Starting with 41 sets in 1962 and one channel (Audience Research unit, 1991) at present TV in India covers more than 70 million homes giving a viewing population more than 400 million individuals through more than 100 channels (<http://www.indiantelevision.com>). Easy accessibility of relevant technology, variety of programmes and increased hour of transmission are main reasons for rapid expansion of TV system in India.

Major educational projects in India

In India, since the inception of TV network, television has been perceived as an efficient force of education and development. With its large audience it has attracted educators as being an efficient tool for imparting education to primary, secondary and university level students. Some of the major educational television projects are discussed as hereunder:

Secondary School television project (1961)

This project was designed for the secondary school students of Delhi. With an aim to improve the standard of teaching in view of shortage of laboratories, space, equipment and dearth of qualified teachers in Delhi this project started on experimental basis in October 1961 for teaching of Physics, Chemistry, English and Hindi for students of Class XI. The lectures were syllabus-based and were telecasted in school hours as a part and parcel of school activities. According to Paul (1968) 'by and large, the television schools did somewhat better in the test than did the non-television schools'.

Delhi Agriculture Television (DATV) Project (Krishi Darshan) (1966)

The project named Krishi Darshan was initiated on January 26, 1966 for communicating

agricultural information to the farmers on experimental basis for the 80 selected villages of Union territory of Delhi through Community viewing of television and further discussions among themselves. Experiment was successful and that there was substantial gain in the information regarding agricultural practices. (IGNOU, 2000)

Satellite Instructional Television Experiment (SITE) (1975)

This project, one of the largest techno-social experiments in human communication, was commissioned for the villagers and their Primary School going children of selected 2330 villages in six states of India. It started on August 1, 1975 for a period of one year in six states Rajasthan, Karnataka, Orissa, Bihar, Andhra Pradesh and Madhya Pradesh. The main objectives of this experiment, were to study the process of existing rural communications, the role of television as new medium of education, and the process of change brought about by the community television in the rural structure with following two type of telecast:

1. Developmental education programmes in the area of agriculture and allied subjects, health, family planning and social education, which were telecast in the evening for community viewing.

2. The school programmes of 22 ½ minutes duration each in Hindi, Kannada, Oriya and Telugu were telecast on each school day for rural primary school children of 5-12 years age group to make the children realize the importance of science in their day to day life.

SITE experiment showed that the new technology made it possible to reach number of people in the remotest areas. The role of television was appreciated and it was accepted in rural primary schools as an educational force (IGNOU, 2000).

Post-SITE project (1977)

The target group for this post SITE project was the villagers of Rajasthan. This was a SITE continuity project and was initiated in March 1977 when a terrestrial transmitter was commissioned at Jaipur. The main objectives of SITE continuity project were to:

- Familiarize the rural masses with the improved and scientific know how about farming, the use of fertilizers and the maintenance of health and hygiene;
- Bring about national and emotional integration; and
- Make rural children aware of the importance of education and healthy environment.

This project was also successful.

Indian National Satellite project (INSAT) (1982)

The prime objective of the INSAT project was aimed at making the rural masses aware of the latest developments in the areas of agricultural productivity, health and hygiene. It was initially targeted at villagers and their school going Children of selected villages in Orissa, Andhra Pradesh, Bihar, Gujrat, Maharastra and Uttar Pradesh. As a part of INSAT of Education project, ETV broadcasts were inaugurated and continued through terrestrial transmission from 15 August 1982 in Orissa and Andhra Pradesh. Later, other states namely Bihar, Gujrat, Maharashtra and Uttar Pradesh were covered under INSAT service using INSAT-1B in June 1983. In each state, a cluster of 3-4 districts were selected on the basis of backwardness of the area, availability of suitable developmental infrastructure and utilization of existing production facilities.

Besides developmental programmes for community viewing, educational programmes (ETV) for two different age groups of school children (5-8 years and 9-11 years) are

telecast daily. A capsule of 45 minutes duration consisting of two separate programmes - one for the lower age group and the other for the upper age group - were telecast regularly. Each programme runs for a duration of 20 minutes with five minutes change over time from one age group to the other. As of today, these ETV programmes are offered in five languages- Oriya, Telugu, Marathi, Gujarati and Hindi- for a large population of primary school children. Programmes telecast in Hindi are being received in all Hindi-speaking states in the northern belt (IGNOU, 2000).

UGC-Higher Education Television Project (HETV) (1984)

University students were the beneficiaries of this project. The University Grants Commission in collaboration with INSAT started educational television project, popularly known as 'Country wide Classroom' on August 15, 1984 with the aim to update, upgrade and enrich the quality of education while extending their reach. Under this programme, a one-hour programme in English on a variety of subjects is presented with the objective of general enrichment for undergraduates, educated public and the teachers as well. An inter-university Consortium for Education Communication (CEC) along with a chain of about 20 audio-visual media Mass Communication Research Centres were set up by the UGC at different institutions in the country, to ascertain high quality of programming for this project. Besides producing programmes at these centers, some programmes are imported from other countries, and are edited to suit the requirements of the Indian students. This project is very popular among students, teachers and other learners.

IGNOU-Doordarshan Telecast (1991)

The IGNOU-Doordarshan telecast programmes, designed mainly for Distance learners started in May 1991. Initially they were telecast on Monday, Wednesday and Friday from 6.30 to 7.00 A.M through the national network of Doordarshan with an aim to provide tele-counselling to students of open universities in remote areas. Owing to the encouraging response from viewers, the frequency of this project was increased to five days a week. This programme is very popular.

Gyan-Darshan Educational Channel (2000)

Ministry of Human Resource Development, Information & Broadcasting, the Prasar Bharti and IGNOU launched Gyan Darshan (GD) jointly on 26th January 2000 as the exclusive Educational TV Channel of India. IGNOU was given the responsibility to be the nodal agency for uplinking/ transmission. It started out as a two-hour daily test transmission channel for students of open and conventional Universities. This duration was increased in February to nine hours a day. The time slot transmission was further increased due to good response upto 16-hours by 1st June and by 1st November it turned out to be 19-hours channel. Within one year of its launching, 26th January 2001, it became non-stop daily 24 hours transmission channel for educational programmes. "The programming constitutes 23 hrs of indigenous programmes sourced from partner institutions and one hour of foreign programmes. Transmission of 12 hrs each for curriculum based and enrichment programmes is being made. The programmes of IGNOU CIET-NCERT including NOS are telecast for four hours each, IIT programmes for three hours, CEC-UGC programmes for two and a half hours and one hour each for TTTI and Adult Education." (IGNOU Profile –2002) The signal for Gyan Darshan transmission are uplinked from the Earth Station (augmented as one plus one system for redundancy) set up at IGNOU HQs New Delhi, and downlinked all over the country through INSAT 3C on C Band Transponder. Although Gyan Darshan has made its presence felt in all Open Universities and most of the prominent conventional Universities /schools, it still has the potential to reach to the door steps of learners through cable TV network. At present Gyan Darshan through the cable transmission covers about 90% in Kerala, most parts of Tamil Nadu, a few pockets in the North East, Nashik, Ahmedabad and Pune. AsiaNet has been providing it free of cost in Kerala. Efforts are being made to make Gyan Darshan available through terrestrial transmission.

Other Avatars of Educational Television

Television may be used along with other media in distance education for interaction and to support learning materials, depending on the educational system and desired outcomes. Below are some of the possible types of technology integration:

Open Telecast

In Open Telecast, television is the only instrument for learning, and student learning is not monitored. Such Open Telecast has been found most suitable for presentation of abstract mathematical concepts (Ahrens et al, 1975); construction of physical models to represent abstract ideas (Bates, 1975); Natural sciences; Laboratory based practical demonstrations in the area of science including medical and engineering where experimentation design is complex, costly and some times in accessible; Arts and culture music and drama; Space sciences; and Community education such as public awareness on developmental issues including public health.

Telecast with print support

Television along with the print support may be an appropriate combination to reinforce the concepts dealt in a course-book (Berrigan, 1976 and Kern, 1976). Here printed word may be adopted for Telecast for effective viewing, listening and study skills. It also allows review of material and limits need for distracting and note taking. It enriches and extends course curriculum.

Telecast with print and feedback

Here the students may submit their assignments to their learning centres for necessary evaluation and feedback, after learning through television supported by print. Learners may also interact with resource person through mail or telephone after viewing the transmission. Teleconferencing has perhaps emerged from this type of interaction. Such a system could also be used to provide learner's feedback to Course developers and resource persons on the effectiveness of lesson.

Group Telecasts

Learner groups may participate in pre and post lesson academic activities and have discussions among themselves. Counselors explain the difficult concepts and encourage learners to participate, which acts as reinforcement to their learning. This stimulates group and cooperative learning. Such experiments have been successful in many countries including India.

Edutainment

Though not as formal learning system, entertainment events provide incidental learning opportunities. Popular formats include the quiz show, soap opera, or dial-in advice shows where topics of general interest like health, sciences, commerce etc can be taken up.

Teletext

Teletext is another form of communication system wherein text and graphics are transmitted as digitized signals through air broadcasting or cable channel for display on television set. Here the television functions like a computer terminal for retrieval of textual information and graphics from remote database. In this system, the information is stored in centralized database, sequenced and indexed in the form of pages of text or graphics. The signal can also be transmitted over one-way cable, air via radio vertical blanking interval besides unused TV transmission lines (Johnstone and Carlson, 1998). The digitalized text messages or pages of information are continuously broadcasted in cycle. A viewer can access to all these messages on a given channel in cycle or through control unit.

Development of Teletext

Teletext was developed in the early 1970s by engineers at the British Broadcasting Company (BBC) and ITC (then known as IBA), the regulating body of commercial networks in the United Kingdom. Although in 1974 general specification regarding teletext was published in UK, but it was year 1976 when first teletext service was put into practice for general public use. While teletext was being developed in England, France was proposing its own system, known as Antiope. This system, first used in 1977, was designed to transmit data over telephone lines, but failed to make use of many of the characteristics of the television signal, however, their another teletext service, Mintel was much successful. During late seventies a Canadian teletext service Telidon was developed, tested, and designed to produce very high-quality graphics. But this facility needed a complex decoder to be put to use, which was not commonly available to the consumer market at that time.

By 1984, as a result of continued development, the teletext system evolved into what is now known as World System Teletext (WST). More than 30 countries now use an enhanced version of WST worldwide, utilizing decoders installed in television receivers, which add little, if anything, to the cost of the sets. The service is available in five levels, with each level showing an increasing array of enhancements and graphics sophistication. The higher levels require more complex decoding devices with progressively larger memories capable of storing great numbers of teletext pages; thus, receivers capable of decoding levels three, four and five may cost somewhat more than their less-sophisticated counterparts. (NCAM, 2002)

Teletext in India

The teletext service in India, popularly known as 'INTEXT' (Indian teletext), was started by the Doordarshan Delhi on November 14, 1985. Similar to other teletext system, in INTEXT also the data are organized into pages in the form of text and graphic symbols. The information is pooled and transmitted on a few predetermined lines in vertical 'blanking' interval of television signals. The information is in the form of magazines, each of which contains about 100 pages with details of contents of the magazine appearing on the first page, like news items, sport events, financial trends, timings of arrival and departure of important trains, weather forecast, city engagements, AIR and TV programmes to be telecast, etc. Though, teletext has the potential for delivering educational instructions, no such experiments have been reported in India.

Applications of Teletext

- Teletext uses the television for information display, which is almost universally present in homes or community centers. Thus it has the potential to become mass media for imparting education to students in general and deaf and hard-of-hearing viewers in particular.
- Teletext provides the educational content in a very concise and effective manner and thus makes learning appealing, interesting and less burdensome. Further, the facility of quick updation keeps it's viewers informed of the recent happenings. It can be a very good media for career counseling along with providing information about courses-in-demand, hot careers, job opportunities, etc.
- It's use in the area of education, agriculture, weather forecasting, farm management, libraries, and industries etc would provide effective management of services.

Conclusions

Television in education has undergone many incarnations. It has been used extensively in conventional and distance education formats. The developed countries are taking full advantage of television in education. This has greater scope in developing countries also. The above discussed projects on the use of television in education underline its role and significance for achieving the goals set for education for all.

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