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Radio, Television and the Internet providing the Right to Education in India

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ABSTRACT :

Radio, television and the Internet (RTI) comprise an important strategic application in India for educational development. RTI provides the means for the right to education using learning materials through the popular mass media. Initially only radio was used for imparting education - broadcasting programs for students at schools, colleges, and at universities. Then TV joined hands and carried the mission further when it started transmission with an increasing number of channels. The use of computers along with the Internet has completely changed the world in the field of information and education. These different forms of communication have varied and interrelated functions to perform towards improving the quality of teaching-and-learning and spreading education to all parts of the country. They have also made it possible to deliver education all over the globe, and India now exports these courses using basic but popular mass media. RTI is helping to eliminate various educational disparities between rural and urban populations, between regular mode and distance mode education, and between different languages used for education. However, in India, there remains much scope for further development, expansion and more effective utilization of RTI. At present there is fairly good coverage of RTI connectivity, considering the size of the country. Expansion and greater utilization of existing RTI facilities could provide further opportunities towards sustaining education among students who are educationally and technologically disadvantaged in many parts of India, and in many countries all over the world.

1. INTRODUCTION :

Education is an investment in human development. Education is an evolutionary force so that each individual is enabled to evolve from purely material consciousness towards higher intellectual development. It is an instrument for developing an economically prosperous society and for ensuring social justice. Providing education is therefore important for human rights, but education is not equally distributed around the world. For instance in the case of India, there are 1.103 billion persons, and 35% of these are illiterate, compared to a world average rate of 26% among the world's total 6.47 billion persons.

Indeed, most developing countries have a very low literacy level, and the proportion of each age bracket entering education, particularly higher education in developing countries is still low, even now at 60 years after the Universal Declaration of Human Rights called for the right to education for all persons.

The existing formal and distance educational institutions are not sufficient in terms of quantity as well as quality in developing countries, especially in India. A lack of adequate educational infrastructure and non-availability of good teachers in sufficient numbers adversely affect the efforts made in education (Sankar, 2004). In India and elsewhere, there are the needs to

extend infrastructure, to establish more institutions, and to appoint more teaching and non-teaching staffs – all of which are not easy. Perhaps only modern communication technologies can help us in resolving these issues.

RTI mass media have now become important in education. They are involved in the collection of information, dissemination, motivation, socialization, and in all developmental issues, in addition to being involved in learning and acquiring knowledge, skills and attitudes. In recent times, RTI is playing a vital role in providing information. The modern information and communication technologies can boost the education sector. Due to its impact on the cognitive development of human beings, modern educationists are emphasizing more use of RTI mass media in education.

In order to correct the imbalances in the infrastructure and availability, planners have derived ways for utilizing various electronic media in the field of education. Radio, TV and Internet (RTI) are the most powerful media. They give a positive effect on large audiences simultaneously. These are used for social, economic and educational (SEE) development in many countries. These – radio, television, and the Internet – are next introduced in turn.

1.1 Radio as an Educational Medium :

In an age of electronic revolution, students learn from various sources. Radio played a significant role in reaching, informing and educating people. Radio is still a dominant medium with wide access.

In India, radio has by far the most extensive network. Radio signals cover almost the entire country. With the advent of satellite services the expansion of electronic media in India has got an enormous boost, both in terms of reach and choice of channels and programs.

Radio was first developed during the late nineteenth century and came into popular usage during the early twentieth century. Though sometimes overshadowed by TV, radio represents a medium capable of reaching a wide geographic audience at a relatively low production cost with proven educational results (Couch, 1997).

Studies by the United Kingdom Open University have demonstrated that radio has a greater value for weak students who benefit from radio as a supplementary learning tool. The Agency for International Development has shown that radio is more cost-effective and has greater learning effect in education (Kumar, Vyas & Sharma, 2004 ; Kumar & Sharma, 2004 ; Kumar, Sharma & Vyas, 2003 ; Tripp & Roby, 1996). Radio has the advantage of teaching subjects in which classroom teachers are deficient or untrained. An added benefit for multi-grade classrooms is that it provides instruction for one group of students while the teacher works with another group.

Radio broadcast, both for information and education, is fairly old in India. However, until recently, radio was a government-controlled medium used extensively for information, education and entertainment. Expansion of radio transmission has been rapid, and today there are over 197 radio stations reaching 97.3% of the population and 90% of the geographical area (Government of India, 2003). In India, radio is successfully used for rural education and development (Long, 1984). Various agencies at the level of conventional and distance universities are making use of radio for broadcasting their educational content as a cheap local supplementary alternative. The educational radio efforts indicate that radio can be an effective medium for delivering quality education and training to those in need (Vyas, Sharma & Kumar, 2002a).

Regarding the strengths of radio (Chaudhary & Bansal, 2000) assumed that radio can cater to region-specific needs of learner groups. A decentralized approach to radio broadcasting can develop a healthy academic relationship between a resource person and the students. Moreover, use of a local language for interaction may assist students in the course of their studies.

Reports confirm that radio has supported educational programs in a wide range of subject areas in many different countries from the beginning. Nwaerondu & Thompson (1987) reported that Switzerland

used radio for public health purposes. Mali and Mexico are effectively using radio for literacy training and other programs. The Philippines uses radio for nutrition education, and Sri Lanka for family planning health. The Dominican Republic and Paraguay each use radio for the development of primary education. Radio is used as an effective supplementary medium to teach mathematics to school children in Thailand.

Educational radio has been employed within a wide variety of instructional design contexts. It is sometimes designed so as to permit and encourage listener reaction and comment. There is provision for the audience to raise questions and to receive feedback. Sweeney & Parlato (1982) concluded that radio plays an effective educational role both as the sole medium and in conjunction with print and group support. For example, in Nicaragua, students who were taught through radio lessons achieved significantly higher scores than those taught through regular classroom instruction. Bansal & Chaudhary (1999), in their evaluative study, found higher student participation in interactive radio sessions than in teleconferences or face-to-face personal contact sessions. Satyanarayana & Sesharatnam (2000) pointed out that radio is useful in providing remedial tutorials, as well as some other forms of tutorial-based feedback such as providing corrections, alterations or updates to material.

Sukumar (2001) studied the extent of utilization of interactive radio counseling (IRC) by the students at IGNOU. The results showed that IRC was more attractive to students than any other media. The main reason given was that students had easy access from their homes. Sukumar suggested that since the medium is so popular, there should be provision for all the programs to have equal weight in the IRC sessions. Sharma (2002) and Chandar & Sharma (2003) examined IRC to ascertain its overall effectiveness. The participants of IRC reported that the level of content matter and the level of clarity in the presentation were satisfactory. It was suggested that all educational systems that aim to expand their reach to students would do well to integrate IRC into their student support services.

Dikshit (2003) has evaluated the feasibility of using new digital technology for cost-effective transmission of audio-visual courseware. The project proved that FM radio transmitters and satellite radio transponders could be used successfully to transmit, downlink and download multimedia courseware. The literature describes radio as an effective medium of instruction and its widespread availability in developing countries underscores its educational potential and importance.

1.2 Television as an Educational Medium :

Television (TV) promises to be a medium that can be used effectively to teach. It is viewed as a powerful alternative to a large lecture class. Students taking educational TV (ETV) courses feel that they receive more input compared to on-campus education. TV is said to heighten students' interests, improve their attention and enhance their retention to the desired levels. Studies have indicated that TV, when used for educational purposes, contributes directly to upgrade and advance the performance of students in their academic achievements (Vyas, Sharma & Kumar (2002b).

TV is largely used for entertainment but it has great potential for being used in education as well. TV has emerged as a remarkable medium of communication, entertainment and education. As a combination of sound and pictures it provides the most effective temporal and spatial transmission of reality to its viewers. With the technology growing in leaps and bounds, education does not stop at the borders of the campus, and TV offers another way to reach out into homes and serve people where they live as stated by (Reddi, 1994). There is widespread concern about the quality of education to which students are exposed in India. TV is supposed to be the most educationally effective.

The Central Institute of Educational Technology (CIET, 1984) study in Orissa found that the children attending schools

with ETV did better on achievement tests than children in the non-TV schools. The gains among the children as a result of watching ETV regularly were to the extent of 3.2%. A few teachers have suggested that ETV should be supplementary to classroom teaching. Jaiswal & Goel (1991) evaluated ETV science programmes for children in terms of their content, presentation, effectiveness and reactions and found that science programmes for children was quite suitable with respect to most of the dimensions. The number of teaching points presented against the time for the programme was adequate. A large number of these programmes were presented well, and 80% of the programmes showed significant knowledge gains. The children were found to have positive reactions to the ETV science programmes. Students were more likely to voluntarily choose ETV when the alternative was a large lecture class. Without ETV, the students would have limited access to education (Garland & Loranger, 1996).

Operations Research Group (1988) found the majority of students rated ETV programmes as interesting. Bates (2000) studied the effectiveness of TV as a medium for distance education in the light of the experiences of the Open University in Britain. He concluded that TV was an important component of high quality open and distance education, but only when its unique teaching characteristics are exploited, and that the effectiveness of TV depends to some extent on how the material is structured and to some extent on the technology available to the student.

1.3 The Internet as an Educational Medium :

Compared to the mass media of radio, TV, and film, the new communication medium of the Internet has a higher ratio of information to entertainment. Many individuals adopt computers and the Internet because these tools allow them to obtain more information. Technologies such as email, fax, Internet, and high-speed data-links fundamentally change the way nations, communities, organizations, and individuals communicate with each other (Singhal & Rogers, 2001). The Internet enables students to have access to anything and everything of their choice including curriculum, books, news, friends, relatives, peer groups and interest groups, and at a time of their choice. Unparalleled and unlimited human connectivity and interactivity, without leaving home, is set to transform intellectual, cultural, economic and political life. The latest and the most proficient development in the information revolution is e-learning through the web (Sharma, 2005 ; Mishra & Sharma, 2005 ; Kawachi, Sharma & Mishra, 2004). Computers and the Internet have started influencing the way everyone learns. Many students are familiar with the Internet and access it at so-called cyber cafes. A large chunk of the clientele of cyber cafes are students. Internet is the medium of the future, and the number of users is likely to increase day by day. All users of the Internet are not doing so for fun alone. Most of them seek information on education, career guidance, career advancement and a host of other areas. Media centers can network themselves and provide web education. From this may emerge a system which provides knowledge anywhere, anytime and to anyone who seeks knowledge at his or her own pace (Saiprasad, 2001).

The recent developments of e-learning through communication technologies increase access, and help faculty members share useful resources, as well as augment face-to-face contact in and outside of class meetings (Balasubramanian & Shajehan, 2001). In 1999, Canada became the first country in the world to connect schools and libraries to the internet (McKeough, 2000). Canada's SchoolNet and LibraryNet have helped students and teachers to create over 20,000 Internet-based projects (Licenik, 2000). However, these online learning materials are expensive to develop, according to Killion (2000).

The usage, popularity and emerging role of the Internet is an alternative knowledge resource outside of schools. The Pew Internet and American Life Project (2001) investigated whether there was any notably regional or demographic difference in usage

of the Internet The report reviews regional and demographic differences separately and finds significant variation across twelve regions and ten demographic categories. It then reviews demographic differences within regions, and found no significant differences between regions based on the demographic factors. However, Machmias, Mioduser, & Shemla (2000) have reported there were significant variations in the usage of the Internet across all regions in a country.

A review of the literature has revealed that the education sector depends on the popular mass media RTI, and education is becoming technology-enabled worldwide. Developed countries are actively implementing RTI for education. Canada for example supports campus-based RTI with most educational institutions having their own radio and TV channels, and even the students have their own academic websites. So the role of RTI is become more important.

2. RADIO, TELEVISION AND THE INTERNET AS EDUCATIONAL MEDIA IN INDIA :

Communication technologies offer potentially powerful tools for contributing to education and development. Radio, television and the Internet (RTI) can facilitate horizontal and vertical networks for information-sharing and purposeful learning as a basis for sustainable development.

However, the introduction of these technologies into all the regions of India has been slow. The lessons learned and the skills developed through past experiences and approaches should be applied to current investments. An approach that incorporates the unique characteristics of RTI with participatory communication and learning strategies can help to make education development.

Now in India there is a large number of RTI projects in the areas of education, social education, rural development, women empowerment and so on. Some of these are discussed next.

Radio Farm Forum Project

In 1956, India was the site of the Pune Radio Farm Forum Project. The Project was inspired by Canada's experience with radio farm forums in the 1940s. It was a field experiment to evaluate the effects of radio farm forums, each consisting of several villagers who gathered weekly to listen to a half-hour radio program broadcast by AIR and then a discuss its contents (Kivlin, 1968).

Delhi School TV Project

Planned and comprehensive TV was introduced into schools under a project called Delhi School TV Project. The project was launched in 1961, by Delhi Administration in collaboration with AIR, and the Ford Foundation. A total of 360 TV sets were installed in 150 secondary schools for the benefit of 20,000 students. From 1975, the Delhi DD centre introduced telecasting of ETV programmes for primary school children. These programmes are of enrichment type and designed to provide a little excitement and entertainment blended with information suited to the audience of this young age group (NCERT, 1993).

Satellite Instructional Television Experiment

From 1975 to 1976, NASA, made its Application Technology Satellite (ATS-6) available to India for this Satellite Instructional Television Experiment (SITE). Direct reception TV sets with dish antennae were deployed in more than 2400 remote and backward villages spread over six states namely Rajasthan, Karnataka, Madhya Pradesh, Orissa, Bihar, and Andhra Pradesh. The villages selected for the experiment were such that they did not have access till then even to the simplest forms of media like the newspapers. The 4-hour telecast concentrated on education, agriculture, health and family planning. The main objective of the SITE was to provide requisite information for national development. In addition to that, one and a half hour were devoted to enrichment programmes. The main emphasis of the ETV programmes was on topics dealing with science (53%). Among the other topics,

programmes, entertainment formed 13%, and national awareness formed 12% (Mohanty & Rath, 1992). SITE is the largest such successful project in the world.

Kheda Communication Project

Another pioneering experiment in using ETV in India was the Kheda Communication Project (KCP). The site chosen for this experiment was Kheda district in Gujarat. Some 650 community TV sets were provided to 400 villages and installed in public places like schools, where village audiences gathered. The Project was independent from commercial interests, as it relied mainly on government funds for financial support. The Project relied heavily on audience research by conducting assessments of village audiences and by carrying out formative and summative evaluations of Kheda TV programs. The Project represented a model of community-level, decentralized TV telecasting in India. It received the UNESCO Prize in 1984 for rural communication effectiveness.

Countrywide classroom

The Countrywide Classroom (CWCR) project of the UGC has been the logical outcome of the successful SITE experience. Higher education in India got fresh momentum through launching the CWCR in 1984. The rapid expansion of TV in India facilitated the launching of the above project, aimed mainly at undergraduate students of colleges located at different places. The project aimed at the widest possible utilization of TV potential to improve the quality of university level education. These educational programmes were telecast twice a day and throughout the week over the DD network. Currently these programmes reach a wide cross-section of society, evident from the fact that out of the feedback letters received 42% are from students, 47% are from the general public and 13% from academics (Rao, 1994). Since 1991, DD has been telecasting curriculum-based video programmes produced by IGNOU. The target audiences for these telecasts are primarily IGNOU students spread throughout the country. The national talk-back experiment of 1991 of UGC proved that it was possible to linkup with various places in the country and to create a CWCR in which learners from different parts of the country interact with the teachers located at the earth station uplink location. An attempt was made in 1994 to teach a course on new communication technologies through tele-conferencing. Currently the availability of multi channel facilities of telecoms through INSAT-2B can help educational systems to become need-based and to function independently with variety, novelty, and relevance (Passi, Sahoo & Singh, 1994).

Lutsaan Radio Project

In the 1990s, the All India Radio and a New York-based non-governmental organization (Population Communication International) produced Tinka Tinka Sukh, a radio soap opera designed to address women's issues in India. Broadcast from February 1996 to February 1997, the show's 104 episodes about the farming village of Navagon addressed issues of family planning, female equality, and HIV prevention. It inspired an immediate response : a local social service group dedicated itself to discouraging gender inequities such as the practice of child marriage ; and enrollment of girls in schools increased. Furthermore, male and female listening clubs were organized for the AIR's follow-up EE programme. Clearly, radio was effective in stimulating social changes in Lutsaan as exposure to radio was higher in Lutsaan than elsewhere (Singhal & Rogers, 2001).

Jhabua Development Communication Project

The Jhabua Development Communication Project (JDCP) was launched in the mid-1990s by the Development and Educational Communication Unit (DECU) of the Space Application Center (SAC) in Ahmedabad. The purpose of the JDCP was to experiment with the utilization of an interactive satellite-based broadcasting network to support development and education in remote rural areas of India. Some 150 direct

reception systems were installed in several villages of Jhabua, which received TV telecasts for two hours every evening. In addition, 12 talk-back terminals were installed in each of the block headquarters of Jhabua district, through which village functionaries asked questions, provided feedback, and reported on progress. The evening TV telecasts - on topics such as health, education, watershed management, agriculture, natural forestry, and local governance - were designed to be entertaining and educational. The programmes were made with the active participation of the local people of Jhabua. A mid-term evaluation of the Jhabua Project conducted in 1998 showed that the poor people of Jhabua district had made significant knowledge gains in several life-skills areas, enhancing the quality of their life and of the environment surrounding them (Kasturirangan, 1999).

Training and Development Communication Channel

The Training and Development Communication Channel (TDCC) using INSAT has been operational since 1995. It provides a one-way video and two-way audio system of interactive education where teaching includes a studio and uplink facility for transmitting live or pre-recorded lectures. Several state governments are using the TDCC system extensively for distance education, rural development, women and child welfare development, and industrial training. The channel telecasts programmes originating from various sources like IITs, for the benefit of students pursuing studies in engineering and technology fields. Selected programmes of GD are telecast on the national network of DD-1 in the terrestrial mode. For viewers of different groups, DD-1 telecasts educative and informative programmes on various subjects. The contents of these programmes provide entertainment along with information and education.

Gyan Darshan

Gyan Darshan (GD) is a major milestone in the field of ETV in India. It was launched as a joint venture of the Ministry of HRD, Information and Broadcasting, the Prasar Bharati, and IGNOU in 2000. GD was envisaged as a public cooperative in which institutions such as the UGC/CEC, NCERT/CIET constituted the major stakeholders. Within the same year of 2000 it became a 24-hour channel. The unique feature of the channel is the high degree of interactivity. GD is all set to usher in a learning society. It covers topics ranging from science and technology, environment, computer education to career counselling. GD transmissions can be accessed all over the country. GD-1 carries the best selection of programmes from different sources for students, youths, homemakers and adults. GD-2 is devoted to interactive distance education. GD-3 (Eklavya), the technology channel dedicated to technical education, telecasts programmes generated at various IITs. Vyas channel, which is run by UGC, evolved from CWCR and is the fourth in the bouquet of GD channels launched in 2004. Eighty-five per cent of the channel content is curriculum-based, the rest being enrichment programmes. Programmes telecast on this channel include e-learning, up-gradation of technology, career watch, and innovations in education. The Video Lecture Series covers all undergraduate and postgraduate areas.

Gyan Vani

Gyan Vani (GV) is an educational FM radio channel launched in 2001 and operated from various places including Chennai, Delhi, Coimbatore, Mumbai, and Kolkata. The network may be expanded to a total of 40 stations. GV stations operate as media cooperatives, with the day-to-day programmes contributed by various educational institutions, NGOs, government, UN agencies, ministries such as agriculture, environment, health, women and child welfare, and science and technology. These channels broadcast educational, curriculum based programs.

Education and Research Network

The Education and Research Network (ERNET) was initiated in 1986 by the Department of Electronics, with funding support from the Government of India and

United Nations Development Program (UNDP). ERNET provides state of the art communication infrastructure and services to academic and research institutions, government organizations, private research and development organizations, and various other non-commercial organizations. ERNET has made a significant contribution to the emergence of networking in the country. It practically brought the Internet to India and has built up national capabilities in the area of networking, especially in protocol software engineering. It has not only succeeded in building a large network that provides various facilities to the intellectual segment of Indian society, and the research and education community, it has over the years become a trendsetter in the field of networking. UNDP has lauded ERNET as one of the most successful programs it has funded.

Educational Web Portals

Cyberspace as a whole can be seen as an ideal platform to build a flexible and powerful environment for sharing and learning. Electronic mail is a uniquely discursive communication mechanism, which can break barriers of time and place. The Web is a powerful tool for collaboration and participation. At the same time, interactive multimedia applications are redefining publishing and reading (Negroponte, 1995). The cultural impact of educational web portals has been demonstrated in business, education, public and private life, (Woods, 1996). Now, the Indian government and some other bodies have made more effort to create a large number of networks and websites for the purpose of educational development.

Information Villages

The M.S. Swaminathan Research Foundation has designed a project for 'information villages' aiming at bringing together a consortium of information communication professionals from academia, the media, government, public sector, private sector and experts in rural development to create a blend of modern communication technologies that would address the knowledge intensive needs of rural families as they make the transition of sustainable agriculture.

The Radio Farm Forum Project, the Delhi School TV Project, The Satellite Instructional Television Experiment (SITE), Kheda Communication Project, Countrywide Classroom (CWCR), the Lutsaan Radio Project, the Jhabua Development Communication Project, The Training and Development Communication Channel (TDCC), Gyan Darshan (GD), Gyan Vani (GV), the Education and Research Network (ERNET), Educational Web Portals, and the Information Villages are some important and popular RTI projects and efforts made in India.

These advances in mass media RTI technologies in India provide great opportunities to enhance the quality and reach of teaching and learning in higher education with both on-campus and distance education initiatives. All those who require updating of their knowledge and life-long education can now benefit through these modern RTI facilities of communication. RTI also provides increased access to information sources and facilitate communication among researchers and teachers, and the building of networks of institutions and scholars. The aim of telecasts and broadcasts of educational programmes are to upgrade, update and enrich the quality of education while extending its reach. The present research study assumes significance as it proposes to assess the extent to which these aims of Indian policy on educational development have been achieved. There is a need to assess the knowledge gains accruing to the members of the target group as a result of listening, viewing the educational programmes through the available media. At present, the data on benefits derived by students from using RTI educational mass media are available mainly in the form of feedback letters reaching the channels. Occasionally, individual producers of the programmes like media research centres and media organisations have been conducting research within local audiences, about specific programmes using separate research methodologies and various designs

(Saiprasad, 2001). However, there has been no study in the Indian context that spans all the different media within the same study, covering respondents of multiple locations, modes of study, medium of instruction, gender, subject of study and other strata. The present study is an attempt to bridge this research gap.

3. METHODOLOGY :

This study has adopted the survey method and descriptive research design. The universe or population of the study consisted of the entire student population at in the State of Tamilnadu. According to the statistical handbook (2005), a total of 702,000 undergraduate students are studying in various colleges in Tamilnadu. Of these, there were 14,000 respondents (2%) of the universe included into this study. They included students in the regular distance mode, and included both urban and rural students. Students included those studying the arts, science, commerce, engineering and technology, medicine, and agriculture. Totally 14 places were involved in this study including seven major cities and seven small towns. Data were gathered using a self-administered questionnaire prepared specially for the purpose. Over 1,000 questionnaires were collected from each place. Based on the average of incomplete responses, the researcher has taken up 840 respondents from each place for the final analysis. The data were collected during the period from January 2005 to March 2006. The total number of respondents whose responses were taken up for further analysis was 11,760.

Students of regular mode of study and distance education mode are likely to differ on several characteristics such as time of direct interaction with faculty members, time available for education and opportunities to keep oneself up to date in their field of study. Considering these differences, the researcher thought it necessary to consider viewing the two modes of study as separate groups for further analysis of their responses. There have been exactly equal numbers of respondents from regular (50%) as from distance education (50%) streams. Thus, it may be seen that the mode of study has been taken as the prime parameter for the stratification of respondents. Of the respondents, 50% belonged to colleges located in rural areas and 50% belonged to colleges located in urban areas.

There have been more male respondents than female. 56.90% were male while the remaining 43.10% were female. This percentage, though unequal in numbers, could be stated to reflect the same proportion of men and women enrolling themselves for studies in the universe of the study. Needs and wants of people tend to differ with their age in general. Further, age factor could heighten the level of exposure a person is likely to have. Since all the respondents were students, a vast majority of them would belong to a narrow range of age group, namely 17 to 30. Hence their age groups were grouped at narrow intervals. 52.26% from the age group 17 – 20, while 37.74% belonged to the age group 21 – 25 and the remaining 10% were above 25 yrs. Thus it may be seen that this study fairly represents all students at colleges in India, reflecting their relative demographic proportions in the full student population.

Of the total, 28% have their course of study as B.A. while 33.33% have their course of study as B.Sc., and the rest of them pursued B.E, B.Com, or other course. More than nine of ten respondents (93.33%) had English as the medium of instruction - while 6.67% had Tamil as the medium of instruction. All questionnaires were in English.

4. RESULTS :

4.1 Concerning Radio :

A vast majority (90.24%) of the respondents possessed radio sets. Only 35.71% of the respondents listened to radio everyday. Data showed a divergence among respondents, with listening time ranging from zero to two hours a week, which means that there is a considerable scope for increase in the usage of this media particularly with respect to education. A

majority (87.35%) of the respondents listened to radio programmes at home. Entertainment programmes on the radio were most popular at 84.30%, followed by educational programmes 37.06%, and then science programmes 29.07%. So, there is still vast scope for using radio effectively for educational purpose.

Regular and distance modes differ vastly in their nature and style of education. As the frequency of interaction and the proximity to teachers are greater in the regular mode than in the distance mode, there is a significant association between the mode of study and listening to radio. Distance mode students listen to the radio more frequently than those in regular mode. Students from the regular and distance modes of education have dissimilar syllabi and teaching-interaction processes. Therefore, the radio listening patterns of both the groups differ in terms of listening frequency.

Urban and rural students tend to differ in the level of exposure to curricular events, and educational services. There is a significant association between the areas where the institution is located and listening to radio. Rural students listen to radio more frequently than their urban counterparts. Rural and urban students differ in terms of listening to radio. This analysis could mean that radio programme planners would have to focus on the area of their target audience.

The medium of instruction in higher education in most cases is English, while the RTI mass media offer contents both in regional languages and in English. There is a significant association between medium of instruction and listening to radio, which could indicate that, language plays a vital role in out-of-classroom learning.

The average time spent listening to the radio is significantly associated with the mode of study. More of the distance mode students spend more time listening to the radio. An association is found between the area where the college is located and the average time spent listening to the radio. Rural students spend less time listening to the radio compared to urban students. There is a significant association between medium of instruction and the average time spent listening to the radio. It may be necessary to look into the familiar lingua franca of the local population if the average duration of listening has to be increased.

4.2 Concerning Television :

A vast majority of the respondents (96.31%) possess TV sets. The majority of them (65.36%) watch TV every day in a week. 86.64% of the students watch TV at home. 78.40% of the respondents watch TV for entertainment, 69.91% for news, and 35.08% for education. Most of them do not receive any educational channel. Among the educational programmes, most viewers (68.12%) claim that they watch syllabus-based programmes on TV, whereas only 38.12% claim that they watch scientific programmes and expert lectures. Since media planners and analysts have divided TV slots into durations closer to 30 minutes, this duration is taken as the minimum period. Data show that the majority of the viewers spend not less than an hour watching these programmes on average.

The regular and distance mode students have many variations in the teaching-learning process. With regard to TV viewing also, the patterns appear to be different. Many of the regular students watch TV every day, while the most frequent viewers are more among the distance mode students.

The urban and rural students have many variations in their nature of study and media access. Urban students watch TV more frequently compared to rural students. In respect of this variable too, there is similarity between radio and TV. There is a significant association between the medium of instruction and watching TV. Analyzing the result in the light of earlier findings, it is seen that there is consistency between findings for radio and TV.

There is a significant association between the mode of study and the average time spent watching TV. The difference could possibly be due to the unstructured or inadequate time availability to students in the distance mode. Urban students spend more time watching TV compared to rural students. But rural students also spend considerable time watching TV. Comparing these results with those of earlier findings, it

is seen that differences do exist between the areas where the college is located on almost every parameter taken up for measuring usage patterns of both radio and TV. Many of the English medium students spend more time to watch TV while Tamil medium students spent less time. The association between the medium of instruction and the average time spent watching TV reveals that separately designed programmes are necessary for students having different languages of instruction.

4.3 Concerning the Internet :

The Internet, being of recent origin, has evoked the interests of researchers. 20.95% of respondents possess internet. A vast majority of the current students (92.86%) claim to have used the Internet. This is because of the accessibility of the Internet is more in cyber cafes, and students can get more useful information for their study. Most of the students browse on average for 31 to 60 minutes a week. The majority of the students use browsing centres for accessing the Internet. There is a near total familiarity and widespread acceptance of the Internet, although the usage is largely dependent on having a nearby browsing centres. The Internet gives syllabus-based content as study materials to the students. It also provides career guidance and higher education information. Time spent on the Internet browsing is found to be significantly associated with the demographic variables such as mode of study, place of study, and the language medium of instruction, gender and the course studied. It is seen that the usage frequency is widely dispersed, with majority of the users browsing not less than twice a week. The majority (59.74%) of respondents answered that they used the Internet to send e-mail. 41.92% use it always to seek information about education. 40% use it to gathering information about study. The results of the analyses of the purposes of browsing show that there is no marked pattern of using the net for any singular purpose.

The demographic variables in this study were found to have had direct influence on enabling students to use the Internet even once. This similarity is also found in frequency of using the Internet and the demographic variables. Associations between the approximate time spent using the Internet and the independent variables are also the same as the association for radio and TV.

The majority of the respondents agreed upon the usefulness of the Internet for educational purposes, although the percentage of agreement among the majority varies from 20 to 60%. There is also a sizeable segment whose evaluation of the Internet is much greater than 60%. The usefulness of the Internet and the independent variables are significantly associated. Regular mode students get more benefit than distance mode from the Internet. Urban students get more benefit than the rural students. English medium students get more benefit than Tamil language medium students. There are significant differences in these variables.

The findings of this study point out that, despite widespread usage of radio, there is infrequent usage, non-receipt of signal, non-fulfillment of requirements, and very little awareness of educational programmes among the respondents. With regard to TV, the findings indicate that there is high penetration of TV sets, regular watching of general programmes and usage of the media for subject-related content. With regard to the Internet, there is near total familiarity and widespread acceptance of the medium, although the usage is infrequent and largely dependent on browsing centres. The findings lead to the understanding that the usage patterns are significantly related to the regular-distance, rural-urban, the language medium of instruction, the mode of study, and place of study with regard to radio, TV and the Internet.

5. DISCUSSION :

Findings from this study suggest that advertisement campaigns should be stepped up to ensure wider publicity to the educational programmes. Since it is a well-

known fact that cable operators and DTH providers have a powerful role to play in providing a link between TV networks and the viewers, it is recommended that the cable operators and DTH providers must be provided the information about these channels and must also be influenced to include them in their list of channels.

Educational radio should be strengthened. More campuses should be encouraged to start campus-based radio stations. These radio stations must provide localized syllabus-based programmes to students.

Colleges should facilitate the use of educational programmes on TV by allotting time and facilities like TV sets and classrooms in their premises to watch the programmes. Strengthening of educational TV could be achieved through quality improvement in programmes and the use of high technology. In order to achieve localization of educational TV, media centres carrying out research and producing needs-based programmes should be created in each college. Campus-based TV systems could be introduced to produce and telecast programmes of specific educational needs.

This study has found that there is ample scope for furthering the usage of the Internet among students. In order to achieve progress in this regard, colleges should encourage students to make use of web sites for their course work. The Internet should be made easily available in terms of place, time and cost. All colleges should include Internet facilities within their campus and offer access for browsing to all their students. Besides, the curriculum of each course should be made available online, so that the students could have access to course-related input at anytime and at all places.

Since this study has identified significant differences among rural and urban students, regular and distance mode students, and between the genders, care must be taken by the makers of the educational policy to ensure greater awareness and equitable distribution of resources required for browsing. Content development meant for educational purposes must be stepped up in order to strengthen e-learning. The existing content should be improved by the addition of more audiovisual components.

The study recommends that there should be further studies into evaluation of student demand for flexible delivery and emerging models of education among different categories of student groups including international students, postgraduate students, and students participating in open and distance education courses, and the lifelong learning group, both vocationally- and recreationally-oriented.

Funding mechanisms or projects designed to encourage the application of information and communication technologies within education sectors should be oriented more towards long-term strategic considerations than short-term projects. This will entail strategic alliances within the educational sector and between the sector and communication networks. The energies and resources of the state governments need to be directed towards efforts which might embed communication and information technologies into teaching and learning practices and foster greater content convergence. This could be possible if content is produced and made available in different formats that would enable students to access the materials they need from any one or more of the media of their choice, convenience and accessibility. The study recommends active consideration of efforts to foster the latest emerging technologies. These technologies would include educational satellite, direct broadcast satellites used for direct-to-home delivery of contents, Wi-Fi, high-speed broadband Internet, and more campus-based community RTI mass media.

6. SUMMARY AND CONCLUSIONS :

To enhance education, the design and blueprint of RTI infrastructure for education needs to be well-planned and well developed first. Local campus-based radio, TV and Internet (RTI) services are becoming essential. This includes the standardization of technology for the various types and sizes of college, as well as different levels of use. They should be supported by sufficient infrastructure.

Students should be released from paying the cost of Internet. The Government should help schools have free access to the Internet. It should establish a working team to develop integrated RTI curricula, as well as design, develop and launch several local on-line learning portals with materials and information that can be accessed by students and teachers anytime and anywhere instantly. The government or some organization should help to improve the abilities of teachers and technicians for designing, developing and utilizing RTI mass media.

State governments in India need to make an RTI policy for educational development. The government needs to set up a special working team, or commission, that will be responsible for developing and implementing clear regulations and guidelines of RTI policy for education. This would include RTI knowledge and skills, and whether RTI resources are used for instructional purposes and how. The government has to conduct a comprehensive needs assessment of the RTI environment at the national and state levels. An overall and comprehensive policy and regulation guidelines on the implementation of RTI for education need to be developed. Of course, the budget for education should be expanded, so that the amount allocated for the implementation of RTI for education is consequently increased. Other funding resources need to be obtained. Private sectors should be encouraged and involved to support the implementation of RTI educational institutions. The government should increase its investment to enhance the quality and quantity of telecommunication infrastructure, as well as RTI infrastructure for education, since these are concluded as effective for promoting access and for raising the academic levels of college students across India.

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