From Countrywide Classroom to Virtual Classroom: the analysis of UGC experience of using television for higher education.

By
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Abstract

For over two decades University Grants Commission (UGC) of India has been using television for higher education. Initially specially designed educational television programmes, imported from abroad or locally produced at the media centres established by the UGC in various universities across the country, were telecast on Doordarshan, the largest public television network in the country, in what was called UGC Countrywide Classroom. Today these programmes are also telecast on DD Bharti, Gyandarshan and VYAS – the higher educational channel of UGC. The UGC has also established Satellite Interactive Terminals (SIT) across the country for Virtual Classroom Operations. This helps students, scholars and teachers share information and knowledge. The UGC has also launched a highly ambitious project of e-Content development on the three year undergraduate syllabi that shall remain available to the students through internet. From Countrywide Classroom to Virtual Classroom UGC has come a long way, but the scheme is yet to achieve its potential and make its presence felt in an effective manner. This paper tries to analyze the UGC’s experience of using television and new technology for higher education.

With the rapid growth of Doordarshan in early eighties, owing to satellite broadcasting, Doordarshan experienced a huge dearth of programmes to feed the transmission. Around the same time there was a strong feeling that television, with its dynamic and versatile character, can be an economical and effective medium for taking quality education to the students across the country. Taking advantage of the Indian experience from “Satellite Interactive Television Experiment” (SITE) and Doordarshan’s growing demand for television software, University Grants Commission (UGC), the apex body of higher education in India, decided to exploit the potential of television for the cause of higher education and launched “UGC Countrywide Classroom” on Doordarshan National Network on 15th August 1984. “Under the Countrywide Classroom”, on Doordarshan special educational television programmes were produced and telecast for the benefit of undergraduate and post graduate students across the country.

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The need for using television for higher education was necessitated due to enormous growth in student population in higher education. The enrolment for higher education by the end of 10th plan was estimated to cross 10 million. Though there was a significant increase in number of higher educational institutions in the country but there was not enough matching growth in terms of proper infrastructure and manpower. While some colleges in cities and urban areas had a sound infrastructure in terms of manpower and facilities to conduct the courses, most of the colleges, especially in rural areas were experiencing shortage of trained teachers, dearth of equipped laboratories and libraries. There was a great disparity among the colleges located in various parts of the country, which continues with greater magnitude today, which resulted in imbalance in the quality of teaching between rural and urban colleges. Under the circumstances it was thought that television may be able to remove some of the disparities and make quality education available to the students irrespective of their location. The idea, therefore, was to make use of television technology for taking quality education to students especially in rural, remote and underprivileged areas of the country.

The countrywide classroom also meant to provide students a ‘ringside view of the latest developments in various fields’ taking place around the globe. The programmes are meant to “upgrade”, “update” and “enrich the knowledge” of students, “broaden their mental horizons” and “stimulate their urge” to know more. The credo for the countrywide classroom reads:

“The programmes will aim to upgrade, update and enrich the quality of education while extending its reach. They will attempt to overcome the obsolescence of the syllabus and present the latest advances in all fields. The programmes will seek to arouse the interest of the viewers, whet their appetite and broaden their intellectual horizons. The aim is to stimulate but not to satiate. The programme will not be based on or restricted to a syllabus. Instead they will seek to provide new insights, interrelatedness of various disciplines and highlight developmental problems so that the sum is greater than the whole of the parts” (CEC, 1993)1 p.5

A special cell, UGC INSAT Television Project (which later became CEC in 1993) was established, to coordinate the production and transmission of educational television programmes. Six programme production centres, “four Educational Media Research Centres and two Audio Visual Research Centres” (CEC 1993)2, were also established at different educational institutions of the country. By 1995 the number of these media centres rose to 17 and all of them were established in universities and educational institutions in 14 states. Equipped with broadcast quality equipment and professional man power these media centres were called Media Education Research

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2 CEC, Brochure (1993): ibid p.3
Centres (MERC) or Audio Visual Research Centres (AVRC), conveniently referred to as “Media Centres”. The AVRCs were smaller centres with minimum equipment and a small number of staff whereas the EMRCs were relatively bigger centres with more production facilities and staff.

The centres were initially equipped with a relatively low cost production technology including, U-matic low band recording systems. The U-matic equipment had been a reliable tool for industrial programme production in the developed countries but was already on its way to obsolescence. Since the state broadcaster Doordarshan, at that time, was using the U-matic technology for telecast, the U-matic equipment served the purpose of countrywide classroom. In fact, most of the production centres used the equipment for more than a decade. Gradually the CEC and media centres were equipped with advanced CCD cameras and Betacam recording and production technology in the early 1990s. This tendency to go for the best and the latest production technologies continued into the era of non-linear editing, computer animation facilities, multimedia platforms and now much advanced tape-less digital XD-cam technology.

In 2004 the centres were upgraded and renamed as Educational Multimedia Research Centres (EMMRC). These media centres are located at University of Kashmir, Srinagar; Punjabi University, Patiala; Jamia Millia Islamia, New Delhi, Jai Narain Vayas University, Jodhpur; Devi Ahila Vishwa Vidyalaya, Indore; Gujarat University, Ahmadabad; Harisingh Gour Vishwa Vidyalaya, Sagar; University of Poona, Pune; Osmania University, Hyderabad; University of English and Foreign Languages, Hyderabad; University of Mysore, Mysore; Anna University, Chennai; Madurai Kamraj University, Madhurai; University of Calicut, Calicut; St. Xaviers College, Kolkatta; University of Manipur, Manipur and Indian Institute of Technology (then University of Roorkee), Roorkee. The centres are distributed throughout the country covering major geographically and culturally distinct areas. The wide distribution of the centres brings in a unique diversity to countrywide classroom from across the country.
The primary reason of locating these production centres in the universities is to help them make the best use of the expertise of academics and scientists working in these institutes. The university teachers and academics are involved in the production of programmes as subject experts and script writers. The type or kinds of programmes that must be produced and telecast during countrywide classroom always generated debates among the producers, academics, general audience and the planners. Some favoured enrichment type programmes while others thought syllabus oriented programmes will serve the cause of higher education in a better way.

Though there was a strong need to formulate a solid programming strategy the UGC followed an open programming strategy that allowed production of both the types of programmes. Having an open programming strategy was considered a boon by the producers. Although the decision to create programming not tied to a specific syllabus or curriculum was quite disconcerting for some academics and students, especially those who needed clear instructions as to what to do with the content viewed, the production staff loved the creative freedom it provided. Planners argued that not all television viewers were students. Viewers would like to see educational programmes on TV even without the promise of certificates, diplomas and degrees, merely for the sake of increasing their knowledge. But another sizable section of the people demanded strictly syllabus-oriented programmes that will help students pass the exams. Therefore to bridge this gap the UGC, in addition to enrichment type programmes, decided to produce video programmes meant specifically for colleges. These were not to be telecast, but used as transportable videos in VHS tape format for viewing by students who did not have access to good lecturers. The best professors, from all over the country, were involved to design and deliver lectures that were recorded creating a series of model video lectures in around nine subjects.

Gandhi (1995)\(^{3}\) reported that “the countrywide classroom programmes seek to exploit fully the potential of the medium in following ways:

1. **Immediacy**: For bringing to viewers the latest and exciting new findings.
2. **Omnipresence**: For taking the viewers to where action is, such as a research laboratory, a hospital, a village or conference.
3. **Animation and special effects**: To help in clarifying the concepts, highlight built structures or invisible process.
4. **Intimacy**: To serve the viewers and make them a part of the voyage of discovery of wonders and of enquiry.”

(p.120.)

The research based programmes with rich academic content produced by the UGC media centres were telecast on national network of Doordarshan, under UGC

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Countrywide Classroom. Initially, from August 1984 to February 1985, the programmes were telecast on national network of DD1, six days a week between 12:45 hours to 13:45 hours. From February 1985 the telecast was repeated at 16:00 to 17:00. The repeat telecast was made to enable the students watch programmes as per their convenience after they return from the colleges. The timings since then have been changed back and forth by DD1, obviously to accommodate other commercially viable programmes, sports coverage and political coverage programmes and today, in 2008, the UGC programmes are telecast on DD1 between 05:30 hours to 06:00 hours seven days a week.

Some of the UGC ETV programmes however are also shown on DD Bharti. While the UGC programmes under “Healthline Category” are shown on DD-Bharti for around one hour five days a week, Monday through Friday, programmes on culture (DD-Bharti Culture) are shown every Sunday at 7:00 pm to 7:30 pm.

To enable students and teachers watch UGC countrywide classroom programmes in the colleges, UGC during the seventh plan period provided colour television sets to over 7000 colleges in the country. (Rao, 2004) Sadly most of these sets were not used for the purpose for which they were sanctioned. While most of the sets remained non-functional due to one or the other reason, some of them were misused by the principals of the colleges by installing the sets in their offices or at their residences.

The countrywide programmes were telecast primarily on national network of Doordarshan and mostly these were in English and some in Hindi, however with the launch of many local and regional channels by Doordarshan, some of the UGC centres, including EMMRC Mysore, EMMRC Calcutta, EMMRC Pune and EMMRC Hyderabad started telecast of UGC programmes on regional channels in the regional languages.

**Establishment of the Consortium for Educational Communication (CEC)**

For better co-ordination among the media centres and to take the educational television to newer and more meaningful heights with cooperative planning, involving universities and academics, the UGC in 1993 constituted an interuniversity “Consortium for Educational Communication” (CEC). Located at New Delhi, CEC is the apex body to oversee and coordinate the activities of all the media centres. Over a period of time the role and mandate of CEC underwent a drastic change, owing to tremendous growth of information and communication technologies in India. The

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4 Rao, Jagadeeshwar V. Needs and Expectations of Primary Target Viewers of Countrywide Classroom Programmes – A Report. (Hyderabad: Audio Visual Research Centre, Osmania University, 2004): P.6
CEC in addition to use of television for education is also envisaging using various new communication technologies for enhancing the standards of higher education in the country. The current objectives of the CEC are:

1. Close Coordination, facilitation, overall guidance and direction to the activities of the media centres set up by UGC in various universities.
2. Dissemination of educational programmes through both the broadcast and non broadcast mode.
3. Production of educational programmes (especially video and audio) and related support material and the setting up of appropriate facilities.
4. Research related to optimizing the effectiveness of the programmes.
5. Providing a forum for the active involvement of academic and other scholars in the creation of appropriate educational programmes.
6. Studying, promoting and experimenting with new techniques / technology that will increase the reach and / or effectiveness of educational communication.

(CEC 2006, p.2)

The role of CEC has been to provide direction for countrywide classroom, coordinate the development of centres, ensure the quality of programmes produced by the media centres, collect programmes from the media centres, conduct proper preview and technical check of the programmes, make programme capsules as per the requirements of transmission slots, prepare proper programme schedules and send the programmes to Doordarshan for telecast at national network. Simultaneously CEC organizes qualitative and quantitative research on various aspects of countrywide classroom, including production techniques, transmission, needs assessments of the target group, utilization of countrywide classroom programmes at national level. The CEC also encourages research at the media centre level to enhance the quality of the programmes and increase the utility of countrywide classroom. To achieve uniformity in quality of programmes and provide additional skills to media production and research staff CEC has been organizing various workshops and training programmes.

The CEC has maintained a video tape library of the programmes produced by the media centres, by now the number of these programmes has crossed 15,000, with around 1000 fresh programmes added every year. These programmes, in English and Hindi, include enrichment and syllabus based programmes covering 50 subject areas. The library also has a collection of e-content modules and Reusable Learning Objects developed by CEC and media centres. The library is on path to full digitalization for creation of a video data base for streaming in various forms. The complete digitalization of video programmes is aimed at creation of a virtual video library for retrieval by students through internet / Ernet / Infonet in the form of what is called “Video on Demand”. The video on demand with a limited choice is currently available through internet at <http://www.cec-vod.edu.in>.

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The CWCR programs, till recently, were more of enrichment type programmes, and not necessarily, based on syllabi. For the last few years the centres are concentrating more on lecture and discussion format programmes based on UGC model syllabus for the undergraduate students. The programmes are, however, embellished with graphics, animations and other visuals to make them more attractive and comprehensible. Initially the programs were mostly produced in English language but later programs were also made in Hindi and some other regional languages.

Viewership and utility of Countrywide Classroom

Various viewer-ship surveys conducted by the media centres showed these programmes were being watched by a sizable population of students and teachers besides a very high percentage of house wives, retired persons and senior citizens.

National Viewer-ship Survey conducted by ADMAR services (P) Ltd. New Delhi in (1993)\(^6\) and (1997)\(^7\) also showed very encouraging results. As per the report the overall viewership of UGC countrywide classroom in 1993 was 21.29 million viewers with an average daily viewership of 3.99 million. About 1.57 million were regular viewers watching UGC programmes over 4 days a week. The report produced by ADMAR in 1997 showed viewership of countrywide classroom as stagnant at 12% with increase in the viewership base from 21.29 million to 22 million. “At the height of its popularity the CWCR (countrywide classroom) on Doordarshan enjoyed a viewership of 20 million people with a daily viewership of 4 million people” (Rani 2006)\(^8\). It may be noted, however, that in a country of one billion people, this is a very small percentage. The fact is that the programmes are being watched by a very small percentage of students across the country. Arulchelvan & Viswanathan (2006)\(^9\) reported that a small percentage of 14.61 percent respondents in Tamilnadu watch UGC CWCR programmes while a huge population of students 85.39 percent do not watch the programmes. “Even those who watch the programmes, majority of them do not watch even twice a week”. The researchers suggest that, “top priority should be given to strengthen the educational usage of the powerful electronic media” and “creation of awareness among students about educational media should be taken up on a massive scale with a sense of urgency”. (Arulchelvan et al. p.116)

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\(^6\) ADMAR Report, “Viewership study on UGC Countrywide Classroom programmes” (New Delhi: Consortium for Educational Communication, 1993)

\(^7\) ADMAR Report, “National Viewership Study” (New Delhi: Consortium for Educational Communication, 1997)


The in house research conducted by CEC, Media Centres and some independent researchers show that the UGC Countrywide Classroom programmes remain underutilized for a variety of reasons. Some of the in house research studies including Peddharkar (1988), Kumar (1990), Mishra (1990), Kumari and Ali, (Jan. 1991), Govindaraju (1996), and Rao (1998), etc., have detailed the reasons for underutilization of UGC programmes and the over all apathy facing the use of television for higher education. Majority of the researchers have reported that lack of proper information about the programmes, indifference of teachers, non availability of television sets, lack of proper space for the viewing, lack of electricity in the colleges, difficult language used and improper mode of delivery of programmes are some of the reasons that undermine the utility of educational television programmes. The students have also reported that “they have never heard of VYAS –the higher educational channel of UGC even after two years of it being in operation” (Jan 2007, p.6).

**Interactivity and Talkback Experiments**

Television is essentially a one way medium, while the requirements for education demanded an interactive communication between the teachers and the taught. The lack of interaction was seen as a major disadvantage for UGC countrywide programmes on Doordarshan. UGC therefore supported experimentation in interactivity during countrywide classroom telecasts. As back as 1991, UGC with the active support of Indian Space Research Organisation (ISRO) conducted first National Talkback experiment, called UGC-ISRO National Talkback Experiment, “to test the viability of two way interactive communication to enhance and enrich the quality of educational content for undergraduate students”.

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10 Pendharkar, Sushama. “Profile of the UGC’s Countrywide Classroom: A feed back survey of universities in the state of Maharashtra”. *Quest.* (Pune: EMRC, University of Pune, 1988).


For one week, from 25\(^{th}\) to 30\(^{th}\), Nov, 1991, 835 students from eight selected locations across the country, Viz. Jodhpur, Imphal, Hyderabad, Calcutta, Ahmadabad, Roorkee, Madhurai and Patiala, watched 12 prerecorded ETV programmes produced by various media centres, up linked from Delhi earth station (Reddi et. al. 1992)\(^{17}\). Soon after the telecast the students interacted, through two ways audio and one way video, with the subject experts located at the studio created for the purpose at Delhi Earth Station. For interaction students made use of satellite based remote talkback at two centres, Jodhpur and Imphal, and conventional or temporarily dedicated STD telephone lines at the other six centres. Some students also asked questions using FAX facilities kept available for the purpose. During this period research teams, using various elaborate and well designed research tools, measured and examined technical, operational, educational, enrichment, and economical aspects of the experiment. The analysis of the data, collected by the researchers from various locations, clearly suggested that the interactive mode of television should become a regular feature of the countrywide classroom. The study further revealed that the successful completion of the experiment demonstrates the operational feasibility of making interactivity a part of countrywide classroom, and suggested that such interactivity on one hand will help students in providing them up to date information on various subjects and on the other create awareness and increase the audience for the countrywide classroom.

Encouraged by the results of National Talkback Experiment 1991, Consortium for Educational Communication (CEC) in collaboration with Indira Gandhi National Open University (IGNOU), Indian Space Research Organisation (ISRO), Doordarshan and UGC media centres conducted another national talkback experiment in 1994. This time, however, the experiment was conducted by including programmes on a single theme; a course on new information and communication technologies. 9 interactive sessions of one hour duration each, with transmission of 20 minutes of specially designed educational television programme followed by 40 minutes of interaction using STD lines, were conducted from December 15\(^{th}\),1994 to December,24\(^{th}\), 1994. The programmes were up-linked from Ahmadabad and broadcast at National Network of Doordarshan. For interaction organized viewing of students was arranged at 15 smaller cities and towns across the country viz. Mysore, Sagar, Jammu, Shillong, Shirur, Berhampur, Modinagar, Tiruchurapally, Bhuj, Nasik, Darjeeling, Calicut, MalerKotla, Kavaratti and Jamshidpur. (Reddi et.al. 1995)\(^{18}\). After watching the programmes students interacted with the panel of experts located in the studio at Ahmadabad, who answered host of questions raised by the captive audience at the 15 locations. During the last four days of the experiment telephone lines were also thrown open for the general audience and a number of questions were raised by people watching programmes at their own places. After detailed analysis of the experiment, based on observations of the researchers and the data collected from the 15 locations


using various research tools, Prof. Usha V. Reddi and others (1995) reported the results on many aspects of the experiment which include:

- The general enthusiasm and positive attitude toward this educational innovation.
- Enhanced educational outcomes which would be even more if the technical snags are worked out.
- The very successful attempt to reach out to the targeted viewers of CWCR in the small towns of India
- The spirit of participation and the feeling of involvement in learning process expressed by so many of the participants from these small towns who wanted many more such experiences.
- The package concept which has been very well received and which has gone a long way in improving retention and understanding on the topic chosen, especially when the concept matches participants needs and current enrichment topics with quality programming.
- That such telecourses can be easily introduced into the regular transmission at a relatively low cost while benefiting a very wide audience

(Reddi et al. P. 3)

While providing valuable suggestions for making interactivity more effective the report suggested “increase in number of telephone lines at the teaching end”, to ensure fast connectivity and provide “more time for interaction”. If the programmes are telecast in a package mode then every care must be taken to achieve “uniformity in programme content, quality, and information overload”. The report suggests that the enrolled students shall be provided, “supplementary reading material”, before the telecourse; the “telecourses must be open to the general viewing audience” and it also lays stress on the “need for improvement of the technical quality of both the programmes and the interaction”. The report while recommending use of teleconferencing for educational television more frequently, in a more organized manner, concludes that “interactive television” increases “participatory communication that brings about motivation and commitment” among the teacher and the participant students. (pp. 89-90)

**Vyas –the higher educational Channel of UGC**

Owing to commercialization Doordarshan forgot its mandate of service to educational sector and sadly pushed the UGC Countrywide Classroom programmes to insignificant and odd telecasting hours further reducing the viewership and utility of these programmes. To tide over the problem of transmission of programmes, the CEC with the support of Ministry for Human Resource Development (MHRD) and The University Grants Commission (UGC) launched Gyandarshan-4 (GD-4) called VYAS –the higher educational channel of UGC, on January, 26th, 2004. VYAS is a satellite channel and can be received either directly by installation of a dish antenna or through the cable network. The 24 channel, managed, coordinated and operated by Consortium
for Educational Communication and the University Grants Commission, telecasts 6 hours of fresh programming everyday with repeat transmission 3 times on a regular basis. The programmes are telecast on the channel on various subject bands during the week as per the fixed point chart as shown in the following table:

<table>
<thead>
<tr>
<th>Days/Timings</th>
<th>5.30-7.30,11.30-130,17.30-19.30,0.30-1.30</th>
<th>5.30-7.30,11.30-130,17.30-19.30,0.30-1.30</th>
<th>5.30-7.30,11.30-130,17.30-19.30,0.30-1.30</th>
<th>Band would be blended with programme on</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>Maths</td>
<td>Fine Arts</td>
<td>Geography</td>
<td>India for the World</td>
</tr>
<tr>
<td>Tuesday</td>
<td>Economics &amp; Commerce</td>
<td>History</td>
<td>Zoology</td>
<td>Heritage India</td>
</tr>
<tr>
<td>Wednesday</td>
<td>Political Science</td>
<td>Home Science</td>
<td>Botany</td>
<td>Contemporary Issues</td>
</tr>
<tr>
<td>Thursday</td>
<td>Physics</td>
<td>Sociology</td>
<td>Language &amp; Literature</td>
<td>Women Empowerment</td>
</tr>
<tr>
<td>Friday</td>
<td>Physiology</td>
<td>Chemistry</td>
<td>Education</td>
<td>Guru Devo Bhava</td>
</tr>
<tr>
<td>Saturday</td>
<td>Functional English</td>
<td>Environmental Science</td>
<td>Medical Science</td>
<td>Hall of Inspiration</td>
</tr>
<tr>
<td>Sunday</td>
<td>Art &amp; Culture</td>
<td>Technology</td>
<td>Career Watch</td>
<td>Window to the World</td>
</tr>
</tbody>
</table>

**Fixed Point Chart of the Vyas Channel of CEC**

The ETV programmes, a mix of syllabi based and enrichment type, in the form of documentaries, lectures, discussions and some other formats are telecast on the VYAS channel under various programme categories including Heritage India, Contemporary Issues, Women Empowerment, Hall of Inspiration, Guru Deva Buvo, India for the world, Window to the world and other subject based categories. The programme schedules drawn are published in CEC News Letter and distributed among various institutions and viewers.

The syllabi oriented programmes are based on UGC model syllabi for various courses. The enrichment type programmes are meant to broaden the mental horizons of students. The fact that the UGC media centres are located in various geographically, socially, linguistically, and culturally distinct areas they bring in a lot of heterogeneity and variety to VYAS channel. From February, 2006, VYAS became fully digitalized and server based. The programmes are also now carried through multicast on Ernet / Infonet and are capable to benefit over ‘10 million students’ and ‘.5 million teachers’, enrolled in ‘17,625 colleges’ and ‘348 universities’ (Prakash 2006) all across the country depending on Ernet and Infonet connectivity. With the quantitative expansion of institutions of higher education in India, devoid of quality teachers and worthwhile infrastructure, use of VYAS for taking quality education to the students in remotest areas can make a significant difference.

But research suggests that the channel remains underutilized as the signal can not be received without the help of cable or dish antenna and people are not fully aware about the channel despite being in operation for over two years. (Salima 2006). The channel therefore requires enough publicity to create awareness about it among the target audience so that they are motivated to either ask cable operators in their areas to provide the channel or install a dish, costing from 3 to 4 thousand

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19 Prakash, P. Jt. Secretary UGC, Power Point Presentation (New Delhi: University Grants Commission, 2006)

20 Jan, Salima (2007): ibid p.6
rupees, to directly receive the programmes. The involvement of college teachers is also required to make viewing part of classroom activity. The viewing of the programmes in the classroom with the intervention of the teacher will greatly enhance the scholastic achievements of students. The launch of VYAS, though seen as a significant development for taking quality teachers and education to the students, has not been yet able to mark its presence in the educational institutions; precisely because the signal is not available and the people are not yet aware about the richness of ETV programmes telecast on the channel. The CEC is trying hard to convince “Prasar Bharti Corporation” to include VYAS channel in DTH, but the efforts sadly have not yet yielded much results; as Prasar Bharti fails to understand the significance of educational television for higher education in India. The inclusion of VYAS on DTH of Doordarshan, DD Direct Plus, is seen as a possibility to reach a wider audience and help students see the programmes at their own convenience. But DTH with limited market share may again not prove very effective.

**Virtual Classroom, through EDUSAT**

The lack of interactivity during telecast of educational television programmes on Doordarshan and VYAS is seen as a major impediment in the utility of the programmes. Because interaction is seen as a major factor for the over all scholastic achievements of students from educational television programmes. (Reddi et al.1992)\(^{21}\), (Reddi et al.1995)\(^{22}\). The launch of EDUSAT, a dedicated satellite for education in India, in September 2004 has provided much needed opportunity for interaction between the expert teachers and students across the country. After the launch of EDUSAT the Ku Band National Beam of EDUSAT was assigned to Consortium for Educational Communication (CEC) and the University Grants Commission (UGC) for higher education. With the help of ISRO 58 Satellite Interactive Terminals (SIT), also known as Virtual Classrooms, were established at various locations in the country, which include 17 UGC-CEC media centres, 12 Academic Staff Colleges, 9 Universities/Colleges of potential excellence and 19 Universities/Colleges in remote areas, with CEC as the nodal agency. A collaboration project of ISRO, UGC-CEC and the educational institutions having SITs, this unique interconnection of institutions across the country provides an opportunity for the users to share their expertise through a two way audio / video mechanism.

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\(^{21}\) Reddi et al. (1992): ibid

\(^{22}\) Reddi et al. (1995): ibid
The UGC-CEC EDUSAT national beam became operational in September, 2005 for virtual classroom operations with CEC New Delhi as the teaching end. Students across the country at various SITs attend the live lectures, of one to one and a half hour duration, delivered from CEC and each lecture is followed by a live interaction with the expert through a two way video conference through net meeting. The questions are also taken from students using e-mails, SMSs, Phone or Fax calls. Over a period of time teaching end is rotated among various media centres and teachers and experts from various institutions across the country share their knowledge and expertise with the students and scholars across the country. To make virtual classrooms more need based Educational Multimedia Research Centre (EMMRC) Srinagar with the help of CEC launched the “Lectures on Demand” from May 2007. The students and teachers at Kashmir University, suggested topics and experts and the EMMRC with the help of CEC organised the lectures. This proved very effective and popular among the students and teachers and huge demands for lectures started pouring in from most of the university departments. Encouraged by the success of “Lectures on Demand”, UGC Chairman dedicated the scheme to the nation on teacher’s day on 5th September 2007.

The national beam is also used by CEC and the media centres for organizing various workshops/seminars, online courses and meeting in the virtual mode. EDUSAT, with inbuilt facility for two way audio and video interactions, brought in much desired and recommended talk back facility for the students. The quality of video/audio, especially during interactivity, however, is still far from satisfactory and requires improvement at par with, if not better than, the quality of interactivity seen on various national satellite news channels viz. AajTak, NDTV, Zee News, Star News etc.

If the enthusiasm of teachers and students towards virtual classrooms at some of the SITs (Virtual Classrooms) is an indicator, one can safely imagine a very bright future for educational television in higher education. All it requires is a serious approach and cooperative planning involving all the academics, students, teachers, media professionals and institutions of higher education.

From one hour UGC countrywide classroom programmes on Doordarshan in 1984 to launch of 24 hour VYAS in 2004 and establishment of Virtual Classrooms through Edusat in September 2005, CEC has come a long way; but its contribution to higher education in terms of access and reach is still far from satisfactory. Under the circumstances CEC has started some new initiatives with a revised vision to package knowledge and reach target audience in a much better and effective way.
The New Initiatives

Edusat, together with the convergence of media and growth of Information and Communication Technologies in rural India, promises a great future for educational television in India. Under the changed scenario and with a view to making significant contribution in creating a vibrant knowledge society CEC has launched several new activities with a revised vision. The CEC vision for 2020 reads as:

“Vision 2020 envisages India to be a knowledge superpower. To achieve this vision higher education has to play a key role. Universities and colleges provide higher education to nearly nine million students. To enable India to become knowledge superpower, education and knowledge resources have to reach out a large number of people through various means in a seamless way. During 80s with the expansion of television the electronic media reached different parts of the country with the receiving stations dotting the skyline. The new information and communication technology has further expanded its reach through internet. Our vision, therefore, is to electronically reach out to a large number of students, teachers and general public with quality educational material, so as to address the issue of access to higher education with equity and quality. This in turn CEC believes will contribute to overall vision of making India a Knowledge superpower by 2020”.

(CEC 2006)23

To achieve the above vision CEC has taken serious initiatives to engage academics, media professionals and multimedia experts all over the country in packaging of knowledge in various forms. These initiatives include:

Development of e-Content and Multimedia

With the advent of new information and communication technologies and great demand for reliable and authentic educational content in electronic form CEC recognized the need to develop e-content and multimedia involving teachers and subject experts from various parts of the country. A “Technology Incubation Cell” was therefore established at CEC for the purpose of capacity building and training for development of e-content material on higher education. The “incubation cell” helps in training of teachers and integration and development of e-content, with a solid video base, on UGC model syllabi for the undergraduate students; besides developing and experimenting new software to make e-content data base universally available to students and teachers.

With the training of teachers in e-content development, CEC also announced a scheme inviting college teachers to develop e-content in their own subjects with

financial support and incentives. The scheme however could not take off in a significant way due to indifference of teachers or their lack of knowledge about such a scheme. CEC is therefore currently devising a mechanism of involving teachers all over the country to develop e-content and multimedia in their own field. For this purpose each media centre shall be allotted one subject area, depending on the strength of the faculty in a particular subject in their area, and the centres shall involve the best college and university teachers to develop e-content and multimedia modules. The e-content generated shall be properly checked, by a peer group of experts at national level using a standardized educational effectiveness scale, and fully authenticated before it is placed on server for the use of students and teachers. Currently the e-contents available at CEC can be accessed through internet at <http://www.cec-econtent.edu.in>

Training teachers in e-content development

For the training of teachers in development of e-content, CEC organized a number of long and short duration workshops at CEC and some universities. During the workshops teachers were sensitized about the use of new technology in teaching and learning and provided a solid training, with hands on equipment, in the development of educational multimedia and e-content. By the end of each workshop teachers developed e-content modules and Learning Objects. Some of the three week workshops held at CEC were also extended through Edusat to media centres and SITs at Pune (Maharashtra), Mysore (Karnataka), Coimbatore (Tamil Nadu), Srinagar and Baramulla (J&K). The lectures and demonstration at CEC were carried to teachers enrolled at remote locations through Edusat. The teachers saw the lectures and participated in interaction with the experts at CEC with two way audio and video. The practical sessions at remote centres were conducted with the help of local demonstrators with constant guidance of experts through Edusat.

The experiment was a huge success, in terms of training through Edusat, as the teachers who were trained in virtual form were able to develop e-content and multimedia at par with the teachers who were actually trained at CEC New Delhi. But these training programmes, on the whole, did not achieve the desired results as teachers who took the training and produced e-content modules during the workshops could not continue the actual development of e-content when they returned to their places. They also did not show any significant response towards CEC e-content scheme. Their indifference towards e-content requires a deeper analysis but it seems that since e-content development at present is neither directly related to teaching pedagogy nor is it linked with the promotional avenues of the teachers, like publications, the teachers are not motivated enough to devote time for e-content development. The technophobia that afflicts majority of our teachers can be the other reason.
Development of Learning Object Repository (LOR)

CEC with a very strong library collection of over 15000 educational television programmes on various subjects is in the process of developing a Learning Object Repository (LOR) with video and graphic inputs. Each reusable learning object shall have a 60 to 90 second video and a paragraph or two written content for the download. LORs being developed by CEC and media centres are in essence a “video glossary” on the basic concepts. This brings students an added advantage of seeing a video alongside the written content thereby making learning more enjoyable and enriching. The Learning Objects Repository shall be available to the students through internet. Currently the LORs developed by CEC and the media centres are available at <http://www.cec-lor.edu.in>.

On-Line Courses

Taking advantage of VYAS, SITs, and Internet CEC in 2005 also launched some online part time courses viz. Certificate course on scriptwriting for television and other electronic media; Certificate course on Marketing Communication and Salesmanship; Certificate course on Digital Library and Information Science and Certificate Course on Editing for Films and Television. Hundreds of students, across the country, enrolled for the courses. The course material was packaged in the form of video courses telecast on VYAS channel, the interaction with the expert was organized through Edusat on weekly basis, additional reading material was kept available for the students on the CEC website and the assignments and evaluation was conducted using internet. The successful conduct of workshops and online courses through Edusat demonstrates the capability and the capacity of virtual teaching and training. It is established beyond any doubt in a country like India, which is scattered mostly in villages and remote areas, a proper use of communication technology, with solid application and judicious use of mind and machine, will bring the desired results and make dream of education for all, anytime anywhere, come true in a real sense.

Production of Syllabus Oriented ETV Programmes

With the aim of making VYAS -the higher educational television channel, more meaningful to students in distant areas and to help them overcome the disadvantages caused due to lack of proper infrastructure and expertise, CEC initiated the process of producing syllabi oriented programmes, based on UGC model syllabus, for the entire course under different subject categories. Each media centre, depending on the strength of the faculty of the institution in which the media centre is located, is assigned a subject to produce educational television programmes on the entire syllabi involving one or a group of teachers. The programmes are made using a variety of formats, more often lectures, demonstrations, discussions or interviews. The programmes are then enriched with multimedia inputs including graphics, animations, maps, video clippings etc. The idea is to exploit the audio visual potential of television for making teaching and learning more attractive and meaningful.
But in pursuing production of more syllabi oriented programmes production of enrichment programmes at the centres have dropped to the disadvantage of the students. The emphases now seem to have shifted to “satiate” rather than to “stimulate” and “broaden the mental horizons” of the students. With the production of syllabus based programmes each centre produces over 50 to 100 programmes a year. The bulk production of programmes in lecture format, without caring too much for the production values and elements, have reduced the importance and effectiveness of UGC programmes, thereby defeating the very purpose for which educational television was thought to be used. The producers at the centres, who were earlier trying to devise innovative ways of making programmes, have turned recordists and majority of them simply do not apply their production skills to make programmes attractive and effective. In the number game the centres are more after the quantity throwing the quality to dustbin. Nonetheless the media centres have produced a considerable number of, syllabus oriented, lecture / discussion format educational programmes with international standard content and quality.

**Preview of Programmes**

Marketing and utility of the educational television programmes, like other products, is directly linked to the quality assurance and benchmarking. For benchmarking of the programmes media centres and CEC organize preview of programmes. The programmes produced at the centres are mostly seen by a preview committee at the centre level. After incorporating the suggestions the programmes are revised and send to CEC. At CEC level programmes are again previewed by another group of people including two subject experts from the same field. The programmes found up to the mark, as per the CEC standards, are forwarded for telecast. The others with suggestions are returned to the media centres for corrections or revision. The CEC over a period of time has devised its own standards or mechanism to review the programmes; however there is a need to re-devise and standardize the preview tools to achieve a globally accepted benchmark for the programmes.

**International Cooperation and Linkages**

For sharing of knowledge at global level and benefiting from experience of international agencies involved in the use of new technologies for education, CEC has started developing linkages with the global agencies. Through Commonwealth Media Centre for Asia (CEMCA) numerous international delegations visited CEC premises at New Delhi and Interacted with the staff. Commonwealth of Learning (COL) supported a five day workshop on “adaptive learning systems” in which expert from prestigious Massachusetts Institute of Technology (MIT), USA was a resource person. CEMCA also supported the visit of some CEC and media centre staff to educational institutions and broadcast agencies in Malaysia and Singapore.

**Problems facing CEC and the Media Centres**

The greatest misfortune of India is that technocrats, planners, bureaucrats, researchers, producers, students and teachers are all going their own ways in a
seemingly chaotic and individualistic manner. This characteristic of the society has kept the benefits of the use of television and technology for higher education at the minimal.

CEC and the media centres are capable of making a very significant contribution to higher education, as billions of rupees have been pumped into the project by UGC during the last two decades. But the project on the whole has been facing serious problems from the day one which have considerably impeded its progress.

One of the major problems facing UGC CWCR is that of governance and coordination. While CEC is responsible to coordinate the production and development of media centres, there management is still left to the institutions where they are located. The employees of the media centres at various centres have different working conditions, nature of appointment, salary structure, avenues of promotion etc. Most of the media centre staff has no service rules, no recruitment conditions and no promotion policies. This has led to discouragement of the staff members who fail to perform to their potential. The result is poor quality of programmes. So staffing the media centres with capable and talented manpower has remained one of the biggest problems for the countrywide classroom. In the absence of a proper recruitment, service and promotion policy the centres did not attract much of talented manpower, who mostly embraced the commercial and mainstream popular television. This also resulted in media centres remaining understaffed and nearly half the number of approved posts remained vacant at any given time. There are still no posts of audio recordists, video editors, computer animator. This meant that whoever was producing had to be good at all the skills required for production. Since there are no professional sound recordists and music composers, the centres at most places could not record and make use of specially designed music tracks for their programmes and rather depended on the existing music, most of the time resorting to violation of copyright, that resulted in poor use of audio tracks.

With the increase in hours of transmission, particularly because of the launch of VYAS, the demand for number of programmes increased manifold. But in the absence of enough production staff at the media centres a situation arose where Research Scientists, Production Assistants, Technical Assistants and even Camerapersons were asked to produce the programmes to meet the targets. This undermined the position of the producers who lost interest in production. The demand for quantity also meant lack of attention to quality.

Since the centres were established in universities, the university system had the prerogative of appointments. “Usually directors of media centres were chosen from amongst the professors of the universities. Unfortunately, most had no previous exposure to production dynamics and some had no interest in it. But these posts had power and clout and some perks which were attractive” (Madhu K.P. 2007)24. This

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often led to under productiveness of the staff and conflicts between the production staff and centre directors.

The media centre staff is staggering under a heavy pressure because there is no coherent salary structure or promotional avenues for them. Quite often these people were not accepted by the academic community. With trouble brewing in the ranks, a staffing and promotion policy was issued in 1996 but same was not implemented due to the indifference of institutions, UGC, CEC, media centres and the complexity of already existing designations, years of service and above all the bureaucracy. The absence of service rules and proper promotion policy for the staff still remains a problem for CEC and media centres.

Effective participation of CEC and Media centres in academic development is directly linked with their coordination and uniform administration at the national level. The scattered location of production centres and the fact that the centres are more under the control of the Universities, CEC is at times finding it too difficult to co-ordinate activities and productions. The CEC in essence was set up to provide leadership, vision and coherence but the organizational pattern that has developed over a period of time hampers its effectiveness and control. Though a “Memorandum of Understanding (MOU)” was signed between the UGC, CEC, Universities, and the media centres, in the past and very recently a new MOU has been signed, to give CEC more powers and control over the media centres but their implementation in letter and spirit is still caught in the complexity of bureaucracy and idiosyncrasies of the system. This has infact further aggravated the problem of staff who are now seen outsiders even by their own universities.

The educational television programmes of countrywide classroom are seen by Doordarshan “as a liability, rather than an asset”, owing to their over-indulgence with commercialization (Rani 2006)25. The programmes are now telecast at most inappropriate time, 05:30 am to 06:00am, with almost no audience. The VYAS Channel is hardly visible out side as it is not carried on the cable and people are not ready to install a separate dish to receive the programmes. The channel is also facing problems of publicity as most of the people do not know about the channel. Though CEC publishes the telecast schedule in its monthly newsletter but its distribution has not proved very effective. The sustained efforts to convince Prasar Bharti to carry VYAS on DTH have now yielded results and VYAS may be visible through DTH. This may help more people to see these programmes. As the teachers and students have not yet realized the importance of television or technology for education, the UGC CEC endeavor in this regard remains grossly under utilized. The indifference of planners and policy makers has adversely contributed in making the best use of knowledge resources. The ministry it seems is interested only in “channel launching spree”. “In India policy makers are good at creating facilities but bad at creating

access to the facility. Facility without access defeats the purpose for which it is created”. (Rani 2006)\(^{26}\)

Though CEC claims to have over 15000 ETV programmes in the library, Rani (2006)\(^{27}\) reported that out of 13000 programmes in CEC library, “over 50 percent” are not telecast worthy and require “cosmetic surgery”. The “free and open for all strategy of programming” followed by the CEC / UGC was in way good, as it brought variety and different approaches to a subject. But the collection of programmes at CEC library reveals that there is abundance of some kind of programmes and at the same time dearth of many more. Madhu (2007)\(^{28}\) reported, “32 programmes on remote sensing, but only 6 on agriculture”. He adds that there are “a large number of cases where it had many programmes on the same topic”. Admittedly some sort of redundancy is always useful in education, but on the whole the efforts could have been better utilized for covering some other areas where very few or no programmes are available. This requires better coordination among the media centres which till recently was not seen. Though CEC has recently allocated subject areas for production of syllabus based programmes and development of e-content to certain centres but the centres are producing programmes without caring too much for the guidelines and without knowing what the others are producing. This most often results in duplication of efforts, wastage of time and money.

The e-content scheme has not been able to attract many teachers, even the teachers who took training did not return to generate e-content in their subject areas. Out of 58 virtual classrooms established across the country less than 15 are active and only few are actively taking part in the virtual classroom operations. The general indifference of planners and policy makers at UGC and ministry towards use of television for education can be judged from the fact that even after 24 years, CEC does not have a proper building of its own and is housed in the outhouse of another interuniversity centre. The ministry has pumped in a lot of resources in creating CEC and media centres but has failed to provide additional support and direction to make the best use of the facility. The flow of funds from UGC for production of programmes and other activities of the media centres has remained stagnant and mostly the grants are not released on time resulting in faulty planning for programme production.

Despite the above problems and many more that are beyond the purview of this study CEC and media centres hold a promise to make a significant contribution in the higher education through use of television and other new technologies.


\(^{27}\) Rani (2006). ibid. p. 26

\(^{28}\) Madhu, K.P. (2007): ibid p.17
Prospects for higher education

While the Discovery Channel, which started around the same time as the Countrywide Classroom, without having its production facilities located at the Universities, but by concentrating on few chosen subjects, could establish itself as a global channel with expanded viewership, the Countrywide Classroom could not expand even within the Indian borders. If Discovery could carve out a niche for itself with a relatively small audience and could make a difference across the globe, one fails to understand why Doordarshan and the University Grants Commission could not explore the possibility of putting the best of Countrywide Classroom into a sponsored category. The possibility of such a venture had the support of the viewership survey conducted by ADMAR for CEC in 1997, which had shown a significant audience share, 22 million, for UGC Countrywide Classroom programmes. This could have boasted the prospects of educational television and made it an economically viable proposition for both the Doordarshan and the UGC.

Today when television penetration is very high, the technology is spreading across the rural areas, satellites and transponders are manufactured like cars, the Indian skyline is dotted with transmission towers of all kinds, there is a greater scope of using television technology for education. There are many wonderful ways to make use of television for education for all; ‘anytime anywhere’. But the users have to be prepared to make effective use of these services. Such ventures, whether in education or other sectors, take time and effort; but sustained and constant efforts by planners, producers, managers and academics are a sure way to succeed in making effective use of television and new technologies for higher education.

With the new initiatives CEC and the media centres are making a humble beginning by packaging knowledge in various forms viz. educational television programmes, Educational multimedia / e-content, Learning Object repository and live interactive sessions through Edusat. The initiatives are to be carried forward in a much serious and sustained manner. The CEC at the same time shall have to devise easy, flexible and effective ways of dissemination of knowledge among the students and teachers across the country for a meaningful teaching and learning. The delivery of knowledge resources shall be backed with a strong interactivity mechanism; also involving the teachers in the classroom. This will help students in better understanding and comprehension and will iron out all their doubts; making countrywide classroom and virtual classroom real in essence. In the long run this may help India to overcome the problem of equity and access to higher education with out undermining the quality and help the country emerge as a global superpower by 2020.

For better understanding of the future role and utility of UGC Countrywide Classroom and the new information and Communication technologies it is imperative to further examine and understand the phenomenon of teaching through television and new technologies. This is also more important because of the tremendous growth of new technologies together with the convergence of media and India’s growing student population in higher education in the absence of a quality infrastructure for teaching.