

EDUCATIONAL TECHNOLOGY AND ICT

Dr. Sarita Anand

Department of Education, Vinaya Bhavana

Visva-Bharati, Santiniketan

Week-08

Lecture-40

Module-40: Resource Centre for Educational Technology: CET, AVRC & EMRCs

Hello dear learners, welcome to SWAYAM-NPTEL course on Educational Technology and ICT. I am your course coordinator, Dr. Sarita Anand, from the Department of Education, Vinaya Bhavana, Visva-Bharati, Santiniketan, West Bengal, India. Today, we will talk about Module 40 on Resource Centers for Educational Technology, such as CET, AVRC, and EMRCs. This is Lecture 40, and before proceeding, we will review the concepts covered. Earlier, in the previous lecture, we covered the CIET, we discussed CIET's genesis, vision, mission, areas of activities, major functions, and digital educational initiatives. We also discussed the department-wise facilities available at CIET. We explored the IJET, the Indian Journal of Educational Technology, and visited the CIET website.

Now, we will discuss the Resource Centers for Educational Technology: CET, AVRC, and EMRCs. First, we must understand what CET is? CET stands for Center for Educational Technology, and AVRC refers to the Audio-Visual Resource Research. EMRC is the abbreviation for Educational Multimedia Research Center. These centers, typically part of universities, are dedicated to developing and distributing educational content through multimedia technologies. AVRC is the older designation, which has often been upgraded to EMRC due to advancements in technology. These advancements have enabled the integration of a wider range of digital media formats.

Earlier it was known as AVRC that is why we had kept here in our ah syllabus. So, addressing a critical gap in Indian education system, Ministry of Education, Government of India introduced the significant reforms to shape the nation's educational scenario and effort led to establishment of several centers within the universities. to develop and produce

and disseminate the educational content using audio visual and digital technologies. Among them the CET, AVRC and EMRCs are important having a crucial role to promoting the technology enabled learning. The first one we will talk about the CET, Center for Educational Technology.

These are the established in various institutions In India to promote the technology driven education, they are having different functions related with the technology like developing instructional materials using technology for diverse educational needs of the learner, conducting research and training on educational technology, promoting ICT based teaching in education in school and higher education, designing e-learning platforms and digital resources for the students and the teachers collaborating with the government agencies like UGC, AICTE, NCERT etc. for the researches on technology and the notable institutions hosting CETs are the first one.

I have kept here IIT Kharagpur because this course which you are pursuing on educational technology is going with the help of IIT Kharagpur. This is having its own CET for Educational Technology which was established in 1995 and later on in 2001 CET moved into its present 25000 square foot fully air-conditioned location in high tech Takshashila building in Ramanujan complex. Earlier it was in other location, but now it is here in Takshashila building and at present they are working in the field of different video course production, web course production, video on demand, different technological aspects of teaching learning process.

SWAYAM NPTEL is running here from this CET and our course content development at present I am sitting in front of you with the help of this CET (Center for Educational Technology) that is why to motivate you all I have kept here in this presentation, we will show you the CET at IIT Kharagpur, located in the Takshashila building.

The next one is IIT Bombay, and they have the CET, which is actively engaged in research and education in the field of pedagogy and tools for technology-enhanced learning. This Center for Educational Technology was started in 2010-11, and they conduct courses at the Ph.D. and M.Tech levels. The next one is the CET at IIT Guwahati.

They are also working with the help of NPTEL, coordinating the northeastern region, and working on mission projects while collaborating and interacting with IITs and various educational departments. Additionally, the center hosts world-class, state-of-the-art infrastructure to execute mission projects spanning all subject areas, such as science,

engineering, and humanities, while infusing educational and pedagogical technology and the next one is CET at IIT Patna.

Their Senate decided to establish the CET, and in July 2023, they started their hybrid-mode program on computer science and business management. This CET works to deliver high-quality, industry-aligned, skill-based education without barriers, making learning accessible and affordable for all. The CET is equipped with a technology-driven platform and employs innovative pedagogical approaches to provide cost-effective education. Its primary objective is to empower youth with the necessary skills and knowledge, enabling them to build their careers and advance toward a promising future.

Now, the major contributions of the CET—as we have already discussed—include the development of digital lesson plans and multimedia e-content for teachers and learners. It also provides research and implementation of artificial intelligence (AI), AR, and VR in education, training teachers in ICT-based pedagogy, and online assessment tools. It contributes to national initiatives like SWAYAM and NPTEL. Applications of CET in education. They integrate ICT tools into traditional teaching methods, develop e-learning content, educational apps, and digital classrooms, facilitate online content development, and conduct training programs for teachers and educators in digital pedagogy.

AVRC, which we have discussed, is the topic we will talk about CET, AVRC, and EMRC. The second one is AVRC. This is the Audio-Visual Research Center. It was set up in several universities during the 1970s and 80s to support educational broadcasting. It primarily focused on the production of educational films, radio programs, and television content for distance education. Over time, AVRCs were upgraded to Educational Multimedia Research Centers as multimedia technology evolved. Earlier, its name was AVRC, and institutions that had AVRCs later renamed their departments as EMRCs.

The function of AVRC was to produce audio-video content for educational purposes, supporting distance education programs through media. It collaborated with Doordarshan and All India Radio for educational broadcasts, documenting academic lectures, documentaries, and subject-specific modules. Notable universities hosting AVRCs included CET of NCERT, which merged and became CET, and Osmania University, Hyderabad, which had the AVRC as a research and training center. It was established in 1983 to produce educational television programs, develop video and audio lectures, and create learning materials for distance education. What was the major contribution of the AVRC?

They produced audio and video lectures for university students under the UGC Countrywide Classroom initiative. They developed radio-based learning materials for distance education through All India Radio. They supported IGNOU's radio and television-based learning programs, including Gyan Vani and Gyan Darshan. Gyan Vani was for educational radio programs, and Gyan Darshan was for TV channel programs.

So, created the subject based educational things in collaboration with the Doordarshan. Now, the third point is EMRC we had talked about named the EMRC Educational Multimedia Research Center. It was established as an advanced version of AVRC to integrate the multimedia digital learning and online education into higher education. EMRCs were set up in various universities under the IGNOU's national education policy, sorry, UGC's national educational policy to enhance the educational content production in different higher education institutions.

The function of EMRCs producing the high-quality educational content in multimedia multiple formats like video, interactive media, online courses and virtual learning environments. Developing MOOCs for the platforms like SWAYAM. Also broadcasting the educational television programs like Gyan Darshan and Swayam Prabha channels, also their function was to conducting research in multimedia technology for education. They were aiming to support the virtual lab, simulation-based learning and e-content development.

Now, the notable universities hosting EMRCs there are total 21 EMRCs operate under the UGC. to produce the digital educational content and some leading institutions include EMRC Ahmedabad Gujarat, EMRC Kolkata at St. Xavier's College of Kolkata, EMRC Indore at Devi Ahilya Vishwavidyalaya, Madhya Pradesh and the EMRC Pune at Savitribai Phule Pune University. These are the few names only I have prepared the list of 21 EMRCs. Which are working day and night to produce the content for the different level of the education like EMRC Ahmedabad is working on the MOOCs and multimedia-based learning content. St. Xavier's is creating video lectures and virtual simulations for science and commerce.

Devi Ahilya is working upon the developments of subject based e content for the higher education. Savitribai Phule is producing the content for Swayam Prabha and the group of 34 channel TV channels broadcasting 24x7. So, these are the list name of the institutions in a sequence that where these EMRCs are existing. You can go through it. Now, the major contribution of EMRC.

The EMRC is producing which we have already discussed that the MOOCs contain the the creative educational programs on Gyan Darshan and Swayam Prabha, supporting the online education, distance education, e-learning platform, developing the multimedia resources for different subjects including STEM, humanities and management. And they are continuously evolving and updating the system and creating the new content for the learners. Now, the impact on the Indian education definitely EMRCs play a crucial role in digitizing the education and making higher education accessible. Providing subject based lectures for undergraduate and post graduate students. Strengthening India's distance and all learning online learning ecosystem.

Now, the government support for CET, AVRC and EMRC. The government of India has actively promoted Educational Technology through various initiatives like NEP 2020 is emphasizing on CET and EMRCs also emphasizing the NETF which we had already discussed. Then Digital India Initiative, SWAYAM, DIKSHA and National Digital Library are the example. E-Content Development is scheme, the high-quality video lectures and digital resources are being developed. Expansion of FM and Community Radio PM e-Vidya is also having this community radio facility.

Now, we can conclude that CET, AVRC, and EMRC centers have transformed India's education sector by integrating technology, multimedia, and online learning resources. CET, AVRC, and EMRC represent different stages in the evolution of educational technology in India. While CET focuses on educational technology research and teacher training, AVRC led the function for audio-visual-based learning. It later evolved into EMRC, supporting multimedia education, MOOCs, and digital content development. So, these centers continue to bridge the gap between traditional and digital education, making learning more accessible, interactive, and engaging for students across India. These are a few references for your further reading. I hope you will go through them.

Thank you. Keep learning.