



Multimedia Courseware as a means of Reformatations in Open Universities in India

Gitali KAKATI

Krishna Kanta Handiqui State Open University, Assam, India

gitalik87@gmail.com

Ankuran DUTTA

Department of Communication and Journalism, Gauhati University, Assam, India

ankurandutta@gmail.com

ABSTRACT:

Studies have claimed that use of multimedia technologies motivate and stimulate the learning of students as compared to using traditional teaching methods alone. Multimedia aids are therefore significant in effective teaching learning process. It is even more significant in open and distance learning where the learners are separated from their teachers by distances. The study has been done by using both qualitative and quantitative methods. Data has been collected from all the fifteen Open Universities of India. In this study, the researchers have attempted to understand the availability and delivery mechanism of different multimedia courseware in institutions imparting distance learning in India. The study will also provide interesting findings like commonly used or most preferred multimedia technology in these institutions.

Keywords: Multimedia, effective, distance learning, Open Universities, multimedia courseware, availability, delivery mechanism

1. INTRODUCTION:

With the introduction of technologies in distance education the learners are offered different options to choose upon. Mohan, L et al. (2010) opined in a study at India that 85% of the students are in favor of teaching methods that employ audiovisual aids as compared to typical lectures delivered without the use of audio-visual aids. In another study, Adeyanju (1997) has claimed that audio-visual aids improve teaching methodology. It is therefore reinforced that learning with teaching aids i.e. audio-visual aids; motivate and stimulate the

students interest along with holding his/her interest during the whole instructional process (Akram et al., 2012). Based on the findings of these studies, it will be interesting to learn the application of different multimedia aids in the Open Universities of India.

The term 'multimedia' has been interpreted by different scholars in a number of ways. According to Henrich et.al; "Multimedia is a concept that emerged in the 1950s and commonly referred to as a method that combined at least two media formats such as text and video or audio at one time to derive a

more complete, not necessarily educational, effect” (Heinich, Molenda, Russel, & Smaldino, 1996).

Rob Phillips has defined multimedia as “characterized by the presence of text, pictures, sound, animation and video; some or all of which are organized into some coherent program” (Phillips, 1997). Dr. Usha V. Reddi has defined multimedia as an integration of multiple media elements (audio, video, graphics, text, animation etc.) into one synergetic and symbiotic whole that results in more benefits for the end user than anyone of the media element can provide individually (Reddi, 2003).

Multimedia can thus be defined as the integration of text, graphics, sounds, images, animation and video with the computer mediated tools that can create a multisensory experience. Multimedia courseware will include various multimedia aids like audio, audio-visual, online materials, e-materials etc. that are provided as learners support services in most of the open and distance learning institutions. These are also provided in the open universities of the country. In this study, an attempt has been made to know the availability and delivery mechanism of different multimedia materials in the Open Universities of India.

In this study, the researchers try to study the availability of the multimedia courseware in Open Universities of India and to understand the delivery mechanism of the multimedia courseware in different Open Universities of the country.

2. PREVIOUS LITERATURE

Prof. Ramesh Chandra in his book ‘Impact of Media and Technology in Education’ has illustrated the significance of use of technology in education and the skills required by both teachers as well as students to use them effectively. The author has also identified evolution and use of different multimedia tools in schools. The book has emphasized the use of technology tools in imparting quality education in the modern times.

Similarly, Krishna Sagar in his book ‘Digital Technology in Education’, has

described the use of new digital technologies in education. He has also elucidated the significance of using ICT in teaching and learning. He has illustrated the use of different technology tools in schools, its impact and the teachers’ education in the networked environment (Sagar, 2005).

In the book ‘Advanced Educational Technology’, Seema Sharma has analyzed the roles of different tools of educational technology. She has described the broadcasting roles, production of audio and video programmes, teaching aids of modern nature, techniques of assessment, communication tools and some feasible activities for effective teaching-learning process. She has also emphasized the impact of mass media and possible social changes by communication (Sharma, 2005).

Bent B. Anderson and Katja van den Brink in their book ‘Multimedia in Education Curriculum’ (2013) have provided an analytical pedagogical scenario for using multimedia in education, its role, production process, use of multimedia in teaching and learning process etc. The book has described different applications of multimedia at different levels and sectors of education.

In the research paper ‘Use of Multimedia Tool as a New Educational Technology Tool - A Study’ (2012), S. Malik and A. Agarwal have provided a comprehensive study of the use of multimedia in education. The authors have also presented a list of such papers accompanied by annotations that describe use of multimedia and its relevance in education.

In the paper ‘Learners Support Services at State Open Universities in India: Quality Matters’ (2011), Murugan Krishnapillai has emphasized the need of quality assurance of the technology enhanced services used in teaching learning process. He has identified some of the quality indicators of learners support services in ODL mode. Technological advancements are a must in distance learning but the levels of quality

assurance must also be examined (Krishnapillai, 2011).

In the paper 'Use of Multimedia in Online Distance Learning' (2005), Susan Genden has highlighted use of multimedia and its benefits in distance learning. The author has also put forward some of the negative considerations and hurdles in using effective multimedia in teaching and learning process. The author has also provided some future trends of multimedia which can help in utilizing multimedia in distance education (Genden, 2005).

In the study 'The Impact of the Audiovisual Aids in the Teaching Learning process at the Technical University of Cotopaxi during the academic period March-July 2012' (2012), Sandra de los Angeles Parreño Garzón has investigated the significance of use of audio-visual aids for learning. Based on the analysis of the surveys applied to the teachers and students of the Technical University of Cotopaxi, he has found that audio visual tools like video recordings, audio recordings, photos, slides and overhead transparencies help in learning but they should be considered only as aids and not as educational methods that stand alone. Video recordings have been identified as the most favoured audio visual aid; however the production requires financial resources as well as professional expertise.

3. METHODOLOGY

The present study is an attempt to study all kinds of tools or aids used in Open Universities of the country for facilitating efficient teaching-learning process. In this study, both qualitative and quantitative methods have been used. For quantitative data, structured questionnaires were used while for collecting qualitative data, in-depth interviews with the authorities/concerned persons of the department of the university have been conducted. Data from different universities have been collected through primary as well as

secondary sources. A structured questionnaire on the production, delivery, utilization of the multimedia tools as well as infrastructure of the multimedia department of the university had been designed and sent to the Directors/In-charge of the Multimedia/Electronic Media Production centres of sixteen open universities of the country through emails. The researcher has also tried to contact the concerned authorities of the universities over phone and also visited three of the universities. However only a few universities reverted back and thus data from the universities namely Netaji Subhas Open University (NSOU), Vardhaman Mahaveer Open University (VCMOU), Yashwantrao Chavan Maharashtra Open University (YCMOU) have been collected through telephonic interview with a concerned person from the university. The researcher visited Indira Gandhi National Open University (IGNOU), Bhim Rao Ambedkar Open University (BRAOU), and Krishna Kanta Handiqui State Open University (KKHSOU) in person to collect the requisite data. The data collected from rest of the universities are through secondary sources like books, internet, university website etc.

How multimedia courseware are designed and developed by Open Universities in India:

The data have been collected from different Open Universities of India regarding the multimedia materials provided to the distant learners. A total of twelve Open Universities have multimedia or electronic media production centres whereas the rest either use multimedia materials from different universities or have plans to establish a multimedia production unit to provide their learners.

1. IGNOU:

Indira Gandhi National Open University (IGNOU) is the first and only National Open University of India. It was established by an Act of Parliament in 1985 in order to provide higher education through open and distance learning mode. However, the university started offering

academic programmes from the year 1987. IGNOU is also the pioneer in producing audio and audio-visual materials for its learners. The Electronic Media Production Centre of IGNOU is the core of all kinds of electronic materials aimed to reach the learners with different media technologies.

As per records of EMPC library till the month of April 2016, EMPC has produced a total of 4624 video programmes and 2495 audio programmes. It also has a repository of 273 foreign videos and 525 audio programmes for Gyan Vani. It used to produce different curriculum based audio and video programmes to supplement the self-learning materials. Video programmes are mostly of 25-30 minutes duration. These are displayed in the study centres during specific sessions and the learners are duly notified. IGNOU provides radio lessons through Gyan Vani radio stations located in various cities of the country. The university also provides TV lessons through Gyan Darshan channels available on DTH networks. Tele-conferencing, video conferencing, live streaming of various programmes are also available through Edusat programmes. IGNOU programmes are also telecast on DD National Channel from 6.00 to 6.30 am.

However, all the above mentioned services of EMPC that is radio lessons through Gyan Vani, TV lessons through Gyan Darshan and Edusat were not functioning during the study period i.e. 2015-16 due to some administrative reasons.

- **GyanVani:** Gyan Vani is an educational FM radio channel which is operated through several of its sub stations. Radio being a low cost and effective medium, GyanVani attempted to enhance teaching-learning process by offering radio lessons from various cities in the country. Gyan Vani Allahabad and Bangalore were launched in November 2001 followed by another 35 GyanVani stations in phased manner through local institution or a Regional

Centre of IGNOU. Gyan Vani reaches to a range of 60 kms and serves the niche audience. The programme schedule includes radio talks, lectures, discussions and Live-in programmes. Interactive radio counselling facility is also provided by the GyanVani stations to enable distant learners interact with faculty, academic counsellors and student support staff members. These sessions are conducted by the Regional Centres through respective GyanVani stations. A toll-free number is provided to the learners so that they can interact with experts according to their convenience and from respective areas. The programmes are contributed by organizations/institutions like NCERT, NIOS, IGNOU and State Open Universities, government organizations, social organizations etc. and pertain to primary, secondary education, Adult Education, Technical and Vocational Education, Higher and Distance Education etc. Some selected stations of All India Radio also broadcast the audio programmes. The dates and time have to be confirmed by the learners from study centres and also through the university website.

- **Gyan Darshan:** It is the educational television and set up as a joint venture of Ministry of Human Resource Development (MHRD), Ministry of Information and Broadcasting, IGNOU and Prasar Bharati. It uses C-Band transponder of INSAT-3C and is fully digitized. TV lessons or the video programmes are telecast through Gyan Darshan or National Network of Doordarshan. Gyan Darshan has four educational TV channels under its banner and offers variety of contents in programmes. This has been described briefly as:
 - **Gyan Darshan-1:** Launched in the year 2000, GD 1 is a 24 hour exclusive educational television channel which telecasts educational programmes for a wide range of audience of different age groups and nature. Programmes of

NCERT/CIET, IGNOU, NIOS, DST and programmes from independent producers and foreign broadcasters were telecast through this channel. It's programme broadcast list included about four hours of children's programmes; half an hour on women issues and their empowerment; couple of hours on curriculum based programmes for IGNOU learners; language programmes and a good duration of time is devoted to general enrichment programmes like health, science, technology, culture, history, environment, agriculture etc.

- Gyan Darshan-2: This is an interactive channel used by the University for tele-counselling, tele-training and tele-convocation. This channel has been set up for facilitating interaction between teachers and learners. One-way video and two-way audio teleconferencing facilities are offered for organising important nationwide programmes for IGNOU learners, lectures by eminent personalities, discussions with staff members of Regional Centres of the university; interactions between teachers or experts with students etc. Tele-counselling sessions of IGNOU are also conducted for some professional courses like nursing, Continuing Medical Education, Information Technology, MBA, Functional English etc. The channel is also used for organising live teleconferencing during convocations, periodic orientation of IGNOU academic counsellors.
- Gyan Darshan-3: This channel also known as Eklavya channel, is basically devoted to technology education for the benefit of students of IITs and other engineering colleges of India. Programmes from IIT Delhi are received by EMPC through microwave and uplinked to the satellite.
- Gyan Darshan-4: Also known as the Vyas channel, it telecasts higher education programmes produced under

UGC's 'Country-wide classroom' and is coordinated by Consortium for Educational Communication (CEC), UGC.

GyanDarshan I & II channels are available on DTH platforms of DD Direct Plus as well as private networks. EMPC serves as the nodal centre for managing GyanVani and GyanDarshan channels.

- Edusat: Edusat is a collaborative project of ISRO, IGNOU and State departments of Education which facilitates interactive distance education system through audio-video streaming and data exchange through computer network. IGNOU uplinks its Edusat programmes in KU band transponder on the satellite INSAT 4CR using DVS-RCS (Digital Video Broadcast Return Channel through satellite) technology. There are 182 SITs (Satellite Interactive Terminals) established across the country to facilitate regular two-way video conferencing. The teaching end is co-located with the Hub i.e earth station at EMPC, IGNOU, New Delhi. It serves not only IGNOU but also seven other networks of other institutions.
- eGyanKosh: The IGNOU eGyanKosh is one of the largest and freely accessible repositories of educational resources in higher education in the world. The eGyanKosh consists self-learning materials of around 2565 courses and over 2389 video programmes of IGNOU. The resources available on the eGyanKosh can be accessed through Login ID and Password which need to be created by the user at the initial login.

2. BR Ambedkar Open University:

The first State Open University of India, Dr. B R Ambedkar Open University (BRAOU) initially known as Andhra Pradesh Open University, was set up on 26th August 1982 through an Act of the Andhra Pradesh State Legislature. It has a well-equipped audio-visual

production centre initiated in the year 1983. It was first started as a material production unit which was later separated in 1993. There is provision of television lessons through DD-Saptagiri channel and through GyanDarshan channel in the first Open University of India, Dr. B.R Ambedkar University. Radio lessons are also broadcast through All India Radio, Hyderabad 'A'. As stated by Prof. YeshwantJadhao, Director of Audio-visual Production and Research Centre of BRAOU, the Unit is a statutory Directorate headed by a Director. The multimedia learning materials are produced in HD production in a digitized audio-video studio. The audio-video studio is well equipped with all kinds of technical equipments including HD cameras, editing suit etc. it has new equipments for video production that are compatible with similar Television networks with a sound studio and television studio equipped with four CCD cameras, tripod and other accessories, including a 8 line microphone audio recording system for production of educational radio and television programmes. There is a video duplication system that has facilities for making CD copies from beta cam format. Similarly, the audio CD duplication work is done in an audio fast duplicator. The video studio has online four professional High Definition (HD), 3 CCD camera set up with switching and HD Digital Recording facility. There are three numbers of ENG (Electronic news Gathering) setup for field recordings. There are also three numbers of professional non-linear video editing setups with special effects. Apart from video studio, there is an audio non-linear recording and editing facility studio.

There are around 25 staff members consisting of two Deputy Directors, two producers and four production assistants; two instrumentation engineers, one senior technical assistant, three technicians, two helpers and one Assistant Registrar, two junior assistants and four office subordinates.

BRAOU provides radio lessons through All India Radio everyday for 15 minutes from 6.25 pm to 6.40 pm; telecast of video lessons through DoordarshanSaptagiri channel for five days from Monday to Friday from 5.30 a.m to 6 a.m; video lessons are also telecast through Manna TV from Mon to Sat from 11.30 to 12.30 pm and 4 pm to 5 pm and through GyanDarshan from 10.30 to 11.00 pm. Interactive Live teleconferencing is conducted through DD Saptagiri channel on every Sunday from 2 pm to 3 pm. The Unit used to produce about 150 video lessons, 125 radio lessons and 52 teleconferencing classes per year. Every year 239 number of video lessons are telecast through DD Saptagiri channel, 730 through Manna TV and 365 through GyanDarshan channel. 365 number of radio lessons are broadcast through All India Radio. The average duration of the radio lessons are of 15 minutes, 30 minutes of video and one hour of teleconferencing. Radio lessons were started from the year 2000-2001 through AIR. It is broadcast everyday. TV lessons are telecast through Doordarshan from every Monday to Friday. It was started from 2001-2002 as stated by Prof. Jadhao. The learners usually access the multimedia learning materials at the study centres as well as at homes.

BRAOU provides different multimedia materials provided to its learners. They are printed texts, radio, TV lessons, internet, counseling classes, teleconferencing, audio materials, video materials and face to face counseling. The learners are communicated by SMS, emails, telephone, notice boards and through University website. The Director also said that the content of the multimedia materials provide information related to syllabus as well as beyond it. BRAOU also conducts surveys regarding viewers watching and listening to the programmes broadcast through DD Saptagiri channel, Manna TV, GyanDarshan channels and All India

Radio. Various research projects are also taken up to update the feedback from learners about the audio and audio-visual programmes of the University. The audio video centre of BRAOU is also planning to launch their web radio, Video on demand as well as E-learning in the future.

3. Yashwantrao Chavan Maharashtra Open University:

Yashwantrao Chavan Maharashtra Open University (YCMOU) was established in July 1989 by Act XX-(1989) of the Maharashtra State Legislature at Nashik, Maharashtra ("About YCMOU," n.d.). Apart from self learning materials, audio and video contents have also been formulated for the learners of the University. The Audio Video centre of the university was started on 1st July, 1990. It was established by the Government of Maharashtra for providing learning materials to the distant learners. The Production Assistant cum Video Producer of the university, Sapnar Prakash N. in an interview with the researcher said that the audio-video centre produces audio and audio-visual programmes complementary to the syllabus of the university. The unit started with four persons and technical equipments worth Rs 28 lakhs. However, presently the staff has increased to 18 persons and about 20 crores of equipments and studio. The staff members include one Head of the department, two producers, two camerapersons, three production assistants, one floor manager, three technical assistants, one graphic artist, one technician, one junior technician and two clerks. Awarded in National and international levels for different educational programmes, the centre has produced about 1000 video and 2000 audio programmes (with an average of producing 100 video and 200 audio programmes annually). The centre has a well-equipped studio set up consisting of three Sony HD cameras, FCP set up, Matrox, equipped sound studio, projectors, outdoor set up and other

equipments necessary for audio-visual production. Apart from printed study materials and audio visual production, the university is providing multimedia materials through radio, audio, television, new media and video/tele conferencing. It also has a web radio known as Yashwani Radio Webcast. Yashwani is radio lessons of YCMOU and have till date broadcast about 1000 episodes. It was started from the year 1990. The learners are communicated through SMS service regarding the delivery of multimedia materials. They access the multimedia learning materials at the study centres, homes as well as from the University website. The audio-visual programmes are of 20 minutes (average) duration. The University measures the impact by assessing the number of Hits on their web radio page which means number of listeners connecting to the page. As a future plan, the University is planning to provide all the radio lessons to the learners on their mobile phones.

4. Netaji Subhas Open University:

Netaji Subhas Open University (NSOU) has been started as a result of a State Act (W.B. Act (XIX) of 1997 and recognised by U.G.C. that was passed on the 20th August 1997 in favour of opening a University for imparting Distance Education ("NSOU - About Us - History," n.d.). The University has a FM station named GyanVani. Audio cassettes of different programmes are supplied to the study centres. As mentioned by Dr. Anirban Ghosh, Associate Professor of Commerce of Netaji Subhas Open University, a Multimedia Production Unit is yet to be established. The University provides printed texts and radio lessons through GyanVani (presently GyanVani channels are not operational). The radio lessons provide information related to the syllabus as well as beyond it. The learners access the materials specially the radio lessons individually at their homes and also from the University's website. The learners are also provided ICT enhanced

services and a student portal that links the students to the Learning Management System of the University. The learners are also provided a mobile application. Learners are communicated through SMS service, e-mails, phones, website and notice boards. In terms of preference, the learners prefer mostly printed texts followed by face to face communication, counseling classes, audio programmes and notice boards. Providing of Learners' Support Services to the learners is a challenge as the learners are reluctant to attend classes, said Prof. Ghosh. He also said that the impact of the support services is accessed by investigating the participation of the learners in the counseling classes and also by accessing the University website. Netaji Subhas Open University has further plans to produce audio-visual materials and introduce multimedia learning to the learners.

5. *Vardhaman Mahaveer Open University:*

Vardhaman Mahaveer Open University initially known as Kota Open University was established in the year 1987 ("Vardhaman Mahaveer Open University, Kota," n.d.). The university has an Electronic Media Production Centre for its learners. It was started in the year 1996 almost a gap of 12 years after the university was formed. In a telephonic interview with Mr. Abhisekh Nagar, Assistant Professor of VCMOU said that the multimedia materials are provided as add-on materials alongwith printed materials. 1000 video lectures have been developed in two years out of which 500 are available online. The Unit also has a web radio which runs for 24 x 7. The present multimedia production of the University includes video lessons, multimedia materials, like talking books, information uploaded in websites and provided as individual copies. There are four staff members in the Unit comprising of two video producers and two audio producers. The University communicates with its learners by SMS service, e-mails, telephone, notice-boards, post services in

form of letters and its website. The communication is however mostly preferred through internet like e-mails, blogs etc. The average duration of the audio programmes is 45 minutes and 10 minutes for audio-visual programmes. There has been also provision of providing radio lessons through All India Radio. It was started in 2012-13 and about 22-25 episodes have been broadcast till date. The multimedia materials are accessible at study centres, their homes, in the University's website and in form of Open Educational Resources. There are certain limitations while providing the required materials to the learners as they are far and due to time constraint. The impact of such materials is measured by the University by regular feedback survey mechanism of online visitors which is around 40000 till April 2016.

6. *Madhya Pradesh Bhoj Open University:*

Madhya Pradesh Bhoj Open University (MPBOU) was formed in 1991 under an act by the Madhya Pradesh state legislature ("MPBOU," n.d.). The university also has a full-fledged Electronic Media Production and Research Centre in the campus. It has been producing a number of audio and video programmes since 1998 to meet the needs of the learners. Digital (DVCAM) Video Recording centre has Sony DVCAM digital video recording facilities with two camera system with outdoors lights. Video Editing (Digital and Beta-CAM A/B roll) EMPRC have Sony DVCAM digital linear video editing system (cut to cut) and with Beta cam (digital-analogue) hybrid A/B roll editing system. The media centre has also introduced its educational On Demand Internet Radio named Bhojvani from July, 2006. The internet radio is being used for educational purposes of the learners. A learner can select, listen and control educational audio programmes as per their choice. This service is free from time constraints and location constraints. User can access this any time as per

his/her convenience from wherever they want without any kind of restrictions. One can access and listen as many times one desires to do so. Madhya Pradesh Bhoj Open University has also established FM Radio Centre "GyanVani" at Bhopal for radio conferencing and broadcasting lectures in collaboration with Indira Gandhi National Open University, New Delhi on 13th September, 2002. It can be listened to around 100 km area around Bhopal city. EMPRC MPBOU has also got a time slot of half an hour at Gyanvani, Jabalpur M.P. It's broadcasting time is 11:30 am to 12:00 Noon ("Development of EMPRC," 2007).

7. *Uttarakhand Open University:*

Uttarakhand Open University (UOU) was established by an Act of Uttarakhand Legislative Assembly in 2005 (Act No. 23 of 2005). The University also offers its learners a host of multimedia materials for learning. Video lectures of different courses have been designed for the learners. The study materials are available as OER materials and easily available and accessible from the university website. A discussion forum is also another platform where a learner can ask questions on various subjects to the concerned authorities of the university. The University is providing audio materials through its community radio station named as Hello Haldwani 91.2 MHz. Established in the year 2012 at the University campus, the radio station is also available online ("Uttarakhand Open University | Uttarakhand Open University," n.d.).

8. *UP Rajarshi Tandon Open University:*

Uttar Pradesh Rajarshi Tandon Open University in Allahabad (UPRTOU) was established under Act No. 10/1999 passed by U.P. Legislature on March 24, 1999 ("UPRTOU," n.d.). UPRTOU is well equipped with state-of-art digital audio and video production facilities, video studios, edit suites, audio editing suites, duplication and graphics facilities

(Srivastava, 2015). The university has database of about 6000 video recordings, 1025 audio recordings and 1613 e-books ("UPRTOU," 2018).

9. *Babasaheb Ambedkar Open University:*

Dr. Babasaheb Ambedkar Open University (BAOU) was established by the Act No.14 of 1994 passed by the Gujarat State Legislature by the Governor of Gujarat on 27th July, 1994("Introduction | About | Dr. Babasaheb Ambedkar Open University," n.d.). BAOU has introduced a number of new initiatives like developing android mobile educational apps for providing relevant information of the university. These apps once downloaded do not require internet connection. The university has also started five initiatives in ICT applications. A digital repository of all study materials named as Open Matrix Knowledge Advancement Resources for Empowerment (OMKAR-e). *Jyotirgamay* is first of its kind initiative that facilitates any student to take tests related to selected course offered by the university on the basis of self-study or preparations pertaining to his/her knowledge domain. BAOU also has a GPS enabled air-conditioned van with 16 internet enabled work-stations networked through a LAN. It has been equipped with an LCD projector, a screen, white board and a public addressing system. This van is named as *Kamdhenu* and first of its kind ICT enabled Classroom on Wheels. Two other innovative initiatives of BAOU that facilitate web based learning through video and radio are Swadhyaya TV and Swadhyaya Radio. In order to facilitate web based learning in interactive mode, virtual classrooms have also been initiated by the university (Srivastava, 2015).

10. *Karnataka State Open University:*

Karnataka State Open University (KSOU) was established on 1st June 1996 as a result of the KSOU (Act 1992) ("Introduction," n.d.). As a part of providing multimedia technologies to the

learners, NPTEL has been initiated to produce course contents. National Programme on Technology Enhanced Learning (NPTEL) is a project started by a number of IITs, IISc and other institutions for creating contents for 100 courses as web based supplements and 100 video courses for forty hours of duration per course ("NPTEL," 2016).

11. Tamil Nadu Open University:
Tamil Nadu Open University (TNOU) has been formed by the Government of Tamil Nadu in the year 2002.

There is an Electronic Media Production and Research Centre in Tamil Nadu Open University and the learner support systems including admission, examination, material distribution, counseling etc. have been digitalized ("Tamil Nadu Open University," n.d.).

12. Nalanda Open University:

Nalanda Open University was established in the year 1987 by an Ordinance as promulgated by the Government of Bihar. However, the Nalanda Open University Act, 1995 was passed by the Bihar legislature replacing the earlier Ordinance ("Nalanda Open University," n.d.). The University though does not have a multimedia/electronic media production centre of its own, it has linked the learners to National Mission on Education through ICT (NMEICT) to address their learning needs. This is a centrally sponsored project taken up by Ministry of Human Resources and Development (MHRD) to make available e-content and educational videos by synergizing the efforts of institutions like IITs, UGC, NITs, CEC, IGNOU to develop high quality content materials. Sakshat is another platform of delivering e-learning by integrating all the contents developed under the Mission ("National Mission on Education through ICT: MHRD" 2014).

13. Pt. Sundarlal Sharma State Open University:

Pt. Sundarlal Sharma State Open University was established by an establishment of Government of Chattisgarh by an Act of 2004 ("Pandit Sundarlal Sharma (Open) University Chhattisgarh," n.d.). The university does not have a multimedia production unit but has plans to establish one to provide different multimedia materials to its learners. However, the university provides e-books on different courses that are uploaded in the university website.

Pt. Sundarlal Sharma State Open University was established by an establishment of Government of Chattisgarh by an Act of 2004 ("Pandit Sundarlal Sharma (Open) University Chhattisgarh," n.d.). The university does not have a multimedia production unit but has plans to establish one to provide different multimedia materials to its learners. However, the university provides e-books on different courses that are uploaded in the university website.

14. Krishna Kanta Handiqui State Open University:

Krishna Kanta Handiqui State Open University (KKHSOU) in Assam was established in the year 2006 under the provision of the KKHSOU, Act' 2005 enacted by the Govt. of Assam ("Krishna Kanta Handique State Open University," n.d.). The university is privileged to launch a Multimedia Production Unit alongwith a community radio station. The multimedia learning materials of KKHSOU are audio materials in form of audio programmes on course curriculum; community radio and radio lessons titled Eklavya, Live Phone-in programmes broadcast through All India Radio. A number of audio and audio-visual programmes have been produced from the centre and uploaded in the website of the university as well as in YouTube. The university has launched the first community radio service of North East India, Jnan Taranga. It runs throughout the day for all days in a week. Apart from community development programmes, the radio station also broadcasts educational

programmes for the benefit of the learners as well as community at large. The Multimedia Production centre of the University has produced about 750 audio and 250 audio-visual programmes till date. The audio-visual materials in form of video classes and academic discussions and new media materials like e-books, web radio, job portal and android app to its learners. It also has an e-bidya portal where all the self-learning materials are uploaded so that any learner can get access to it conveniently. The University has recently launched its Android App that can be downloaded in any smart phone. The app consists the university website like information from admission to examination including multimedia materials. KKHSOU also has a Job portal for providing information on different jobs to the job seekers.

It is also pertinent to mention that the university has formulated an OER policy in consultation with Commonwealth Educational Media Centre for Asia (CEMCA). The self learning materials as well as all the publications available in the university's website are now licensed under Creative Commons which encourages open and free learning to the larger masses of learners and not limited within any geographical periphery.

As analysed in the earlier part, KKHSOU provides three kinds of multimedia tools to its learners. There are audio, audio-visual and new media materials. The materials are disseminated to the learners as follows:

a) Audio materials: Audio materials of KKHSOU consists of EKLAVYA, an educational programme broadcast by All India Radio (AIR), Guwahati and Dibrugarh every Saturday from 8 PM to 8.30 PM. There is a Live Phone-in programme on every Thursday by AIR from 9.15 AM to 10.15 AM and on every 4th Saturday by AIR from 11.30 AM to 12 PM. Audio programmes on course curriculum uploaded at University's website, provided to study centres and broadcast through Jnan Taranga CRS. It has produced about 750 audio materials.

The University has also launched the first community radio service of North East, 'Jnan Taranga' which broadcast community programmes with effectual educational programmes from the university curriculum for upliftment of the learners and the community at large. The visually impaired learners classes on course curriculum provided in form of audio CDs to Audio-visual materials:

b) Video classes and academic discussions are produced and uploaded at the You Tube Channel of the University and University's web portal. About 250 audio visual materials have been produced by the university. Audio-visual programmes are delivered to study centres and learners with courses as blended and supplementary materials in form of DVDs.

c) New media materials: The self-learning materials of the university are uploaded so that any learner can get access to it conveniently through web portal named E-bidya. The university also has a web radio. Jnan Taranga community radio station is available as web radio and can be accessed from the University's website. The university has designed a unique job portal for its learners as well as job seekers to look for new work opportunities. KKHSOU has developed an Android App that consists of all kinds of news and information of the university like information from admission to examination, study centres, publications including multimedia materials.

15. Odisha State Open University:

Odisha State Open University is the most recent open university of India. It was established in the year 2015 by the Government of Odisha to cater to the learners of open and distance learning ("Student Handbook and Prospectus Master Degree Programme," n.d.). It provides various learners support services including audio and video lessons on different subjects through blended mode of learning. The university has appointed a committee that is responsible for coordinating, production and review of all

the audio-visual materials. The videos are of maximum 10 minutes of duration and consist of mostly lectures from experts and resource persons on specific subjects of the curriculum. The video lectures are uploaded in the university website and the audio of the video programmes are separated and developed into audio lessons and later uploaded in the university website. As such, anyone can get easily access the audio and audio-visual materials of the university. A total of 108 video lessons have been produced so far (Sharma, 2018).

4. FINDINGS OF THE STUDY:

The present study has put forward some interesting findings on the availability and delivery mechanism of the multimedia courseware of the Open Universities of India. They are as follows:

- a) Audio-visual materials are preferred in almost all the Open Universities of India as compared to audio or other technology enhanced materials.
- b) The Open Universities of India deliver radio lessons mostly by Gyan Vani and All India Radio stations. However Uttarakhand Open University and KKHSOU have their own community radio stations to connect to their learners.
- c) A number of Open Universities of India like IGNOU, BRAOU, MPBOU, VMOU, YCMOU, BAOU, UPRTOU, TNOU and KKHSOU have their own Electronic/multimedia production units and offer a wide range of multimedia learning materials to their learners
- d) Almost all the Open Universities of the country offer internet based or digital materials to their learners like mobile applications, e-books, knowledge enhanced learning through ICT, web radio etc.
- e) Multimedia tools like video-conferencing, tele-conferencing, online learning are not opted by most of the Open Universities of India. However IGNOU, BRAOU and YCMOU are providing video conferencing and teleconferencing facilities to its learners through various channels.

f) Mobile phone connectivity has increased in an unprecedented way in the recent times. Over 80 crore people in our country are mobile users. Over a quarter of the total population of India will be using a smartphone by the end of 2018 (Sitharaman, 2018, p. 28). The potential of mobile phones can be utilized by enhancing mobile learning. Mobile based learning materials can be developed for reaching out to the learners. A few universities like BAOU and KKHSOU have developed their mobile educational App for the learners.

g) The Open Universities of the country are gradually adopting Open Educational Resources (OER) as a platform to disseminate learning through open and free accessibility to all. Universities like BRAOU, NSOU, KKHSOU etc. have also adopted and developed their own OER policy for free accessibility of the learning materials.

5. CONCLUSION:

Multimedia technologies have the potential to turn the world into a smaller place to live in and can thus eliminate the gap between the learners and teachers. Different forms of media can provide opportunities to learn through different channels. A number of Open Universities provide different kinds of multimedia materials to their learners apart from self-learning materials though a few institutions have still to provide them. New and innovative multimedia technologies can be explored to provide the learners interesting platforms to learn from. This is more important among the learners of open and distance learners where the learners always face a kind of alienation from their teachers. However, the effective use of multimedia materials will be done if the learners are aware about their availability and accessibility. The delivery mechanism also needs to be efficient so that the materials can be accessed on time. Multimedia having its unique format has the potential to make learning interesting. The authorities and policy makers can plan unique strategies

to motivate the learners about the significance of multimedia materials and how can they be benefitted by using them. The distant learners should be provided an enabling environment for easy accessibility of the multimedia materials.

REFERENCES:

- Mohan, L., Shankar, P. R., Kamath, A., Manish, M. S., & Eesha, B. R. (2010). Students' attitudes towards the use of audio visual aids during didactic lectures in pharmacology. *Journal of Clinical and Diagnostic Research*, 4(6), 3364. Retrieved from https://www.researchgate.net/publication/265084886_Students%27_attitudes_towards_the_use_of_audio_visual_aids_during_didactic_lectures_in_pharmacology
- Akram, S., S., & Malik, K. (2012). Use of audio visual aids for effective teaching of biology at secondary schools level. *Elixir International Journal*, (50), 10597-10605.
- Heinich, R., Molenda, M., Russell, J. D., & Smaldino, S. E. (1996). *Instructional Media and Technologies for Learning* (Rev. ed.). Englewood Cliffs, NJ: Merrill.
- Phillips, R. (1997). *The Developer's Handbook to Interactive Multimedia: A practical guide for educational application*. London: Kogan Page.
- Reddi, U. V. (2003). Multimedia as an Educational Tool. In U. V. Reddi & S. Mishra (Eds.), *Educational multimedia: A Handbook for teacher-developers* (pp. 3-7). Retrieved from [http://www.cemca.org.in/ckfinder/userfiles/files/EdMul_Full\(5\).pdf](http://www.cemca.org.in/ckfinder/userfiles/files/EdMul_Full(5).pdf)
- Mishra, R. C. (2009). *Encyclopedia of Educational Research*. New Delhi, India: A.P.H. Publishing Corporation.
- Chandra, R. (2005). *Impact of Media and Technology in Education*. Delhi, India: Kalpaz Publications.
- Sagar, K. (2005). *Digital Technology in Education*. Delhi, India: Tarun Offset.
- Sharma, S. (2005). *Advanced educational technology* (1st ed.). New Delhi, India: Anmol Publications.
- Andresen, B. B., & Brink, K. V. (2013). *Multimedia in Education Curriculum*. Retrieved from <http://unesdoc.unesco.org/images/0022/002241/224187e.pdf>
- Krishnapillai, M. (2011). Learner Support Services at State Open Universities in India: Quality Matters. *Indian Journal of Open Learning*, 20(1), 31-44. Retrieved from journal.ignouonline.ac.in
- Malik, S., & Agarwal, A. (2012). Use of Multimedia as a New Educational Technology Tool—A Study. *International Journal of Information and Education Technology*, 468-471. doi:10.7763/ijiet.2012.v2.181
- Genden, S. (2005). *The Use of Multimedia in Online Distance Learning*. Retrieved from Wayne State University website: https://www.academia.edu/4512895/Running_head_THE_USE_OF_MULTIMEDIA_IN_ONLINE_DISTANCE_LEARNING?auto=download
- Garzon, S. A. (2012). *THE IMPACT OF THE AUDIOVISUAL AIDS IN THE TEACHING LEARNING PROCESS AT THE TECHNICAL UNIVERSITY OF COTOPAXI DURING THE ACADEMIC PERIOD MARCH-JULY 2012* (Master's thesis). Retrieved from <http://repositorio.utc.edu.ec/bitstream/27000/1626/1/T-UTC-1452.pdf>
- About YCMOU. (n.d.). Retrieved from <https://www.ycmou.ac.in/>
- NSOU - About Us - History. (n.d.). Retrieved from http://www.wbnsou.ac.in/about_us/history.shtml#history
- VardhamanMahaveer Open University, Kota. (n.d.). Retrieved from <https://www.vmou.ac.in/notice/164189006>
- MPBOU. (n.d.). Retrieved from <http://www.bhojvirtualuniversity.com/>

- Development of EMPRC. (2007). Retrieved from <http://www.bhojvirtualuniversity.com/ada/emprc/empdev.htm>
- Uttarakhand Open University | Uttarakhand Open University. (n.d.). Retrieved from <http://www.uou.ac.in/book/uttarakhand-open-university>
- Srivastava, M. (2016). *Status of the State Open Universities in India*. Retrieved from CEMCA website: [http://cemca.org.in/ckfinder/userfiles/files/Status%20of%20The%20State%20Open%20Universities%20in%20India\(1\).pdf](http://cemca.org.in/ckfinder/userfiles/files/Status%20of%20The%20State%20Open%20Universities%20in%20India(1).pdf)
- UPRTOU. (n.d.). Retrieved from <http://www.uprtou.ac.in/>
- UPRTOU. (2018, August 2). Retrieved from <http://www.uprtou.ac.in/library-eresources.php>
- Introduction | About | Dr. BabasahebAmbedkar Open University. (n.d.). Retrieved from <http://baou.edu.in/introduction>
- Introduction. (n.d.). Retrieved from <http://ksoumysore.karnataka.gov.in/Pages/Introduction.aspx>
- NPTEL. (2016). Retrieved from <http://ksoumysore.karnataka.gov.in/Pages/NPTEL.aspx>
- Tamil Nadu Open University. (n.d.). Retrieved from <http://www.tnou.ac.in/about-university/>
- Nalanda Open University. (n.d.). Retrieved from <http://www.nalandaopenuniversity.com/>
- National Mission on Education through ICT: MHRD. (2014, June 13). Retrieved from <http://www.sakshat.ac.in/document/nmeict-brochure-30-11-2015.pdf>
- PanditSundarlal Sharma (Open) University Chhattisgarh. (n.d.). Retrieved from <http://pssou.ac.in/University.aspx>
- Krishna KantaHandique State Open University. (n.d.). Retrieved from http://kkhsou.in/web_new/university.php
- Student Handbook and Prospectus Master Degree Programme. (n.d.). Retrieved from <http://osou.ac.in/pdf/STUDENT-HANDBOOK-MASTERS-PROG-2018-19.pdf>
- Development of EMPRC. (2007). Retrieved from <http://www.bhojvirtualuniversity.com/ada/emprc/empdev.htm>
- Uttarakhand Open University | Uttarakhand Open University. (n.d.). Retrieved from <http://www.uou.ac.in/book/uttarakhand-open-university>
- Srivastava, M. (2016). *Status of the State Open Universities in India*. Retrieved from CEMCA website: [http://cemca.org.in/ckfinder/userfiles/files/Status%20of%20The%20State%20Open%20Universities%20in%20India\(1\).pdf](http://cemca.org.in/ckfinder/userfiles/files/Status%20of%20The%20State%20Open%20Universities%20in%20India(1).pdf)
- UPRTOU. (n.d.). Retrieved from <http://www.uprtou.ac.in/>
- UPRTOU. (2018, August 2). Retrieved from <http://www.uprtou.ac.in/library-eresources.php>
- Introduction | About | Dr. BabasahebAmbedkar Open University. (n.d.). Retrieved from <http://baou.edu.in/introduction>
- Introduction. (n.d.). Retrieved from <http://ksoumysore.karnataka.gov.in/Pages/Introduction.aspx>
- NPTEL. (2016). Retrieved from <http://ksoumysore.karnataka.gov.in/Pages/NPTEL.aspx>
- Tamil Nadu Open University. (n.d.). Retrieved from <http://www.tnou.ac.in/about-university/>
- Nalanda Open University. (n.d.). Retrieved from <http://www.nalandaopenuniversity.com/>
- National Mission on Education through ICT: MHRD. (2014, June 13). Retrieved from <http://www.sakshat.ac.in/document/nmeict-brochure-30-11-2015.pdf>
- PanditSundarlal Sharma (Open) University Chhattisgarh. (n.d.).

- Retrieved from <http://pssou.ac.in/University.aspx>
- Krishna KantaHandique State Open University. (n.d.). Retrieved from http://kkhsou.in/web_new/university.php
- Student Handbook and Prospectus Master Degree Programme. (n.d.). Retrieved from <http://osou.ac.in/pdf/STUDENT-HANDBOOK-MASTERS-PROG-2018-19.pdf>
- Student Handbook and Prospectus Master Degree Programme. (n.d.). Retrieved from <http://osou.ac.in/pdf/STUDENT-HANDBOOK-MASTERS-PROG-2018-19.pdf>
- Development of EMPRC. (2007). Retrieved from <http://www.bhojvirtualuniversity.com/ada/emprc/empdev.htm>
- Uttarakhand Open University | Uttarakhand Open University. (n.d.). Retrieved from <http://www.uou.ac.in/book/uttarakhand-open-university>
- Srivastava, M. (2016). *Status of the State Open Universities in India*. Retrieved from CEMCA website: <http://cemca.org.in/>
- UPRTOU. (n.d.). Retrieved from <http://www.uprtou.ac.in/>
- UPRTOU. (2018, August 2). Retrieved from <http://www.uprtou.ac.in/library-eresources.php>
- Introduction | About | Dr. BabasahebAmbedkar Open University. (n.d.). Retrieved from <http://baou.edu.in/introduction>
- Introduction. (n.d.). Retrieved from <http://ksoumysore.karnataka.gov.in/Pages/Introduction.aspx>
- NPTEL. (2016). Retrieved from <http://ksoumysore.karnataka.gov.in/Pages/NPTEL.aspx>
- Tamil Nadu Open University. (n.d.). Retrieved from <http://www.tnou.ac.in/about-university/>
- Nalanda Open University. (n.d.). Retrieved from <http://www.nalandaopenuniversity.com/>
- National Mission on Education through ICT: MHRD. (2014, June 13).
- PanditSundarlal Sharma (Open) University Chhattisgarh. (n.d.). Retrieved from <http://pssou.ac.in/University.aspx>
- Krishna KantaHandique State Open University. (n.d.). Retrieved from http://kkhsou.in/web_new/university.php
- Student Handbook and Prospectus Master Degree Programme. (n.d.). Retrieved from <http://osou.ac.in/>
- Tamil Nadu Open University. (n.d.). Retrieved from <http://www.tnou.ac.in/about-university/>
- Nalanda Open University. (n.d.). Retrieved from <http://www.nalandaopenuniversity.com/>
- National Mission on Education through ICT: MHRD. (2014, June 13). Retrieved from <http://www.sakshat.ac.in/document/nmeict-brochure-30-11-2015.pdf>
- Pandit Sundarlal Sharma (Open) University Chhattisgarh. (n.d.). Retrieved from <http://pssou.ac.in/University.aspx>
- Krishna KantaHandique State Open University. (n.d.). Retrieved from http://kkhsou.in/web_new/university.php
- Student Handbook and Prospectus Master Degree Programme. (n.d.). Retrieved from <http://osou.ac.in/>
- Sharma, J. K. (2018, September 15). Guideline for preparation of Audio Visual materials for OSOU. Retrieved from http://osou.ac.in/docs/osou_1537003_955.pdf
- Sitharaman, N. (2018, August 11). Narendra Modi. *Outlook India*, 8(33), 28.

Gitali KAKATI is a research scholar in Bhupen Hazarika School of Mass Communication at Krishna Kanta Handiqui State Open University, Assam. She has completed her Masters in Communication and Journalism and also in English literature from Gauhati University. Apart from having six years experience in programme production in Jnan Taranga community radio service and Multimedia Production Unit of KKHSOU, she has published a total of 5 research papers in different national and regional journals. She has participated as a resource person in a number of national and regional awareness workshops and events on community radio organised by Ministry of Information and Broadcasting, CEMCA, Government departments, Universities etc. She was also working as Research and Teaching Assistant in Bhupen Hazarika School of Mass Communication at Krishna Kanta Handiqui State Open University, Assam. Presently she is working as Technical Consultant (Media and Communication) for an Adolescent Empowerment Programme of UNICEF, Assam at District Children and Adolescent Cell, Sivasagar, Assam.

Email: gitalik87@gmail.com

Ankuran DUTTA is Associate Professor and Head, Department of Communication and Journalism (Estd. In 1967), Gauhati University, Guwahati, Assam, India. Dr Dutta is a media educator by profession with an experience of about 14 years having been involved extensively in countries like India, Bangladesh, Canada, Maldives, Sri Lanka, Pakistan and Malaysia. Dr. Dutta has recently participated the Study of the United States Institutes programme in Journalism and Media at E. W. Scripps School of Journalism at the University of Ohio, United States of America from June-August, 2018 representing India. He has been awarded as the "Best Media Educator" in the Media and Media Education Summit organised by Exchange for Media, BW Businessworld at India International Centre, New Delhi. Adding feather to his cap, Dr Dutta also wrote and edited around 50 self-learning study materials for seven universities of India and abroad, published about 25 research papers and articles in reputed journals. He has contributed around 350 articles in different newspapers, periodicals and participated in around hundred programmes of radio and television and produced more than a thousand educational programmes.

Email: ankurandutta@gmail.com

For copyright / reproducing permission details, email : Editor@AsianJDE.org