UNIT 6 RADIO AND AUDIO

Structure

6.0 INTRODUCTION

Among the wide spectrum of communication options available, Radio continues to be a popular medium due to its wide outreach, low cost and versatility. It operates on simple technology and can make use of a variety of innovative formats. In the initial stages of broadcasting starting from 1920s, radio reigned supreme as a medium of mass communication for almost three decades. Since then, it has been extensively used for teaching, instruction and enrichment. The advent of television, with its inherent strength of audio-visual capacity, made impact on the listener-ship of radio and it was almost assumed that radio is dead and gone. However, after a brief lull, radio has reinvented itself with more innovative and interactive formats. The satellite technology, the Internet and the convergence of technology have further expanded the nature and scope of media for education. In the changed media scenario, radio continues to be relevant and useful for education.

In this Unit, we shall discuss the role and efficacy of audio/radio medium in relation to education in general and Open and Distance Learning (ODL) in particular.

6.1 LEARNING OUTCOMES

After working through this unit, you are expected be able to:

- *Describe* the strengths and limitations of radio and audio media in education;

- *Use* radio, audio, podcasting, satellite and internet radio etc. in distance education;
- *Analyse* the development of community and low-cost radio FM stations for distance education;
- *Discuss* educational audio programme production; and
- *Apply* radio/audio in the teaching-learning process.

6.2 RADIO-AUDIO MEDIUM

Radio/audio medium has always been at the heart of education. It has been often said that the history of educational broadcasts in India is almost as old as the history of Indian radio itself. This is because even before AIR came into existence there were occasional broadcasts for schools from Bombay and Calcutta. However, organised school broadcasting started in 1937 from Kolkata followed by other primary radio stations of AIR. These bi-weekly programmes were enrichment based and not strictly governed by curriculum. Over a period of time, efforts were made by AIR to make its radio broadcasts more curricula oriented but due to a number of factors, these could not achieve much success.

To appreciate the radio/audio medium in education, it will be pertinent to briefly trace the growth and development of broadcasting in India in this section. We shall analyse the characteristics and relative strengths and limitations of radio for education. Since, apart from broadcasting, audio cassette/CDs, interactive radio, audio conferencing and radio-vision are also being used for education, we shall take an overview of these formats. Then we shall examine some issues relating to learning from audio/radio.

6.2.1 Growth and Development

Broadcasting in India started in 1927 at Bombay (Mumbai) and Calcutta (Kolkata) by two radio clubs with privately owned transmitters. The first radio station of the Indian Broadcasting Company (IBC) came into existence on January 1927. The IBC was liquidated in 1930 paving the way for Indian Broadcasting Service which also closed down in 1931 due to financial constraints. All India Radio came into existence in the year 1936 as a government organisation with objectives to inform, educate and entertain. During the Second World War, radio emerged as a powerful and effective means of propaganda which led to an increase in the number of transmitters and transmission hours and greater variety in programmes.

At the time of Independence there were a total of six radio stations in the country and a complement of 18 transmitters. The coverage was 2.5 percent of the area and 11 percent of the population. Realising the potential of broadcasting for education and development, the policy makers placed a great deal of thrust on broadcasting leading to its rapid expansion. In 2009, AIR had a network of 232 broadcasting centres with 149 medium frequency (MW), 54 high frequency (SW) and 171 FM transmitters. AIR covers 91.79 percent area and 99.14 percent population and programmes are broadcast in 24 languages and 146 dialects.

Till the nineties, broadcasting in India remained a government monopoly and the demand to free AIR and Doordarshan from the government control was being expressed from time to time. Towards this, Prasar Bharti Bill was introduced in the Parliament in 1990 and in 1997, the autonomous

corporation of Prasar Bharti came into existence under which AIR and Doordarshan are presently functioning.

6.2.2 Characteristics, Strengths and Limitations

Like other media of mass communication, radio has its inherent strengths as well as limitations. Among its various strengths, radio has been found easily accessible among a large section of population located in remote rural and tribal areas and weaker classes. Being audio medium, it can overcome the barriers of literacy and can effectively reach out to the illiterate population. It has the inherent strength to overcome geographical barriers and difficult hilly terrains. It is relatively inexpensive and works on simple technology, hence it is quite economical to use both in terms of programme production and utilisation.

Radio is considered an intimate and personal medium. This implies that the listener can use it in the confines of one's room, office or even while moving around as it is convenient to carry. It performs on the canvas of mind of the listener, thus is also termed a 'blind medium'. In view of its capacity to evoke images, Marshal McLuhan, a well known media expert called radio a 'hot medium' and television a 'cold medium' which does not offer greater rein to imagination. Subjects and topics which lend themselves for ear such as language, phonetics, mathematics etc. can be effectively taught through radio.

The limitations of radio, however, are many -- it is a sound-only medium that can only be heard and not seen. Since the listener is required to use one's imagination this may lead to a gap between the reality and imagination. In sharp contrast, television, can take the viewer right at the actual spot through its visual element. Radio also cannot provide finer details of a topic, subject or an issue. Topics which require explaining complex issues, statistics and greater analysis are better suited for the print media. Similarly, subjects which offer scope for visual support and illustrations are better suited for television and cannot be effectively taught through radio. Thus Radio cannot be a substitute for all types of learning experiences.

Radio broadcasts have fixed schedule hence do not allow flexibility. Due to this ephemeral nature of the medium, the message once broadcast cannot be retrieved unless earlier recorded. Radio is essentially a one-way medium, however, lately interactivity has been infused in the programming through phone-in programmes. Yet another limitation of radio is that it is not useful for the hearing challenged.

Thus while using radio or audio for education, it is essential to keep in view the strengths and limitations of the medium to facilitate learning. However, with innovative use, some of the limitations of radio can be actually turned into its strengths.

Audio Cassettes/CDs

Some of the limitations of radio broadcasts can be overcome by using audio cassettes or audio CDs which can be used by the learner at one's own time, place and convenience. These are relatively inexpensive, simple and flexible to operate and allow greater control to the learner. The options to pause, replay, and rewind offer the freedom to the learner to use it as per one's learning style and pace. Audio cassettes/CDs require short lead time to produce as the equipment and tapes are easily portable and the duplication is also easy and cheap. In sharp contrast to radio broadcasts, audio CDs can

be used to impart in-depth content as it can be used any number of times until the content has been comprehended and assimilated. However, audio cassettes/CDs are essentially one-way in nature and if over used, the fidelity is likely to decrease.

Interactive Radio

We have already stated that radio was initially a one-way medium which placed a major constraint in its utilisation patterns. Bertolt Brecht, a well known German playwright observed that one-way nature of radio will condemn it to sterility. To overcome this limitation, two-way communication has been introduced in radio programming by way of **Phone-in** programmes**.** In phone-ins, a topic/subject is identified and telephone numbers are announced in advance on which listeners could call. The experts available in the studio provide real time advice, counselling and suggestions on the subject thus infuse two-way communication.

To draw upon this interactive element, the Indira Gandhi National Open University (IGNOU) is providing radio counselling to the learners on academic and administrative matters. This fully interactive facility allows the teacher to establish real time two-way dialogue with the learners and help address their queries and problems. This enables isolated learners to get in touch with the teacher as well as other learners. With increased access of telephones and mobile phones in both urban and rural areas, interactive radio is poised for greater use.

Audio Conferencing is an extension of the phone-in facility linking two or more radio stations through satellite or telephone lines. Invited experts discuss a topic in the studio of several cities and answer listeners' questions in live situation. Audio conferencing thus links teachers, groups or both via a two-way channel at study centres and also in homes.

Radio-vision was pioneered by the BBC in which the subject matter was presented combining the use of audio and the visual. The visual material which does not require motion is made available to the learners in the form of still filmstrips, slides, charts, models etc. along with audio cassette or CD which provides recorded narration. Audio vision is learner controlled and easy to use. It is less costly than video, and has been found particularly useful in talking learners step by step through a process. The limitation, however, is that it is essentially a one-way medium and greater time is required for producing the learning materials. In a study, Sreedher (2002) observed that groups exposed to radio-vision fared better as compared to other learner groups.

Radio-text is a value added facility which enables transmitting of data from radio transmitters along with audio programmes. To receive the text, a special receiver is required which has a built in monitor to display data. This data can either be related to the audio programme in which the programme/ course/unit title, names of the subject expert, producer, etc. can be transmitted. The data can also be totally unrelated to the audio programme such as stock market quotations, traffic details etc. In addition to text data, limited graphics can also be transmitted along with the audio programme from the transmitter.

In a study conducted at the Yashwantrao Chavan Open University, found that radio-text could create very effective learning environment at a distance. However, over a period of time, radio-text has not emerged as an effective

tool for education perhaps in view of its limited utility. Some private radio stations also tried to publicise the radio- text technology as 'visual radio' but with little success.

Ham radio Ham radio is used by amateur broadcasters known as 'hams' as both hobby and a service. One needs to obtain a licence for operating ham radio which works on a fixed frequency with simple equipment. It is also used for community service and in emergency situations such as floods, cyclone and disasters etc. and it is not meant for commercial use. Unlike other forms of broadcasting, ham radio is point-to-point, i.e., the message can be sent from one person to another – hence it has limited use for education.

6.2.3 Learning from Radio

For learning from any form of media – be it radio, television or any other medium, certain discipline on the part of the learner is required. First of all, the learner should have access to a radio set and if the programme is in broadcast mode, he/she should be aware of the schedule. Then he/she should listen to the programme attentively - ideally, the major points should be noted down while listening otherwise one tends to forget due to the ephemeral nature of the medium. The use of an audio CD, however, allows greater flexibility and control to the learner who can stop, play and rewind the programme at one's will.

Whether used in broadcast or CD format, it is desirable that the learner goes through the study material well in advance to optimally utilise the programme. If for some reason that is not possible, then the learner should try to go back to the relevant sections after listening to the programme. This helps to revisit the learning points and assimilate them. If the broadcast is in interactive format, then the learners should raise questions/queries requiring greater clarity or analysis. The questions need to be specific in nature, relevant and clearly articulated. At times, teachers may follow lecture format which may affect interactivity. It is useful to orient the teachers and learners in the art of raising and responding questions to learn effectively for interactive radio.

Although radio is being used all over the world, its use in education has been little researched. However many studies emphasise that given favourable conditions, students can learn effectively from any media available to them and radio supported with other media can teach effectively.

Check Your Progress 6.1

Notes: *a) Write your answers in the space given below.*

b) Compare your answers with those given at the end of this unit.

1) List five strengths of radio.

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2) List five limitations of radio.

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3) List five points which need to be kept in mind for learning effectively from radio?

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6.3 EMERGING TRENDS

The satellite system and the convergence of technology has revolutionised the state of broadcasting the world over. These developments have led to the advent of Internet radio, Satellite radio, Podcasting and more recently WiFi radio. Let us look at some of these emerging trends.

6.3.1 Satellite Radio

Satellite system has provided an alternative for the transmission of radio programme as against terrestrial broadcasts. Satellites have transponders to carry television and radio programmes. Radio stations which originate programmes uplink them to the satellite and these are simultaneously down-linked by the relaying stations. As the satellite remains geostationary in the orbit, i.e., relative to any point on the earth's surface, the ground based antenna is aligned to it for receiving programmes. Satellite radio covers a much wider geographical range as compared to the terrestrial radio signals. However, in areas with a relatively high population density, terrestrial broadcasts have been found easier to use and less expensive.

6.3.2 Internet Radio

The Internet, as you may be aware is 'a network of networks' in which a large number of computers are connected through various means such as satellites, fibre optics, microwave signals, telephone lines and so on. You may be using the Internet for sending and receiving emails, browsing sites and accessing information. Apart from these, the Internet is also being used for audio broadcasts in which audio signals converted into digital form are transmitted. This allows world-wide 24x7 broadcasts of news, talk, and music programmes on a large number of channels. Internet radio has been in existence for a while, however, WiFi radio is the latest addition making foray in the broadcasting scenario. A WiFi radio requires broadband and WiFi connection. It offers a wide range of choice as the Internet Radio Receiver device seeks out radio stations on the Internet and plays them at the click of a remote. At present, the cost of WiFi radio is high, however, in view of the technological advancements the cost is likely to come down over a period of time.

6.3.3 Podcasting

Podcasting is a new trend using the Internet and MP3 players. The term Podcast is derived from a combination of words 'broadcast' and 'iPod' - Apple's MP3 portable music player. It also draws upon '**P**ersonal **O**n **D**emand broad**CAST**'. Podcasting offers an option to those listeners who have access to computers. It started in early 2004 and toward the end of 2005. Enhanced podcast includes simple animation and chaptering navigation which can be exploited in distance learning for mobile viewing.

Podcast is a series of digital audio or video files that can be downloaded by the user usually in MP3 format. These files can be saved and used in both online and offline modes. This implies that podcast users do not have to be connected to the online programming schedule after downloading the audio file. They can rewind, fast forward and listen to a programme at their own time and pace. Podcasting can be compared to blogging in an audio format. For downloading the file one needs a computer with Internet connection and software that plays MP3 files which usually come pre-stalled. One can also download free podcasting clients such as iPodder and Apple's iTunes to download the podcasts from the Internet and transfer them to MP3 player. However, due to intellectual property rights (IPR), commercial music is not placed on podcasts and most podcasts presently available are created by amateurs.

Podcasts offers an alternative to the people on the move and educational institutions need to explore its potential to reach out to diverse learner groups. Some Internet observers find great potential in podcasting and term it as the radio of the future and an alternative to broadcasting.

Check Your Progress 6.2

Notes: *a) Write your answer in the space given below.*

b) Compare your answer with the one given at the end of this unit.

Fill in the blanks:

1) In areas with a relatively high population density ..... broadcasts have been found more useful.

2) A WiFi radio requires ..... and ..... connection.

3) For podcasting, one needs a computer with Internet connection and ..... files

4) Podcast users do not have to be connected to the ..... after downloading the audio file.

6.4 COMMUNITY RADIO AND LOW COST FM RADIO

A historic judgement of the Supreme Court of India on February 5, 1995 stating that "airwaves constitute public property and must be utilised for the public good", brought abut a major shift in the government policy. It paved the way for opening up the radio sector for private radio stations and setting up of community radio stations. These developments brought about a sea change in the growth and utilisation patterns of radio.

For community radio broadcasts in India, the Frequency Modulation (FM) transmission has been allowed which can reach upto 60-70 kms and is based on the principle of 'line of sight' path. FM broadcasts have much better signal quality and better reception; however, the signals get obstructed if there are tall structures and high rise buildings.

6.4.1 Concept and Evolution

Community radio is people's radio which reflects the hopes, concerns and aspirations of a community. The concept has its roots as an alternative to the mainstream radio to provide a voice to the voiceless. It is non-profit in nature and thrives on community participation. Covering a small geographical area of not more than 15-20 km. radius, it aims to initiate development from the grassroots and provide a forum of expression to those at the periphery.

In India, even before a comprehensive policy for community radio came into existence, some media groups were experimenting with community participatory programmes using AIR facilities. Notable among these are Voices in collaboration with MYRADA in Budhikote, Karnataka, Deccan Development Society in Pastapur, Andhra Pradesh and Kutchch Mahila Vikas Snagthan in Bhuj, Gujarat.

In 1999 the radio sector was opened up and a network of 40 radio stations was allotted to IGNOU as Gyan Vani channel. In 2003 the Ministry of Information and Broadcasting decided to grant licence to well established educational institutions to set up community radio stations with the mandate of broadcasting programmes on education and development within a radius of 15-20 kms. Under this scheme Anna University established the first community radio in Chennai which started operating since February 1, 2004. In November 2006, the policy was expanded to include Krishi Vigyan Kendras, Civil Society Organisations and Non-Governmental organisations (NGOs) with proven record of community service.

Every radio station is allocated a fixed frequency within the range of 90.4 MHz to 107.8 MHz. by the Ministry of Communication which needs to be strictly adhered to. Frequency is number of sound waves per second given out by source of sound. It is expressed as Hertz or cycles per second (written Hz).

Realising the potential of community radio, some educational institutions in the country have established campus radio stations to broadcast educational programmes for the student community which serve as useful forums for information, education and development.

6.4.2 Technology

A community radio station works on simple technology and equipment. The minimum technical requirements for a community radio station include a broadcast studio, transmission equipment and working space for the staff.

Broadcast Studio: Studio is a place where programmes are produced. An existing room in a building can be suitably modified to convert it into studio. Appropriate acoustic conditions are created for recording and transmission and for this special treatment of walls and the roof of the room are done. The transmitter, tower and antenna are the basic transmitting equipment required for a community radio station. Let us look at them in some detail:

Transmitter: The transmitter constitutes one of the most important equipment in the community radio set up. It is tuned to the specific frequency allotted to the radio station. It transforms the audio signals into modulated radio frequency (RF) power for sending the programme to the listeners. The present policy allows 100 watt transmitter for community radio. However, it has been found useful to plan two 50 watt transmitters, so that even if one transmitter fails the other keeps the broadcast on air.

Tower and Antenna: Antenna is the device which radiates the RF power received from the transmitter. The location and height of the transmitting antenna are very important factors hence antenna is mounted on the top of a tall tower. The maximum antenna height has been fixed at 30 metres by the government policy. The antenna is located at a distance from welding shops, factories, power plants, airport etc. so that the radio reception does not get affected due to audio noise generated by these sources. The antenna system usually consists of a folded dipole. For better gain and propagation, instead of a single dipole, a 2 bay or 4 bay antenna system can be employed. A feeder coaxial cable of 10-15 metres connects the transmitter RF output to the antenna.

Outdoor Broadcasting (OB): Community radio thrives on community based programmes and for producing such programmes, outdoor broadcasting (OB) is used. OB constitutes an important segment of broadcasting- it can be live (real time) as well as recorded. For such recordings, a simple portable recording set up consisting of Microphones, Portable audio mixer, Portable digital audio recorder, microphone stand, spare batteries, extension cords and audio cables is required. It has been found useful to test the equipment beforehand to avoid failure at the time of recording.

The equipment for community radio station is likely to be used by community members and less trained volunteers. Unlike professional broadcasting studio, the studio may be susceptible to dust and rough handling. Hence it is important that the equipment selected is durable, rugged and user friendly so that it can be easily handled.

6.4.3 Management

The management of a radio station involves management of programmes, finances, technology and personnel. All these areas are applicable to community radio as well though at a smaller level.

Once a community radio station has been set up, regular programmes need to be broadcast, hence a proper planning for software generation has to be made. As mere broadcast is not enough, the programmes should address the needs, concerns and aspirations of the community. For producing such programmes, regular interactions with the community members need to take place and feedback obtained to develop a sustainable strategy for content generation.

Management of finances and revenue generation is crucial for a community radio station for its survival. The management also involves that the conditions included in the licence agreement are adhered to. A community radio station gives ample scope for local talent in its content planning, hence talent scouting and involvement of the teaching and student community is equally important. In addition, publicity, compliance with broadcast requirements, accountability to the stake holders and maintenance of infrastructure constitute some other areas of community radio station management.

Check Your Progress 6.3

Notes: *a) Write your answers in the space given below.*

b) Compare your answers with those given at the end of this unit.

1) Describe the concept of community radio in your own words.

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2) What is Frequency Modulation?

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3) For OB programmes what equipment would be required?

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6.5 PRODUCING EDUCATIONAL AUDIO PROGRAMMES

The production of audio programme involves four stages: conceptualisation, script writing, recording and editing. We shall discuss the technical production process in detail in Block 3 Unit 11 in this Course. In this section we shall take an overview of these stages to acquaint you of the production process.

6.5.1 Conceptualisation

The first stage of programme production is the selection of an idea, topic or concept on which a programme needs to be produced. While selecting the concept, you will have to keep view the relative strengths and limitations of the medium as discussed in sub-section 6.2 of this unit. Once the topic has been selected, you will have to define the objectives and scope of the programme to keep the content of the programme focused and specific.

The next step is research which comprises both library and field research. Library research, as you are aware, involves collection of material from books, journals, documents, reports, periodicals, the Internet and so on. Field

research includes consulting persons connected with the subject, experts and agencies to elicit specialized in-depth information. Depending upon the nature of the programme, you will have to undertake research.

In the process, you may come across a whole body of materials from different aspects and angles. However, you need to include only relevant information by sifting and sieving otherwise you are likely to be laden with unnecessary information which will make script development an arduous task. The overall objective should be that the information selected should meet the defined learning objectives and offer something new to the learner. If the subject is vast, you may plan a series to do justice to the topic instead of cramming all the information in a single programme.

6.5.2 Basic Formats

Format is the broad structure or framework within which content elements are organized and presented. Formats for audio programmes can be placed in two broad categories – basic and complex formats. Straight talk, interview, and panel discussion can be placed under basic radio formats; while features, documentaries, drama, docu-drama, talk shows and quiz etc. may be categorised as complex formats. Each format has its own specific requirements and uses and the process of production is directly linked with the format chosen.

Talk is a straight delivery of words by one speaker and it is one individual's presentation of views. It is often called as lecture format.

Panel discussion gives different perspectives of a given issue and brings forth more than one opinion on a given subject. The role of moderator is crucial for the success of a discussion.

Interview: As compared to a speech delivered by a single person, a conversation between two persons is more absorbing. Interview format makes use of this strength and elicits the views, opinions and information from expert from the perspective of learners.

Drama format engages the learners by way of dramatization of a situation or ideas. Music and sound effects play an important role to create the characters and the time frame.

Documentaries present a factual, balanced and truthful account of actualities concerning an event, place or a person.

Magazine includes a variety of items such as an informative talk, interview, quiz, music item and so on in one programme and offers these as sections.

Talk show is an extension of interview in which two or three speakers to discuss a given topic and the audience present in the studio questions them.

Quiz programmes are generally studio based. Quiz master puts questions to the participants who are invited according to the topic selected for the quiz.

Reports are generally based on excerpts of speeches, account of actuality, interviews and statements of subject experts which are linked up with appropriate narration. Reports are treated as news-based programmes.

The format selection is made on the suitability of the topic rather than on novelty factor. While selecting the format, the objectives of the theme, the

composition of the target audience and the nature of programme and availability of resources need to be kept in mind. At this stage it is also useful to consider whether the programme will be completely studio based or include OB recordings also.

6.5.3 Script Writing for Radio

The next stage is script writing for radio which is slightly different from writing for the print media. For writing for audio medium you need to write for the 'ear' instead of the textbook approach of writing for the 'eye'. This is because, while reading the printed text if you come across a difficult word or expression, you have the option of consulting a dictionary or a reference book. However, in case of radio if you are unable to follow a difficult word or expression, you cannot go back in time. Hence, you need to use simple language and used to suit the audience. You need to avoid written bookish language, complex sentences idiomatic expressions and difficult literary words — the simple rule is to write the way you would say it aloud to a group of people. Since time is the biggest constraint in audio medium, emphasis needs to be placed on brevity. The script should be properly summed up to bring out the essence of the issues discussed.

Each medium has its own specific design elements which need to be kept in mind, e.g. for audio it would be useful to consider how the elements of spoken-word, sound and music effects and silence will be woven in the script.

Once the script has been developed, it needs to be read and re-read so that complex sentences, difficult and jarring words can be substituted with simple sentences and words.

6.5.4 Recording and Editing

Once the script has been developed, the programme is recorded. Depending upon the format selected and whether it is studio-based or requires outdoor recording, appropriate recording is made. A well written script does not require much effort at the time of post production. However, if some unwanted sounds, fumbles etc. creep into the programme, the same are edited for a smooth flow of the programme. You will read more about this in Unit 11 of this Course.

Check Your Progress 6.4

Notes: *a) Write your answers in the space given below.*

b) Compare your answers with those given at the end of this unit.

1) What are the elements of a radio programme?

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2) While writing script for an audio programme what care would you like to take?

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6.6 RADIO IN EDUCATION: IGNOU EXPERIENCES

In this section, we shall examine the experience of the Indira Gandhi National Open University - one of the premier institutions in distance education which has been pivotal in using radio/audio for education.

Audio CDs

The University has been using audio CDs (earlier cassettes) as these are relatively inexpensive and have been found convenient and effective for learning. The CDs are made available to the learners at the Study Centres and can also be purchased at a nominal cost. The audio programmes are largely supplementary in the nature, however, efforts are being made to integrate them with the learning package.

Broadcasting

In addition to audio cassettes/CDs, radio broadcasting is being used by the University form select stations of All India Radio. AIR Hyderabad broadcasts programmes of 30 minutes duration every Tuesday, Thursday and Saturday from 6.00 am to 6. 30 am and AIR Mumbai broadcasts for the same duration every Thursday and Saturday from 7.15 to 7.45 am.

Interactive Radio Counselling (IRC)

Several studies highlighted the one-way broadcast mode quite limiting in the context of education. To overcome this limitation, two-way live phone-in programming was introduced to infuse interactivity and the response was found quite encouraging. At present, Radio Counselling is being provided for one hour from 186 radio stations of All India Radio every Sunday including two Sundays on the national hook-up. Toll-free telephone facility is made available from 80 cities enabling the learners to interact with experts and seek clarifications on academic as well as administrative matters.

Gyan Vani

In addition to above, the University has been running a radio cooperative known as Gyan Vani dedicated to education and development. Under this initiative, a network of 51 radio stations is being implemented by the Electronic Media Production Centre of the University in a phased manner. As of now, 26 stations have become operational, six are coming up shortly in the North East and the remaining are at various stages of setting up.

Each radio station has a range of about 70 kilometres and serves the social and educational needs of the people living in that geographical area. The station functions independently guided by a local steering committee and central linkages in terms of policy planning, budgetary and administrative support. The stations undertake considerable quantum of educational programming in the regional languages supplemented by agencies in the public, private and the NGO sectors.

6.7 LET US SUM UP

In this unit you studied various uses of radio/audio for education. We traced the growth and development of broadcasting in India and analysed the characteristics and relative strengths and limitations of radio medium. We

also discussed various forms and technologies of radio such as broadcasting, audio cassette/CD, interactive radio, radio-vision, audio conferencing, radio-text and so on. Each of these has been used for education in different settings with varied results.

You also learned at the impact of satellite system and the convergence of technology leading to the advent of Internet radio, Satellite radio, Podcasting and more recent WiFi radio. In addition, the efficacy and use of community radio and low cost FM radio as viable options for education was also examined.

While discussing the production process, we traced four stages - conceptualisation, script writing, recording and editing. We briefly outlined various formats such as straight talk, interview, discussion, features, documentaries, drama, docu-drama, talk shows and quiz etc. which may be used for educational audio programmes. We also briefly looked at the IGNOU experience of using radio in education.

To sum up it can be said that radio medium offers immense possibilities in education, hence there is a need to be creative and innovative- away from the class room teaching approach. An effective audio programme has the capacity to take the learner outside the classroom - to bring in actuality and thus make the entire learning experience enriching as well as rewarding.

6.8 KEYWORDS

Antenna: the device which radiates the RF power received from the transmitter.

FM: Broadcast technology that uses frequency modulation (FM) to provide high fidelity sound over broadcast radio. The FM band refers to frequencies within the range of 87.5 to 108.0 MHz. (in the VHF range)

Format: a broad structure or framework within which content elements are organized and presented.

Frequency: the number of sound waves per second given out by source of sound, expressed as Hertz or cycles per second

Transmitter: a device that transforms the audio signals into modulated radio frequency (RF) power for sending the programme to the listeners.

6.9 REFERENCES AND FURTHER READINGS

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6.10 FEEDBACK TO CHECK YOUR PROGRESS QUESTIONS

Check Your Progress 6.1

1) Five strengths of radio are:

   - Easy access among a large section of population;
   - Overcomes the barriers of literacy;
   - Economical to use both in terms of programme production and utilisation:
   - Convenient to carry; and
   - Has capacity to evoke images.

2) Five limitations of radio are:
   - Sound-only medium that can only be heard and not seen;
   - Cannot provide finer details of a topic, subject or an issue;
   - Radio broadcasts have fixed schedule hence do not allow flexibility;
   - Ephemeral nature - message once broadcast cannot be retrieved unless earlier recorded; and
   - Essentially a one-way medium.

3) Five points which need to be kept in mind for learning effectively from radio:
   - Radio should be accessible
   - The schedule of the programme should be intimated
   - Attentive listening
   - Noting down of the major points
   - Going through the study material in advance/after listening to the programme.

Check Your Progress 6.2

1) Terrestrial broadcasts
2) Broadband and WiFi connection
3) Software that plays MP3 files
4) Online programming

Check Your Progress 6.3

1) The community radio is a people's radio which reflects the hopes aspirations, problems and concerns of a community drawing upon their active participation. It is non-profit in nature and covers a small geographical area of not more than 15-20 km. radius.

2) Frequency Modulation (FM) is a mode of transmission which can reach up-to 60-70 kms and is based on the principle of 'line of sight' path. FM broadcasts have much better signal quality and reception, however, the signals get obstructed if there are tall structures and high rise buildings.

3) For OB recordings, a portable recording set up consisting of microphones, portable audio mixer, portable digital audio recorder, microphone stand, spare batteries, extension cords and audio cables will be required.

Check Your Progress 6.4

1) The basic elements of audio are speech, sound effects, music and silence. However, these elements need to be used judiciously as using too many effects may sound jarring and restrict the flow of the message.

2. Radio thrives on live and familiar words with conversational ring which inspire imagination in the mind of the listeners, therefore simple language which conveys the subject matter, emotions and feelings effectively should be used.