Pre-Module Self-Assessment

Attempt the following questions and determine whether you are already aware of the basic definitions and concepts in educational technology. If you score over 80%, you may skip the module; if not, it is worth going through it!

	Questions for Self-Assessment	Points Allocated	Your Score
1.	State one standard definition of educational technology:	3	
2.	Technology in education refers to the _____ concept and technology of education implies the _____ orientation of educational technology	2	
3.	Mention two factors in the instructional design process:	2	
4.	Classify the following as hardware or software: (a) Reference books (b) Blank cassettes (c) Chalkboard (d) Computer animation (e) Video programmes	5	
5.	Mention two components of the educational technology system:	2	
6.	What should a learning resource centre have? Software: _____ Hardware: _____	4	
7.	State two methods of improving teaching-learning effectiveness	2	
	Total :	20	
	Your % Score :		

1.4   What is Educational Technology?

Technology refers to the techniques as also the technical contrivances. A systematic way of applying the techniques to achieve an objective is as important as the use of technical equipment for the same. As a matter of fact, techniques are reckoned as the software and the equipment as the hardware of technology. Technology results in new designs and devices as also new ideas and processes. Each new physical device is accompanied by a new set of procedures and techniques. For example, the development of

telephone has led to phone books, answering machines, Fax, telephone shopping, etc. The 'hard' component (physical device) may be differentiated from the 'soft' component (methodologies) for the purpose of study.

Education, the act or process of acquiring and imparting knowledge, is crucial to the development of a learner with a view to his/her participation in the transformation of the world for a better tomorrow. Learning and understanding are basic to the definition of education.

Educational technology is not a simple combination of these two words as shown in Fig. 1.1. It is usually thought of even more than the sum of the following two interpretations:

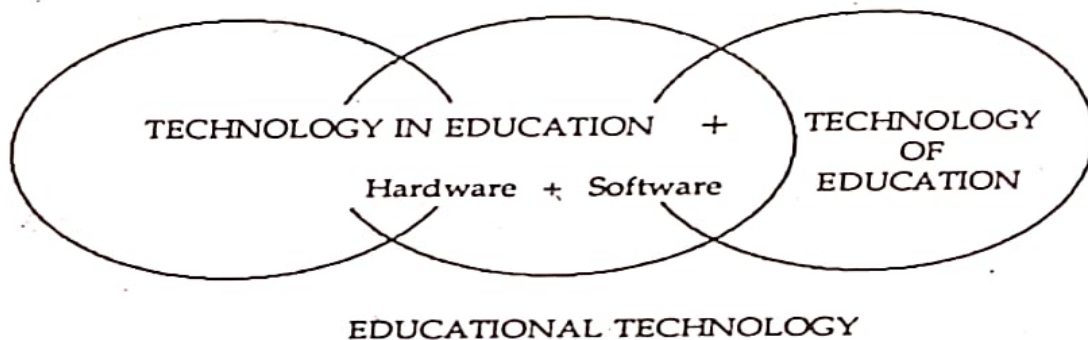1. Technology *in* education
2. Technology *of* education

TECHNOLOGY IN EDUCATION + TECHNOLOGY OF EDUCATION

Hardware + Software

EDUCATIONAL TECHNOLOGY

Fig. 1.1 Concept of Educational Technology

Early developments referred to the role of technology in education which signify the use of audiovisual equipment, i.e., hardware in educational processes. Later developments recognise the concept of technology of education, i.e., techniques and methodologies of the teaching-learning process. This is indeed the software aspect of educational technology. The origin of software is closely associated with the courseware, i.e., instructional design and development of a subject.

Use of technology in education results in increased effectiveness of the educational process. Use of technology in training results in increased productivity through enhanced human capability. For example, telephone extends our capability to talk and listen over long distance and automobile extends our capability to travel large distance over short period of time. Overhead projectors extend our capabilities to project a large image of a visual on a screen and slides enable us to capture real-life events and bring them into the classroom.

Audiovisuals have been on the move, (Fig. 1.2) for quite sometime now. They have made an impact in many different situations, e.g., seminars, conferences, extension lectures, meetings, research and project report presentations. Classrooms are also beginning to feel their influence!

Some of the recognised and oft-quoted definitions of educational technology given are as follows:

refers to the interactive process of learning from one another in small group situations. Simulation, role-play, games and case studies are some of the group learning techniques. The hardware and software required for group learning are only those which help in simulation, presentation of case studies, games, etc.

1.6 Instructional Design and Technology

Instructional design refers to the strategic design and development of instruction for the desired objectives. It incorporates the theories of learning, principles of communication and hypotheses for interest, motivation and participation of learners. Instructional technology implies the techniques and methodologies of instruction, i.e., technology of instruction. It does not place any emphasis on audiovisual aids *per se*. Instructional design and technology are, therefore, linked with the effectiveness and efficiency of the teaching-learning process.

The stages of instructional systems development are shown schematically in Fig. 1.5. It shows that an instructional system is developed by analysing the needs of learners, designing the curriculum, developing the lessons and media, implementation of instruction and finally evaluating the progress of the students as also their terminal abilities.

1.7 Audiovisual Resources: Media

An aural message is perhaps the minimum required for communication. It is often necessary to supplement the aural message with a visual in order to convey it effectively. Visuals with or without aural components are called audiovisual resources, aids, media or simply audiovisuals. Audiovisuals resources consist of hardware and software components. In fact, for every hardware, there is a corresponding software as shown in Table 1.2.

Table 1.2: Educational Hardware and Corresponding Software

Hardware	Software
Chalkboard	Chalkwork
Overhead projector	Overhead transparencies
Slide projector	Slides
VCR and Monitor	Video programme
Computer	Computer programme
Blank paper	Written matter
Audio-recorder	Recorded audio

The audio component may be added to any one of the above resources. It may either be with recorded voice on cassettes, tapes and discs or it may

be live oral message by the presenter. Sometimes, the audio through a recorder or radio broadcast may be the only channel for the message.

In view of the wide range of audiovisuals, they are best classified as non-projected, projected and electronic resources as shown in Fig. 1.6.

Books/Journals
Instruction Manuals
Handouts/Worksheets
Programmed Text

Overhead Projection
Transparencies
Slides/Filmstrips

Chalkboard
Charts/Cutouts
Display Articles

Educational Film
(8mm, Super 8, 16 mm)
Slide-Tape Programmes

Non-Projected   Projected

Electronic

Computers
(CAI, CMI, CAL)

Video Programmes
(VHS, U-Matric, Other)
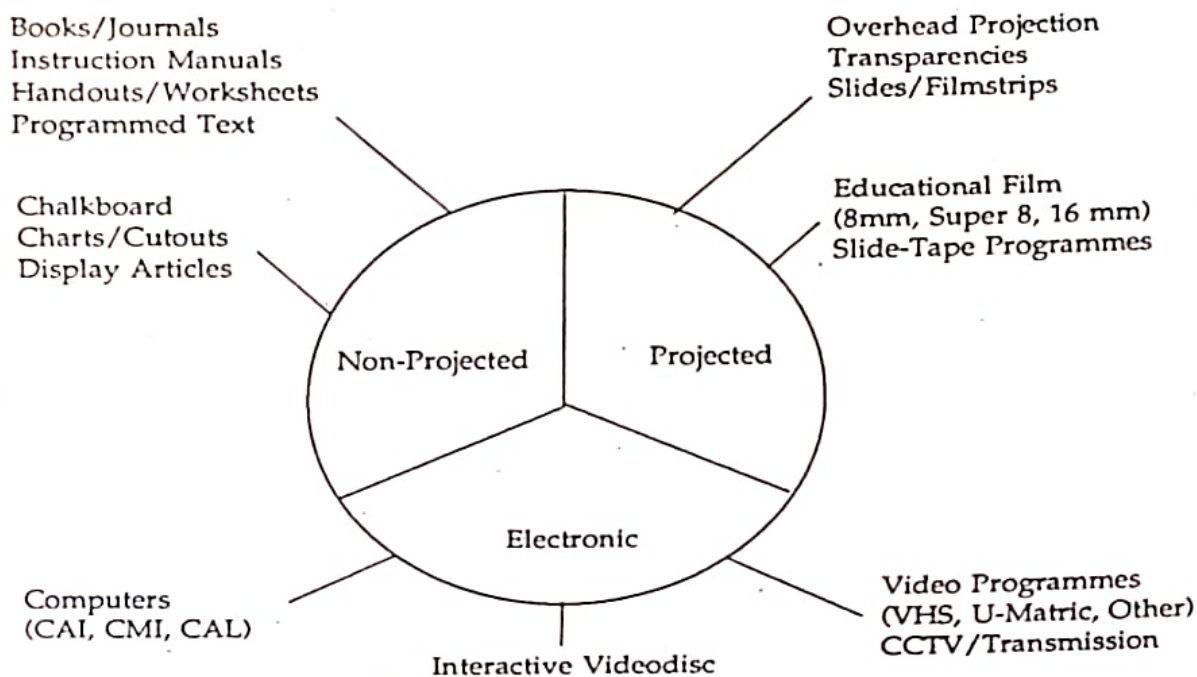CCTV/Transmission

Interactive Videodisc

Fig. 1.6 Classification of Audiovisuals

Audiovisual software is prepared through the steps of preparing instructional design, development and associated processes, e.g., writing, printing and recording. Even so, some early developments denounced all audiovisuals as technology in education and thus narrowed down the scope of educational technology to the mechanical use of audiovisual components. This view is no longer tenable since the basis of audiovisual education goes deep into the psychology of learning and effective communication.

Audiovisual communication in the context of education is different from the media for mass communication. Mass media may, however, overlap with audiovisuals for communication. Use of radio, telephone and television in broadcast, cable or closed-circuit modes may well be educationally meaningful if the message is identified through instructional design and development processes. Furthermore, it is the effective use of the audio or video programme that makes it educationally powerful. Techniques such as previewing the programme, preparing the audience to look for the intended information in advance of the programme and following up the sessions with further questions and discussions, etc. are very useful activities.

1.8 Educational Technology as a System

A 'System' is an assemblage of interconnected and interacting components.