

Education & Technology

B. A. Education Sem V Paper III

UNIT I & II

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Meaning of Technology

- A. Technology literally means "science of craft" coming from the Greek word "techne" (art, skill, cunning of hand) and 'logia'
- b. It is the sum of techniques, skills, methods, and processes used in the production of goods or services or in the accomplishment of objectives
- c. The word "technology" can also be used to refer to a collection of techniques. Man learns to combine resources to produce desired products, to solve problems, fulfill needs, or satisfy wants
- d. it includes technical methods, skills, processes, techniques, tools and raw materials
- E. when we speak of educational technology it refers to the state of knowledge and tools in the field of education.
- f. Science is systematic knowledge of the physical or material world gained through observation and experimentation. But Technologies are not usually exclusively products of science, because they must satisfy requirements such as utility, usability, and safety.
- g. Technology is not a goal but a byproduct of scientific process
- h. technology is neither good nor bad but neutral.
- I. Technology helps you to get results faster, but it has nothing to do with the result.
- j. Technology applies the knowledge from Science into practical purposes.
- k. Webster dictionary defines technology as 'the practical application of knowledge especially in a particular area'
- l. The organization of knowledge for practical purposes
- m. Technology is the system consisting of the technological process, technological objects, technological knowledge, developers of technological objects, users of technological objects, and the worldview (i.e., the beliefs about things and the value of things that shape how one views the world) that has emerged from and drives the technological process.

Aims of Technology in Present Era

The application or usage of technology is driven by human thought. Therefore, the goal of the technology is defined by the goal of the humans which created it.

The goals of technology are:

1. To improve the way in which we live
2. to make our lives easier by reducing physical and paperwork. The purpose of technology is to make things easier to do using science. For example, by inventing the wheel it easier to take heavy immovable objects from point to point.
3. To make our everyday work a lot easier as any piece of technology around you is an example of that, from a simple calculator to smartphones, computers or even a stapler
4. To solve problems of matter, energy, space, or time
5. To help us keep our information safe
6. To make it easier to provide service delivery
7. to interact with people far away (technology like the internet connectivity)
- 8.To help the government/agencies/institutions keep track of the citizens

Today technology helps in:

- a. Speed, Efficiency, and Agility.
- b. Storage and Sharing.
- c. Mobility and Remote Connectivity.
- d. Automation.
- e. Communication.

Advantages of Technology in Education

In narrow sense educational technology means the use of sophisticated hardware in teaching like projectors, tape recorders, televised films, cassettes, videos, gramophone, radio, T.V, satellites, internet, and various apps.

Technology of education broadly means entire process of setting goals, continuous renewal of curriculum, use of new methods and materials and evolution of the whole system of education to achieve the goals in accordance with the present era of internet technology.

Educational technology Helps in:

1. clarifying concepts
2. stimulating critical thinking and activities
3. changing attitudes
4. encouraging creativity
5. promoting, originality
6. better problem solving
7. introducing new methods of teaching and learning
8. helping distant learning
9. helps in lifelong education

Meaning and Scope of Educational Technology

Educational Technology – Meaning

a. The latest term “educational technology” is influenced by the concept of system approach which focuses on language laboratories, teaching machines, programmed instruction, multimedia technologies and the use of the computer in instruction.

- b. According to it, educational technology is a systematic way of designing, carrying out and evaluating the total process of teaching and learning in terms of specific objectives based on research.
- c. This widened the scope of ET as the teaching-learning process was examined in a holistic manner
- d. The arrival of digital convergent media encouraged interactivity and interconnectivity. This added a new dimension to ET.
- e. The universally accepted definition of ET involves processes, methods and techniques, products, resources and technologies organized into workable systems.
- f. The recognition of the need for a multilevel organization of a classroom, for instance, along with the designing of an appropriate programme and its implementation, becomes as much an exercise in ET as the use of audio-visual aids or the information superhighway
- g. Educational technology is the study and ethical practice of facilitating learning and improving performance by creating, using and managing appropriate technological processes and resources.
- h. It is use of the technological tools and media that assist in the communication of knowledge, and its development and exchange.
- i. Educational technology refers to the knowledge, applications and devices that allow the application of technological tools in the field of education.
- j. In other words, it is about the solution of educational problems through the use of information technology.
- k. ET is based on the systems approach to education: the input, output and the process. It directs both the teachers and learners to formulate learning objectives, and to develop. appropriate strategies of teaching and learning evaluation techniques.

Scope of Educational Technology

1. Determination of objectives

Educational technology provides different methods and techniques for writing instructional objectives in behavioural terms such as Bloom taxonomy, Magar's Approach and RCEM approach. The needs and requirements of the people and hence education need be revised from moment to moment.

Educational technology helps in fixing-up the right objectives in the light of the changed circumstances and changed environment.

2. Improvement in teaching learning process

It helps in improving the teaching learning process and makes it more purposive. It tries to discuss the concept of teaching, analysis of teaching process, variables of teaching, phases and levels of teaching, principles of teaching, maxims of teaching and relationship between teaching and learning.

3. Development of teaching learning material

Teaching learning materials are also as important as anything else in the teaching-learning process. In this age of science and technology, the materials of teaching cannot be unscientific. Everything of the society including values of life need be reflected in the materials. Only right type of material will be able to modify the behaviour of the learner suitably making him a fit person for the society.

4. Improvement in teaching training

The change of environment with the curriculum and new materials need be handled by the teachers. The teachers equipped with old strategies and methodologies of teaching will remain misfits. Right type of training to the teachers is the need of the hour. Educational technology can render its valuable help in the training of teachers also. The use of video tapes and close circuit T.V. will help the teachers to remodel and reshape their teaching behaviours suitably. It includes micro teaching, simulated teaching, team-teaching, teacher effectiveness, modification of teacher-behaviour, class-room interaction and interaction analysis, etc.

5. Development of teaching-learning strategies

A strategy plays an important role in the hands of a teacher in every learning situation. The strategy has to be the right one which should be according to the materials and is able to bring about effective teaching- learning. The different strategies are being evolved by educational technology. The knowledge of those strategies is a must for every teacher. Then only the teacher will be able to do justice to their jobs. It tries to describe the ways and means of discovering selecting and developing suitable strategies and tactics of teaching in terms of optimum learning and available teaching-learning resources; the availability of the different types of teaching methods, devices and models of teaching-their appropriate selection and use for the optimum results.

6. Proper use of audio-visual aids

Audio-visual aids have always played an important role in the teaching-learning process. They need be used according to the times. The software aids, the hardware aids, the computer and other such appliances, equipment etc., have to be used in the present type of teaching-learning environment. Computer assisted instructions will help the learner as well as the teacher to achieve the goals of education more conveniently.

7. Utilization of the sub-system of education

Educational technology considers education as a system operating in a systematic and scientific way for the achievement of educational objectives. For the coverage of its systematic approach, it tries to include the topics dealing with the theory and principles of a system approach, explaining education as a system, its different sub-systems in terms of input and output. It is helpful in solving scientifically educational administrative problems with the help of system analysis.

8. Development of curriculum

Educational Technology is concerned with the designing of a suitable curriculum for the achievement of the desired objectives. It is helpful in describing the ways and means of the selection of suitable learning experiences, organisation of the contents in a suitable framework in order to bring better results. It provides the scientific foundation to education as well as develops theories of teaching and learning.

9. Proper use of hardware and software

Modern days hardware and software are playing an effective role in the attainment of educational objectives. Educational technology helps in the proper use of these aids. It tries to describe these resources in terms of their specific functions, their solution, proper handling and maintenance.

10. Provides feedback

It provides an appropriate feedback to the learners as well as teachers for bringing necessary improvement at the preparatory and implementation stages of their specific acts. For this purpose, educational technology discusses the ways and means of suitable evaluation techniques, their planning, development selection and appropriate use in relation to the objectives of teaching- learning system. In this way Educational technology is concerned with all those who are connected in any way, directly or indirectly, to the processes and products of education.