



# EDUCATIONAL TECHNOLOGY

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*Meaning and Definition of Educational Technology*

# Educational Technology

*Eric Ashby* (1967) has identified four revolutions in education:

\*The first revolution occurred when the task of educating the young was shifted, in part, from parents to teachers and from the home to the school.

\*The second came with the adoption of the ‘written word as a tool of education’.

\*The third came with the invention of the printing press and books.

\*The fourth revolution, with the advent of electronics, and development in communication.

# Educational Technology

According to *Ashby*

*“Any technology, which increases the rate of learning, would enable the teacher to teach less and the learner to learn more.”*

# Educational Technology

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# Educational Technology

## **Meaning of educational technology:**

1) *First meaning* of educational technology

Educational technology is science on the basis of which various strategies and tactics could be designed for the realization of specified goals.

# Educational Technology

Educational technology involves four steps;

- Functional analysis of the teaching learning process to identify the various components which operate at the stage of input to that of the output.
- To explore the various functions of these components.
- To observe the effect of manipulating the various components and their functions in the field
- To translate all these research findings into some kind of guidelines for a practitioner

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# Educational Technology

*Second meaning* of education technology:

The second meaning of educational technology is the mechanization of educational process. The mechanization is done in all the three process of human knowledge;

*Preservation of knowledge:* -

First knowledge was orally transmitted by teachers to their students.

But with the advent of printing machine knowledge is preserved in books.



# Educational Technology

*Transmission of knowledge: -*

A large numbers of students sitting at far distant places can be taught with the help of radio and television.

The Open University, corresponding education are the major contributions of this innovation.

*Advancement of human knowledge: -*

The function of research process is to advance new knowledge. The scientific researches are encouraged in the present time because their findings are based on the collection of data.

# Educational Technology

Third meaning of educational technology:

Educational technology is the mediator, necessary for blending the science of learning with the art of teaching.

B.F. Skinner states that “no teacher can provide the frequency of reinforces or the necessary contingencies for optimal learning and that a teacher needs machine aid for this job.”

# Educational Technology

If technology is to serve a blending function for a science of learning and for art of teaching, it may also be seen as an attempt to apply the science of education.

*Silverman called this view-point 'constructive Educational technology'.* It is the basic educational application dealing with:

- The analysis of the instructional problems
- The selection or construction of measuring instrument.
- The selection of appropriate techniques to produce the desired outcome.

# Educational Technology

Another view point of Silverman is no Educational technology is called “*Relative technology*’ it is a burrowing and applying technology that merely deals with procedures and devices which gathers material.

# Educational Technology

## **Definition of educational technology:**

*Definition of education:* education is the development of the power of adaptation to an ever changing social environment.

*Definition of education:* It is a science of doing/getting things done, related to any art or science.

*Definition of educational technology*

“Educational technology is concerned with the development, application, and evaluation of systems, techniques and aids to improve the process of human learning.”



# Educational Technology

According to **G.M.Leith**,

*“Educational technology is a systematic application of scientific knowledge about teaching learning conditions of learning to improve the efficiency of teaching and training. In the absence of scientifically established principles, educational technology implements techniques of empirical testing to improve learning situations.”*

# Educational Technology

According to **B.C.Mathis**:

*“educational technology refers to the development of a set of systematic methods, practical knowledge for designing, operating and testing schools.”*

*B.C.Mathis has emphasized the development of teaching methods and skills for testing the performance.*

# Educational Technology

**Robert Cox**

has defined the term educational technology in the following manner, “*educational technology is an application of scientific process to man’s learning conditions to what has come recently to be called educational or instructional technology.*”



# Educational Technology

**E.E.Haddan** defined educational technology as

*“Educational technology is that branch of educational theory and practice which is concerned primarily with the design and use of message which control the learning process.”*

# Educational Technology

**S.S.Kulkarni** has defined the term educational technology in the following manner, “*educational technology may be defined as the application of the laws as well as recent discoveries of science and technology to the process of education.*”

**K.Mitra**, “*Educational technology can be conceived as a science of techniques and methods by which educational goal can be realized.*”

# Educational Technology

## **Concept of Educational technology:**

The concept of Educational technology is used in two ways; Educational technology means the *use of mass media and audio-visual aids in education* or technology in education.

Educational technology means *utilization of all available resources in a system in order to optimize teaching learning process* or *technology of education*.

# Educational Technology

## **Scope of Educational technology:**

Learning, in a non-technical sense, can be thought of a pursuit which is some how related to the following functions:

Informative function.

Calculative function.

Concept development.

Performance improvement.

Development of interests, attitudes.

# Educational Technology

## **Characteristics of Educational technology**

It involves input, output and process aspects of education.

It stresses upon developing methods and techniques for effective learning.

It is an application of scientific knowledge to education and training.

It includes the organization of learning conditions for realization goals of education.

It emphasizes designing and measuring instrument for testing learning outcome.

It facilitates learning by control of environment, media and methods.



# Educational Technology

**Objective of Educational technology:** To determine the goals and formulate the objectives in behavioral terms.

To analyze the characteristics of the learner.

To organize the content in psychological sequence.

To mediate between content and resources of presentation.

To evaluate the learners performance in terms of achieving educational objectives.

To provide feedback among other components for the modification of learner.

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## **Aspects of Educational technology: -**

Educational technology has three major aspects:

input

process

output

# Educational Technology

**Major approaches of Educational technology or types of Educational technology:**

*Lumsdaine* (1964) has suggested following

Educational technology;

Hardware approach or first Educational technology

Software approach or second Educational technology

Systems approach



# Educational Technology

## **Educational technology in India:**

*1) Educational technology programme or project:*

*2) NCERT and Educational technology programmes:*

*Following programmes has been planned and implemented by the centre;*

*Multi-media package:*

**Data bank and software bank**

**Radio**

**National seminar on Educational technology**

# Educational Technology

## ***2) NCERT and Educational technology programmes:***

**Evolution of television programmes**

**Open school: Delhi in 1983.**

**Programmes of Educational technology cells / state institute of technology**

**Satellite instructional television experiment (SITE) programme** August 1975 six states namely Andhra Pradesh, Bihar, Karnataka, Madhya Pradesh, Orissa and Rajasthan.

# Educational Technology

***2) NCERT and Educational technology programmes:***

**Workshop on Educational broadcasting:**

New Delhi during December 1980 as part of UNESCOs

**Indian National satellite:** INSAT in 1983

**Open Universities:** Indira Gandhi National Open

Universities IGNOU in Delhi in 1985

**Central Institute for Educational technology**

**(CIET):** Established in 1984

# Educational Technology

*Uses of Educational technology:*

*Preparation of teachers:*

**Distance education:**

*Telecast lesson:*

*Correspondence courses:*

*Audio-visual materials:*

*Radio and television educational programmes:*

*Language laboratories:*

# Educational Technology

## **The CIET:**

is concerned with development of educational technology, especially mass communication media, to extend educational opportunities and improve the quality of educational processes, practices and outcome.

# Educational Technology

**The CIET:**

**History:**

Central Institute of Educational Technology (CIET) is a constituent unit of the National Council of Educational Research and Training ([NCERT](#)), under the Ministry of Human Resources Development.

Established in 1984 with the merger of the Centre of Educational Technology and Department of Teaching Aids

# Educational Technology

## **The CIET:**

Functions of the CIET are

- Design, develop, try out and disseminate alternative learning systems to achieve the national goal of universalisation of primary education and
- To address various educational problems at micro, meso and macro levels.

The broad areas of activities:

- a) To design and produce media software materials
- To create competencies

# Educational Technology

## **The CIET:**

Functions of the CIET are

The broad areas of activities:

c)To train the faculty

d)To create competencies

e)To undertake research evaluation and monitoring of the systems

f)To document and disseminate information, materials

•To advise and coordinate the academic and technical programmes



# Educational Technology

## **The CIET:**

### **Programmes:**

- The CIET is responsible along with the SIETs of UP and Bihar to feed a daily telecast of 30 minutes, 5 days a week, on the National Network.
- A series of tutorial programmes in mathematics for students of Class X and XII
- Educational Television programme *Billi Ke Panje*
- Research and Evaluation

# Educational Technology

## **The CIET:**

### **Programmes:**

- a. Research and Evaluation
- b. Monitoring and evaluation of *Tarang*
- c. Analysis of viewer's mail
- d. Field-testing of media programmes
- e. Review of research with implications for media production
- f. A need assessment for media programmes for the middle schools