

TOPIC

INTRODUCTION TO EDUCATIONAL TECHNOLOGY



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CONTENT

INTRODUCTION TO EDUCATIONAL TECHNOLOGY

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- Development Of Instructional Technology
- Trends In Educational Technology- Mass Instructional Technology , Technology Of Individualized Instruction
- Approaches Hardware , Software , Cybernetics and System
- Role Of Technology In Education and Special Education

Educational Technology – concept and definition



Educational Technology = education + technology

The construction of norms and behaviour through learning is called **education** .

The method of using scientific knowledge is called **technology** .

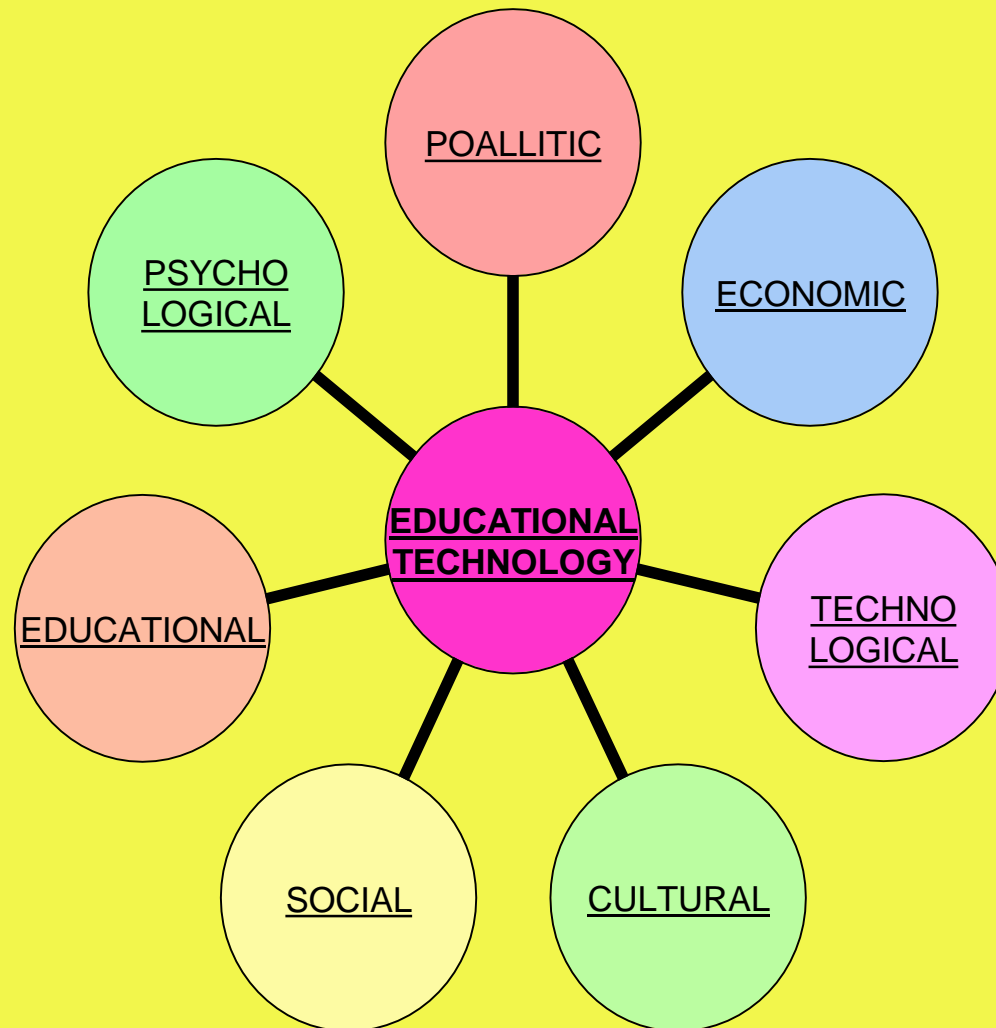
A/C to GOM Leith

“**Educational Technology** is the systematic application of scientific knowledge about teaching learning and conditions of learning to improve the efficiency of teaching and training . ”

A/C to Richmond

“**Educational Technology** is not only scientific application of technological process to education but it also refers to an applied or practical study which is aimed at to attain maximizing educational efforts or effects by controlling relevant facts and educational purposes , educational content , educational method , teaching material , educational environment , conducts of student behaviour , behaviour of teachers and interrelation among students and teachers . ”

FACTORS INFLUENCING THE APPLICATION OF EDUCATIONAL TECHNOLOGY



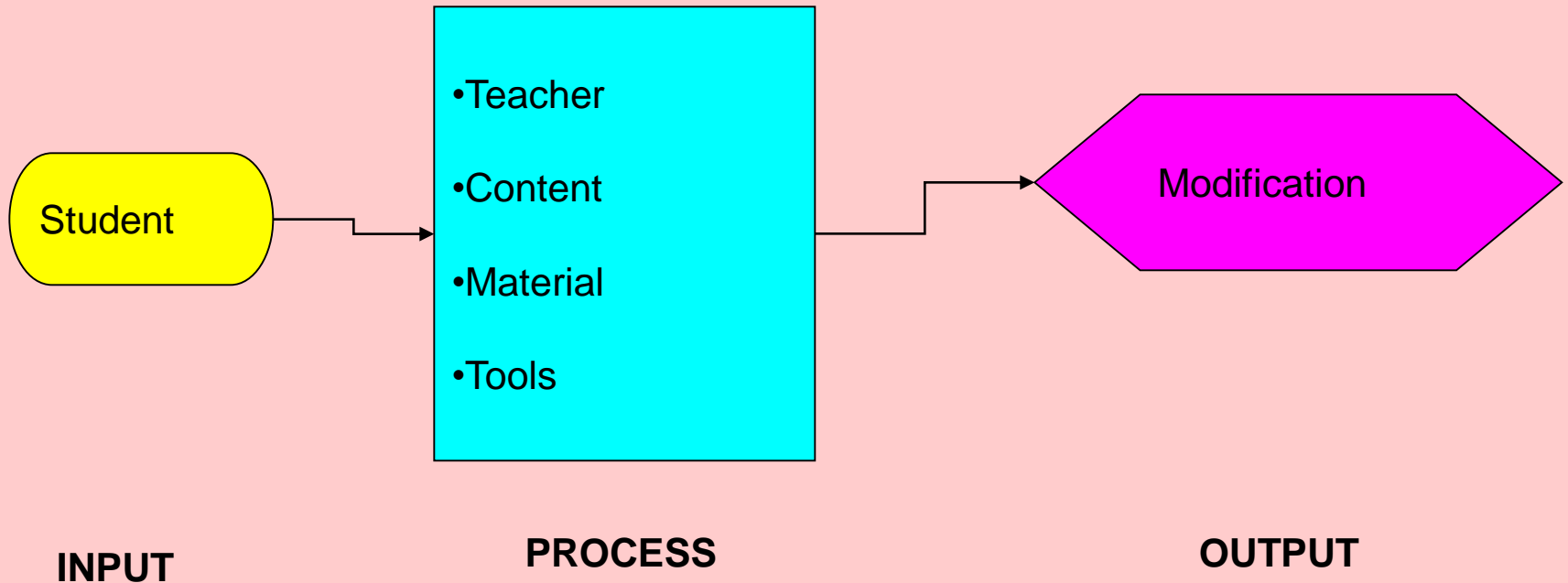
Development Of Instructional Technology

- Firstly educational technology concern with log books , slate , blackboards , chalk .
- In 1873 exhibition held on teaching aid in Vienna (Austria) , first time chart , slate , blackboard , chalk presented in front of common people.
- In 1920 first time machine is presented by Sidney L . Pressey - Testing/Teaching Machine name Drum Tutor .
- In 1920 (Britain) BBC (British Broadcasting Corporation) in school was started , their was broadcast of school programmes .
- In 1945 B.F. Skinner
- Article – ‘ Art of teaching and science of learning ’
- On the basis of operant conditioning he proposed linear programme instruction .
- In 1950 – Brynmore – Educational Technology
- First time tv broadcast programme for education in America .
- In 1954 B.S Bloom gives Taxonomy Of Educational Objectives .
- In 1956 Team Teaching (group teaching) come under force .
- In 1960 FIAC
 - RCS
 - ETC Equivalent Talk Category .

- In 1962 D.W Allen – Micro Teaching
- In 1965 PSI – Personalized System of Instruction .
- In 1968 O.K Murrey – Computer Instruction .
- In 1978 Instruction through Satellite .
- In 2000 Internet uses in Education .
- In 2004 EDUSAT .

Trends in Educational Technology – Mass instructional Technology , Technology of Individualized Instruction

In Educational System



Mass Instructional Technology :- the technology used to provide information to mass is called mass instructional technology. For example T.V , Radio etc..

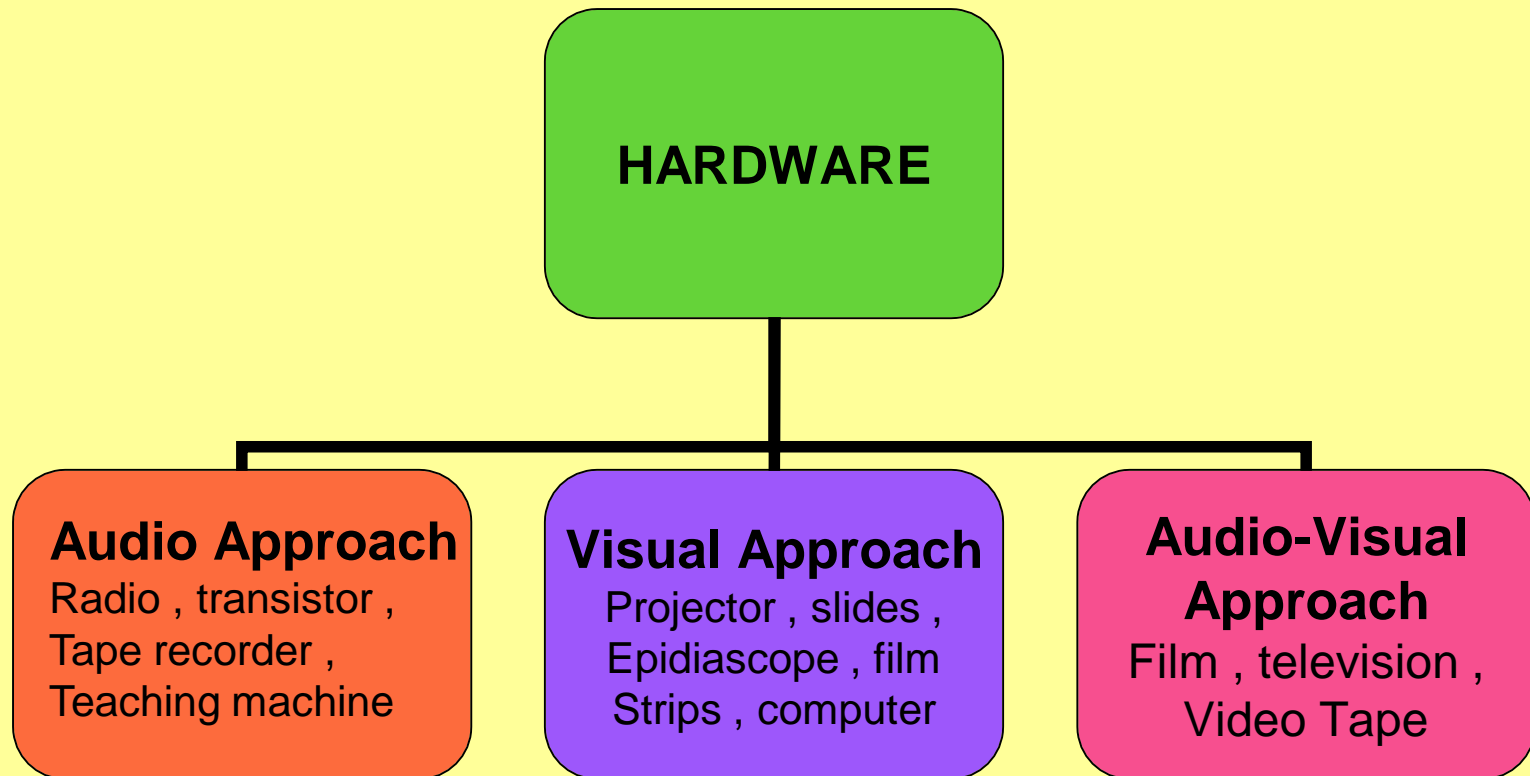
| <u>Instructional Technology</u> | <u>Teaching Technology</u> | <u>Behavioural Technology</u> |
|--|---|--|
| <ul style="list-style-type: none"> • Content presentation is systematical . • For individual learner • Based on educational requirement of individual • Skinner , CAI ,PLI etc.. | <ul style="list-style-type: none"> • Presentation of content in proper communication pattern . • Teacher communication • It includes task analysis ,controlling . • Work of Bruner. | <ul style="list-style-type: none"> •Talk about change in behaviour . • Teacher behaviour • Micro teaching , simulated teaching . • Work of Flanders , Adel etc |

APPROACHES HARDWARE , SOFTWARE , CYBERNATIC , AND SYSTEMS

Hardware

This approach lays special emphasis on the following three principles

- Preservation of learning
- Transmission of learning
- Advancement of learning



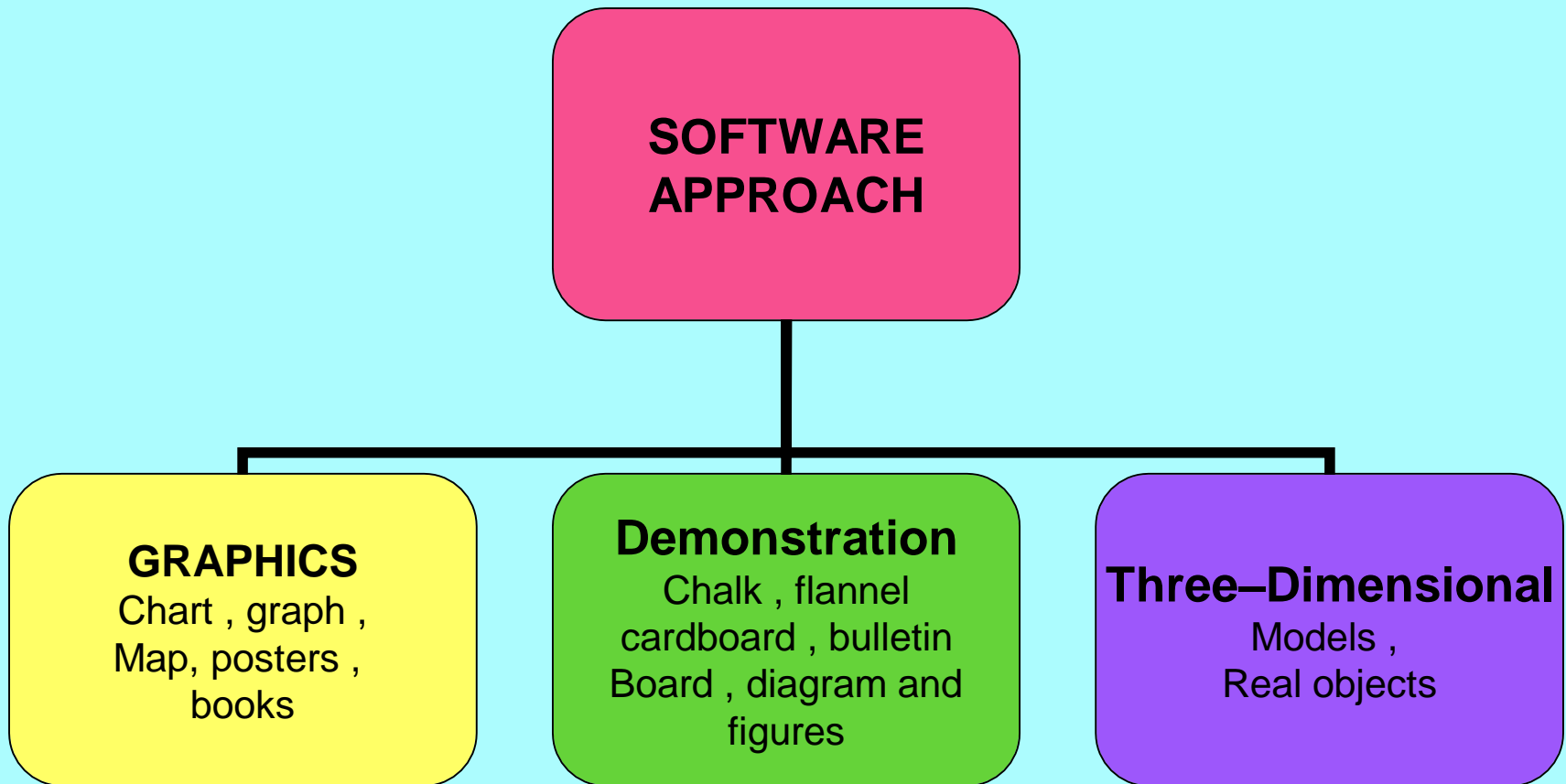
SOFTWARE APPROACH

In this approach emphasis is laid on developing all three aspects of education

Input

Output

Process



Some points related to hardware and software approaches

- **Hardware technology** has its origin in physical sciences and applied engineering whereas **Software technology** has its origin in behavioural sciences and their applied aspects concerning psychology of learning .
- **Hardware technology** is more concerned with the production and utilization of audio-visual aid material and sophisticated instruments whereas **Software technology** makes use of psychology of learning and utilization of software techniques .
- **Hardware technology** tries to adopt product oriented approach whereas **Software technology** tries to adopt process oriented technology or approach .
- **Hardware technology** needs the service of software technology for its use and functioning whereas **Software technology** can itself deliver service to the user without any aid from the hardware technology , for example computer hardware in the shape of machine like a device is of no use without use of software .
- **Hardware technology** has its mass appeal and utilization . It can contribute a lot in handing over the educational benefits to the mass with greater ease and economy whereas **Software technology** has no such wide application and appeal to the masses as found in the case of hardware appliances like radio, telephone, computer application , etc.

SYSTEM APPROACH

- The term system approach came into prominence after World War II. It was first introduced in industry and then expanded into non-military and government agencies.
- It is used for studying problems related to educational administration and educational management in the field of education scientifically.
- It assists in formulating instruction and development of instruction and educational administration.
- The system approach is concerned with identifying goals and determining and evaluating the means for accomplishing these goals.
- The purpose of the system approach is to optimize the outcome by making the best possible utilization of existing and anticipated resources.

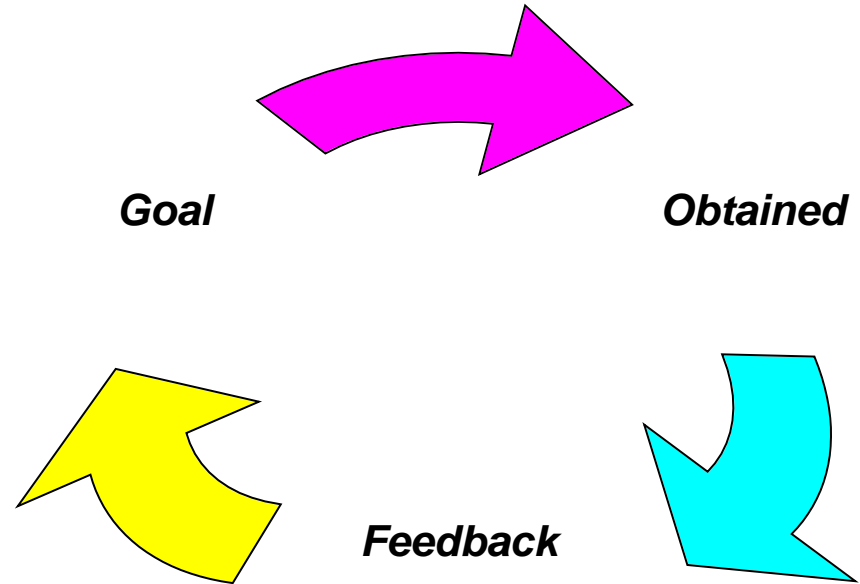
Component of a system

- Input
- Process
- Output
- Environment of a system

Each system works towards the achievement of the goal state of the system which is the objective of the total system.

Cybernetics

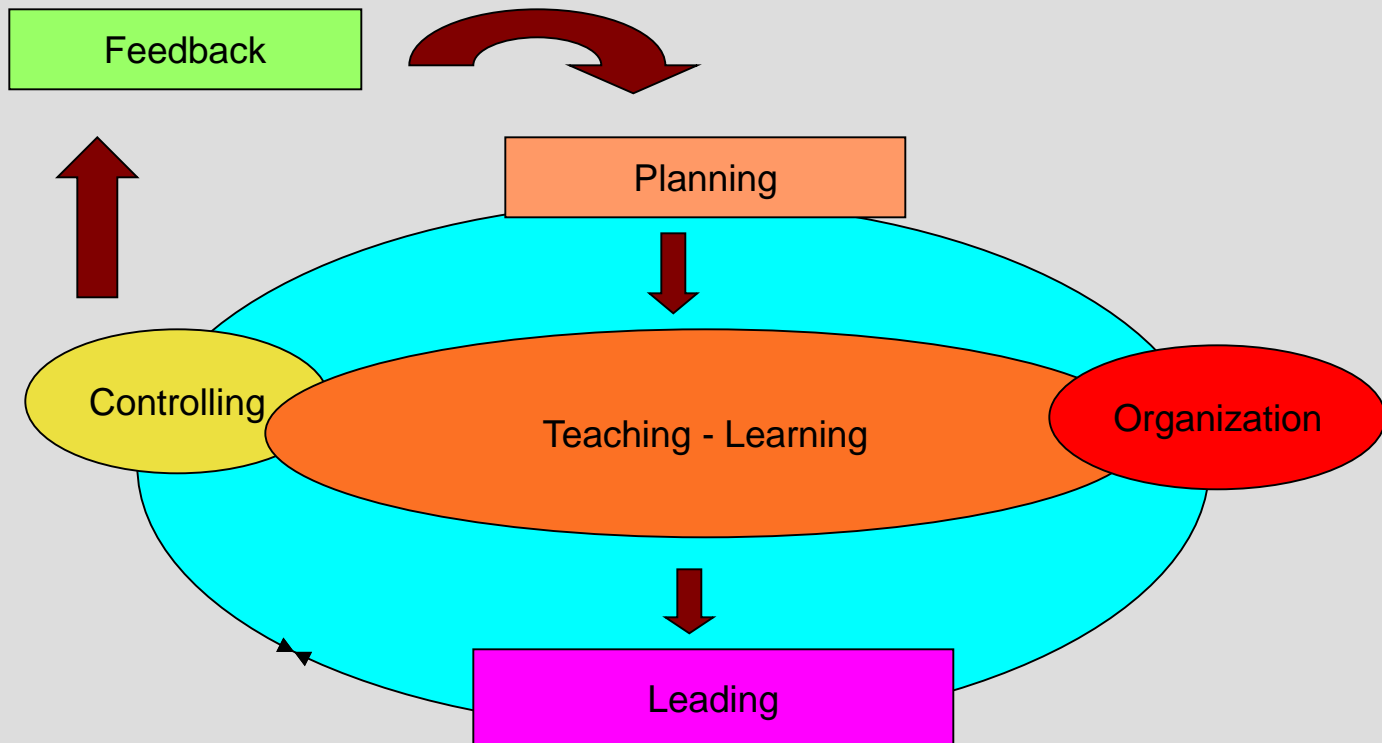
Beer's (1995) feels that cybernetics
Can be applied to any and all field because
It represent a general theory of control .



The science of communication and control has been called cybernetics .

It gives analogies between human and machine behaviour particularly in terms of feedback
As a part of adaptive or purposive activity .

A closed loop system of cybernetics



Role of Technology In Education

- It helps in Individualization of instruction i.e. in making programmed instructions , programmed textbooks , and programme learning modules .
- It helps in making teaching machines .
- It uses in making CAI (computer assisted instruction) .
- It is used in task analysis .
- It is used in audio and video recorded learning and instructional material .
- At personal level technology is used as email , internet , teleconferencing and other online educational facilities .
- Technology is used in multi media and multi sensory approach in teaching learning process .
- It is used in planning of teaching learning .
- It is used in organisation of teaching learning .
- It is used in fulfilling the expectation of distance and correspondence education .
- It also makes the task of teaching learning interesting , purposeful and productive .

Role of Technology In Special Education

- ***For visually Impaired Children***

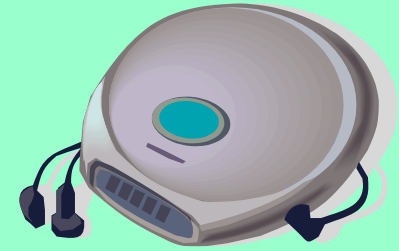
Technology is used in the form of Assistive Devices

Some examples are as follows

- **Laser cane**
- **Digital Watches**
- **Talking Calculator**
- **Optacon**
- **Software Automatic Mouth (SAM)**
- **EGHO II Speech Synthesiser**
- **Relief Copy Machine**
- **Device to draw raised diagram**
- **Touch traffic light system**
- **Closed Circuit Television**

Books on CD

Books on CD



- Available for free from the Library of Congress www.loc.gov/nls
- Available for a fee from Recording for the Blind and Dyslexic (www.rfbd.org)
- Schools or students with financial need can receive free equipment and free books.
- If they don't have a book you need, they will record it.
- Books on CD are mailed directly to the school or home.

Google Docs

- <http://www.google.com/>
- Two people can look at the same document on-line in real time. They can both edit the document, and the other person can see the changes immediately.
- This has caught on as a way for parents who are out of town to be involved in homework.



Boardmaker Plus



- Creates communication boards for students with limited communication ability.
- Very useful for students with expressive language issues, or limited vocabulary.

Word Prediction Software

With the help of word prediction software, students with mild learning disabilities are better able to compete academically in regular classroom settings

Types Of Assisstive Technology use In A Classroom

| <u>AT Category</u> | <u>Why Student Would Need</u> | <u>Examples</u> |
|--------------------|---|--|
| Computer Access | If a student cannot access the computer in its standard form and they need it to perform academic tasks | <ul style="list-style-type: none">• Word prediction• Switches• Voice recognition software• Alternate keyboards• Pointing options |
| Writing | If a student is having difficulty with writing or with composing written pieces | <ul style="list-style-type: none">• Pen/Pencil grips• Adapted paper• writing templates• Word processors• Word card/book/wall• Spelling/Grammar Checker• Software |

AT Category

Why Student Would Need

Examples

Reading

If a student is having trouble understanding what they are reading or paying attention to the reading assigned

Predictable texts
Book adapted for page turning
Electronic books
Single word scanners
talking electronic devices/software

Vision

If a student demonstrated trouble seeing or cannot see at all

Eyeglasses
Magnifier
Large print books
CCTV

Hearing

When the student demonstrates trouble hearing or cannot hear at all

Pen and paper
TTD/TTY for phone access
Signaling devices
Closed captioning
Hearing aids

AT Category

Why Student Would Need

Examples

Learning/Studying

If a student is struggling to get their work done in a timely fashion or if they are having trouble understanding the various lessons

Highlighters
Recorded material
Hand-held scanners
Electronic organizers
Print or picture schedule

Math

If a student is finding it difficult to keep up with the majority of the class on math lessons

Number line
Enlarged worksheets
Calculators
Talking clocks
Voice Output measuring device