TECHNOLOGY IN HIGHER EDUCATION

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FIVE REVOLUTION IN EDUCATION

- Advent of Oral Education
- Written Form of Education
- Birth of Printing & Books, etc
- Use of Electronic Devices in Education (Radio, TV)
- Implication of Digital Technology (computer, e-mail, enter-net)

TECHNOLOGY: MEANING & SCOPE

- The word Technology is derived from the (Greek word “Technic” which means Art or Skill and “logic” means Science or study. So, Technology is the science of study of an art or skill.
- The basis of technology is science and its function is to develop experimental arts.
- Technology is the application of scientific theory to practical ends – J. Bloomer

TECHNOLOGY: MEANING & SCOPE-1

- Technology is the application of scientific knowledge to the practical purpose- International Dictionary of Education
- Technology is a problem solving invention- H.J. Leavit
- Technology includes methods, skills and strategies of teaching, tools, mechanical and electronic devices, instruments, media equipments, library inventories, text books, equipped teachers

EDUCATIONAL TECHNOLOGY: Meaning & Scope

- B.C. Mathis-Educational Technology refers to the development of a set of systematic methods, practical knowledge for designing, operating and testing in schools.
- I. K. Davies- Educational Technology is concerned with very problems in an educational and training context and is characterized by the disciplined and systematic approach to the organization of resources for learning.

EDUCATIONAL TECHNOLOGY: Meaning & Scope-1

- S.S. Kulkarni: 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
- S. K. Mitra- Educational Technology can be conceived as a science of techniques and methods by which educational goals could be realized.

EDUCATIONAL TECHNOLOGY: Meaning & Scope-2

- National Council of Educational Technology[NCET]-Educational technology is the development, application and evaluation of systems, techniques & aids to improve the process of human learning.
- G.O.M.Leith-Educational Technology is the application of scientific knowledge about learning and the conditions of learning to improve the effectiveness of teaching and training.

Areas of Educational Technology

Role of Educational Technology is stretched to four areas:

- Teaching Technology
- Behaviour Technology
- Instructional Technology
- Instructional Design.

Areas of Educational Technology-1

Teaching Technology

- Planning Teaching
- Organizing Teaching
- Leading Teaching
- Controlling Teaching

Areas of Educational Technology-2

Behaviour Technology

- Behaviour modification of students and teachers in the light of identified objectives of teaching (Its nature also gives it another name as Training Technology).

Areas of Educational Technology-3

Instructional Technology

- It is the communication of learning materials to the learners. It can be presented on all the three levels of teaching- Memory, Understanding and Reflective, though it is limited to second level of teaching; for reflective level of teaching, teaching technology is being applied.

Areas of Educational Technology-4

Instructional Design

It is related to all systems, sub-systems of educational interactions. It helps in achieving identified educational goals by manipulating the educational environment. There are three approaches of Instructional Design- (a) Training Psychology (b) Cybernetic Psychology (c) System Analysis

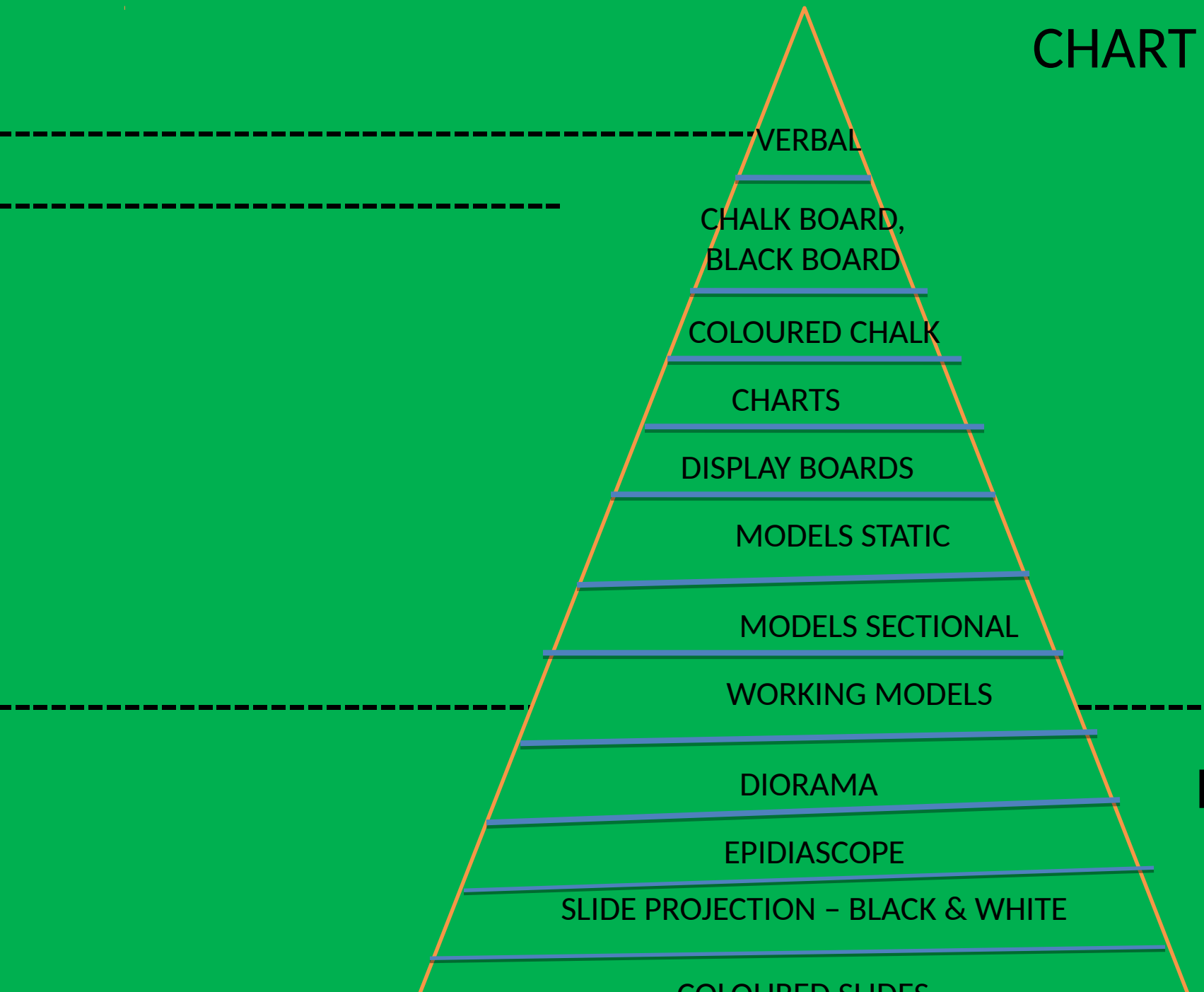
Types of Educational Technology

- Hardware Approach
- Software Approach
- System Approach

Aspects of Educational Technology

- Input
- Output
- Process

ECTIVENESS OF TEACHING AIDS



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SENSE OF SIGHT (SOURCE- EXPERIENCE AND RESEARCH)

A. HOW WE LEARN

- 1.0% THROUGH TASTE
- 1.5% THROUGH TOUCH
- 3.5% THROUGH SMELL
- 11.0% THROUGH HEARING
- 23.0% THROUGH SIGHT

HOW WE REMEMBER

- 20% OF WHAT WE HEAR
- 30% OF WHAT WE SEE
- 50% OF WHAT WE SEE & HEAR
- 80% OF WHAT WE SAY
- 90% OF WHAT WE SAY & DO

ACTS AND LEARNING

1. I HEAR, I FORGET;
2. I SEE, I REMEMBER;
3. I DO, I UNDERSTAND.

1.Visual (Verbal) Print or Duplicated

- Textbook, Supplementary Book.
- Reference book, Encyclopedia, etc.
- Magazine, Newspaper, etc
- Documents and Clippings.
- Duplicated Written Material.
- Programmed Learning Material and Self Instruction Modules.
- Case Studies (Simulating Reality) and case report.

2. Visual (Pictorial) Non Projected Two-Dimensional

- Blackboard writing and Drawings.
- Charts
- Posters
- Maps
- Diagrams
- Graphs
- Photographs
- Cartoon
- Comic strips

3.Audio

- Human Voice
- Gramophone records
- Audio tapes/discs
- Stereo records
- Radio broadcast
- Telephonic Conversation

4. Visual Non-Projected Three Dimensional

- Module
- Mock-up
- Diorama
- Globe
- Relief map
- Specimen
- Puppet
- Holograms

5. Visual Projected (Still)

- Slide
- Filmstrip
- Transparency (OHP)
- Microfilm, Micro card
- Computer

6. Audio-Visual Projected (with Motion)

- Motion Picture Film
- Television
- Close Circuit Television
- Video Cassette/ Disc

7. Multi- Media Packages (for more than one sense)

- Slide + tape + workbook
- Radio + slide or poster (Radio vision)
- Film + posters + workbook (print materials)
- Television + workbook (print material)
- Any of the above + group discussion
- Any of the above + introductory and summarizing talk of teacher/leaders of the group

8. New Emerging Media (all of these are multisensory)

- Teleconferencing
- Cable television (localized television where feedback is possible)
- Satellite television/communication satellites
- Computer networking

video discs

- Mini computer/micro computer/word processors

Analog Vs Digital Technology

- In analog technology an audio or video signal is translated into electronic pulses
- In digital technology signal is broken into binary format in which audio or video data is represented by a series of “1” S and “0” S.
- Digital information can be stored and reproduced, but analog recording involves the modulation of original sound signal to another physical medium.
- Analog-Photocopiers, telephones, audiotapes, earlier television, VCRs, etc.
- Digital- Modems, Computers, Digital Televisions, etc.
- Sophistication is the strength of the digital technology and so it has advantage over analog technology

Digital Technology and India

- Replacement of black boards by digital boards (smart class)
- Swayam Portal
- Swayam Prabha (DTH Channels)
- Blended Learning Approach
- Saransh
- E-Basta
- Shala-Sidhi
- Stem School
- Vidyanjali
- Campus Connect
- Global Initiative of Academic Networks[GIAN]
- National Digital Library
- DigiLocker
- National Academic Depository

Nine Pillars of Digital India

- Broad Bands Highways
- Universal Access to Mobile Connectivity
- Public Internet Access
- e-Governance (reforming government through technology)
- e-Kranti (electronic delivery of services)
- Information for all
- Electronics Manufacturing
- IT for Job
- Early Harvest programme (Projects that can be implemented soon)

Type of Institutions of Higher Learning

- Central Universities
- State Universities
- Institute of National Importance
- Deemed University
- Private University

Types of university

- Unitary
- Federal
- Affiliating

Educational Telecasts

- Gyan Darshan
- Gyan Vani
- NCERT Educational Telecasts
- HVNET-High Speed Satellite network launched by the department of telecommunication
- ERNET- Educational network by department of electronics
- DELNET- Delhi and outside Network
- EDUSAT- a dedicated satellite for education & development launched by ISRO & IGNOU together
- INFONET-UGC
- LAN- Local Area Communication Network
- WAN- Wide Area Communication Network

Technology in Higher Education

- Radio and TV broadcast
- Audio-conferencing
- Video- conferencing
- Electronic mail
- Internet
- Computer
- Mobile Communication

New Initiatives in Higher Education

- Ranking
- LEAP- Leadership for Academicians p Programme
- ARPIT- Annual Refresher Programme in Teaching
- Digital Face
- Technology Friendly System
- Effective Communication System

Measures for further Improvement

- Strengthen digital infrastructure for different communicating ends
- Improve electrical connectivity and availability
- Develop favourable attitude (Stake –holders)
- Integrate human touch with machine
- Improving school education with digital literacy and to prepare digital resources & collaborative digital platforms.
- Integrating multi-media.

Technology & Senses

- The most widely used classification is on the basis of the senses that are stimulated by educational technologies.The above classification in eight categories is based on senses and so is more useful and effective.

Glossary

- Mock-up: A model or replica of a structure
- Diorama: A model representing a scene with figures,specially in a museum
- Hologram: A hologram is a photographic recording of a light field,rather than of an image formed by a lens
- Relief map: It is made by collecting geographical and demographic data and then translate that information into various map form
- Epidiascope: A optical projector giving images of both opaque and transparent object