Appropriate Use of Media

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Learning Objectives

At the end of this session, the learner should be able to

- Differentiate between message, medium and channel
- Classify Teaching Learning Media
- State advantages & limitations of commonly used audio-visual aids
- Discuss the principles to be followed to use them effectively
- State the precautions to be taken while using them
- Select the appropriate medium to enhance learning
Teaching-Learning Process

**Message**
- Information
- Thought
- Idea
- Skills

**Medium**
- Words
- Pictures
- objects

**Channel**
- Human voice
- TV
- Projector
- Recorder
- Playback device
What are Teaching - Learning Media?

- Means of communicating educational information
- Components of Teaching - Learning Methods to facilitate teaching & Learning
Why use Teaching Media

- Simplify the subject
- Improve quality of instruction
- Understanding of the subject is clear & uniform
- Holds the student’s attention
- Students remember the subject much longer & recall it better
Why use Teaching Media...

- Develop the knowledge of material being taught
- Facilitate active learning strategies which promote deeper learning
- High degree of engagement with students, promotes individual’s learning, social interaction
- New, novel concepts learnt more easily
Classification of T - L Media

1. Audio media: a) Public Address System
   b) radio, tape recorder, CD/cassette player
2. Visual media:
   a) Non-Projected - black/green chalkboard, flip charts, printed materials, 3-D aids - models, specimens, simulators
   b) Projected - OHP, slide projectors, Smart board
3. Audio-Visual media: Television, Liquid Crystal Display, Video, LCD projector, Virtual Reality
Classification of T-L Media

4. Written aids
   - Hand outs

5. Patients & Real Objects
Classification of T - L Media

6. 3-D representations
   Models
   Mannequins

7. Simulation & Role Play
Classification of T - L Media

8. Mass Communication Media

Radio

Television
Group Activity

- Discuss how to use the given aid effectively and precautions to be taken
- Prepare a talk of 3 mins on any topic of your choice using the given aid
- Group 1- Blackboard
- Group 2- Flip chart
- Group 3- OHP transperencies
- Group 4- Powerpoint presentation
Visual Media

• Non-Projected:

  Chalkboard:
  Readily available
  A common Visual medium
  For a small group of 30-50
Visual Media

Non-Projected:

Chalkboard: Advantages

- Inexpensive / No electricity required
- Convenient for writing key words, listing items,
  drawing simple line diagrams,
  solve problems
Visual Media

Non-Projected:

Chalkboard: Advantages

- Allows step by step build up of concepts & organisation of structure
- Allows active participation of learners
- Darkening of room not needed
Visual Aids

Non-Projected:

Chalkboard: Limitations
- Loss of eye contact with the learners while using it
- Requires writing & drawing skills of the teachers
- Temporary drawings get erased-so not for future use
- Not suitable for large audience
- Allergy to dust
Visual Media

Non-Projected:

Chalkboard: Principles of effective use

- Write the main headings while teaching or write the objectives prior to starting the lecture
- For an average hall of 32 feet length, use CAPITAL letters of at least 1 inch height
- Avoid crowding of the blackboard
- Use erasing judiciously
Visual Media

Non-Projected:

Chalkboard: Principles of effective use

- Do not obstruct while speaking
- Keep an eye contact when not writing
Visual Media

Projected:

Over Head Projector (OHP):
Visual Media

Projected:
Over Head Projector (OHP): Advantages
- Image projected high on the screen or wall so readable for the whole class
- Can be used in daylight, no darkening of room required
- The teacher can prepare extras in advance
- The teacher faces the audience
- Relatively easy to prepare
- Overlay technique - used for build up of concepts
- Easy to prepare, not much technical skill needed
Visual Media

Projected:

Over Head Projector (OHP): Limitations

- Teacher’s mobility is restricted
- Needs good handwriting
Projected: Over Head Projector (OHP): Guidelines for its use

- Choose appropriate size of OHP paper
- Use pens with permanent inks
- Colour Preference in order: Black, Purple, Green, Red
- Do not use more than one colour per page
- Leave a 1" margin on all sides
- Use 8 lines per page
- Use 8 words per line
- Keep height of letters as 5-7 mm (font size 24 on PC)
- Keep single message per extrans
Visual Media

Projected:
Over Head Projector (OHP): Guidelines for its use

- While projecting turn to screen (verify text position)
- Use a pencil as a pointer on the OHP film
- Use progressive disclosure

- Switch off the OHP while discussing
- Keep a paper between 2 films while storing it
Advantages:

1. Suitable for small & large audiences
2. Good for classroom teaching, conferences, self study
3. Can be used repeatedly
4. Easy to make and easy to edit
5. Inexpensive
6. Easy to store and transfer
7. Access through internet
8. Use of font styles/clipart allows for dynamic content
Slides for Powerpoint Presentation

Limitations:

1. Basic knowledge of computers is necessary
2. Darkening of the room is necessary
3. Problems in computer hardware or software
Guidelines for the use of powerpoint slides:

• No paragraphs, use bulleted list, elaborate on points
• Rule of 7: 7 words per line, 7 lines per slide
• Use line spacing of 1.25 or more
• Use Sanserif fonts (Arial, Helvetica, Tahoma, Lucida, Avantgrade, Impact, Comic Sans, Zurich etc)
• Avoid Serif fonts (e.g. Times new roman, Souvenir, Serifa etc)
• Font size - 32 to 24 (not less than 20)
Slides for Powerpoint Presentation

Guidelines for the use of powerpoint slides:

• Use **contrast colours**: light background with dark text or the other way
• **AVOID ALL CAPS**
• Avoid pictures, logo on the background instead use cliparts at the corners or the side of the text
• Include good combination of words/pictures/graphics/animations
Slides for Powerpoint Presentation

Guidelines for the use of powerpoint slides:

• Do not use too many colour combinations, animations, slide transitions. Try to maintain uniformity in slides
• Check spellings
• Write references in the footnote, use hyperlinks if necessary
• Pictures (.jpeg) files may be converted to (.gif) files as they are of lesser size
Slides for Powerpoint Presentation

Style of presentation:

1. Do not read from the slide
2. Do not talk to the screen
3. Keep an eye contact with the audience
4. Use laser pointer to indicate salient features of the slide as you talk or highlight them as **bold**
5. Use animations like bulleted list one by one (Progressive Disclosure)
Slides for Powerpoint Presentation
Planning for the presentation:
1. Stick to the time & accordingly prepare the slides
2. Begin with overview or objectives
3. Build up the topic in the middle & emphasize your points
4. Use notes section of the slide to write your speech or points
5. End quickly with summary
6. Save the presentation file in the present as well as old version (Microsoft powerpoint 2003)
7. Send it as an attachment to your own e-mail address
Audio Media

- Public Address System

For communication in a large group (> 30-50)

Reproduces the original sound at a higher intensity

Consists of Microphone, Amplifier, Speakers
Audio Media

- Audio Tape/CD System

For any size of audience and for Self learning
To provide narrations for slide sequences
To give commentary for silent films
To demonstrate heart sounds
To give instructions for use of an equipment
To present discussion among experts on controversial important topics
Visual Media

A picture is worth more than 10,000 words
Visual Media

Non-Projected:

Display Boards, Cards, Charts:

-Magnetic board, feltboard, corkboard
Displays prepared material for presentation to small groups
Visual Media

Non-Projected:
Display Boards, Cards, Charts:

- Flannellographs
  Suitable for step by step explanation by using simple symbols, cards, cut-outs
- Charts, Flash cards, **Flip Charts**
  Suitable for stepwise presentation in small groups
Visual Media

Non-Projected:

Viewing box
Visual Media

Projected:

Smartboard

Smartboard Pens
Visual Media

Projected:

Smartboard:

- Front projection interactive white board
- Choice of 4 screen sizes
  - 94” for 70 students
  - 77” for 40 students
  - 64” for 20 students
  - 48” for 6 students
- Touch screen capabilities which allow you to write, erase & perform mouse functions with your finger/pen
Visual Media

Projected:
Smartboard:

- 3 Necessary elements
  SMART Board
  A Computer
  A Multi-media Projector

- Installation
  Fixed if dedicated to a particular classroom
  Board – Wall mounted
  Projector – Ceiling mounted/on mobile trolleys
Visual Media

Projected:

Smartboard:

- What is a SMART Board?
  A computer (with SB software) & a projection screen which looks like a white board
  A 'hands on' interactive teaching tool
  The hand acts like a mouse
  The written work can be saved, printed & distributed as a hand out
Visual Media

Projected:

Smartboard:

- Why use a SMART Board?
  
  It is interactive

  It is kinaesthetic

  It is colourful

  It is collaborative

  It is without messy chalk dust

  It is learning with fun
Audio - Visual Media

a) Video tape System (video recording & replay)
   For teaching psychomotor, communication skills
   For T-L in small & large groups, self-instruction
   Closed Circuit TV can relay action in which only
   one person can participate

b) Tape-Slide system & Cine films
   - Synchronised tape-slide system: 35 mm slides
     for visual and audio tape for commentary
   - Cine films: For psychomotor skills
Audio - Visual Media

C) Videoscope

-A video system which can accept inputs from a VCP, VCD or a Computer
-The current models use Liquid Crystal Display (LCD) technology


d) LCD Panel

An electronic LCD display panel with a high lumen OHP
Audio - Visual Media

e) Virtual Reality (VR)

-A computer based 3-dimensional interactive programme

-For psychomotor skills e.g. surgical skills
Virtual Reality

The simplest form of virtual reality is a 3-D image

- that can be explored interactively at a personal computer
- usually by manipulating keys or the mouse
- the content of the image moves in some direction or zooms in or out.
Virtual Reality

More sophisticated efforts involve

- as wrap-around display screens
- actual rooms augmented with wearable computers
- haptics devices that let you feel the display images
Group activity

Comment on the following three powerpoint slides considering the guidelines for preparation
PRE OPERATIVE ASSESSMENT

- **Sickledex**: solubility test which screens for HbS.
  - Does NOT distinguish between trait and disease thus:
  - Haemoglobin electrophoresis is necessary to confirm the exact phenotype. This may take time to perform so a sickle test must be performed well before the time of an elective procedure.
- **Haematological advice should always be sought for sickle cell anaemia patients.**
- **A sample for blood group and antibody screening**
  - Previously transfused SCD patients often have red cell antibodies.
- **Evidence of renal, pulmonary or cerebrovascular complications should be assessed pre-operatively.**
- **Check for signs of vaso-occlusion, fever, infection and dehydration.**
Mechanisms of Alcohol – Induced Cholestasis

- Ethanol inhibit the function of the Na\(^+\)--K\(^+\) ATPase pump at basolateral membrane thus inhibits hepatocyte bile acid uptake & disrupts an important step in bile secretion.

- Ethanol has toxic effects on intracellular processes. These are mediated thorough its oxidative metabolite, Acetaldehyde. Acetaldehyde binding leads to decreased microtubule polymerization causing impaired function. This affects bile salt dependent bile flow.
<table>
<thead>
<tr>
<th>Thal Type</th>
<th>Homozygote</th>
<th>Heterozygote</th>
</tr>
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<tbody>
<tr>
<td>β⁰</td>
<td>Hb F – 98%, Hb A₂ – 2%, Hb A – absent</td>
<td>Hb A₂ – 3.5 – 7% β/α – 0.4 – 0.6</td>
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<tr>
<td>β⁺</td>
<td>Hb F 70 – 95%</td>
<td>Hb A₂ – 3.5 7% β/α = ~0.5</td>
</tr>
<tr>
<td>Normal A₂</td>
<td>Hb F – 10 –30%</td>
<td>Hb A₂ &lt; 3.5</td>
</tr>
<tr>
<td>β⁻-thal</td>
<td>Hb A₂ 4–5%</td>
<td>β/α = ~0.5–0.6</td>
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<tr>
<td>δβ thal</td>
<td>Hb F – 100%</td>
<td>Hb F 5–20% HbA₂ 1.5 – 2.0% non α/α 0.6 – 0.8</td>
</tr>
<tr>
<td>(GγAγ or Gγ)</td>
<td></td>
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<tr>
<td>γδβ thal</td>
<td>Not described</td>
<td>Hb F – 15–20% HbA₂ – 1.5–2.0%</td>
</tr>
<tr>
<td>(Predominantly Gγ)</td>
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<tr>
<td>δβ Lepore thal</td>
<td>Hb F – 80%, Hb Lepore – 20% Hb Lepore 8–15%</td>
<td></td>
</tr>
<tr>
<td>GγAγ HPFH</td>
<td>HbF – 100%</td>
<td>Hb F 15 – 30% Hb A₂ 1.5–2.0%</td>
</tr>
</tbody>
</table>
List T-L media (in order of learning sequence) for the following learning objective

At the end of the session, student should be able to

- Intubate the patient with respiratory failure
- Interpret CBC report
- Motivate patient’s relative for blood donation
Take Home Message

1. Decide on the best audio-visual aid for a given situation which would be
   - Practical
   - Effective
   - Suitable to the audience, topic & venue as well as to one’s budget & technical skills

2. The technology should enhance and not dominate one’s presentation
References


Queries