ENHANCING THE IMPACT AND OUTCOME OF LECTURING

Medical Education enters the 21st century

Academy of Master Educators Seminar Series
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Professor of Medicine
WHY GIVE A LECTURE?

- To give information not available in print to a large audience
- To give information which has been synthesized from many print sources
- They can be efficient

Whitman, Neil. There is no good gene for teaching: a handbook on lecturing medical students; 2nd edition. 1999
They are efficient (and effective) in

- Transferring knowledge and concepts
- Providing core material
- Directing further learning
They may not be as effective as other methods to

- Stimulate thinking
- Inspire interest in a subject
- Teach behavioral skills
- Change attitudes
- Assure that our students learn what we want them to learn
One of the problems of the lecturer is that the student in a lecture is usually passive and sometimes asleep - a condition not conducive to maximal learning.

McKeachie, 1965
ACTIVE LEARNER

ACTIVE TEACHER

PASSIVE TEACHER

PASSIVE LEARNER
ACTIVE LEARNER

PASSIVE LEARNER

PASSIVE TEACHER
content without good process is as illegitimate as good process without content

Whitman, NA. There is No Good Gene for Teaching, 2nd edition; pg 23
LET’S GET PRACTICAL
LEARNING OBJECTIVES

- To utilize the 3 stages of teaching in the approach to a successful lecture
- To successfully use quality lecturing techniques, effective public speaking and effective audiovisual aides when delivering a lecture
To utilize the 3 stages of teaching in the approach to a successful lecture.

To successfully use quality lecturing techniques, effective public speaking and effective audiovisual aides when delivering a lecture.
1. PREPARE
2. TEACH
3. REFLECT
1. PREPARE
2. TEACH
3. REFLECT
ASK 4 QUESTIONS

- DO I KNOW MY AUDIENCE?
- WHAT ARE MY OBJECTIVES?
- WHAT ARE MY RESOURCES?
- AM I COMPETENT?
ASK 4 QUESTIONS

- DO I KNOW MY AUDIENCE?
- WHAT ARE MY OBJECTIVES?
- WHAT ARE MY RESOURCES?
- AM I COMPETENT?
AUDIENCE

- who are my learners?
  - what level(s)?
  - current knowledge/experience?
- how does my lecture fit in with the curriculum?
- what methods have been used to teach students in the past?
- how many will be there?
- DO I KNOW MY AUDIENCE?
- WHAT ARE MY OBJECTIVES?
- WHAT ARE MY RESOURCES?
- AM I COMPETENT?
SPECIFIC
MEASURABLE/OBSERVABLE
ATTAINABLE
RELEVANT
TARGETED TO THE LEARNER
OBJECTIVES

- what do I want them to learn?
- what are THE MOST IMPORTANT messages?
- What knowledge/skills related to your lecture will students be expected to demonstrate on an assessment?
- DO I KNOW MY AUDIENCE?
- WHAT ARE MY OBJECTIVES?
- WHAT ARE MY RESOURCES?
- AM I COMPETENT?
- where is the room and how large is it?
- how is the room arranged?
- what AV equipment is available?
- what version of PowerPoint®?
- do I need to bring equipment?
  - (computer, LCD)
- DO I KNOW MY AUDIENCE?
- WHAT ARE MY OBJECTIVES?
- WHAT ARE MY RESOURCES?
- AM I COMPETENT?
COMPETENCY

- am I competent in doing the session?
  - do I have the **cognitive skills** for the lecture?
- am I competent in the use of the audiovisual materials?
Students learn information better if it is effectively organized.
Plan for well-placed summary slides

Clear conclusions and summaries reinforce and clarify messages
Decide how to illustrate key points

Students learn information better if they recognize it as important
1. PREPARE
2. TEACH
3. REFLECT
- Bugs, Mice, Snakes, and Bats
- Heights
- Water
- Public Transportation
- Storms
- Closed Spaces
- Tunnels and Bridges
- Crowds
- Speaking in Public
GENERAL INITIAL TIPS:

- prepare yourself
- be on time
- introduce yourself
- introduce your topic
- project positive anticipation
Tell them what you're going to tell them.

Do it creatively.

Tell them what you told them.

Do it once.

The outline.

The talk.

The summary.

Tell them what you're going to tell them.

Tell them what you told them.

Tell them what you're going to tell them.
<table>
<thead>
<tr>
<th>TYPE OF PRESENTATION</th>
<th>RECALL AFTER 3 HRS</th>
<th>RECALL AFTER 3 DAYS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verbal (one way) lecture</td>
<td>25%</td>
<td>10-20%</td>
</tr>
<tr>
<td>Written (reading)</td>
<td>72%</td>
<td>10%</td>
</tr>
<tr>
<td>Visual and verbal (illustrated lecture)</td>
<td>80%</td>
<td>65%</td>
</tr>
<tr>
<td>Participatory</td>
<td>90%</td>
<td>70%</td>
</tr>
</tbody>
</table>

Dale E. Cone of experience. Educational Media, 1969
INTRODUCTION

- Grab their attention
- Set the mood
- Demonstrate relevance
INTRODUCTION

- **Grab their attention**
- **Set the mood**
- **Demonstrate relevance**
ATTAINING ATTENTION

- the anecdote
- the interesting case, dilemma
- emphasizing the relevance of the topic
- surveying the audience
- asking questions
- presenting a situation that requires active participation
ANECDOTES

- must illustrate a principle you are trying to teach
- should be enjoyable/interesting
- student should be able to relate to it
- it’s nice to be humorous/don’t push it
ATTAINING ATTENTION

- the anecdote
- the interesting case, dilemma
- emphasizing the relevance of the topic
- surveying the audience
- asking questions
- presenting a situation that requires active participation
“How many people in the audience have asthma or know someone with asthma?”

Begin with a picture showing John Kennedy in a lecture on Addison’s Disease
- Ronald Regan and Alzheimer’s disease
PASSIVE ➔ ACTIVE
MAINTAINING ATTENTION
Attention span wanes after about 15-20 minutes.

One study of student attentiveness suggests students are paying attention 40% of the time.
MAINTAINING ATTENTION

- watch the audience/maintain eye contact
- be creative but not cutesy
- 15-20 minute attention span
- vary your delivery. Move your body and your voice
- maintain your enthusiasm
- identify transitions and make them fluid
Plan for some active participation
- Ask questions
- Handouts with tasks
- Outlined handouts with key words missing for listeners to fill in as they listen to the talk
- Gimmicks
  - Ask the audience: audience response clickers
  - Phone a friend
- Post-test
- Demonstration
- Summarize regularly/bring ‘em back
THE CONTENT

- Tell the story
- Limit content so that all major points are clear and generalizations and principles are emphasized
- Use “signposts”
- Summarize subsections
ENDING THE LECTURE

- Finish on time (bring a watch)
- Announce it
- Don’t race to squeeze in more info
- Summarize (have summary slide(s))
- The last things you say are the ones the students are most likely to remember
OTHER TIPS

- Be conversational
- Watch for monotone speak
- Avoid distracting mannerisms: “ah”, “uh”
  - consider taping/videoing lecture
- **Routinize but don’t memorize**
- Use concrete examples to illustrate abstract principles
- Pause intermittently
- Check for understanding
DO A DRY RUN
AUDIOVISUAL AIDES
AUDIOVISUAL AIDS

- They work
- People generally remember

- 20% of what they hear
- 30% of what they see
- 50% of what they hear and see
Make sure you know
  - what is there
  - if it’s compatible with your equipment
  - you know how to use it
PowerPoint or other slides
- Bad slide
- Bad slide
Bad slide
another bad slide
4 important principles

- Slides should be simple
- Slides should be legible
- Progressive disclosure
- See/hear compatibility
4 important principles

- Slides should be simple
- Slides should be legible
- Progressive disclosure
- See/hear compatibility
watch your PowerPoint® animation
4 important principles

- Slides should be simple
- Slides should be legible
- Progressive disclosure
- See/hear compatibility
- 35 words (5-7 lines/slide; 5-7 words/line)
- font size (this is 12, this is 32; this is 48)
- avoid non standard abbreviations
4 important principles

- Slides should be simple
- Slides should be legible
- **Progressive disclosure**
- See/hear compatibility
PROGRESSIVE DISCLOSURE OF

- WORDS
- PICTURES/GRAPHS
Hypothalamus (paraventricular nuclei) 

TRH (+) 

Pituitary (thyrotroph) 

TSH (+) 

Thyroid (follicle) 

$[I^-]$ 

$T_3, T_4$ (+) 

Certain tissues 

$T_4 \rightarrow T_3$ 

Target tissue (nuclear receptor) 

Liver conjugation 

Excretion
Hypothalamus
Paraventricular nucleus
TRH
pituitary
TSH
Thyroid follicle
T4 and T3
Target tissue
Liver conjugation
4 important principles

- Slides should be simple
- Slides should be legible
- Progressive disclosure
- See/hear compatibility
WHAT YOU SEE AND WHAT YOU HEAR SHOULD BE COMPATIBLE

- the blank slide
- “B” or “W”
- PowerPoint with slide ins
HANDOUTS

- Handouts are a good idea
- Should have summary of major points
- Variety of styles
  - copies of slides with place to write notes
  - overall outline with space to write note
- Bibliography (brief) if applicable
- Summary points
- The art of knowing when to hand them out
YOU THINK YOU’RE DONE
REFLECTION

- Self evaluation
- Evaluation by your learners
- Outside evaluation by colleague or educational service (videotape)
COMMON PROBLEMS

- covering too much material
- speaking too quickly (anxiety)
- speaking too quickly (compensation for too much material)
- reading from the text
- speeding up at the end
- introducing a key point in the last minute
- encouraging passivity
- going over your time
- something goes wrong with the AV equipment
always have a printed copy of all your slides in case AV projector/LCD fails
How can we improve

- Patricia Hayes, Dept of Speech Communication, Indiana U

- Acknowledging/dealing with speech anxiety
- Anticipating the teaching environment
- Planning carefully for each lecture
- Combining lecturing with other teaching techniques
- Use visual aides
- Deliver the lecture extemporaneously
- Demonstrate respect for student reactions
- Seek feedback on teaching
1. Lectures are an efficient way to transmit information or synthesize information not available in other sources. They work best for the cognitive domain.

2. Lectures full or content but without ways to attain and maintain attention or to enhance active learning are less effective.

4. Do something every 15-20 minutes to bring back the audience to you. Plan for some active participation if possible.
6. The 4 important principles of good slides are simplicity, legibility, progressive disclosure and see/hear compatibility.

7. Self, student and outside evaluations are priceless.
Challenge

- Attend any lecture in your department over the next 3 weeks. This time, don’t concentrate on the CONTENT of the lecture but actually the lecturing process itself. Critique the lecture, thinking about what was done well or what you could have done to make the lecture better.

- Ask a colleague to sit through one of your lectures. Ask him/her to give you honest feedback.

- Videotape your next lecture and watch it.
“When an artist won first award in an art fair and the judge presented her with the prize, the artist said, “You know, I didn’t submit my best work!” The surprised judge asked, “Well, why not?” She replied, “Because I haven’t done it yet.”

…None of us have done our best teaching…yet.

Whitman, NA. There is No Gene for Good Teaching. A Handbook for Lecturing for Medical Teachers, 2nd edition