Lecture Basics

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You be the reviewer...

• What makes a good lecture?
• What makes a weak lecture?
What do others say
Medical Students

Effective
- Enthusiastic
- Models, Demos
- Interactive

Ineffective
- Excess research commentary
- Reading from slides

Nichols et al, IAMSE, 2006
What do others say
Graduate Students

Effective

• Pitched to general audience
• Linked to big picture
• Conducive to questions; time for questions
• Within appropriate time frame

Ineffective

• No general introduction or link to big picture
• Too much jargon, usually undefined
• Expert level only

Courneya, IAMSE, 2006
Fundamentals of the Lecture

• When are Lectures Useful?
• Types of Lecture Formats
• Planning the Lecture
• How to make a point... and maintain attention
• Beginnings and Endings
When are lectures useful?
When are lectures useful?

- The purpose is to teach information
- The presenter is effective, comfortable and the “expert”
- The learners are able to assimilate from lectures
- Group size is moderate to large
- Facilities are adequate
When are lectures useful?

• The purpose is to teach information
  - Not readily available
  - Diverse, scattered
  - Current
  - Limited time available
  - Explain difficult concepts or analysis of issues
  - Demonstrate relationships between information
Fundamentals of the Lecture

- When are Lectures Useful?
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Lecture Types

• Hierarchic
• Problem - centered
• Chaining
• Comparison
  - Paired classifications
• Logical dichotomy
• Network
Hierarchical

- Level 1 point A
  - Level 2 point a
  - Level 2 point b
- Level 2 point B
  - Level 2 point a
  - Level 2 point b
  - Level 3...
Common Organizing Principles

- Cause → to effect
- Historical time sequence
- Phenomenon or examples ↔ theory
- Pro versus con or compare/contrast
- Familiar → unfamiliar
- Concept → application
Problem Centered

FIGURE 5.3. DIAGRAM TO ILLUSTRATE THE PROBLEM-CENTERED LECTURE FORM.
## Compare/Contrast

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Upper limb</th>
<th>Lower limb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dog</td>
<td>ARF</td>
<td>Cat</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CRF</td>
</tr>
</tbody>
</table>

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| | | |
Chaining

FIGURE 5.4. DIAGRAM TO ILLUSTRATE THE ORGANIZATION OF A SIX-POINT CHAINING LECTURE WITH A SUMMARY AND TWO PERIODS OF TAKING STOCK.
Networks

Core Concept
Fundamentals of the Lecture

- When are Lectures Useful?
- Types of Lecture Formats
  - Planning the Lecture
- How to make a point... and maintain attention
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Planning Lecture Organization

- What are the goals of the lecture, course, program, institution?
- What is the logical structure of the subject matter?
- What is the cognitive structure of students’ minds (currently)?
Planning

• What are the most difficult concepts?
• What are the most diverse or scattered concepts?
• What relationships within the material are more subtle than others?
• What framework is needed for future learning?
Planning

• What do I really want students to remember from this lecture...next week.. next year?

• What in my lecture could be better learned by another method?
Example

Source: Rethinking Teaching in Higher Education
Planning

• What are the 4 - 5 major points?
• How do they fit together?
• How do they link to other material?
Planning - Logistics

• What room will it be in?
• What will I need? Is the technology ready?
• Will I need to buy/digitize/request/setup anything?
• Can I get the reading, notes, examples, etc to the students ahead of time?
• What notes do I need?
Questions?

• Lecture as teaching method
• Lecture types
• Planning
Lecture Structure

- Introduction
- Body
- Periodic Summaries
- Conclusion

Make it clear!
Introduction

• Capture attention
• Point out a gap in students’ knowledge
• Raise a question
• Offer a challenge
• Pre-questions
• Example, case, application
The “Anticipatory Set” or The Dead Body Approach

- “Anticipatory Set” credited to Madeline Hunter
Anticipatory Set
Example

Photo courtesy of Dr. Tammy Anderson
Introduction

• Capture attention
• Point out a gap in students’ knowledge
• Raise a question
• Offer a challenge
• Prequestions
• Example, case, application
Who Cares - Big Picture?

- Link backward and forward
  - Review from last lecture
  - How does it fit within section, course, curriculum, etc
  - How does it link to concurrent courses
Body

• Highlight a few major ideas or sequences/chunks
• Appropriate use of audiovisual support
• Keep highlighting the overall structure
• Use examples where possible
Some “guidelines” about length

• What you say should be no more than about 5 pages single-spaced text (Joanne Chesley, slideshare.net)

• 1 minute per slide

• 4 to 5 major points or segments

And Remember.....
• LESS IS MORE!!!
Teach Less Better

• Write out everything you want to say to the students and cut out half of it! (Dennis and Exley, 2009)
Fundamentals of the Lecture

• When are Lectures Useful?
• Types of Lecture Formats
• Planning the Lecture
• How to make a point... and maintain attention
• Beginnings and Endings
Making a point effectively

• Rule
• E.g.....
• Rule
Making a point effectively

- Concisely state the rule
  - Simple language using 7-8 words
  - One key word
  - Less than 5 seconds (Remember trace decay is quick!!)
Example

• PRErenal Azotemia is caused by hypoperfusion of the kidneys, so that even if the kidneys are working fine, GFR drops and they don’t have a chance to filter the urea and creatinine load.
  - For example, a vomiting dog might get quite dehydrated...

• So, like in this example, PRErenal Azotemia is most often caused by dehydration and decreased renal perfusion.
Making a point effectively... what's the e.g....?

- Display
  - Word, statement on screen
- Reexpress
  - Say it another way
- Elaborate
  - Illustrate
  - Explain
  - Detail
  - Analogies
  - Relate
  - Example
Making a point effectively... rule!

• State simply
• Give example
• Restate (Use the same statement you started with)

And...
Making a point effectively... rule!

• Rule or Concept
  - State simply
  - Give example
  - Recapitulate
  - Restate (Use the same statement you started with)

And...

Pause!
What happens?

- Hearing
- Linking and Storing Concepts
- Linking words/images to Concepts
- Auditory Analysis
- Speaking
- Visual Analysis
- Seeing
- Writing
HAS BEEN STUDYING HIS SUBJECT FOR 30 YEARS

ASSUMES YOU WILL UNDERSTAND IT AFTER 3 CLASSES

Found at http://greatbritishmag.co.uk/lifestyle/the-rise-of-university-memes
Making a More Difficult Point

- E.g.
- Rule
- Rule
- E.g
Making a More Difficult Point

- **E.g.**
  - Example(s)
  - Reasoned interpretations
  - Observation*

- **Rule**
  - Concise statement/display

- **Rule**
  - Rexpression

- **E.g.**
  - New example
  - Recapitulate, restate
Example

• How can protein get in the urine...
  - Proteinuria can come from preglomerular, glomerular and postglomerular sources and we always rule out postglomerular causes before pursuing primary glomerular disease.
  - In other words, if a dog with persistent proteinuria doesn’t have evidence of urinary tract hemorrhage or inflammation, then we start worrying about glomerular leakage of proteins from a few potential pathologies.

• For example, this is some data from a dog with heartworm disease...
Maintaining Attention
FOCUS

Body

People

Environment/World

Time

Pollio et al, UT
Students’ Heart Rate Data
- Uninterrupted Lecture

Heart rate (bpm)

Time in Minutes
IN A TRADITIONAL CLASSROOM...

CLASSROOM

150 words per minute

50%

Instructor generally says about 150 words per minute

Students usually hear only about half (50 percent)

LECTURE

150 words per minute

40%

In a typical lecture class, students are attentive just 40 percent of the time

FIRST 10 MINS OF CLASS

70% RETENTION

LAST 10 MINS OF CLASS

20% RETENTION

One study concluded that students retain about 70 percent of what they hear in the first ten minutes of class—and just 20 percent during the last ten minutes. Adding visual aids increased retention by 14-38 percent.

From Falcon Products as viewed at
Lecture Attention

FIGURE 3.4. LEVEL OF PERFORMANCE DURING A LECTURE.

Source: Adapted from Lloyd (1968).
Shall I tap dance?
Gaining attention

• Variation
  - Intensity
  - Pace
  - Expression
  - Surprises
Gaining attention

- Visual cues
  - Gestures
  - Movement
  - Eye contact/facial expression
- Demonstrations, cases, activities, questions
- Stories
- Use a lot of examples
- PAUSES!
Isn’t this just entertainment?

• The brain tends to remember surprises!

• We are wired to react and problem solve in novel and unexpected situations to survive
Videos and Drawings

- http://www.youtube.com/watch?v=KWHasxDRf54
FIGURE 3.7. HYPOTHESIZED PATTERN OF PERFORMANCE DURING A LECTURE WITH A BREAK.

- Level of Performance
- Period of Teaching (Minutes)
- Learning lost through rest period
- Learning gained through rest period
- Rest
Periodic Summaries

• Offers a chance to catch up
• Offers a chance to check perceptions/misperceptions
• Makes transitions clearer
For example...

- Lecture as a teaching method
- Types of Lectures
- Lecture planning
- Lecture structure
  - Introduction
  - Attention spans
  - Periodic summaries
More on Transitions

- Explain the “jump”
- Show a “map”
- Ask for Questions, Pose a clicker question
- Relevant Photo or Visual Cue
- Follow the organization of the notes
Common Micturition Disorders

- Urine Retention
  - Neurogenic Disorders (Both)
  - Fxn Bladder atony
  - Fxn Urethral obstruction

- Urinary Incontinence
  - Urethral Incompetence
  - Bladder overactivity/other

- Urinary Obstruction

- Fxn Urethral obstruction
Repetition is Good... but
Don’t overdo it!

“And then I said...”
Concluding the lecture

- Recapitulate major points
- Encourage students to formulate questions
- Review organization of the lecture
- Ask a student(s) to summarize the lecture
- Propose unanswered questions for next time or for independent work
Go back to your “hook”

• http://www.youtube.com/watch?v=IiYUzYozsAQ
Getting feedback

• Watch the students
• Ask questions
• Use classroom assessments
Getting feedback

• Watch the students
  - Not necessarily the top students

• Ask questions
  - Not necessarily to the ones who answer every time
Getting feedback

• Audience Evaluations
• Peer evaluation
• Videotape Review
• Voice or Speech Training
• Focus on a few goals
Fundamentals of the Lecture Summary

• Use lecture format when appropriate
• Plan what to cover and the best structure/format
• Use an Introduction, Body, Periodic Summaries, Conclusion
• Convey the structure to be used
• Keep refreshing the structure as you introduce new points/make links or make transitions
• Use lots of examples and pauses!
References

- Exley K and Dennick R. Giving a Lecture, 2\textsuperscript{nd} ed. 2009 (elibrary)
Does it work?

- Comparison of short lectures given to Nurse Practitioners on anticholinesterase inhibitors

Gwee et al, IAMSE, 2006
Does it work?

Lecture X
- Traditional factual delivery

Lecture Y
- Statement of objectives
- Dramatic episode
- Review
- Interactive Questions
- Humor
- Sequenced, organized
- Focused on application
Does it work?
Final Ratings

Lecture X
• Traditional factual delivery
1.7 - 3.1

Lecture Y
• Statement of objectives
• Dramatic episode
• Review
• Interactive Questions
• Humor
• Sequenced, organized
• Focused on application
3.9 - 4.5
Good Luck!