

Preparing and Presenting a Lecture

Best Practices for Teaching and Learning



Questions

- What are traditional lectures **good** for?
- What are traditional lectures **bad** for?

Pros and Cons of Traditional Lecture

Good/Pros

- Providing up-to-date information.
- Summarizing large amounts of related information.
- Adapted to different audiences.
- Can be inspiring.

Bad/Cons

- Less effective at developing thinking skills.
- Less effective in promoting independent thought.
- Too long → tend loose student's attention.

Goal

To illustrate how the **structure** and **delivery** of your lecture can help you support learning.

Learning Objectives

- **Explain** how the structure of a lecture can influence learning.
- **Explain** effective means of communication during lecture.
- **Critique** and **evaluate** lectures.

Outline

Part 1: Preparing

- Goals
- Structure
- Formats

Part 2: Delivering

- Tips from acting
- Blackboard and PowerPoint slides

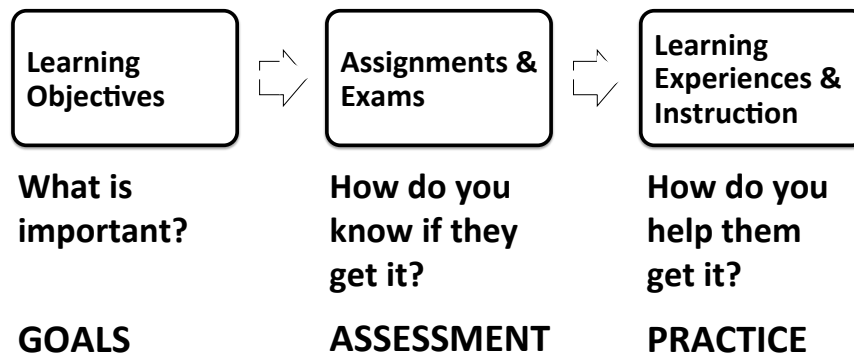
What makes for an effective lecturer?

Teacher-behavior variables that influence learning

1. Clarity
2. Variability of instruction methods
3. Enthusiasm
4. Task-oriented instruction
5. Student opportunities to ask questions

Rosenshine, B. & Furst, N. (1973)

The Backward Design Process

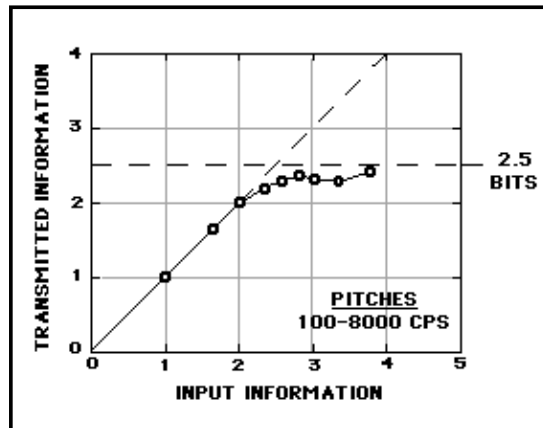


Modified from Wiggins & McTighe, Understanding by Design, p. 18

Goals

- Choose small number of concepts (< 5)
- Tell students about the goals
- Structure class so that goals are transparent

General Rule: 7 ± 2 Items



Miller, G. (1956)

Teacher-behavior variables that influence learning

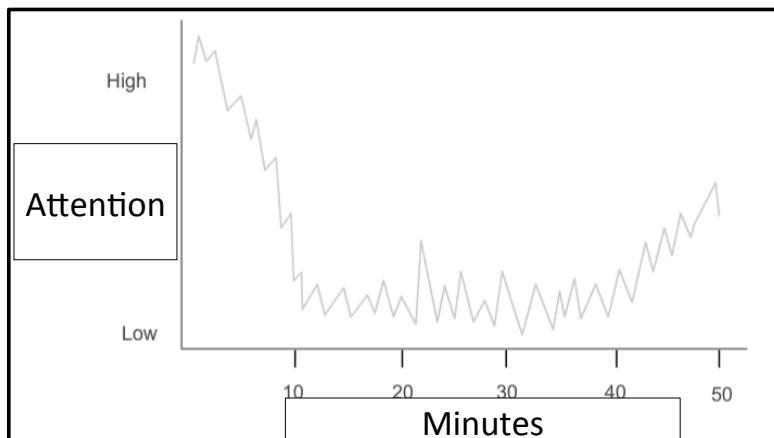
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Structure

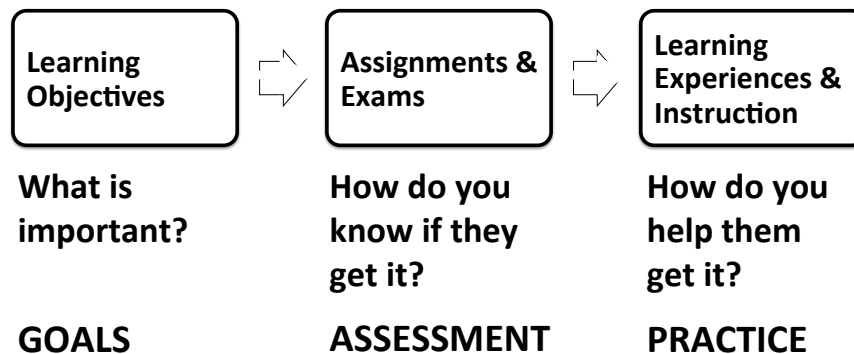
1. **Opening:** attention-getter
2. **Thesis:** goals, learning objectives & outlines
3. **Connection:** background & relation to prior lectures
4. **Body:** elaborate each of the goals → use examples
5. **Summary:** reinstate key points

Students' attention is highest at the beginning & end of class



Hartley, J., & Davies, I. (1978)

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Formats

- Expository
- Thesis
- Problem solving/demonstration
- Case study

Think-Share Activity

For a **concept** you would like to teach:

1. determine the goal and learning objectives for that concept.
2. think about the material you will cover to support teaching of that concept.
3. choose a lecture format that will be appropriate and justify your decision.

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What can we learn from actors ?

- Intonation
- Connecting and engagement
- Managing anxiety

Intonation

- Emphasize NOUNS and VERBS
- Pace your speech

Non-verbal Communication

Of all the information received:

- **25%** is from *verbal* reception
- **75%** is from *non-verbal* reception

Connect and Engage

- Make eye contact: follow **W** across the room
- Engage through movement and gesturing
- Reduce noise

Managing Anxiety

**Let's try some
exercises!!**

Displaying Information

- Blackboard: **accuracy and organization**
- PowerPoint slides: **less is more**

Blackboard

- Write clearly
- Label everything
- Space content through different boards

PowerPoint Slides

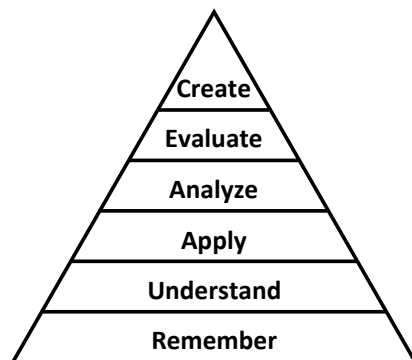
- Less is more → remember **7 ± 2** rule
- Visual is better than text
- Consider: colors, fonts, and animation

Main Points

- A powerpoint presentation isn't meant to put down your thoughts verbatim in text that your audience will feel compelled to read. In particular, don't use complete sentences as you would present them if you were writing. Worst of all, don't read it all aloud! (Assume your audience is reading along at a 4th grade level.) Also, don't use more than one sentence in a bullet. You can avoid punctuation all together, except for effect!
- Over-presentation of text will bore your audience to stupefaction and they will stop listening to you. You would like to focus attention on you personally and what you are saying, not your slide presentation.
- Spel chek, speil cheek, spell check!!!
- Only present enough text to function as a outline or summary and to prompt you to remember the next point.

Example developed by Anique Olivier-Mason

Bloom's Taxonomy



Bloom's taxonomy is composed of 6 different levels which vary in degrees of cognitive abilities:

1. Remember = ability to recall
2. Understand = ability to explain
3. Apply = ability to use information in a different way
4. Analyze = ability to break down & explore relationships
5. Evaluate = ability to judge or justify
6. Create = ability to design & generate new ideas

Less is More

- A common problem: an overly busy slide
- Keep to one point per slide
- Just because the authors of your journal club paper jammed 6 figures into one, doesn't mean you should too
- (They probably had a limit on the number of figures for the paper)

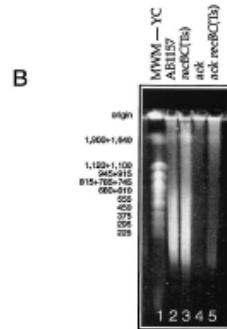
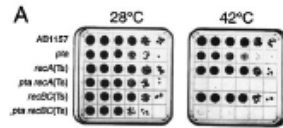
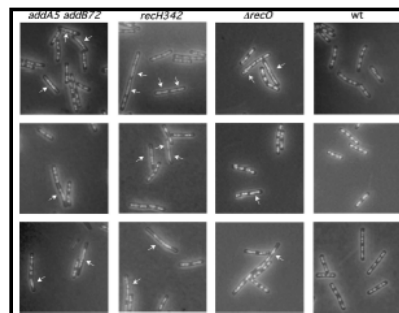
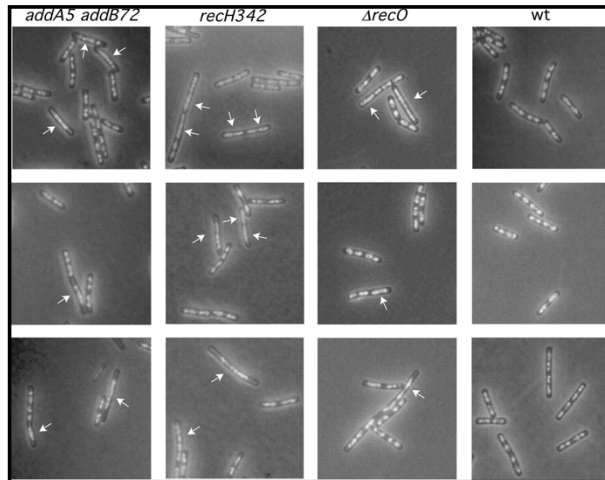


Figure legends are unnecessary and unreadable-OMIT!

FIG. 3. *Spontaneous recB(Ts) mutants are inviable and fragment their chromosomes. A, *recA(Ts)* and *recB(Ts)* are inviable at 42°C. Serial 10-fold dilutions of growing cultures were spotted onto plates which were incubated at the indicated temperatures for 76 to 86 h. The strains are as follows: for *recA*, J3; for *recA(Ts)*, J396; for *recB*, J3; for *recB(Ts)*, SK129; for *recB(Ts)* p81A, E1. B, ³²P-labeled-*ackA* gel of chromosomal DNA, isolated from AB1157, *recA(Ts)*, *ackA*, and *ackA(recB(Ts))*. The cells were grown at 40°C to an OD₆₀₀ of 0.3. MPMW-YC, yeast chromosomes serving as molecular weight markers (their length in kilobase pairs is indicated on the left). The strains are as follows: for *recA(Ts)*, SK129; for *ackA*, T594; for *ackA(recB(Ts))*, T596.*



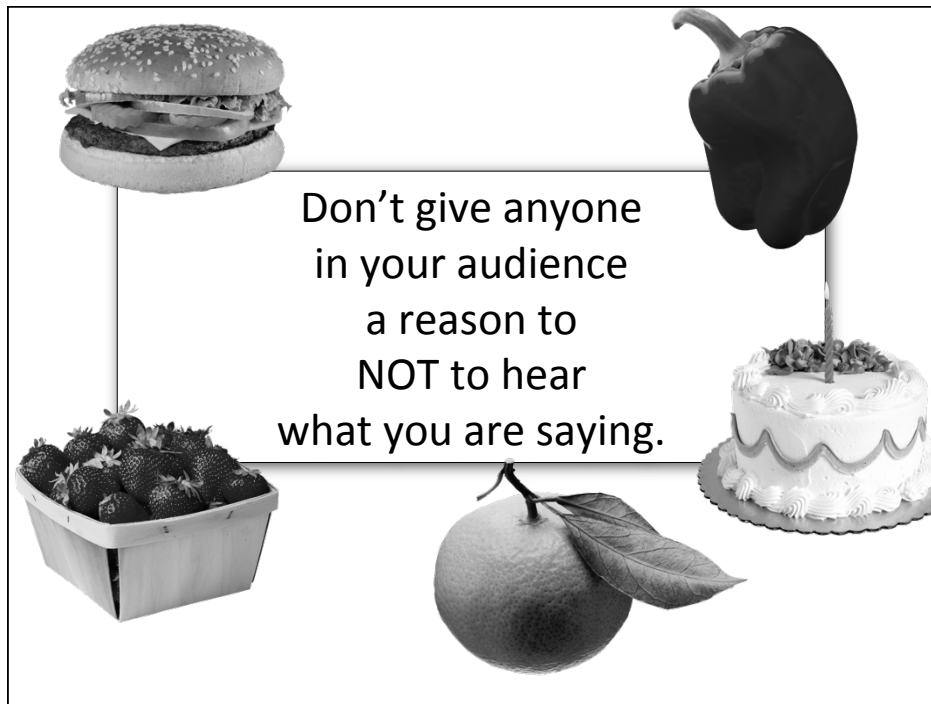
Example developed by Anique Olivier-Mason



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Color Choices

- Optimize contrast → dark and dark = not good
- 15% of the population can't tell green from red
- Bright colors are easy to read on dark backgrounds, but not on light ones



Think-Pair-Share Activity

Think and answer the following questions about Professor Lewin's lecture that you previously watched:

1. What makes the lecture work so well?
2. What would you change about the lecture?

Summary

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Part 2: Delivering

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How can you incorporate what we have learned today to improve aspects of lecture **preparation** and **delivery** in your own teaching?