

A Discussion of Professional Talks and Presentations

Preparing Future Physicists / Scientists



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Outline / Framing

- **Part I: (today)**
 - A Presentation on Presentations
 - A word about abstracts
 - Discussion / questions
- **Part II: (next week)**
 - Practice presentations
 - Feedback

Some Items to Consider

1) Why are you giving the talk?

2) Where are you giving the talk?

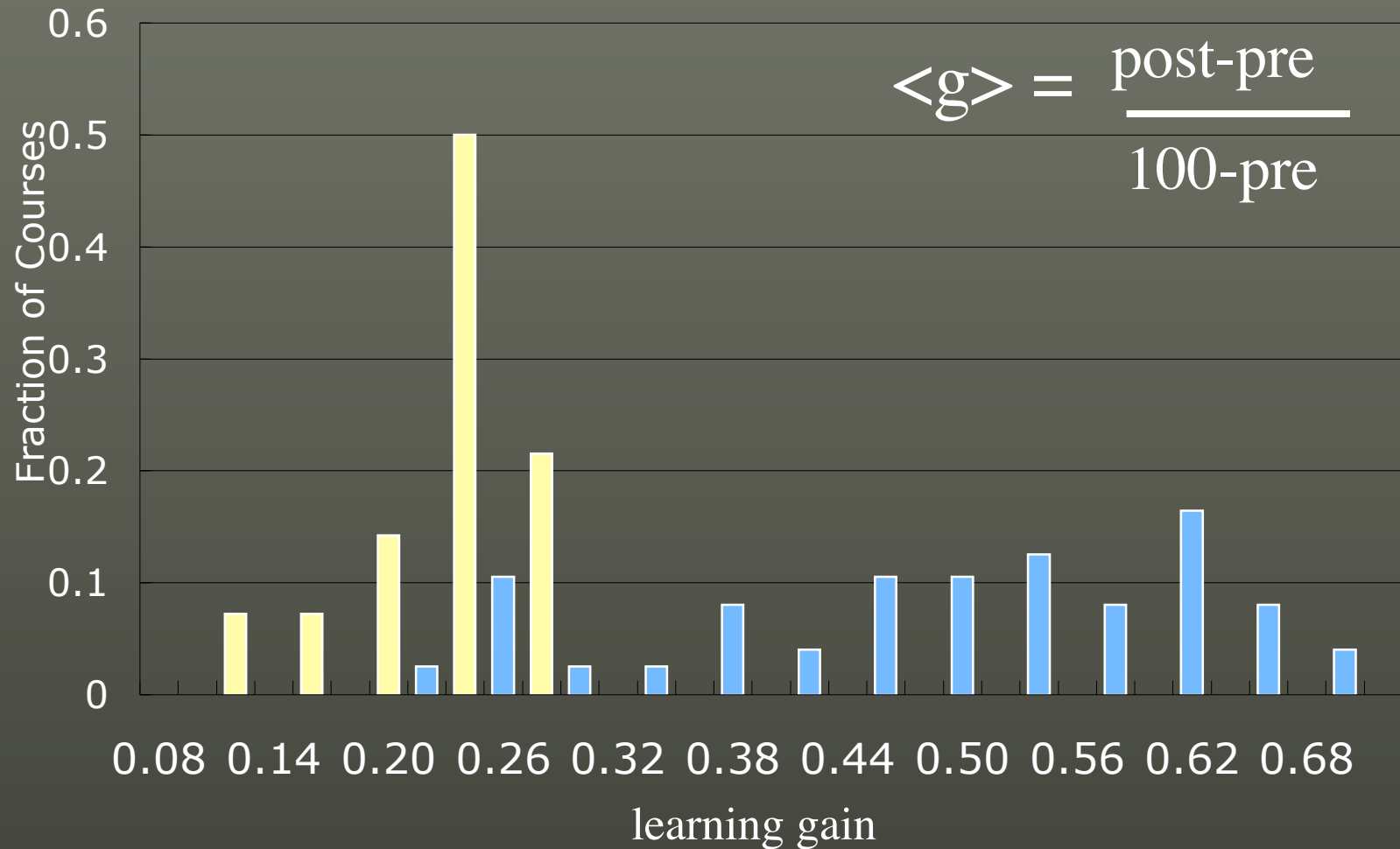
3. Who are the slides for?

Imagine a widely used and expensive prescription drug that promised to make us beautiful but didn't. Instead the drug had frequent, serious side effects: It induced stupidity, turned everyone into bores, wasted time, and degraded the quality and credibility of communication. These side effects would rightly lead to a worldwide product recall.

- Tufte, Wired, 11.09

Engagement Improves Learning

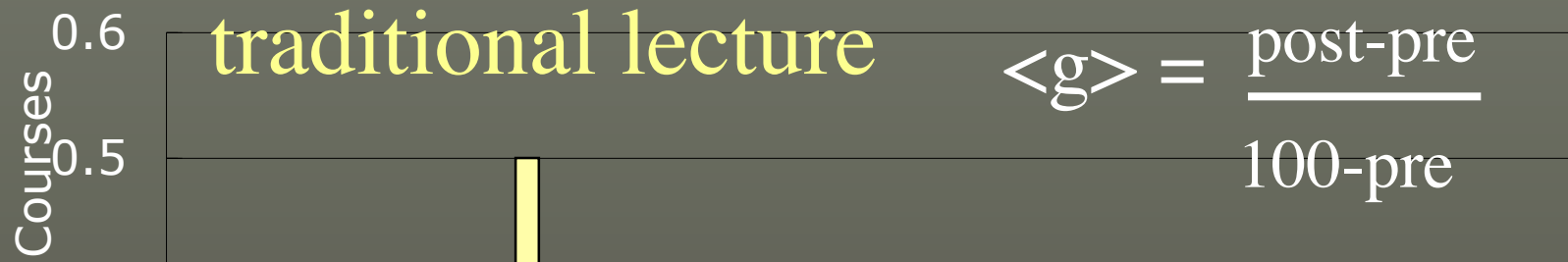
traditional lecture interactive engagement



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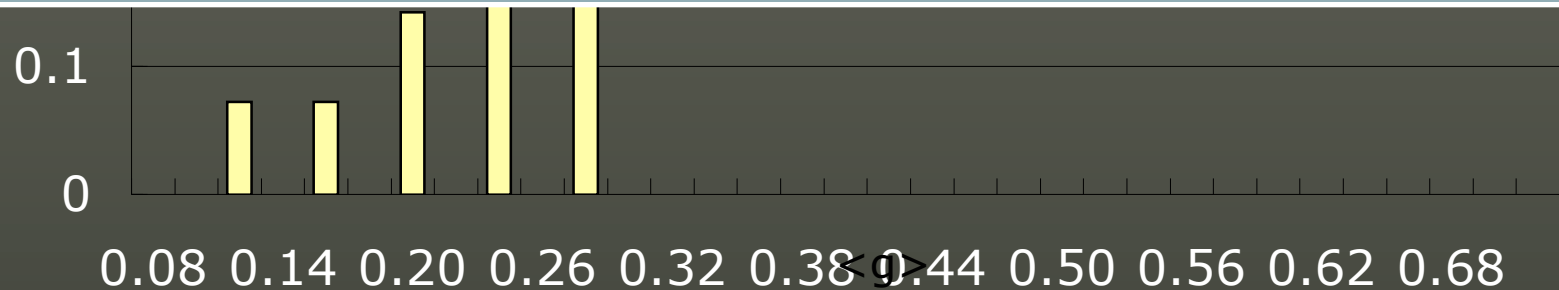
Pollock & Finkelstein, Physical Review, 4, 010101 (2008).

We are not teaching students



Take home message:

Students learn less than 25% of the most basic concepts (that they don't already know).



Tools allow thought

A Story of Galileo: 6 theorems of a genius

Theorem: If a moving particle, carried
uniformly, covers two
distances, the times required are
to each other as the distances.
(followed by 2 page geometric proof).

algebra

$$\begin{array}{l} \frac{d_1}{d_2} = \frac{r * t_1}{r * t_2} \\ \frac{d_1}{d_2} = \frac{t_1}{t_2} \end{array} \quad \longrightarrow \quad \begin{array}{l} \frac{d_1}{d_2} \propto \frac{t_1}{t_2} \end{array}$$

Do NOT do this...

THIS is VERY DISTRACTING

This is even MORE DISTRACTING

4. Respect and Engage Your Audience

5. Keep it Simple

actively engaging is important

what people know affects what
they learn

contexts shape what students
learn (content and beliefs)

A cognitive task...

Try to memorize the following number
(in order):

3 7 3 2 3 7 1 9 4 5 5 3 0 0 1 7

What was it?

how many numbers did you get?

3 7 3 2 3 7 1 9 4 5 5 3 0 0 1 7

G. Miller - magic number: 7 ± 2

7 +/- 2 is that it?

Now try the following:

1 7 76 1 8 6 5 1 9 4 5 2 0 1 1

How'd you do?

1 7 76 1 8 6 5 1 9 4 5 2 0 1 1

Did anything change?

what's the difference?

6. Prepare for the Unexpected

A brief word about Abstracts

- Be concrete
 - At best make it like a patent
 - Hit those 3 points (or fewer)
 - Do NOT include details
- Sell your ideas
 - Why to they matter?
 - Who do you want there?

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Thank you

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