

Using Clickers with Peer Instruction

- This is NOT a training on how to use clickers in general, about best practices for using clickers with Peer Instruction
- Use TodaysMeet for interaction - todaysmeet.com/peerinstruction
- **Intermediate or Advanced Users**- help out by responding to participant questions, sharing resources, & sharing your own ideas in the TodaysMeet window
- All slides will be available at bit.ly/turningtech



Turning Technologies Webinar
October 7, 2013

Using Clickers with Peer Instruction

1. Show you how to use TodaysMeet for interaction - todaysmeet.com/peerinstruction
2. Introduce the problem and 1 big idea about clicker implementation
3. Review my goals for today
4. Provide a basic introduction to the Peer Instruction method
5. Discuss 3 best practices for using clickers with Peer Instruction
6. Review an implementation guide for using clickers with Peer Instruction
7. Open up for questions



http://todaysmeet/peerinstruction



<http://todaysmeet.com/peerinstruction>



TodaysMeet

Listen

Welcome!

10 minutes ago by Julie Schell

Talk

What's your name?

Join

By submitting this form you agree to the [Privacy Policy](#) and [Terms](#).



Today'sMeet

Listen

Welcome everyone!

less than a minute ago by Julie Schell

Welcome!

11 minutes ago by Julie Schell

Talk

Message:

132

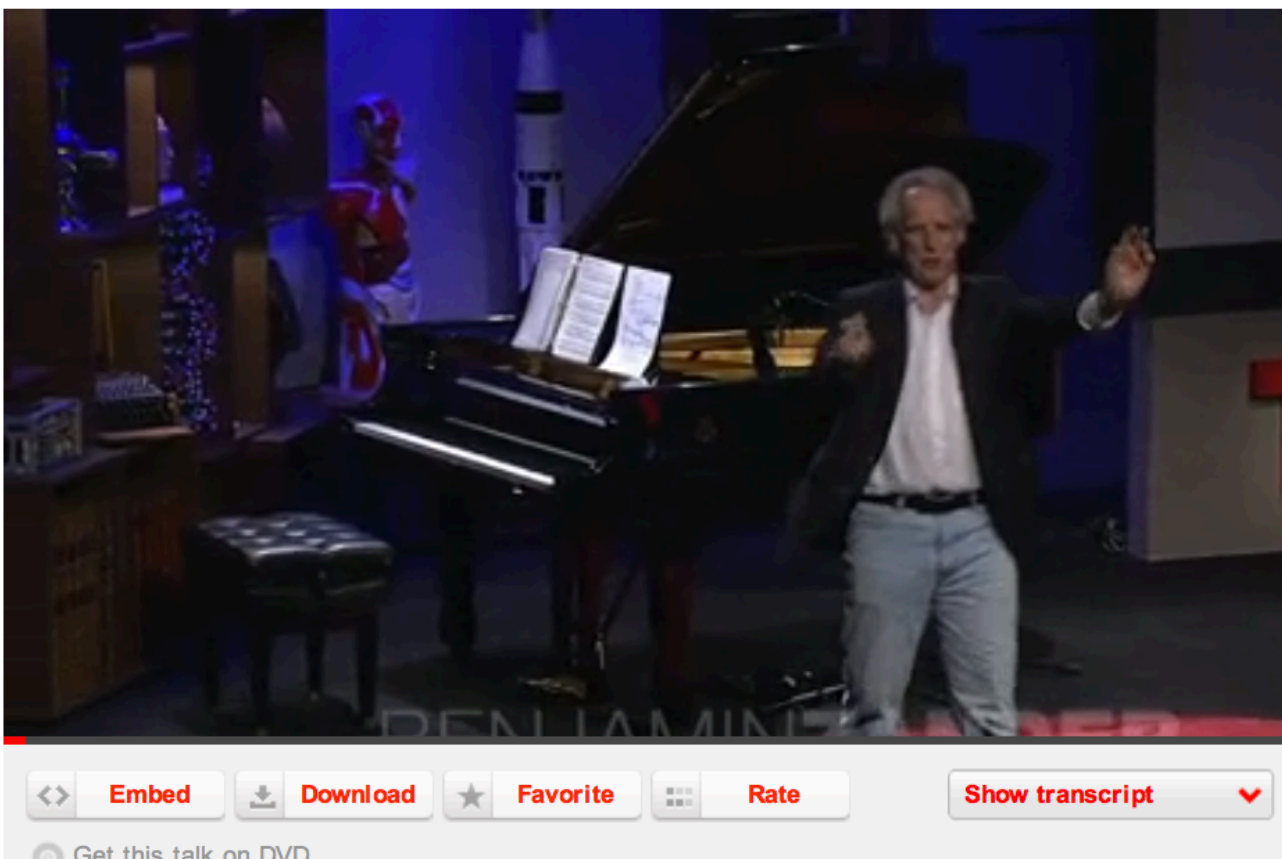
Welcome!

Say



Benjamin Zander: The transformative power of classical music


FILMED FEB 2008 • POSTED JUN 2008 • TED2008



Salesman 1: “Situation hopeless they don’t wear shoes.”

VS

Salesman 2: “Glorious opportunity, they don’t have shoes yet!”

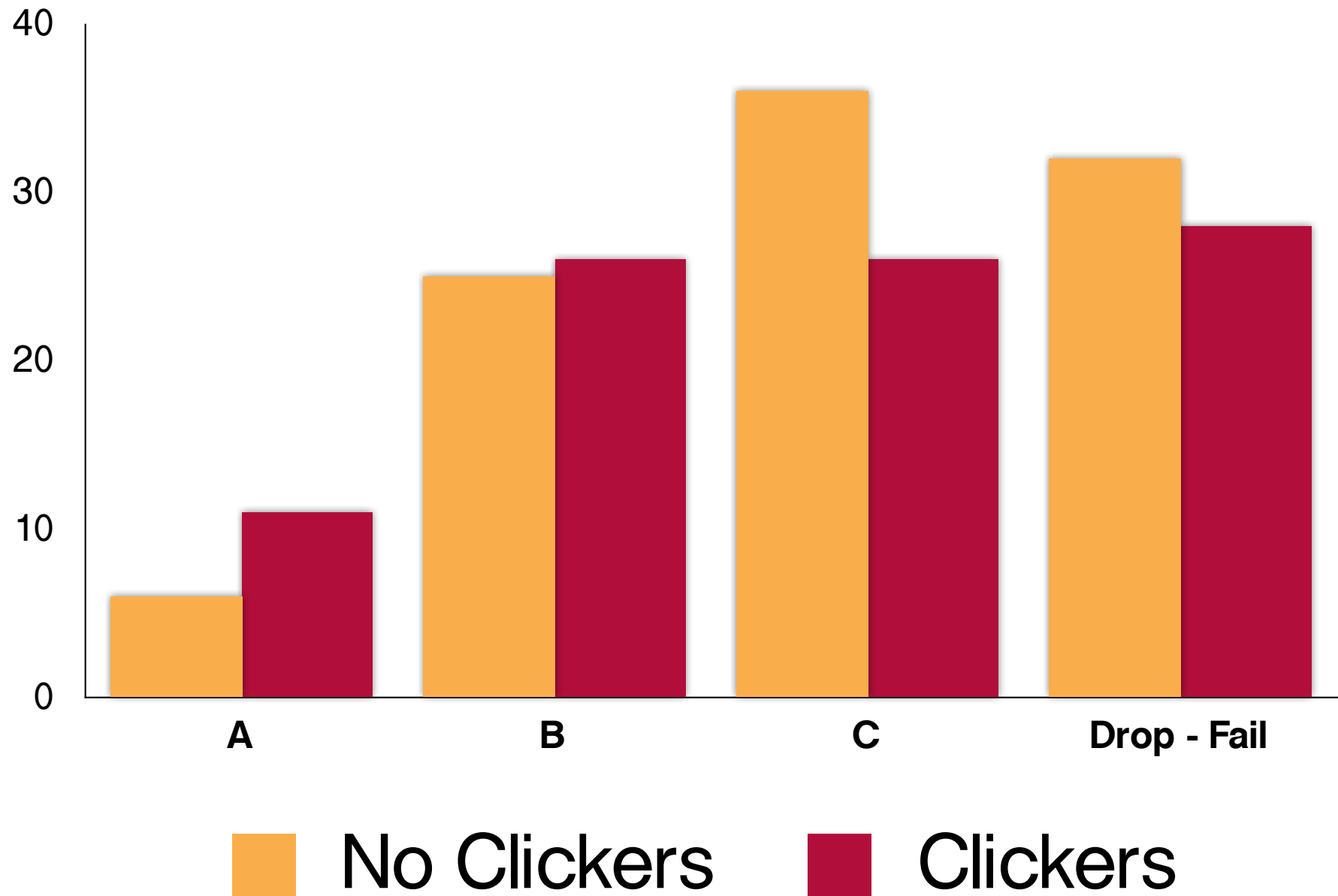


follow me on
twitter
@julieschell



**“I tried using clickers
& it didn't work!”**

Percentage of Students by Earned Grade



Resolving conflicting messages about clickers

► **Teacher:** I tried using clickers and they just didn't work!

VS

► **Julie:** Observations of clickers “working” in a 1,000 student classroom, data, etc.

Clickers implementated in various ways in today's classrooms

► To take attendance



Sean Rosensweig @SeanRosenweig

2 Oct

If you're only gonna take attendance at the end of **class** every day, I'm only going to show up at the end of **class** every day **#clickers**

Collapse

← Reply ↻ Retweet ★ Favorite ... More

► To cause general mayhem (cheat)



Ashley Bronstein @ashleybronstein

7 Dec 11

Gonna be a pro clicker by the end of this class **#oneclass**
#threeiclickers pic.twitter.com/HoN632pP

🖼 View photo

← Reply ↻ Retweet ★ Favorite ... More

Clickers are used in various ways in today's classrooms

► To get points (vs to learn)



Sydney @SydneyDearest

5h

I come to this **class** to get my damn **clicker** points, so ask some damn **clicker** questions, or else this a waste of time.

[#LearningIsForSquares](#)

Expand

► To stay awake



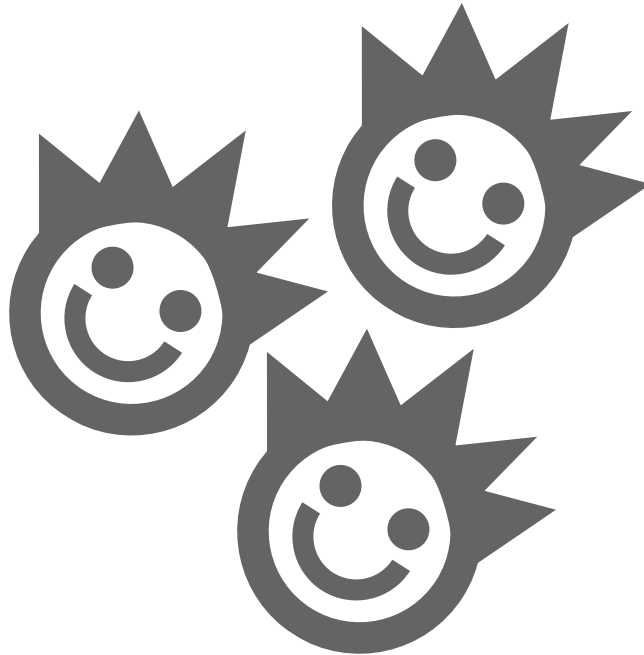
Si Ying ✓ @honestyshot

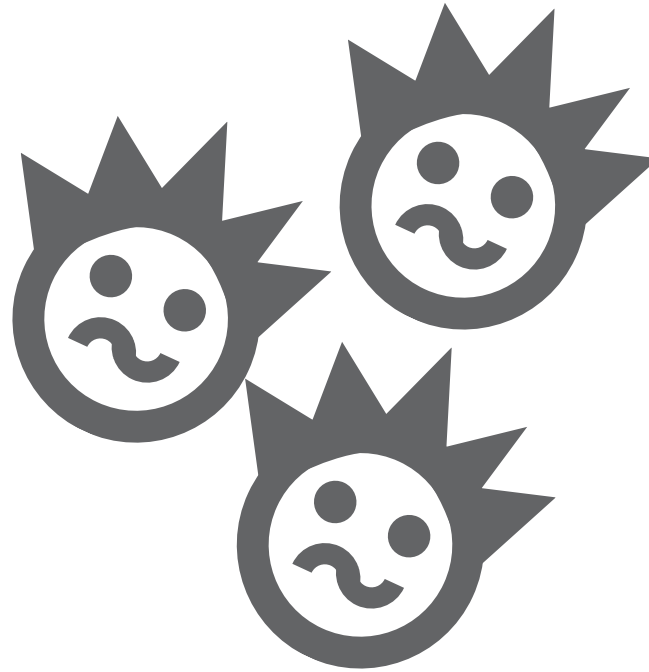
22 May

I love it when we use the clickers in class cos then I won't fall asleep

Expand

I am using best
practices.





BIG IDEA

It's not the clicker, it's the implementation!



BIG IDEA


It's the pedagogy, not the technology.




Solution: Peer Instruction

▶ **Gold-standard approach to clicker use**


Webinar goals



This doesn't
seem so bad.



I've been doing this
but didn't know it.



I'm going to
innovate and help
others.

What is Peer Instruction?

► Research-based pedagogy developed by Harvard's Eric Mazur in the 1990s.



blog.peerinstruction.net

What is Peer Instruction?

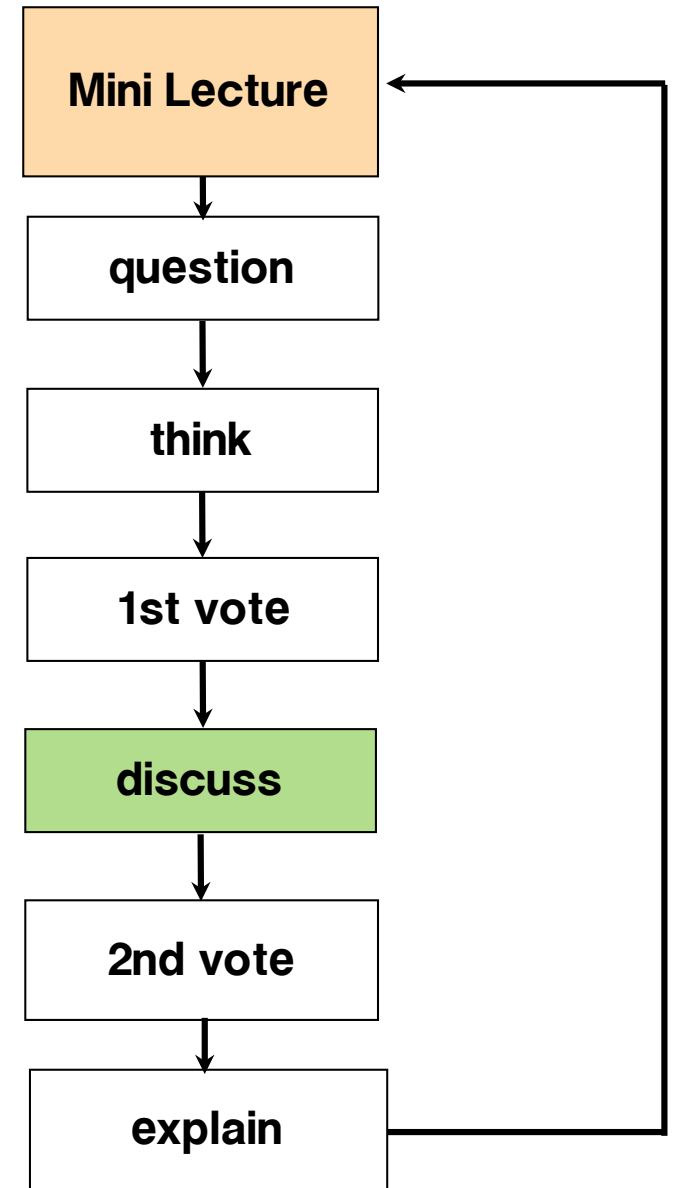
- ▶ Not about polling, attendance, exam administration, or using technology as a carrot
- ▶ Is a research-based method that incorporates clickers to:



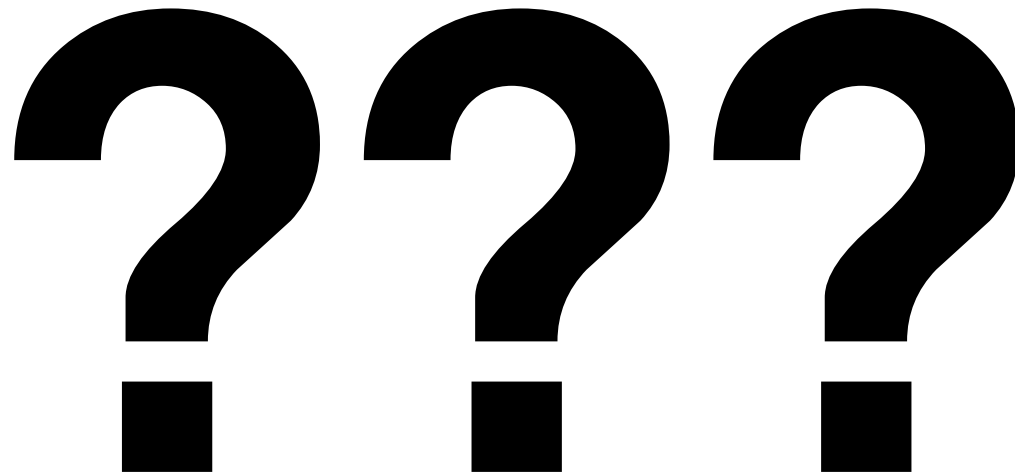
Elicit
Confront
Resolve
Misconceptions
(ECR)

How does Peer Instruction Work?

► 7 Basic Steps



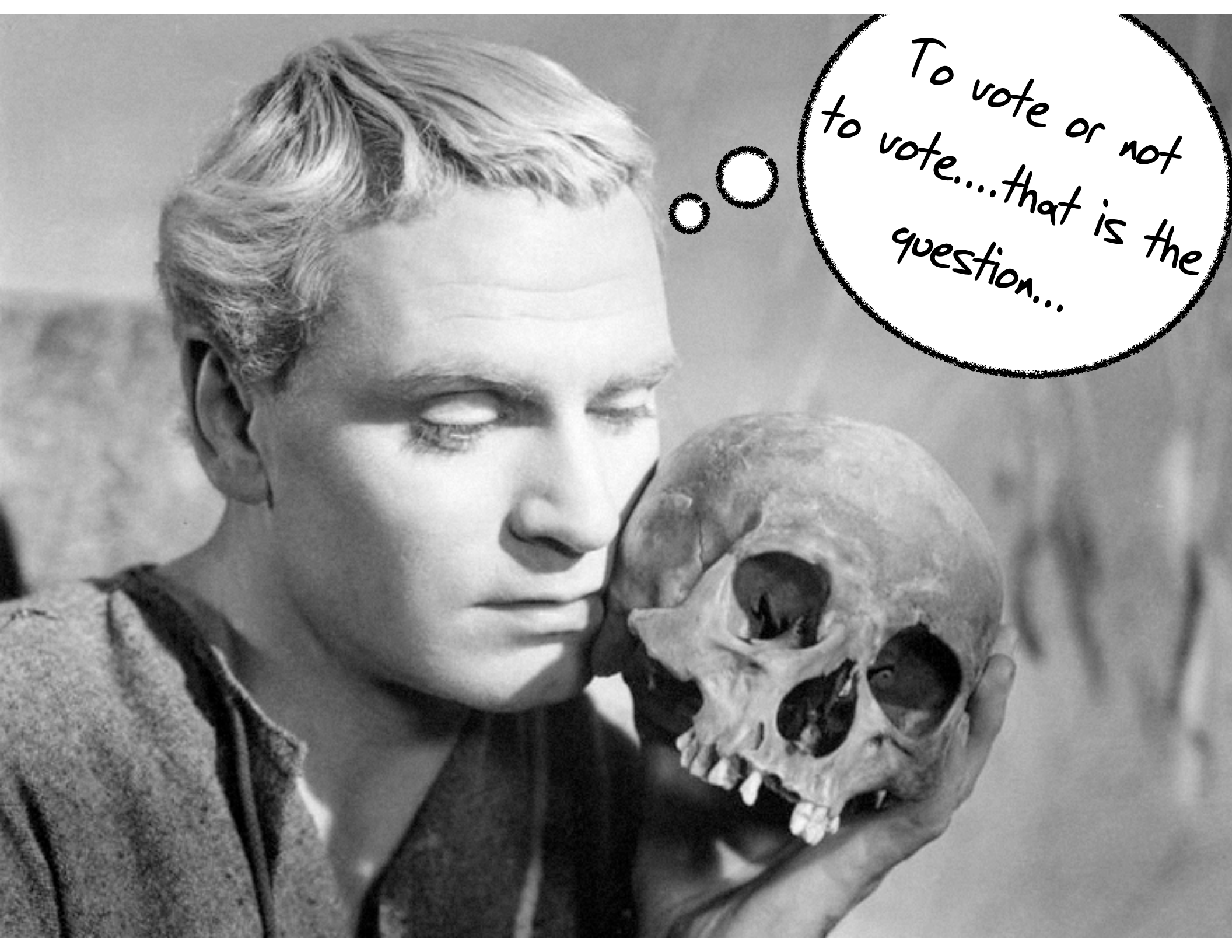
3 Big Questions



3 Best Practices for
Using Clickers with Peer Instruction



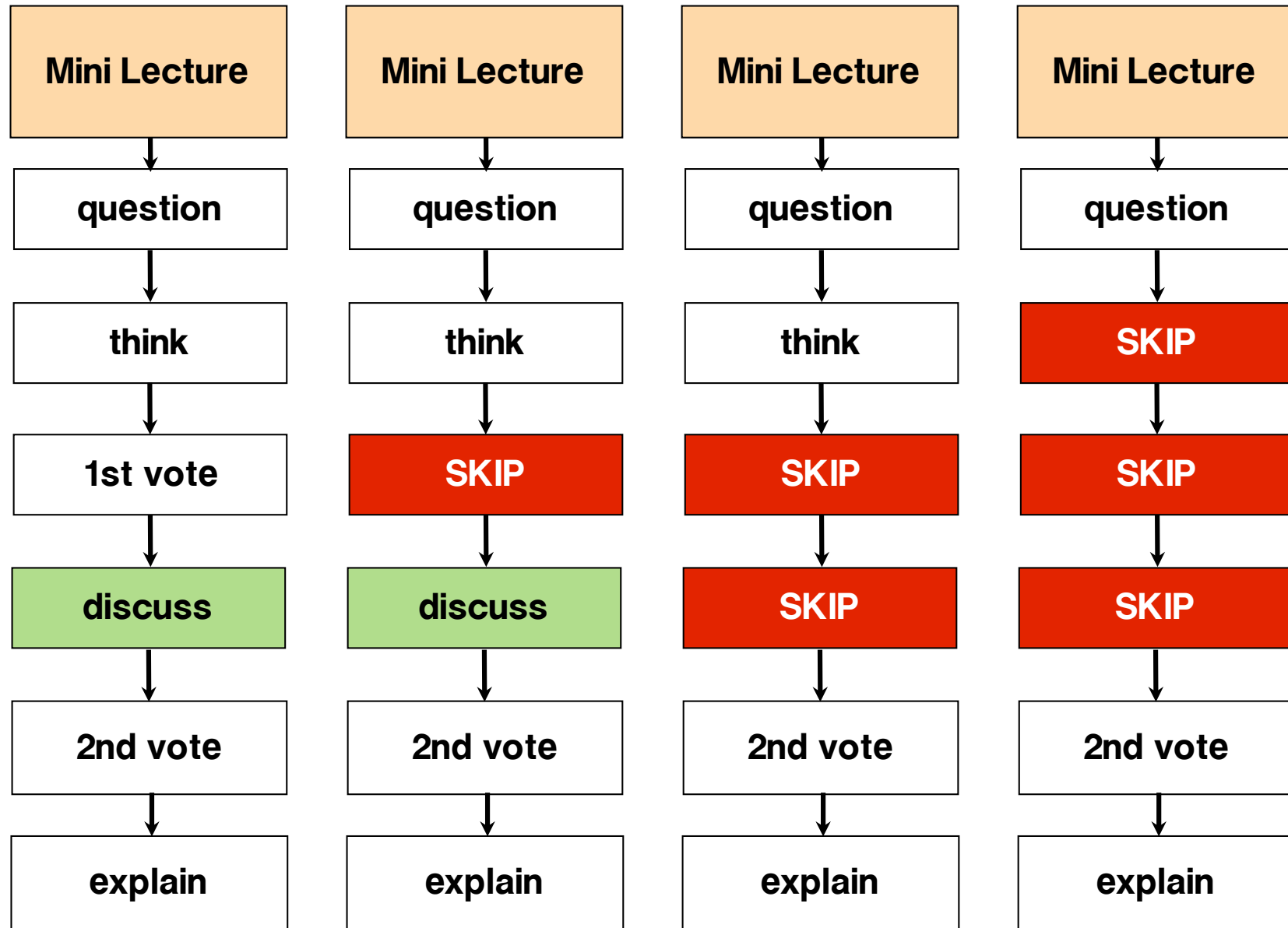
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To vote or not
to vote....that is the
question...

Best Practice # 1 for Using Clickers

Peer Instruction

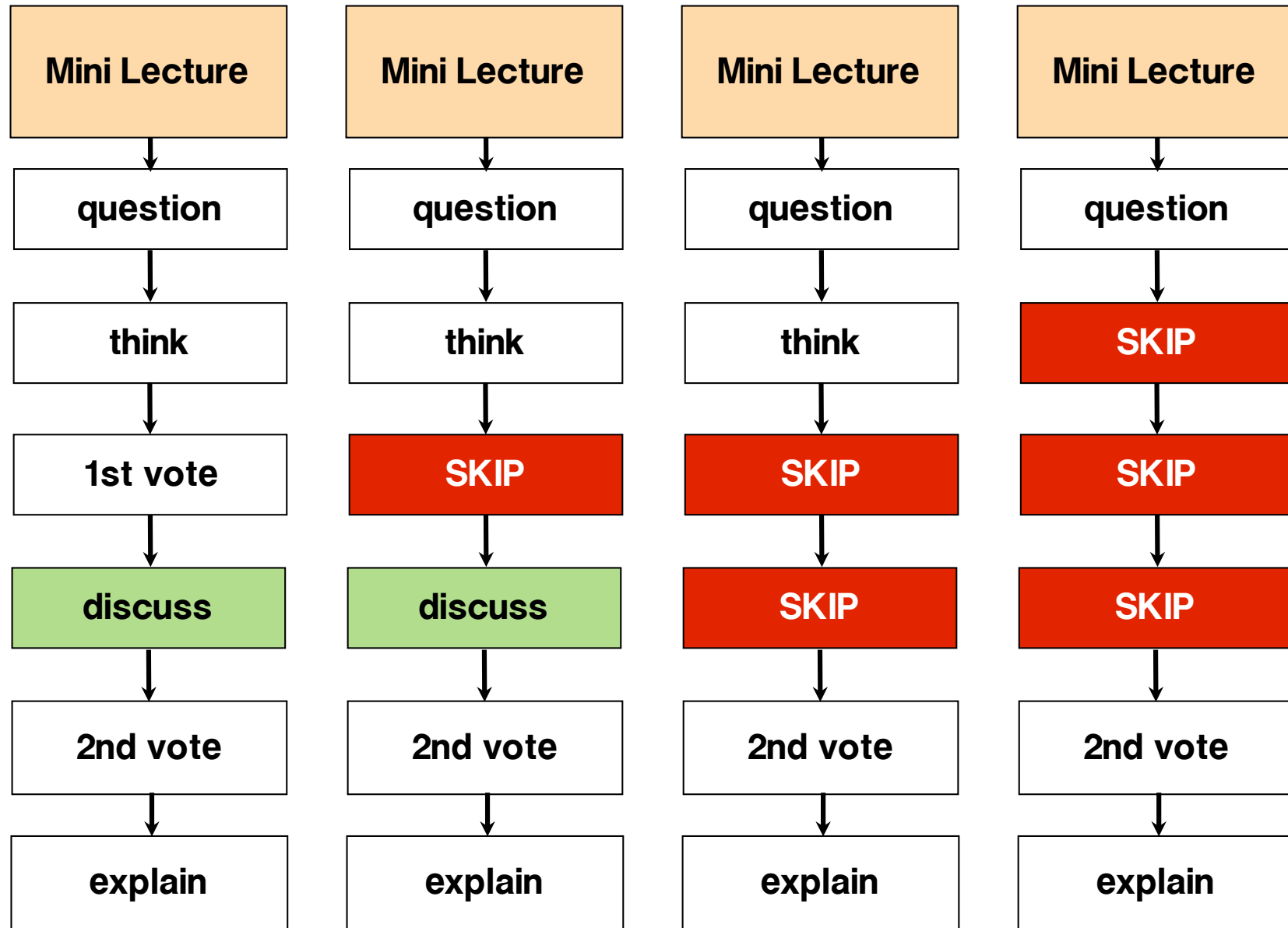


Should you have students vote first, before turning to their neighbors to discuss?

<http://todaysmeet.com/peerinstruction>

Best Practice # 1 for Using Clickers

Peer Instruction



What are students' perceptions on the individual vote?

- ▶ 82% prefer the opportunity to vote on their own first.

Best Practice # 1 for Using Clickers

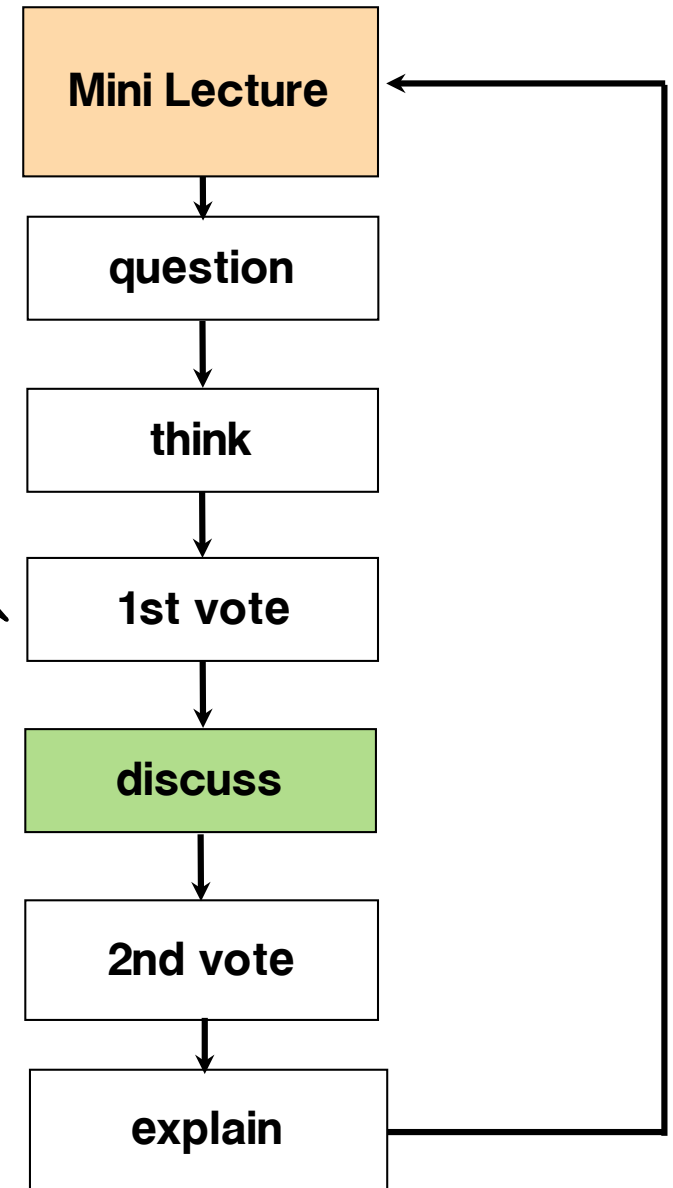
Peer Instruction

Goldilocks range of desirable difficulty

30%-70% correct

1. If less than 30% - restart with a new mini lecture

2. If more than 70% can skip if you like



Best Practice # 1 for Using Clickers

Peer Instruction

Mini Lecture



question



think



1st vote



discuss



2nd vote



explain

1. Give students time to think about their answer.

Script: “Take a few moments to think about your response.”

2. Get them to commit to answer answer.

Script: “Commit to your best response now.”

Best Practice # 1 for Using Clickers

Peer Instruction

► Always give students the chance to think first and to have a first vote

- Engages students in retrieval practice
- Creates deeper engagement
- Encourages metacognition
- Gives desirable difficulty feedback to instructor



2

Should you show the students the results of the histogram before the second vote?

<http://todaysmeet.com/peerinstruction>



**What is the only American
Kennel Club breed with
the official description of
“barkless dog”?**

50:50



A. Briard

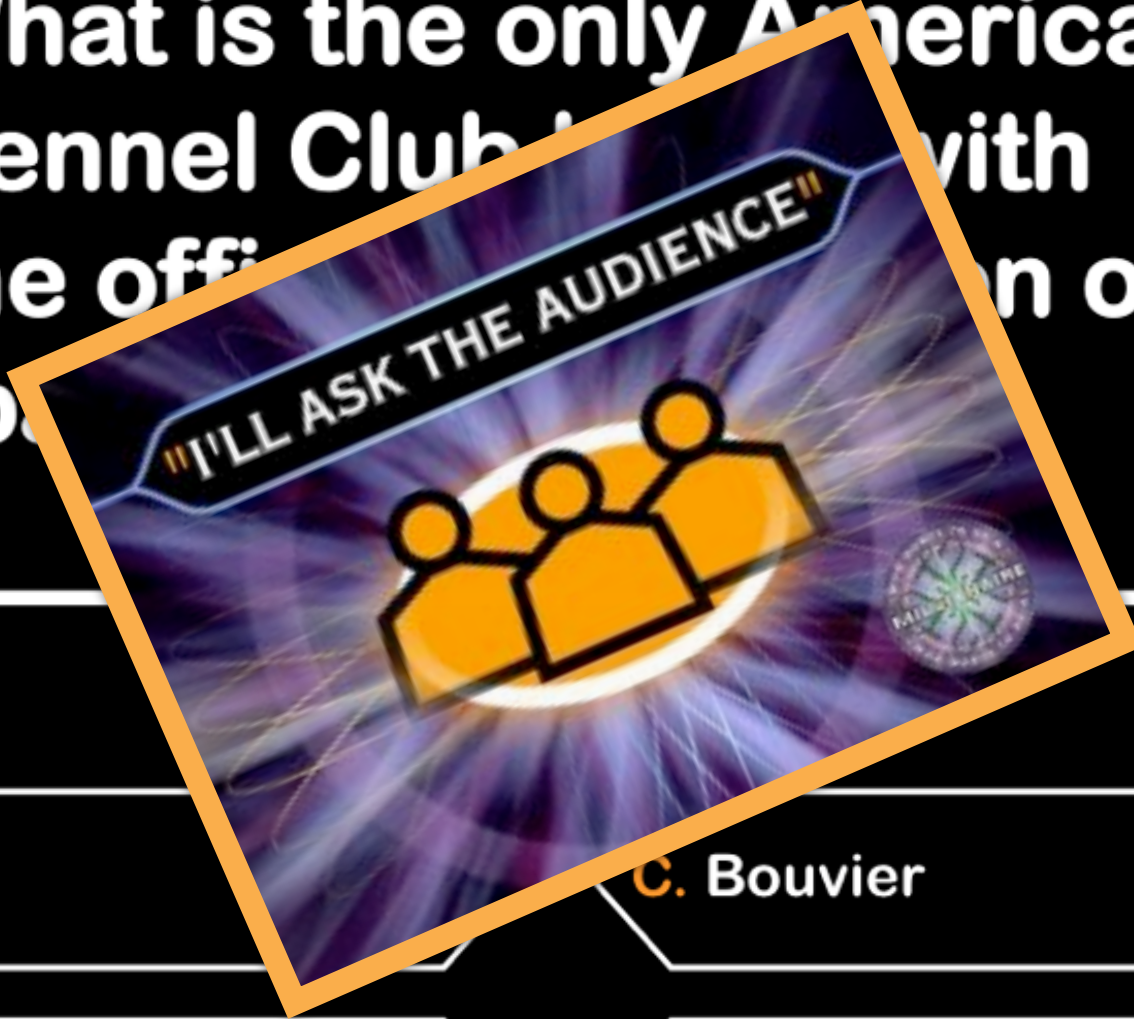
C. Bouvier

B. Basenji

D. Borzoi



What is the only American
Kennel Club breed with
the official designation of
“best of breed”?



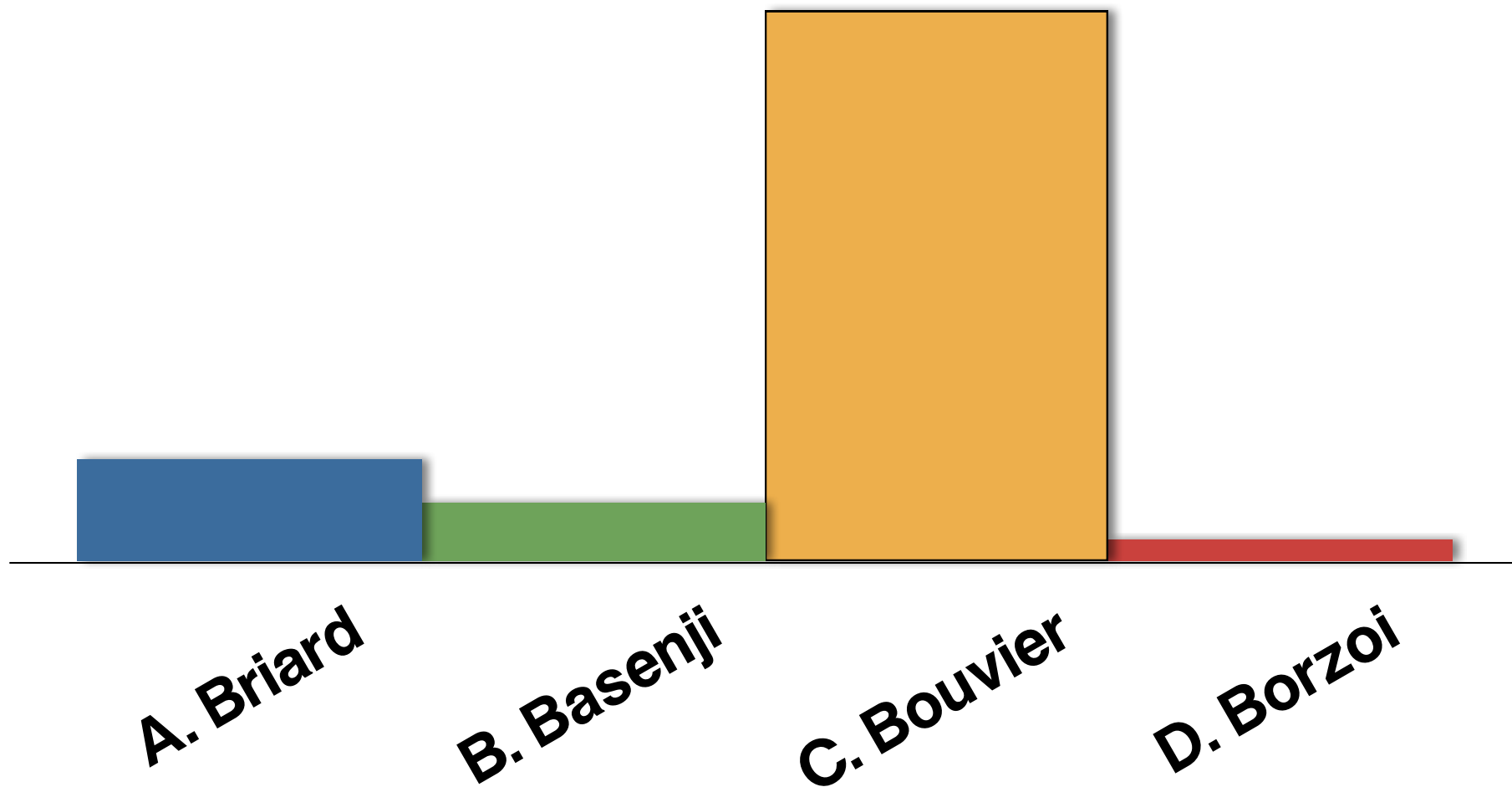
A. Briard

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A. Briard

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What is the only American
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A. Briard

C. Bouvier



B. Basenji



D. Borzoi



If you show students the results of the histogram after the first vote...

► 30 % will change to the most common response vs the correct answer

If you show students the results of the histogram after the first vote...

► 30 % will change to the most common response vs the correct answer



When does showing the histogram *not* matter?

- ▶ When you won't continue on with Peer Instruction or on that question
- ▶ For questions with no right answer
- ▶ For questions used for eliciting discussion

Heinz's wife was near death, and her only hope was a drug that had been discovered by a pharmacist who was selling it for an exorbitant price. The drug cost \$20,000 to make, and the pharmacist was selling it for \$200,000. Heinz could only raise \$50,000 and insurance wouldn't make up the difference. He offered what he had to the pharmacist, and when his offer was rejected, Heinz said he would pay the rest later. Still the pharmacist refused. In desperation, Heinz broke into the store and stole the drug.

Should Heinz have broken into the store to steal the drug for his wife?

1. Yes

2. No

What if Heinz's child was sick, not his wife?

Should Heinz have broken into the store to steal the drug for his child?

- 1. Yes**
- 2. No**

Best Practice #2 for Using Clickers

Peer Instruction

Mini Lecture

question

think

1st vote

discuss

2nd vote

explain

If there is a correct answer....

1. Describe the spread verbally after 1st vote

Script: “Quite a few of you have the right answer.”

2. Show the histogram after the second vote

Best Practice #2 for Using Clickers

Peer Instruction

► Never show the histogram before discussion and the second vote, *if* there is a right answer

- Limits bias
- Encourages metacognition
- Gives instructor more accurate feedback about understanding



3

What's the best way to ensure students have productive discussions?

Best Practice #3 for Using Clickers

Peer Instruction

Mini Lecture

question

think

1st vote

discuss

2nd vote

explain

1. Ask desirably difficulty questions that will elicit misconceptions



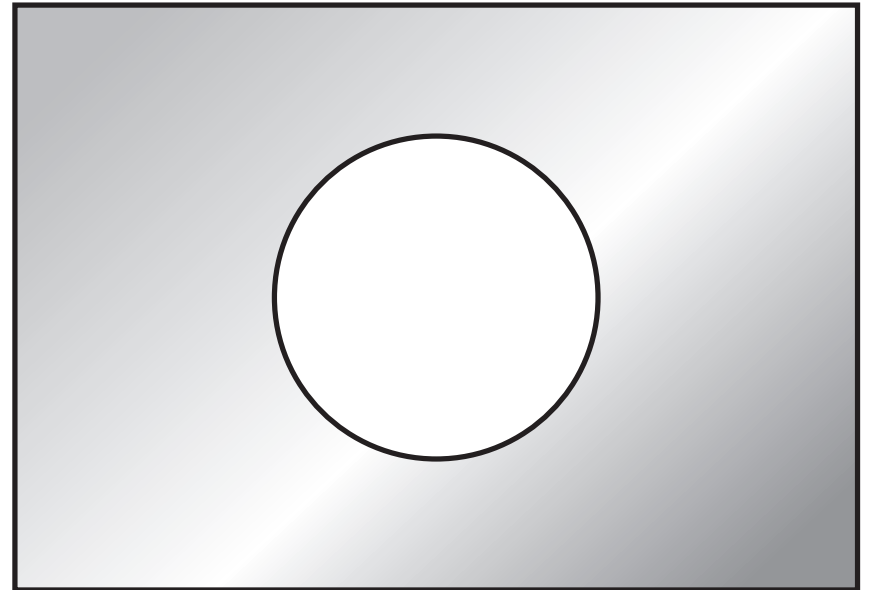
Example Clicker Question

When metals heat up, they expand.

Consider a metal (aluminum) plate with a hole in it.

If you heat the plate uniformly what happens to diameter of hole?

- A. increases**
- B. stays the same**
- C. decreases**



What happens when you heat metals up?

- a) they expand**
- b) they shrink**
- c) nothing**

Today'sMeet

Which question was better and why?

Best Practice #3 for Using Clickers

Peer Instruction

Mini Lecture

question

think

1st vote

discuss

2nd vote

explain

1. Ask desirably difficulty questions that will elicit misconceptions

2. Group students by *different* response

Script: “Find someone with a different answer, and back up your response with evidence.”


Best Practice #3 for Using Clickers

Peer Instruction

► Ask desirably difficult questions, group students by response versus proximity.

- Breaks down student reliance on friendships for learning
- Moves discussion from correctness to reasoning
- Creates cognitive dissonance
- Early data suggest students in different answer pairs may converge on the correct answer more than students with the same responses

Implementation Guide for Using Clickers with Peer Instruction

1	Write good questions with the goal of eliciting student misconceptions
2	Always provide students with time to think before they vote
3	Always provide a 1st vote opportunity
4	Never show students the histogram after the first vote <i>if</i> there is a correct answer
5	Group students by different answer, not by nearness of the neighbor
 6	Implement Peer Instruction by requiring pre-class activities - i.e. flipped classroom or Just-in-Time Teaching



What do you want me to do, Julie?

1 Tip - Find a Mentor





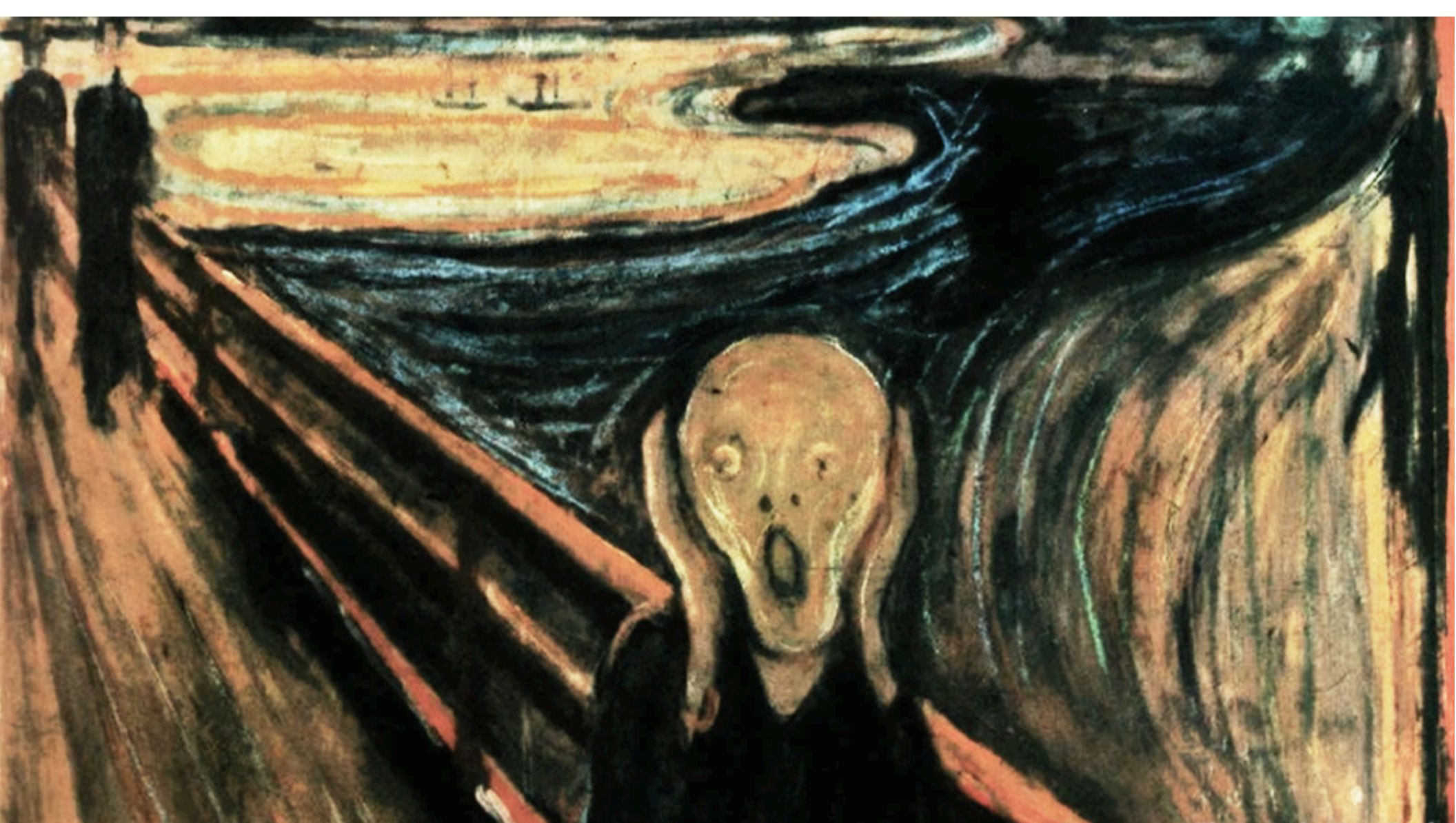
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BIG IDEA

It's the pedagogy, not the technology!





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Acknowledgements

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