

Flipping the Classroom

How to turn your students' worlds upside down

Use a laptop, smartphone, iPad, etc:

Go to LCatalytics.com

Click “Create student account”

Click “I have a signup code”

use the signup code DEMO

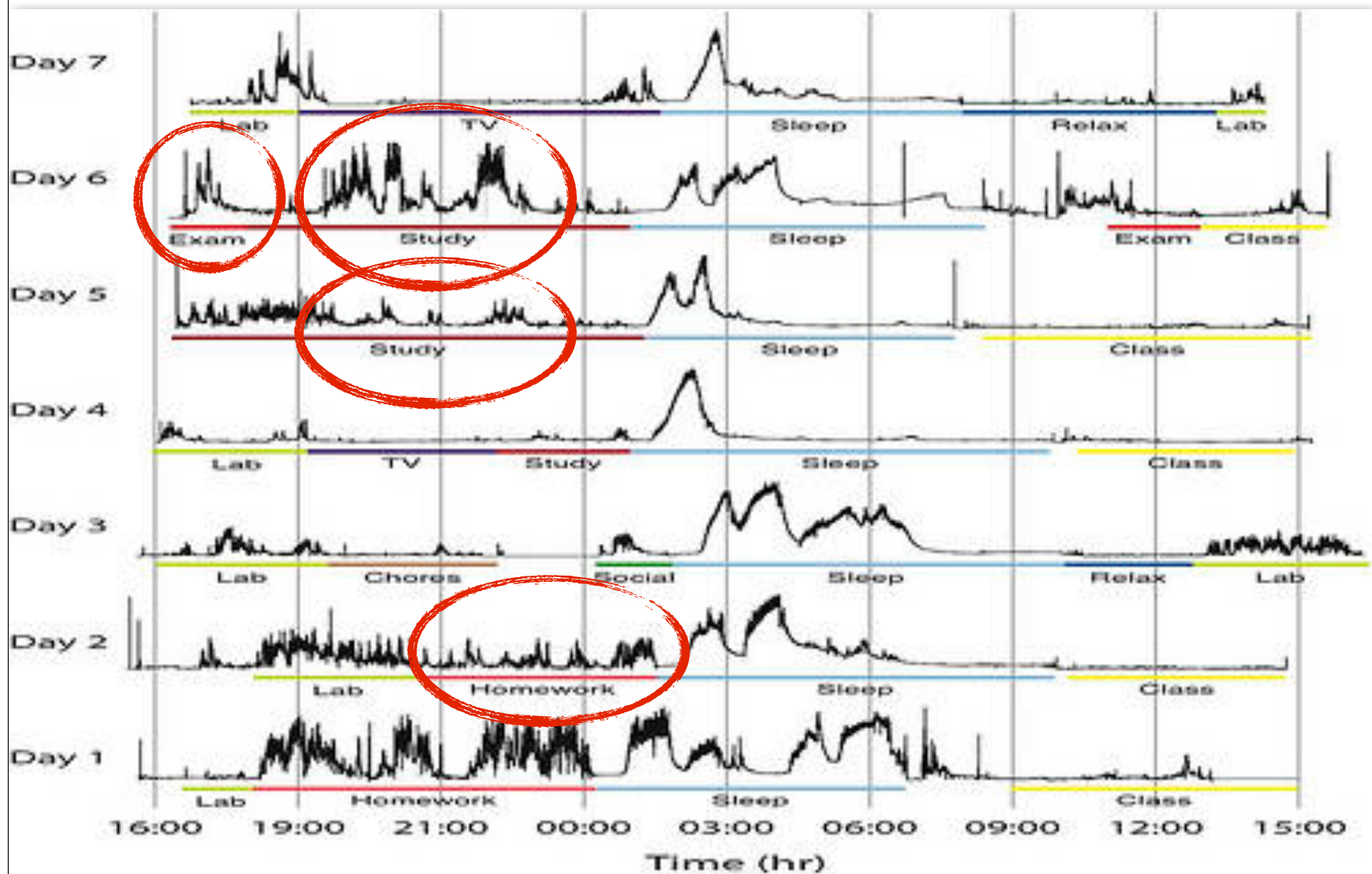
Class Session: 617648

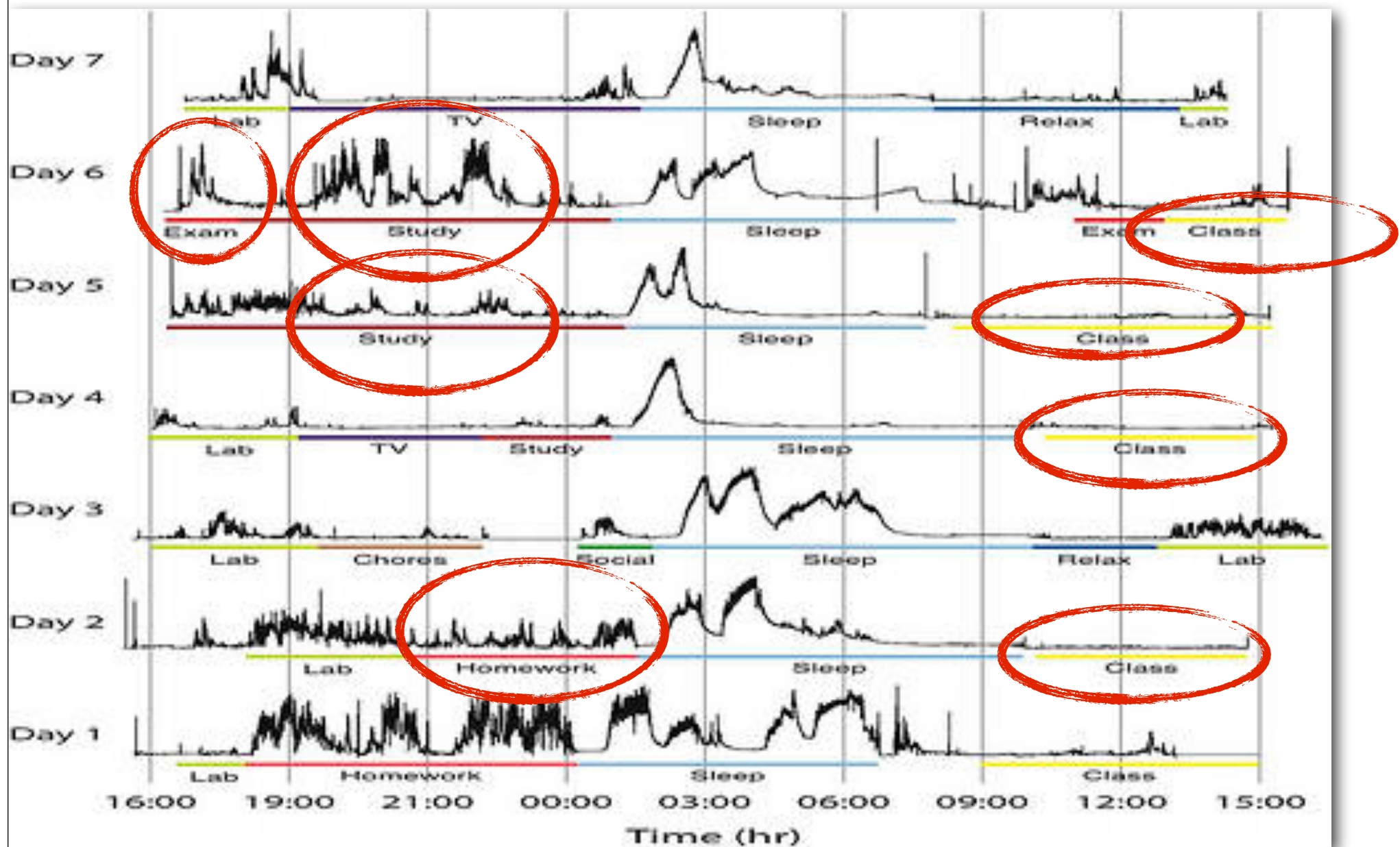


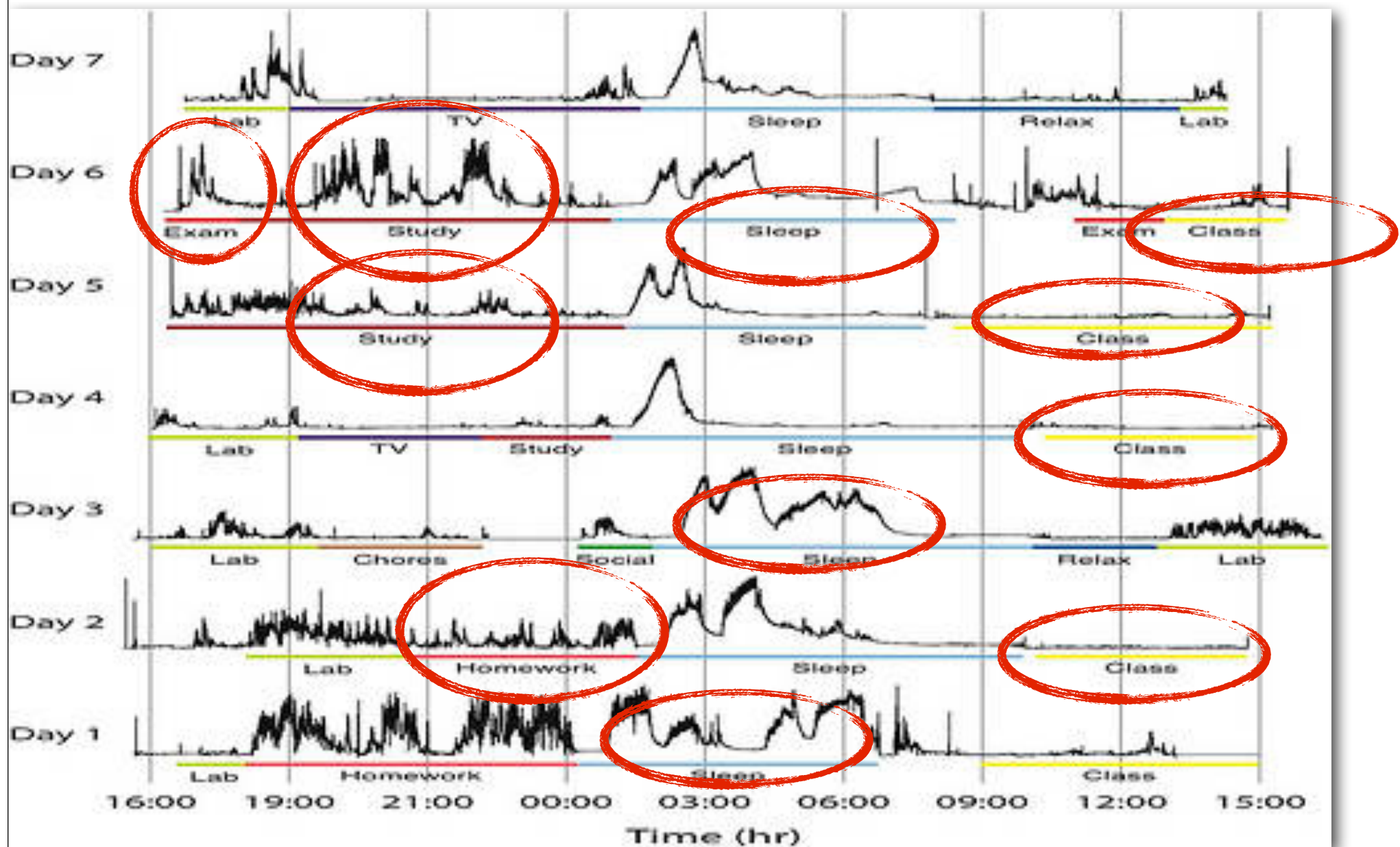
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New England Board of Higher Education
15 October 2012
Boston, MA

Think of something you are very good at.....









Ancient Greek Amphitheater



Modern American Classroom

Problem?

“Education is suffering from narration sickness.”

Pedagogy of the Oppressed, Paulo Freire, 1970, p. 17



Consequence

Passive education creates passive people

Pedagogy of the Oppressed, Paulo Freire, 1970, p. 17



Solution

Limit passivity, boost engagement

Pedagogy of the Oppressed, Paulo Freire, 1970



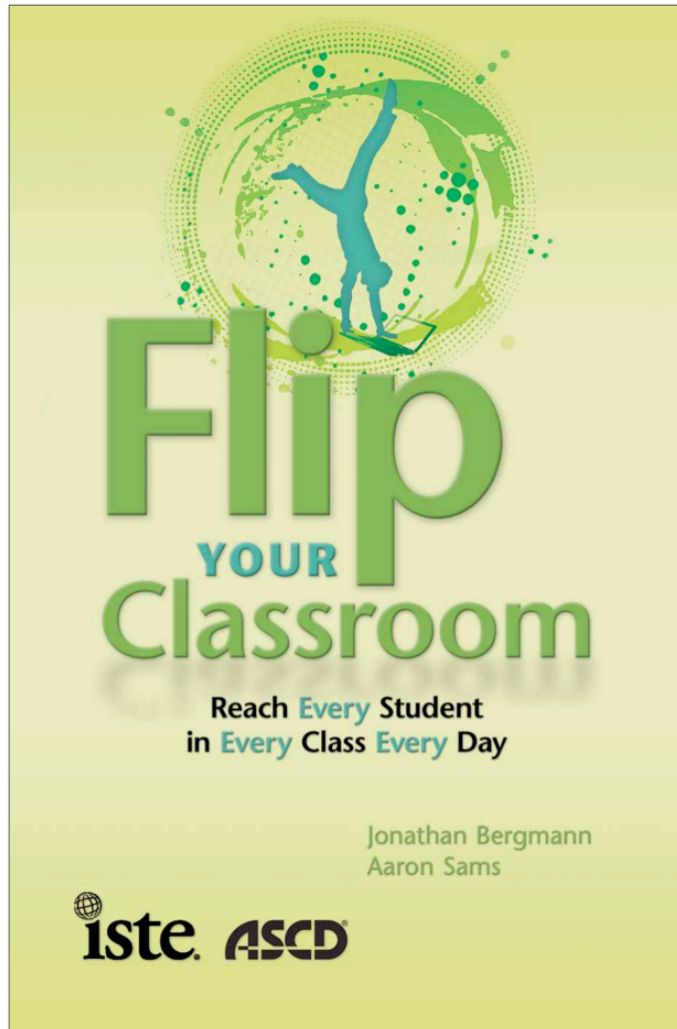
Goals

After this talk you will be able to...

1. Have a sense of the history of the call for flipped classrooms
2. Explain basic steps for flipping a class
3. Describe one best-in-class flipped method and tool
4. Access resources for learning more about flipped classrooms

1. History of the call for flipped classrooms

What is a Flipped Classroom?



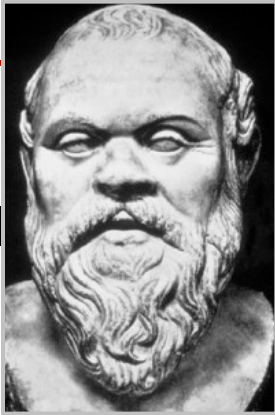
What is a Flipped Classroom?

“Flipping the classroom is...[a] **mindset**

redirecting attention away from the teacher and putting attention on the learner and the learning.”

Bergmann and Sams p. 12

•BC 469



One possible Flipped Class Timeline, with omissions

Freire

Dewey

Langdell

•1970s

•1920s

•1870s

Bergmann & Sams
Lecture Capture/
Flipped Classroom

•1980s

•1990s

•2006-2007

•2011-2012

Lyman
Think-Pair-Share

Michaelson
TBL

Mazur
Peer Instruction

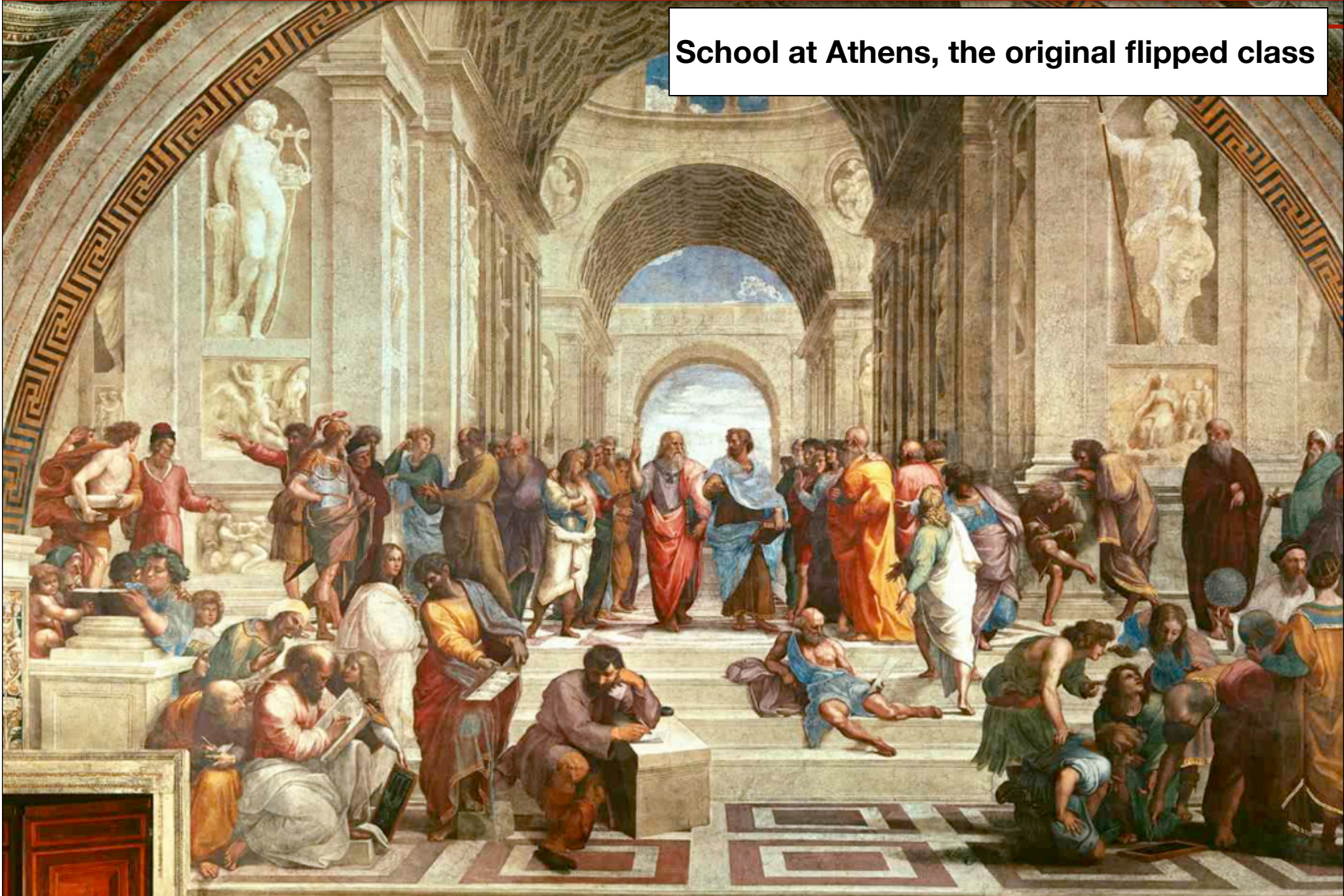
Novak et al.
JiTT

Hanson et al.
POGIL

Koller et al.
Coursera

What is a Flipped Classroom?

School at Athens, the original flipped class



2. How do you flip a class?

Basic Steps for Flipping a Class

Traditional Class

Class time: Lecture

At home: Homework

Basic Steps for Flipping a Class

Traditional Class

Class time: Lecture

At home: Homework

Vs.

Traditional Flipped class

Class time: Homework

At home: Lecture

Basic Steps for Flipping a Class

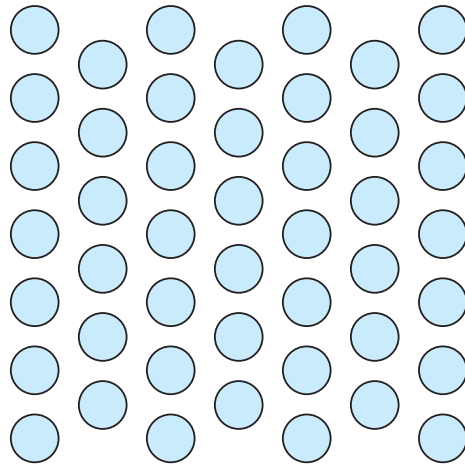
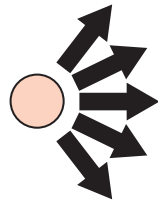
Traditional Flipped Class Protocol

Bergmann and Sams version

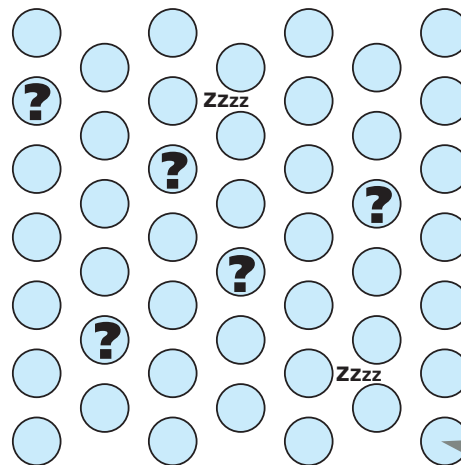
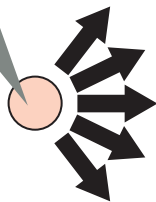
1. Video record lecture using screencast software
2. Put lecture online, require students to watch, give some instruction on effective viewing
3. Spend 10 mins of following class time talking about the video
4. Do traditional “homework” during class

3. Best-in-Class Method

lectures focus on knowledge coverage



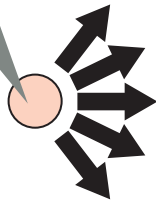
I think they understand



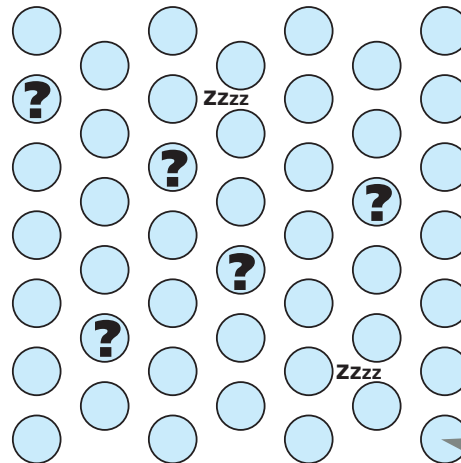
I think I understand

I did
awesome
on my exam

I think they understand



**lecture's
lullaby**



I think I understand

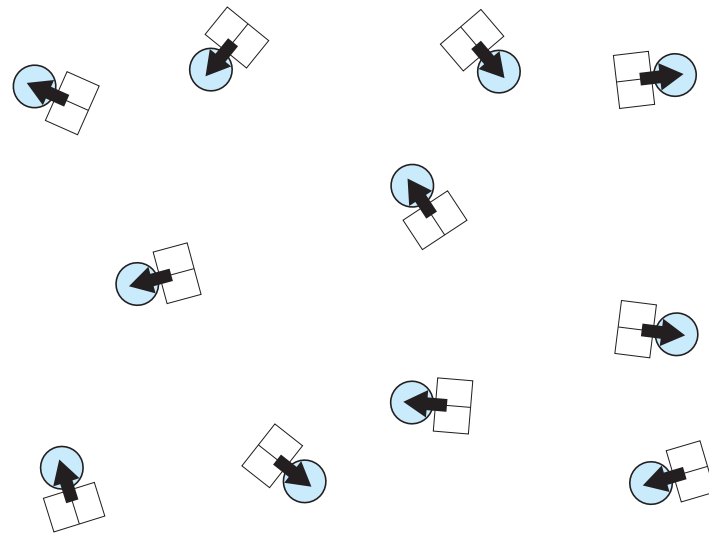
I did
awesome
on my exam

What is a Flipped Classroom?

a flipped class moves coverage out

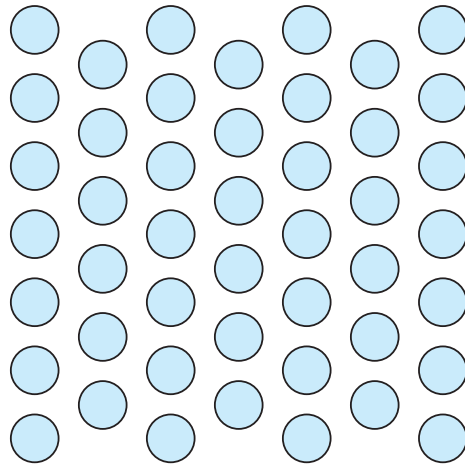
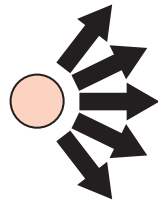


students do coverage before class

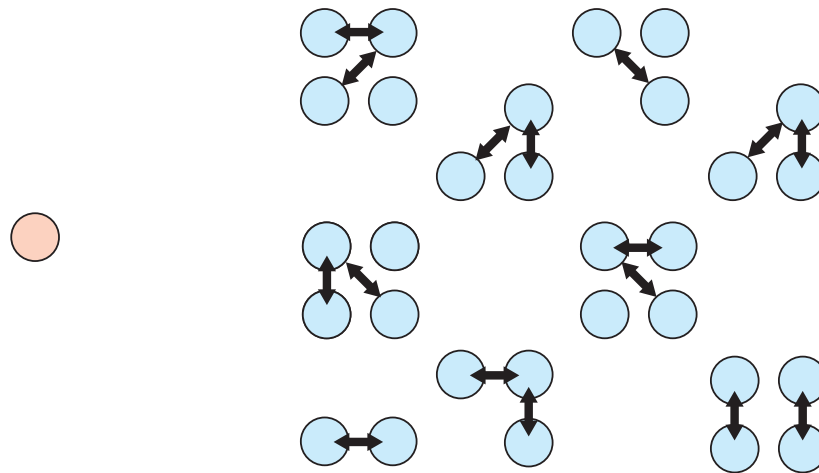


students do UNcoverage in class

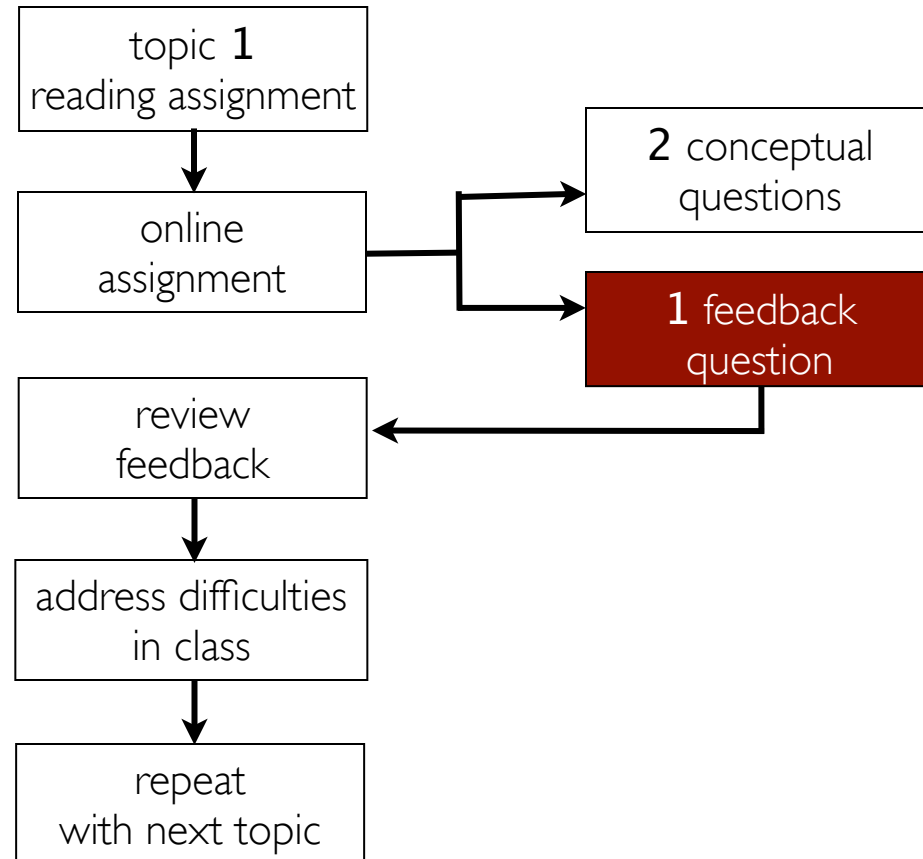
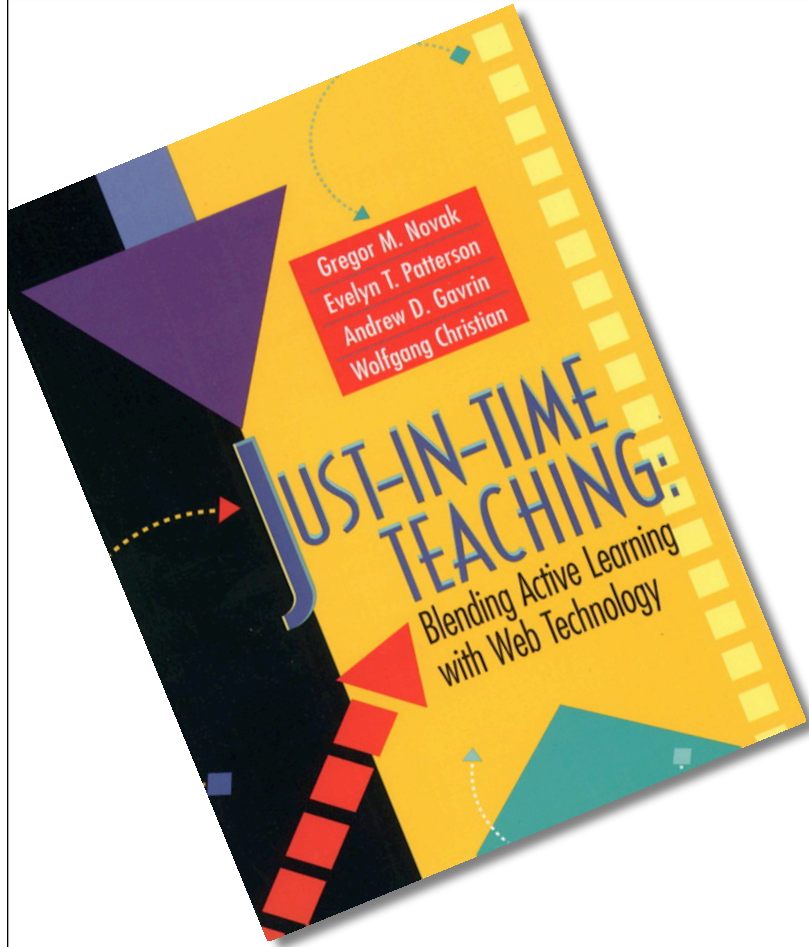
you, lecture a little



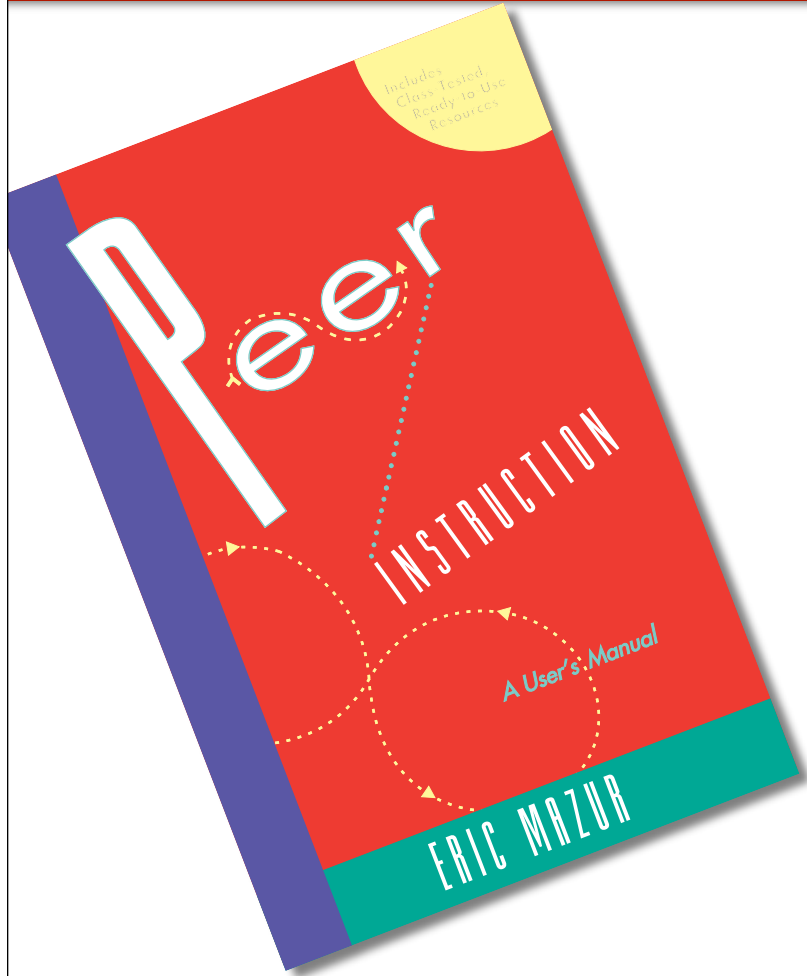
you, help students uncover
meaning in class a lot



PEER INSTRUCTION

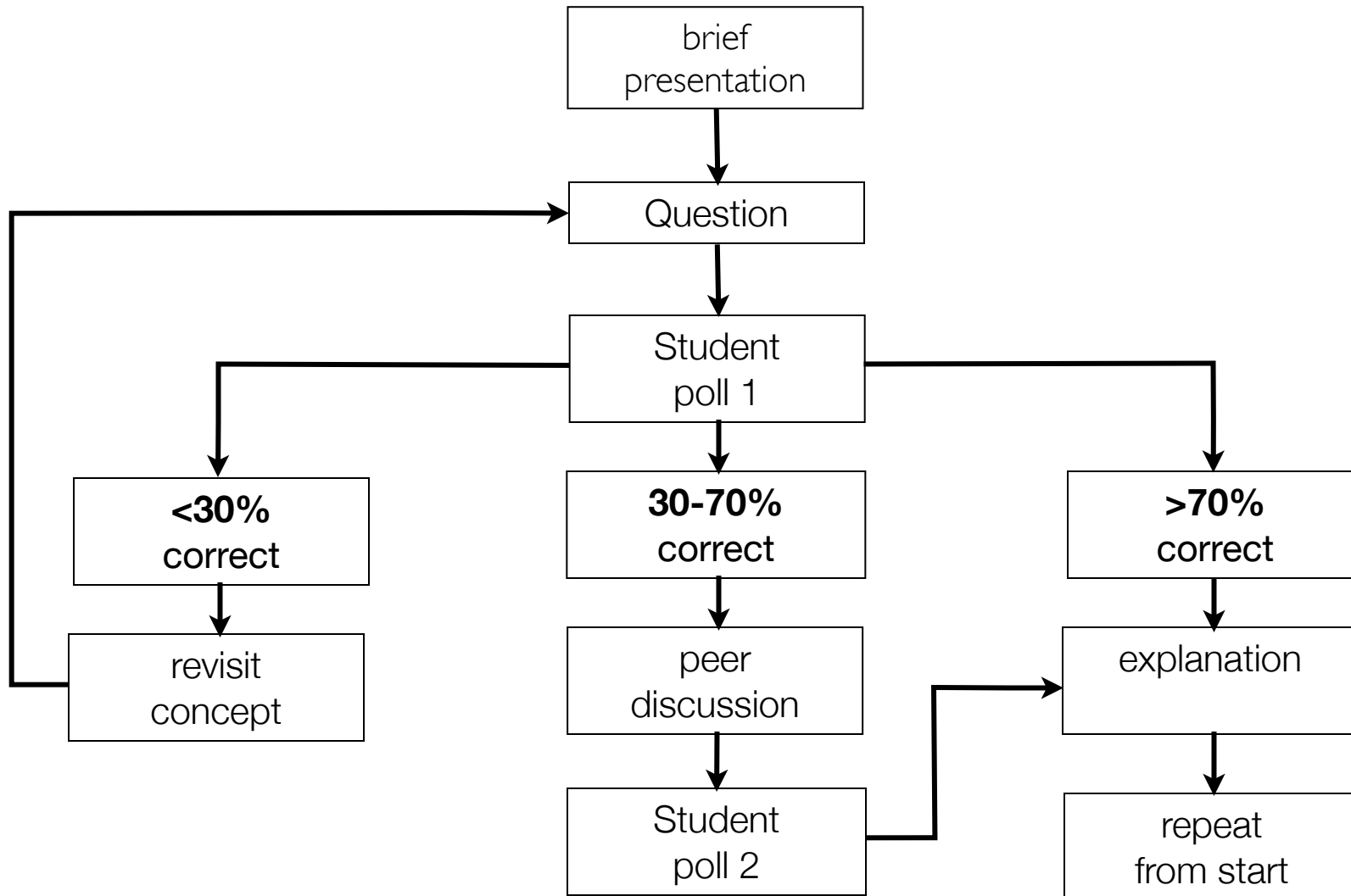


PEER INSTRUCTION

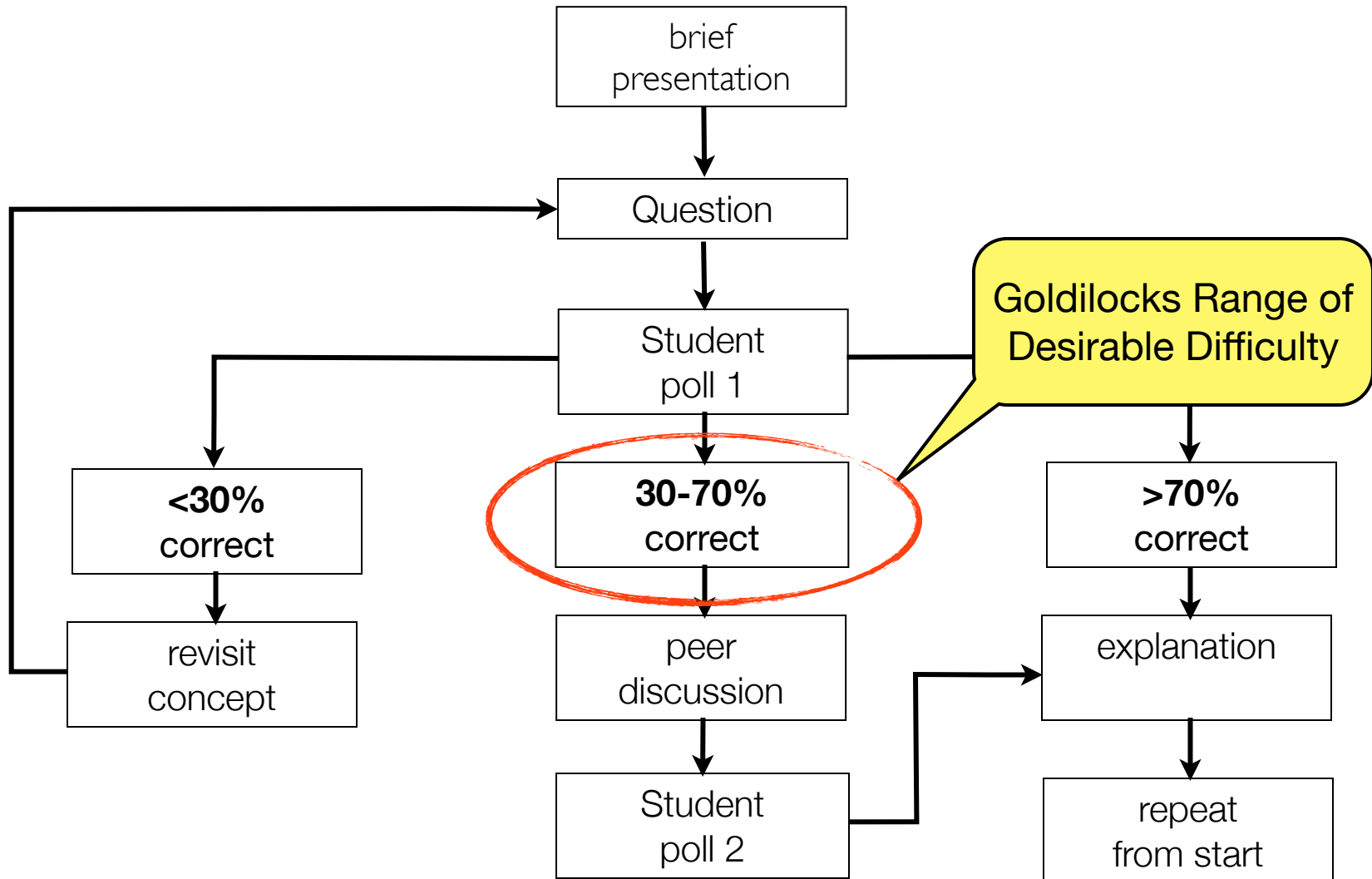


- pre-class activity
- in-class: depth, not coverage
- Socratic method

Peer Instruction



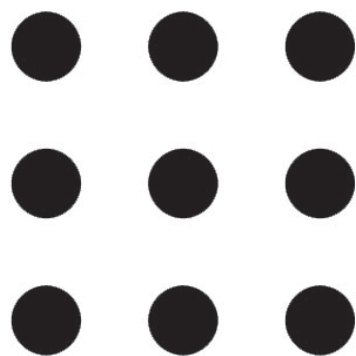
Peer Instruction



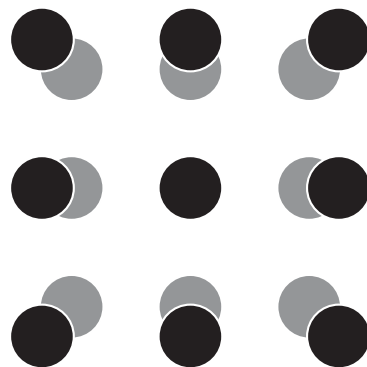
Thermal Expansion



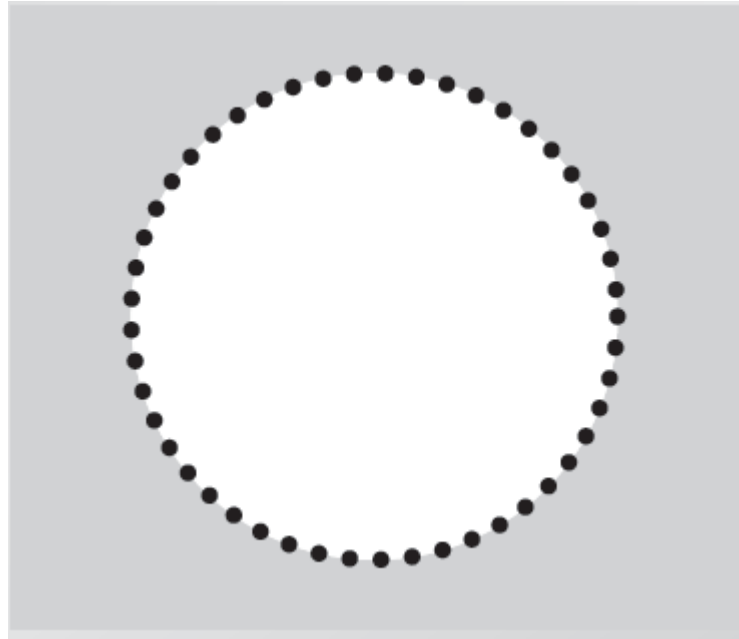
Demo



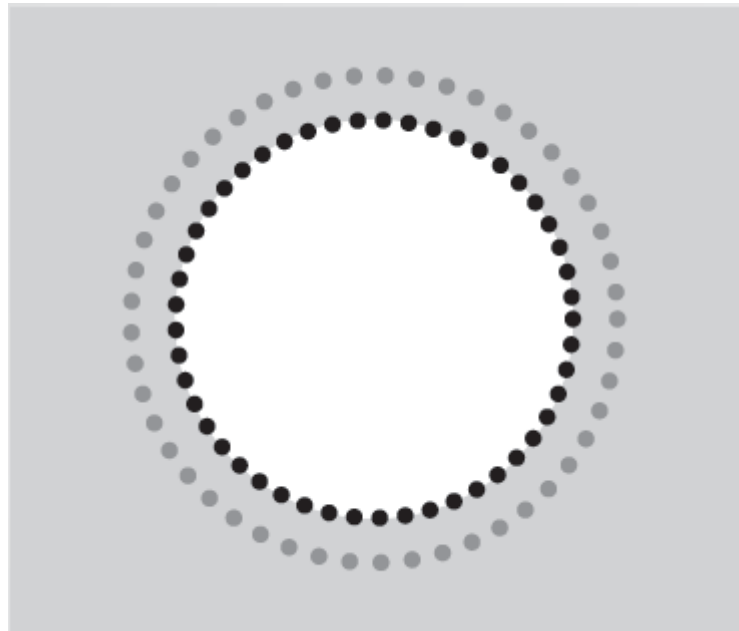
Demo



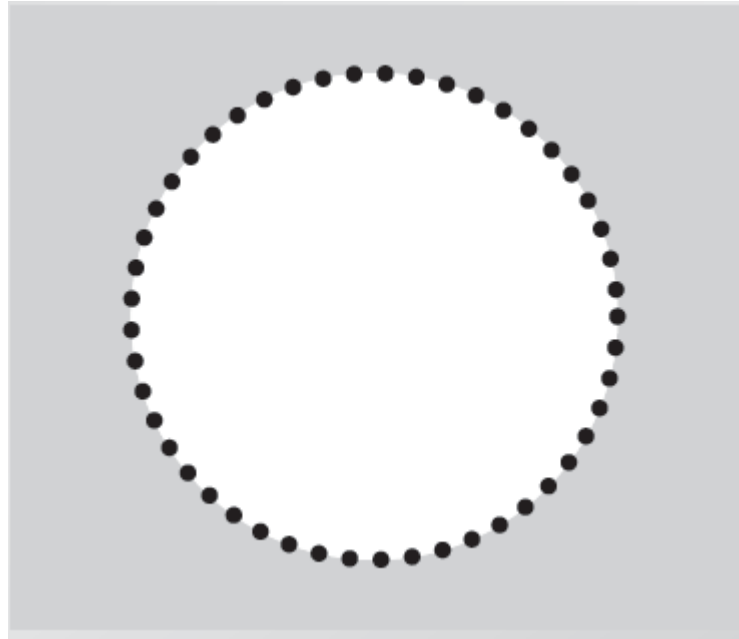
PEER INSTRUCTION: DEMO



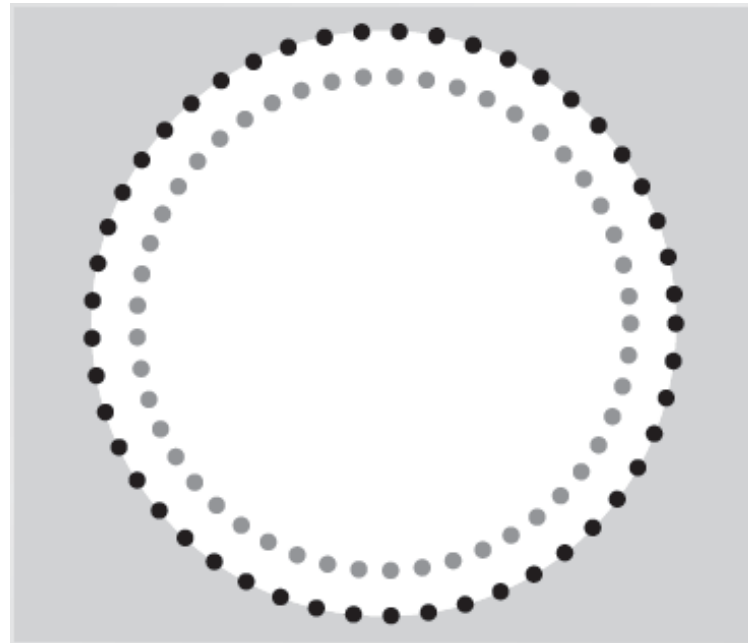
PEER INSTRUCTION: DEMO



PEER INSTRUCTION: DEMO



PEER INSTRUCTION: DEMO



Let's Try It!

Systematic Moral Analysis

Systematic Moral Analysis

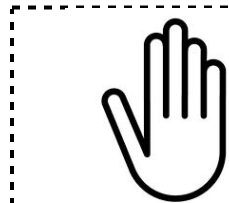
Gert's Moral Rues

1. Do not kill.
2. Do not cause pain.
3. Do not disable.
4. Do not deprive of freedom.
5. Do not deprive of pleasure.
6. Do not deceive.
7. Keep your promises.
8. Do not cheat.
9. Obey the law.
10. Do your duty. (i.e. what is required by your job, social role or special circumstances.)

4. Best-in-Class Tool

Peer Instruction

Evolution of Classroom Response Systems

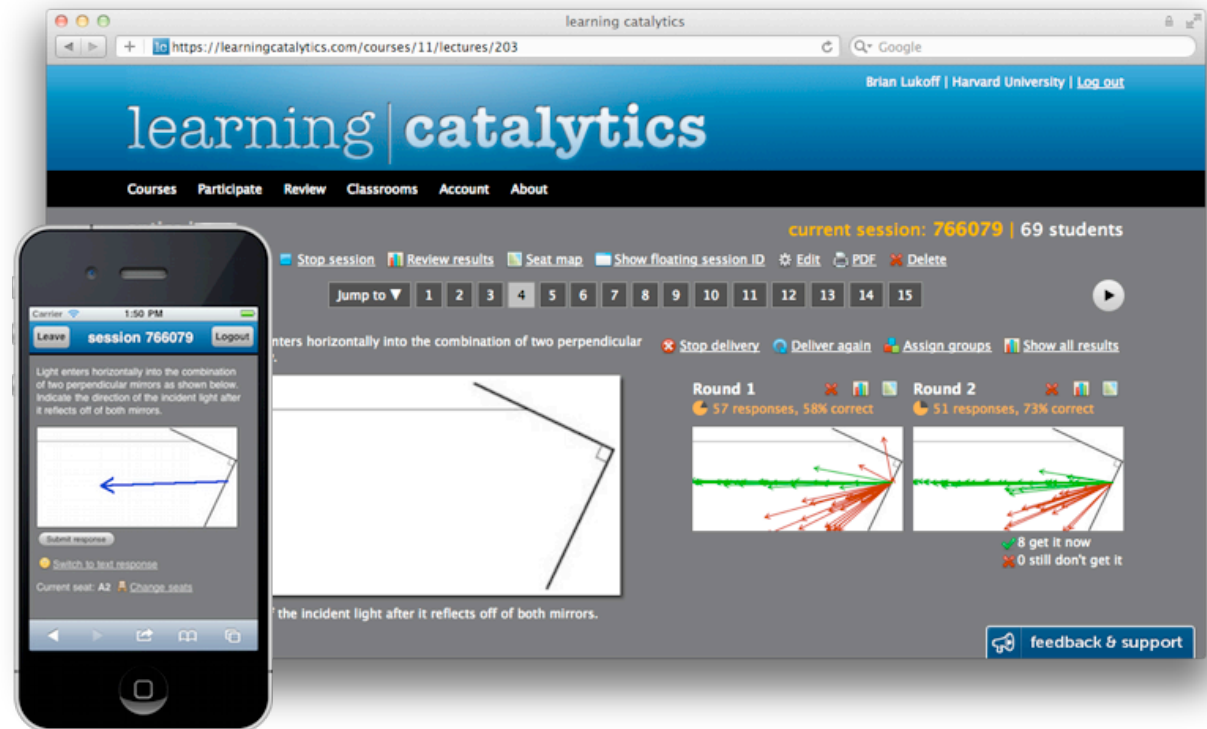


Learning Catalytics (learningcatalytics.com)

**Cloud-based technology
- students “BYOD”**

**Piloted for the first time
in Spring 2011**

**Now used both in K-12
and higher education**





Not restricted to multiple-choice questions

Learning Catalytics (learningcatalytics.com)

2. word cloud Now describe in a couple of words how you became good at whatever it is you entered in the previous question.

[Deliver](#) [Show all results](#)

Round 1  

● 123 responses

experiences

learning observing

reading people being

experience time

practice

work others school

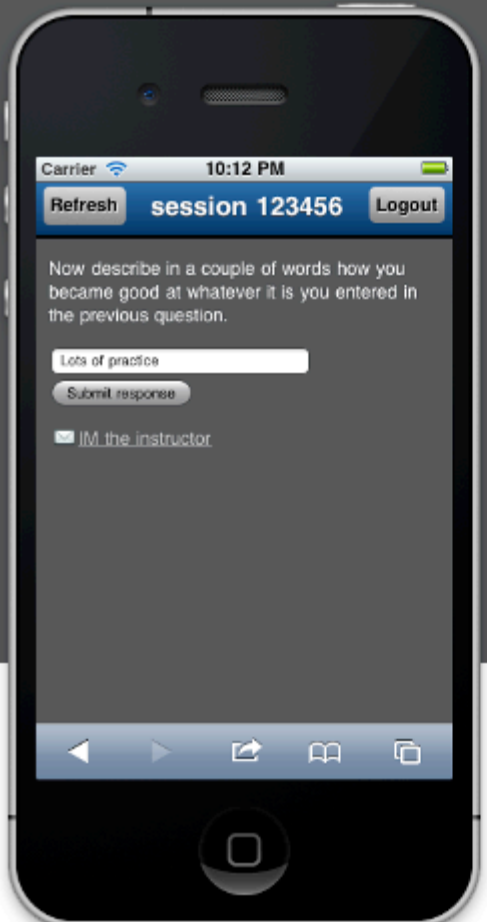
working through family

good watching many

listening

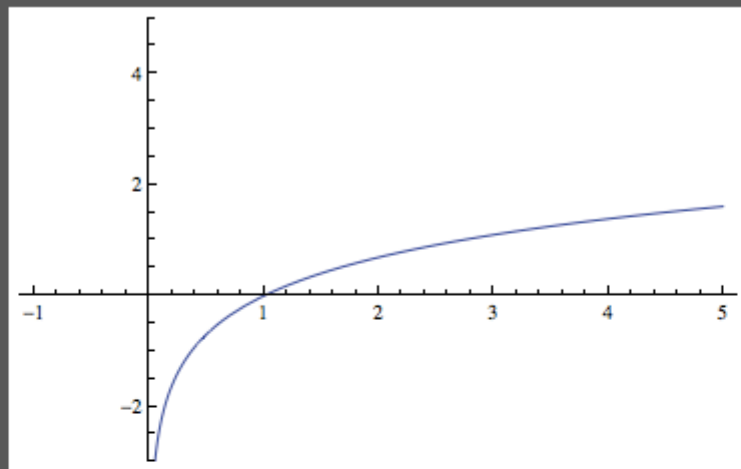
✓ 61 get it now

✗ 4 still don't get it



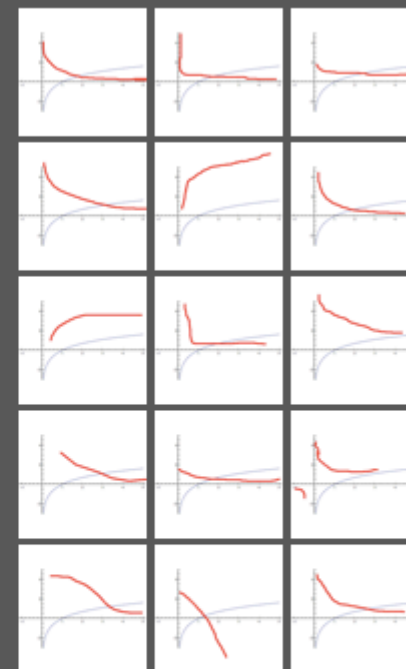
Learning Catalytics (learningcatalytics.com)

This is a graph of $f(x) = \ln x$. Sketch a graph of the derivative $f'(x)$.



Round 1

15 responses



✓ 6 get it now
✗ 0 still don't get it

Let's Try Some More!

5. Resources

Peer Instruction Network

Connect. Share. Learn.

@julieschell

blog.peerinstruction.net

scholar.harvard.edu/julieschell



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@LCatalytics

learningcatalytics.com

Acknowledgements

**Eric Mazur
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Why don't students like school?, Daniel Willingham**

Slides: scholar.harvard.edu/julieschell

Blog: blog.peerinstruction.net

followme: [@julieschell](https://twitter.com/julieschell)