

# learning | catalytics

1 lecture

2 PI

3 PI 2.0

Use intelligent algorithms and data analytics to...

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- improve questioning
- manage discussions
- facilitate time management/flow

- lowest
- a. A 30-year fixed rate mortgage at 12%
  - b. A 15-year fixed rate mortgage at 12%
  - c. A 30-year fixed rate mortgage at 12%
  - d. A 15-year fixed rate mortgage at 12%
2. The biggest factor that leads American companies to manufacture their products overseas in India is:
- a. Higher quality of craftsmanship
  - b. Lower labor costs
  - c. Decreased transportation costs
  - d. Effective legal systems
3. Which of the following correctly summarizes the accounting equation for a sole proprietorship?
- a.  $\text{Assets} = \text{Liabilities} + \text{Owners' equity}$
  - b.  $\text{Liabilities} = \text{Assets} + \text{Owners' equity}$
  - c.  $\text{Owner's equity} = \text{Assets} + \text{Liabilities}$
  - d.  $\text{Revenue} = \text{Assets} - \text{Liabilities}$
4. In order to present a business plan to a group of potential investors, a businessperson would most likely use which of the following?
- a. Powerpoint
  - b. Quickbooks
  - c. Peoplesoft
  - d. Excel
5. In order to start an online business, and individual would need all but which of the following:
- a. business model
  - b. capital
  - c. market research
  - d. depreciation?

## extensible plug-in architecture for question types

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## Sample question types:

- direction
- mathematical expression
- long answer, short answer, word cloud
- numerical, data collection
- ranking, priority
- region (select point on image)
- sketch, composite sketch
- highlight passage

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3 ID 1234567

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4. direction of prevailing winds

The image provides several clues about the direction of prevailing winds in Oahu. Indicate this direction by drawing an arrow on your screen.

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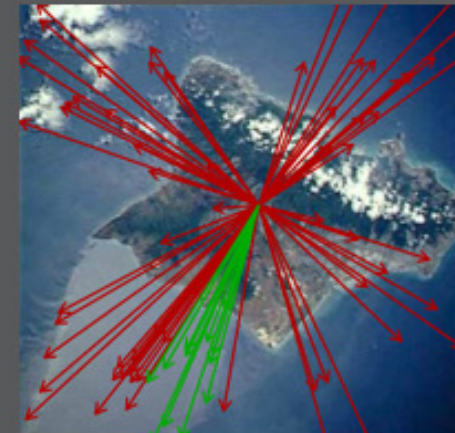
4. direction  
prevailing

...le. The image provides several clues about the direction of  
...on your screen.

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Round 1

77 responses, 16% correct



✓ 17 get it now  
✗ 3 still don't get it



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optics i

current session: 766079 | 69 students

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10

11

12

13

14

15



4. direction Light enters horizontally into the combination of two perpendicular mirrors as shown below.

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Indicate the direction of the incident light after it reflects off of both mirrors.

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6 7 8 9 10 11 12 13 14 15

perpendicular mirrors as shown below.

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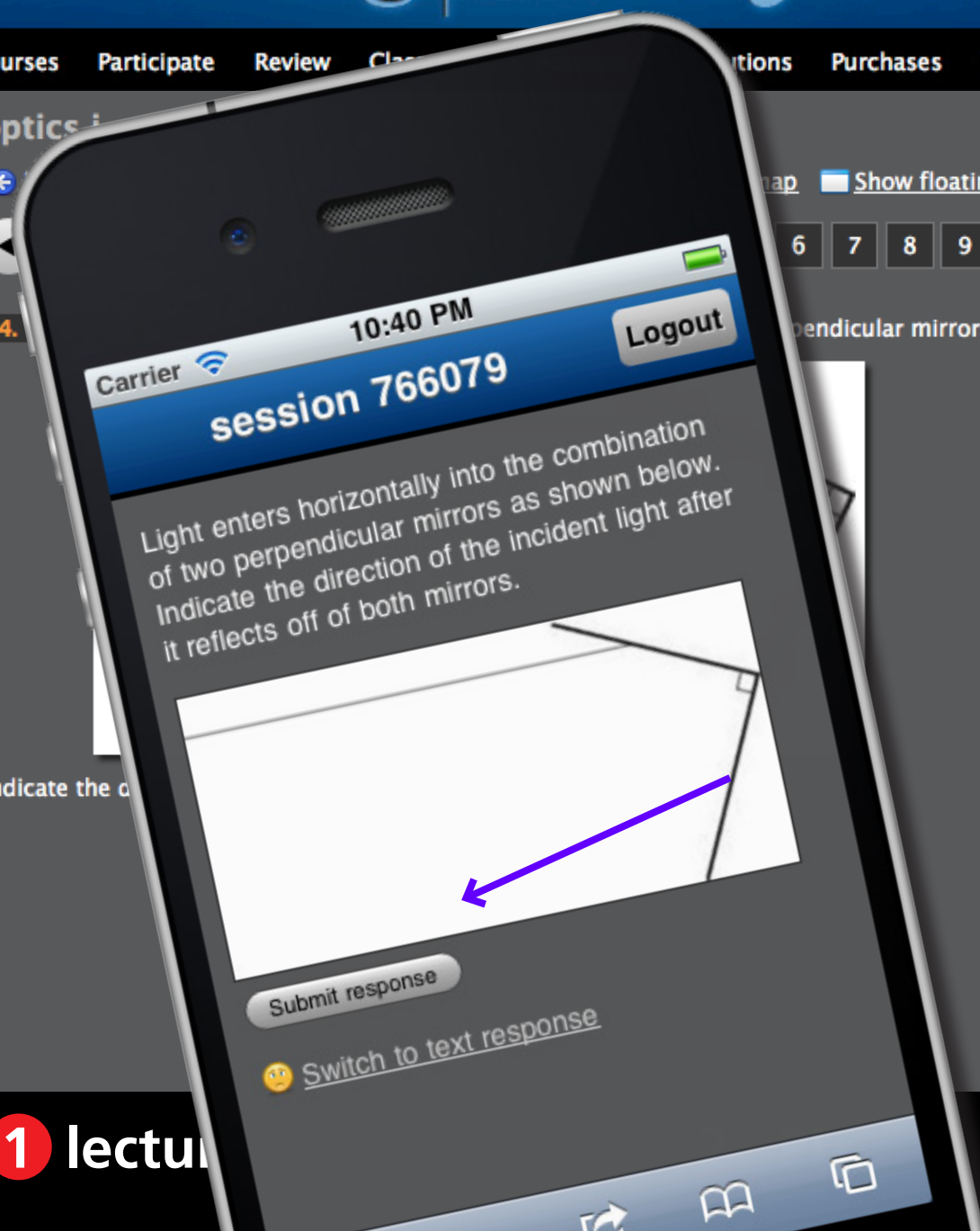
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6 7 8 9 10 11 12 13 14 15

perpendicular mirrors as shown below.

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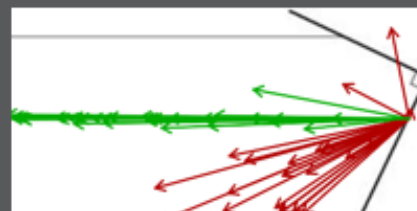
6 7 8 9 10 11 12 13 14 15



perpendicular mirrors as shown below.

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Round 1   
● 57 responses, 58% correct



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6 7 8 9 10 11 12 13 14 15

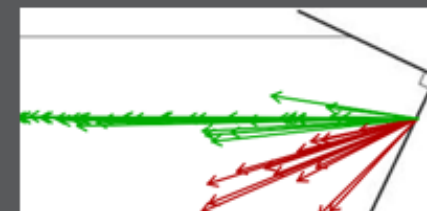
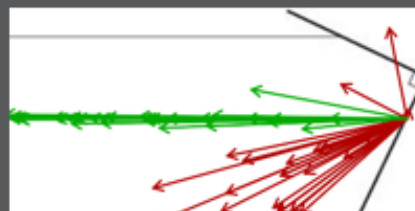


perpendicular mirrors as shown below.

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Round 1     
● 57 responses, 58% correct

Round 2     
● 51 responses, 73% correct



✓ 8 get it now  
✗ 0 still don't get it

feedback & support



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## Sample question types:

- direction

- mathematical expression

- long answer, short answer, word cloud

- numerical, data collection

- ranking, priority

- region (select point on image)

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- highlight passage

**If  $2x - y = 4$ , then  $x =$**



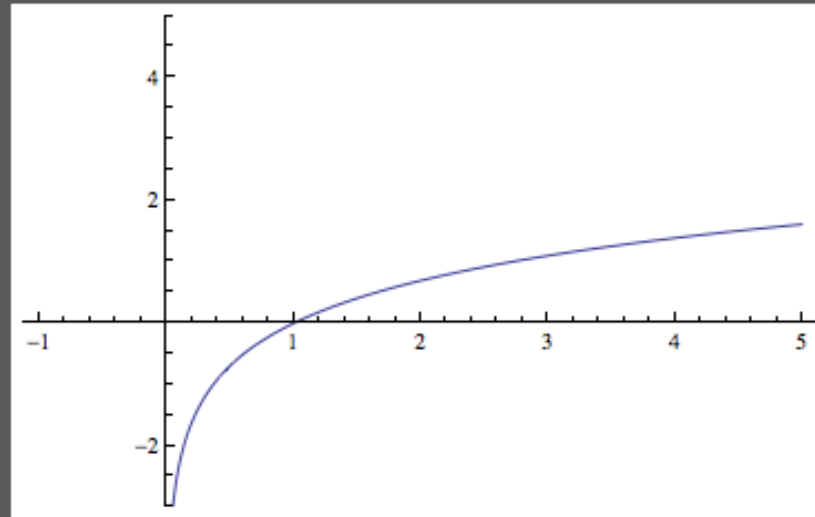
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This is a graph of  $f(x) = \ln x$ . Sketch a graph of the derivative  $f'(x)$ .



**1** lecture

**2** PI

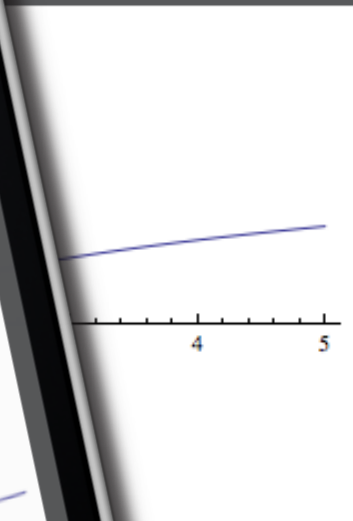
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**1** lecture

**3** PI 2.0

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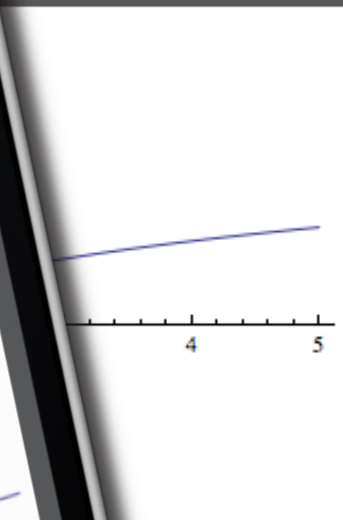
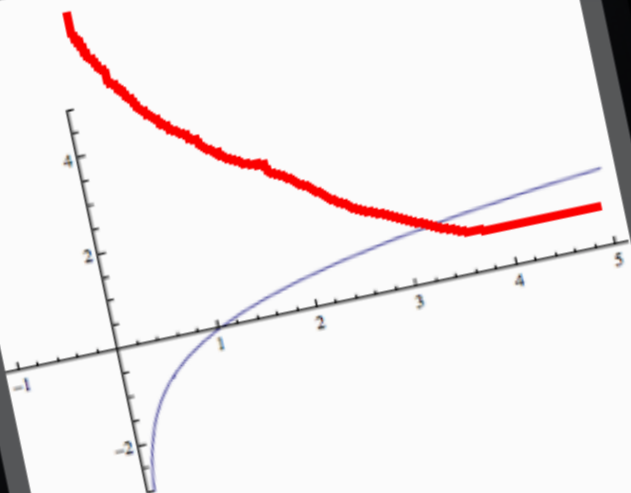
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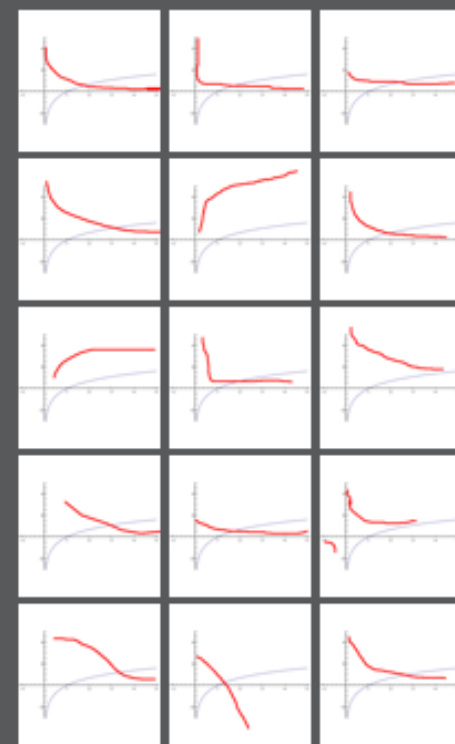


This is a graph of  $f(x) = \ln x$ . Sketch a graph of the derivative  $f'(x)$ .



Round 1

15 responses



✓ 6 get it now  
 ✗ 0 still don't get it

1 lecture

3 PI 2.0

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**data analytics**



1 lecture

2 PI

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# human interaction

1 lecture

2 PI

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Round 1 74 responses, 61% correct

Round 2 75 responses, 83% correct

A. 61% B. 4% C. 35% D. 0% E. 0%

A. 83% B. 0% C. 17% D. 0% E. 0%

A positively charged rod is held near a neutral conducting sphere as illustrated below. A positively charged particle is moved from point A to point B

A. positive  
B. zero  
C. negative  
D. depends on the path taken from A to B  
E. cannot be determined without knowing more about the polarization induced in the sphere

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A positively charged rod is held near a neutral conducting sphere as illustrated below. A positively charged particle is moved from point A to point B as illustrated below. The potential difference from A to B is

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 75 responses, 83% correct

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C. 17%
D. 0%
E. 0%

Search: \_\_\_\_\_

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Search:

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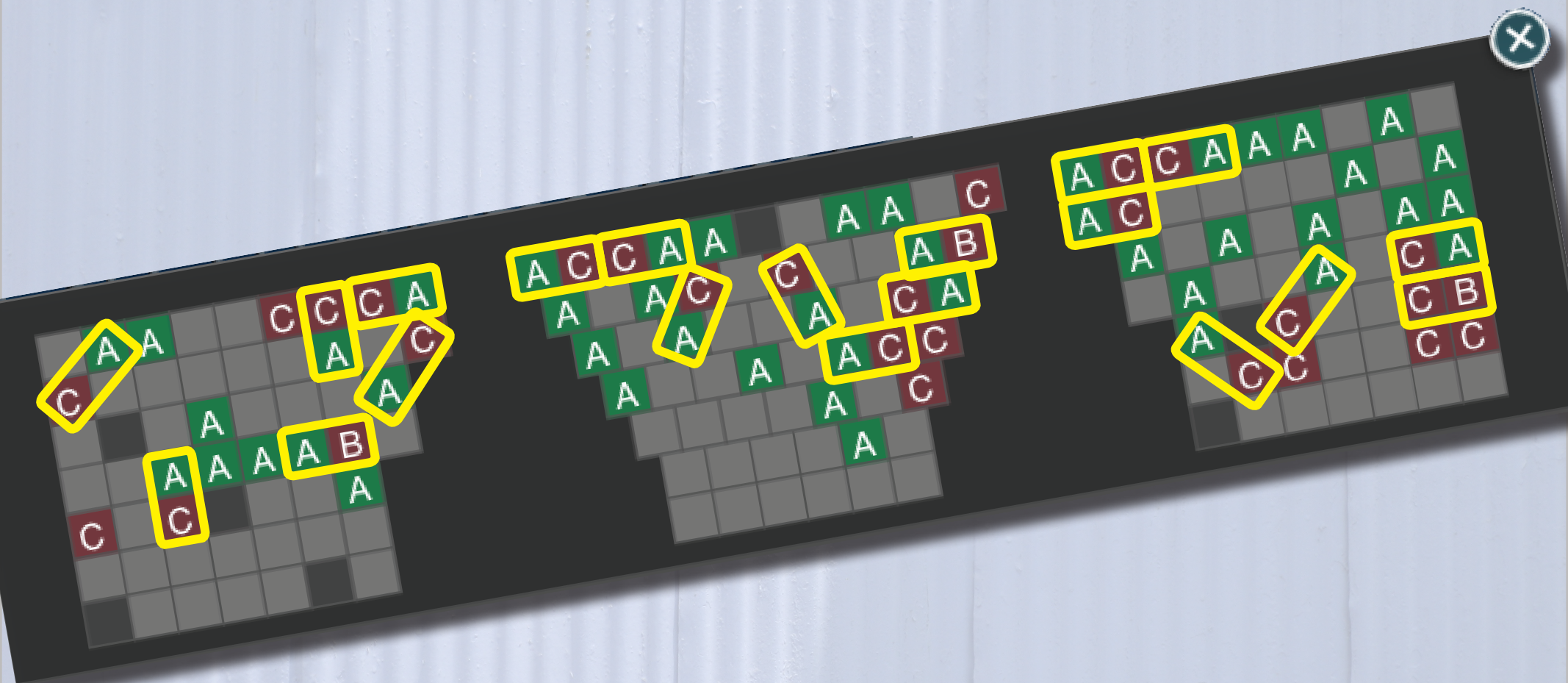
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let system manage pairing



1 lecture

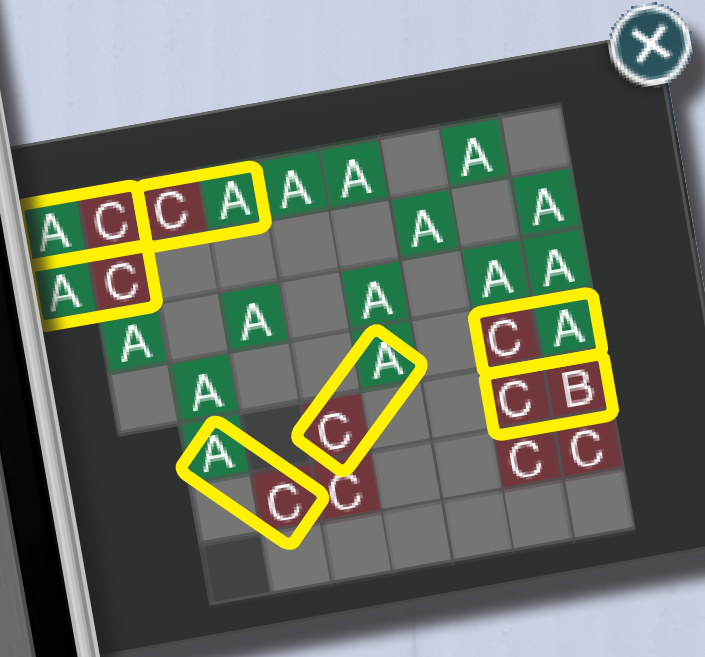
2 PI

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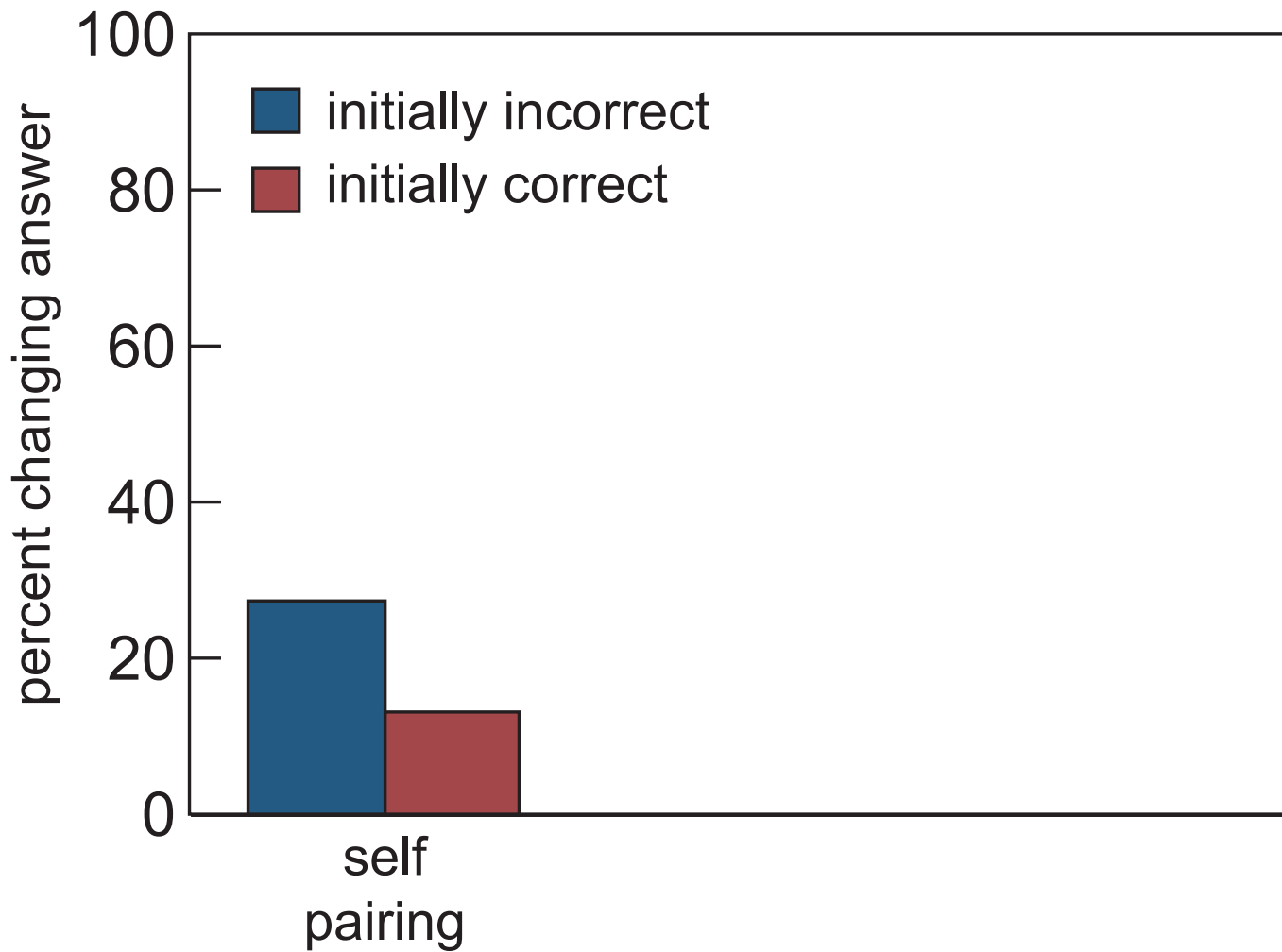
A positively charged rod is held near a neutral conducting sphere as illustrated below. A positively charged particle is moved from point A to point B at constant speed. The mechanical work required to cause this motion is



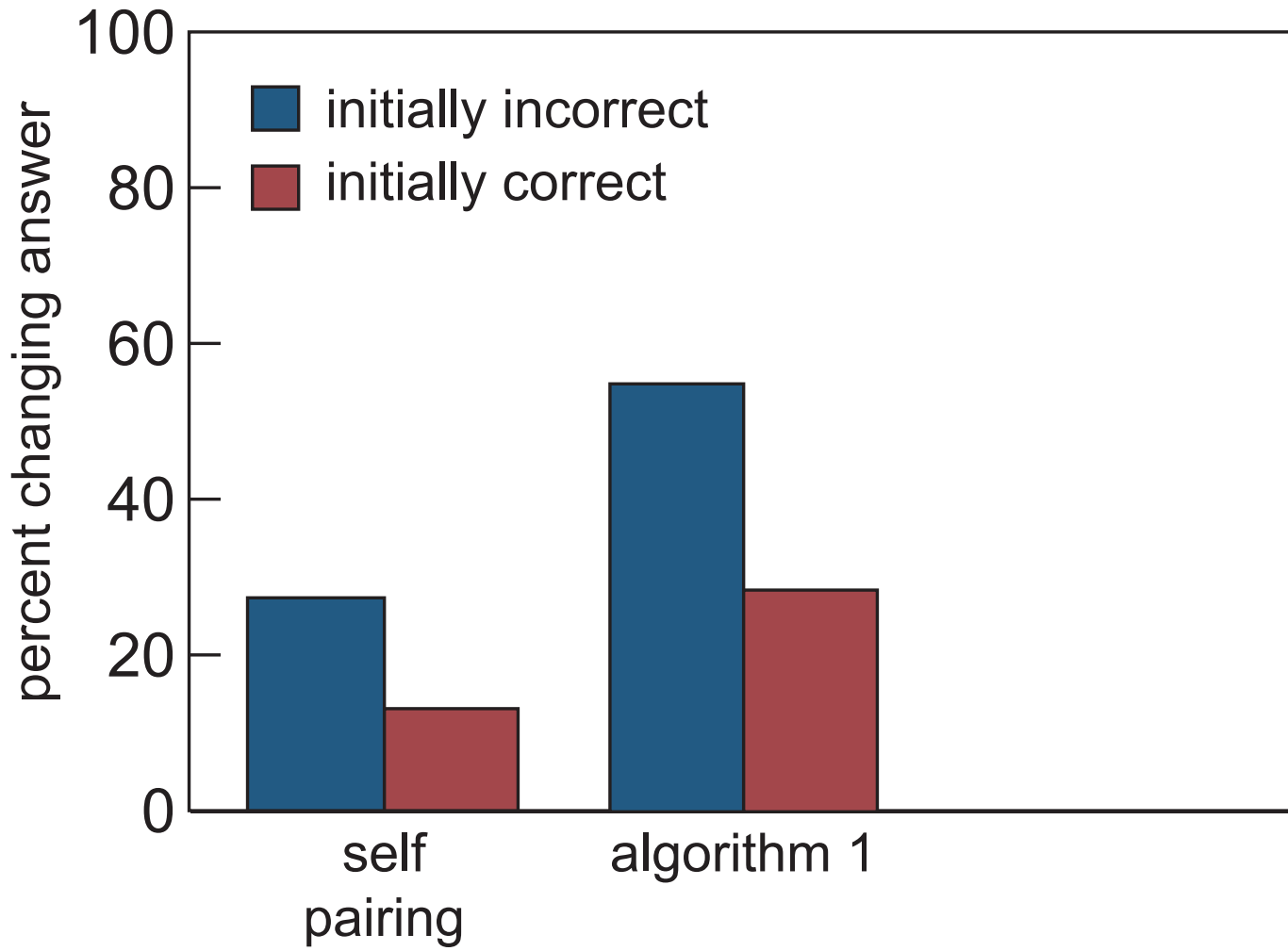
Please discuss your response with:  
• Brian Lukoff (to your left)  
✓ I am talking to this person/people

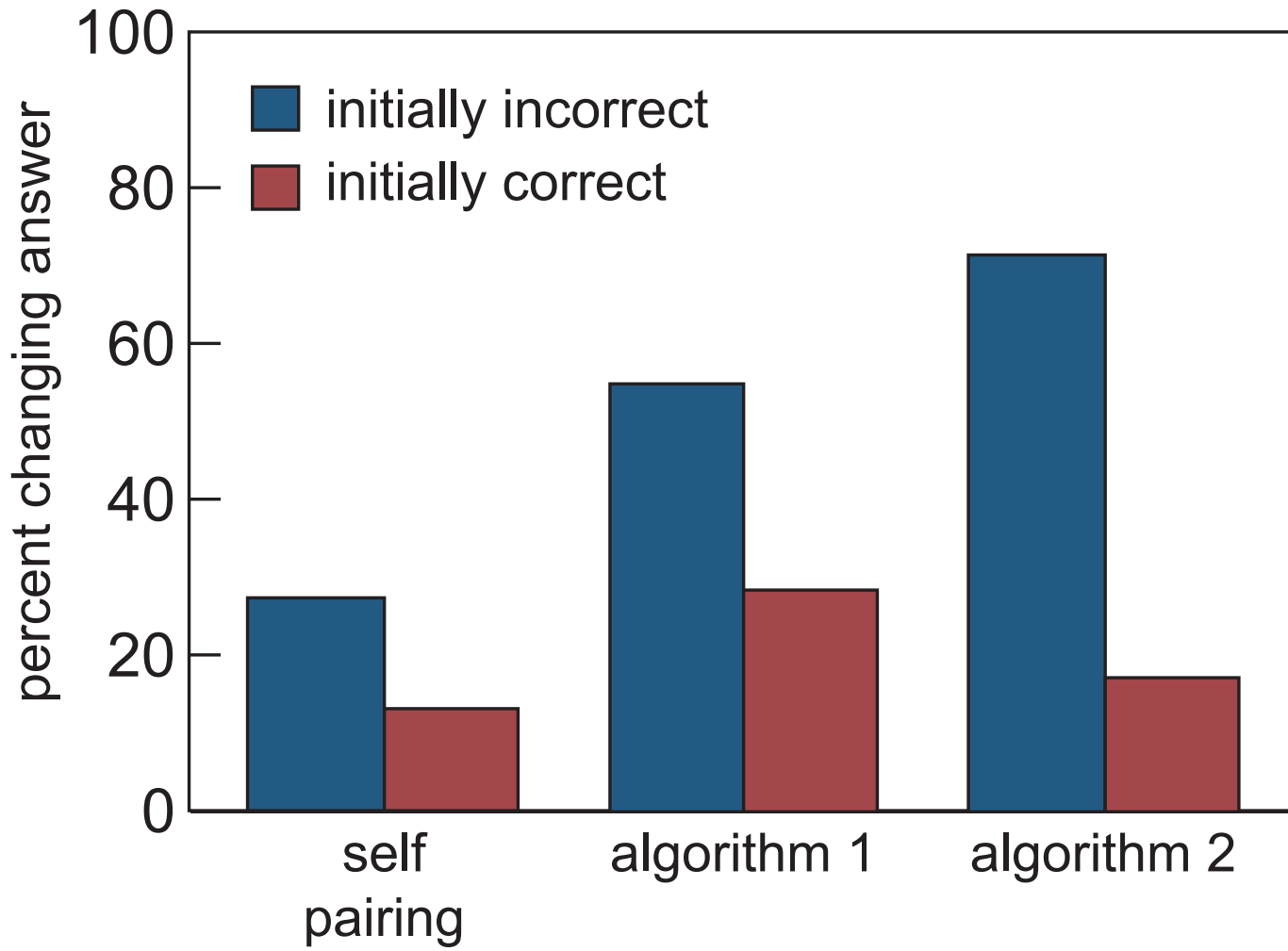














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**Education is not just about:**

- **transferring information**
- **getting students to do what we do**



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- **transferring information**
- **getting students to do what we do**

**discovery & exploration a must!**



## Learning Catalytics:

- implement proven, researched pedagogy



## Learning Catalytics:

- implement proven, researched pedagogy
- use consumer devices

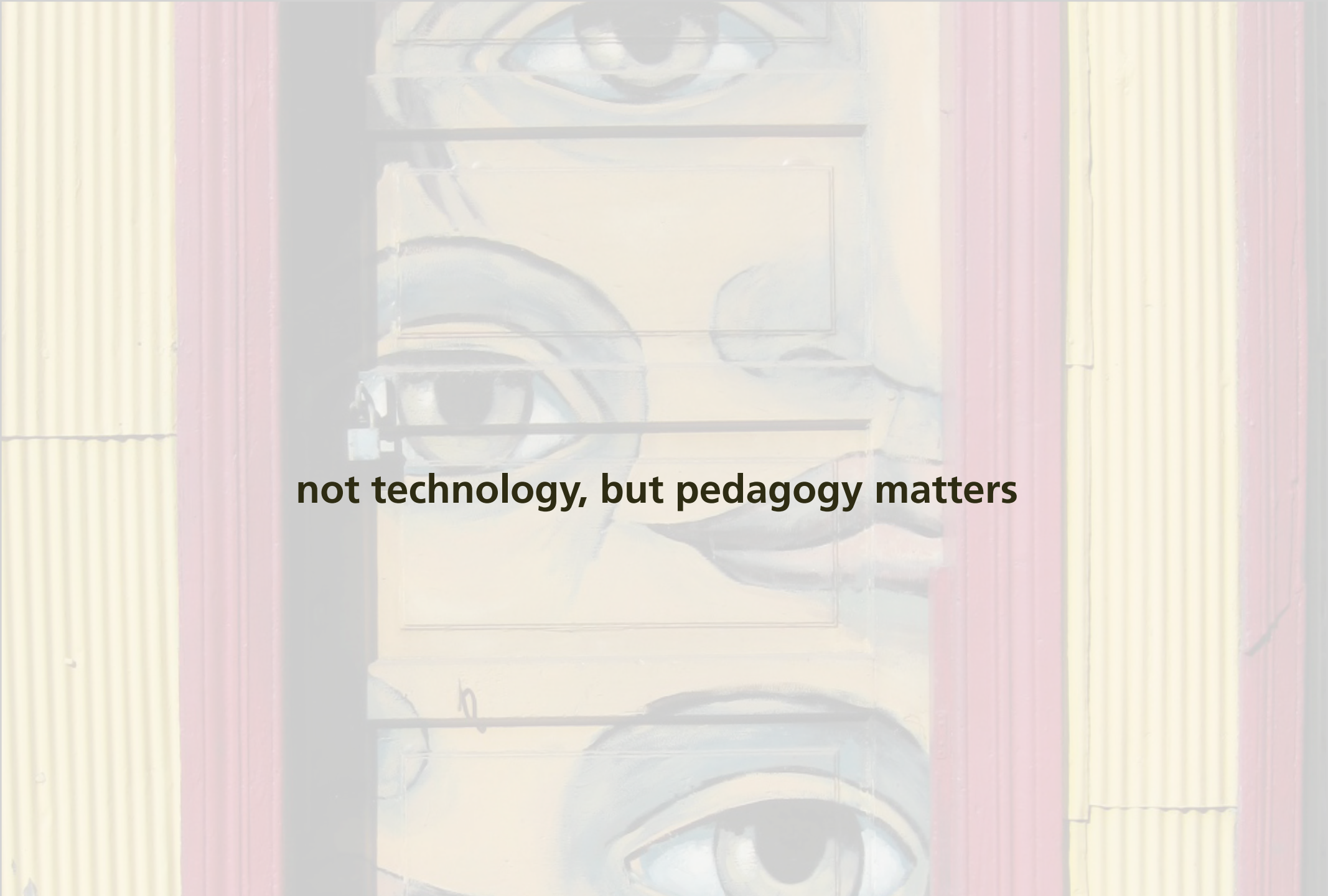
## **Learning Catalytics:**

- **implement proven, researched pedagogy**
- **use consumer devices**
- **avoid pitfalls of MC assessment**



## Learning Catalytics:

- implement proven, researched pedagogy
- use consumer devices
- avoid pitfalls of MC assessment
- create a smart classroom *anywhere*



**not technology, but pedagogy matters**

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**Funding:**

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