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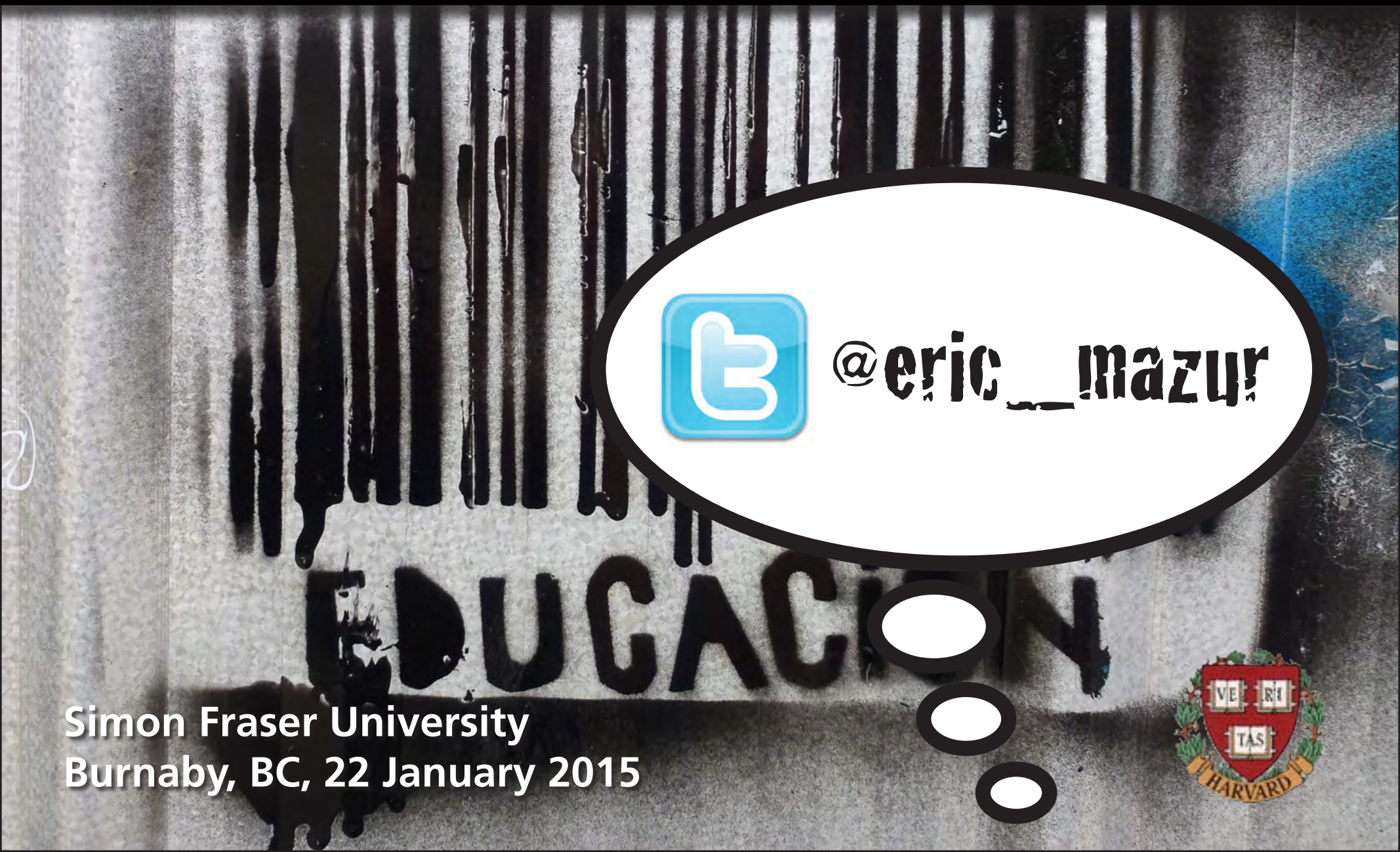
3. Join session 123456789

The Tyranny of the Lecture

Simon Fraser University
Burnaby, BC, 22 January 2015

The Tyranny of the Lecture



Simon Fraser University
Burnaby, BC, 22 January 2015

1 lecture

1 lecture

2 PI

1 lecture

2 PI

3 PI 2.0

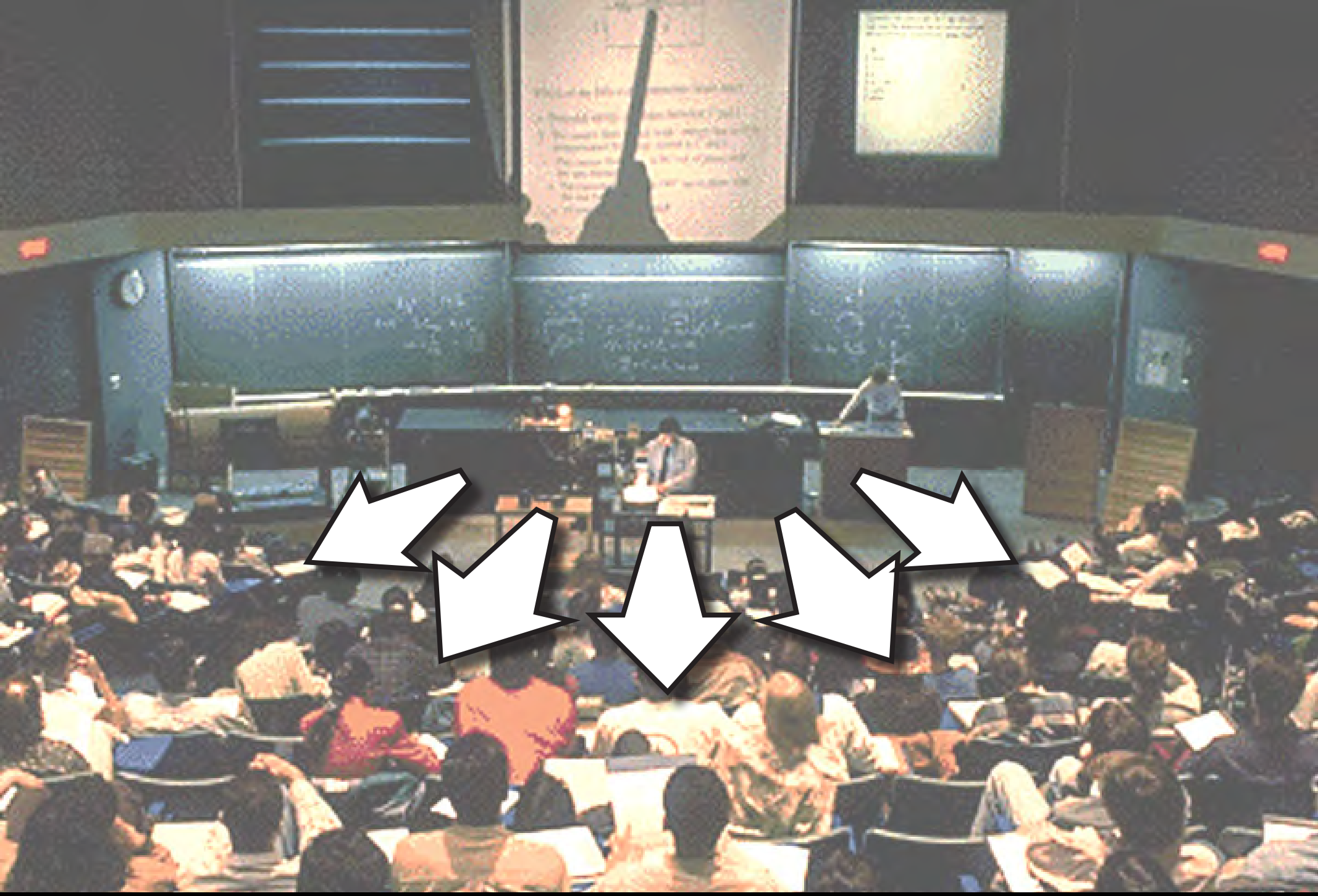
1 lecture

2 PI

3 PI 2.0

What happens in a lecture?

1 lecture



1 lecture

in a lecture, students…

in a lecture, students…

1. don’t pay utmost attention

in a lecture, students…

1. don’t pay utmost attention

2. think they know it

in a lecture, students…

1. don’t pay utmost attention

2. think they know it

3. are not confronted with misconceptions

in a lecture, students…

1. don’t pay utmost attention

2. think they know it

3. are not confronted with misconceptions

false sense of security

an illusion. . .

1 lecture

1 lecture

2 PI

1. transfer of information

1. transfer of information

2. assimilation of that information

1 lecture

2 PI

1. transfer of information (in class)

2. assimilation of that information

1 lecture

2 PI

1. transfer of information (in class)

2. assimilation of that information (out of class)

1 lecture

2 PI

Should focus on THIS!

1. transfer of information (in

2. assimilation of that information (out of class)

1 lecture

2 PI

1. transfer of information (in class)

2. assimilation of that information (out of class)

1 lecture

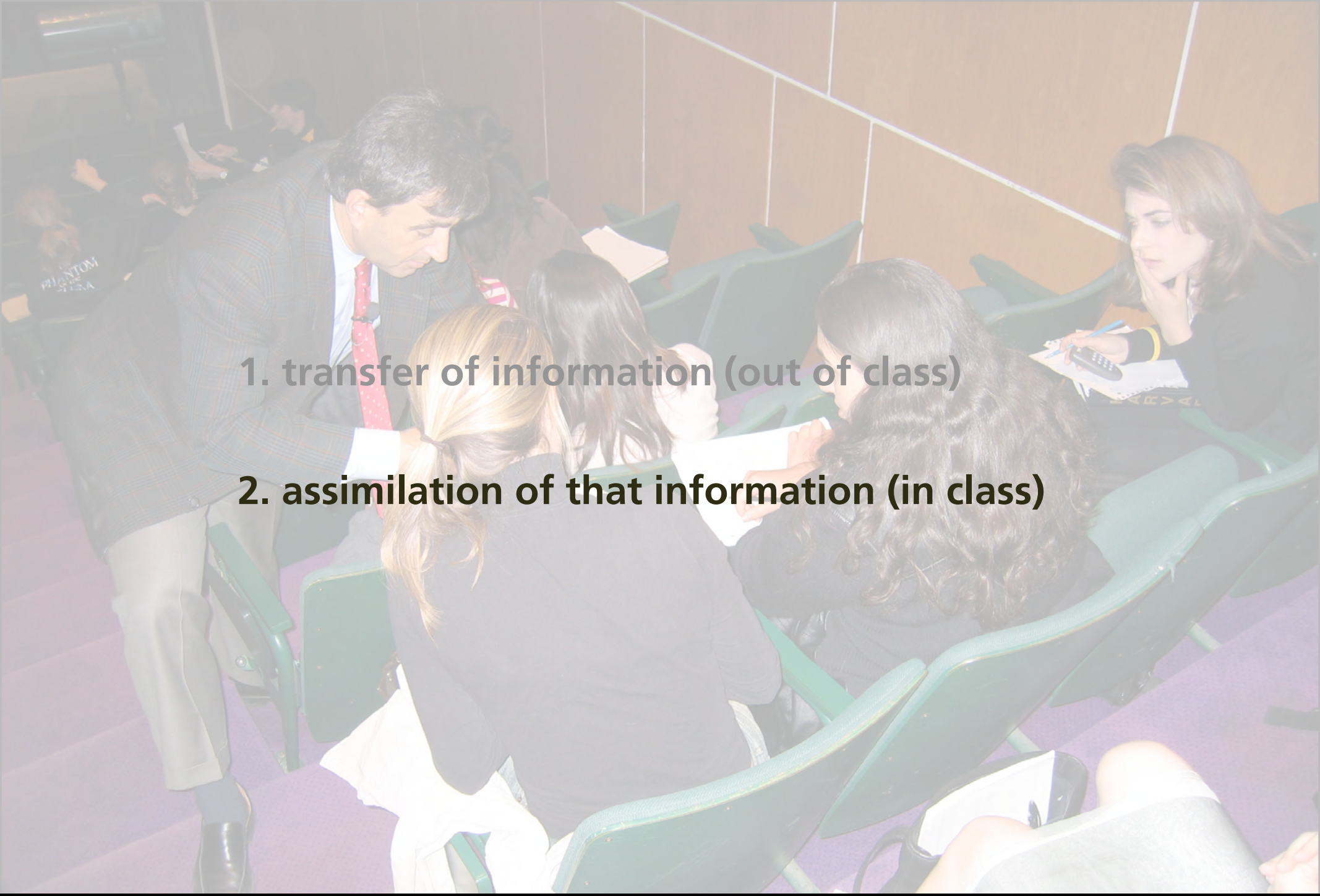
2 PI

1. transfer of information (out of class)

2. assimilation of that information (in class)

1 lecture

2 PI

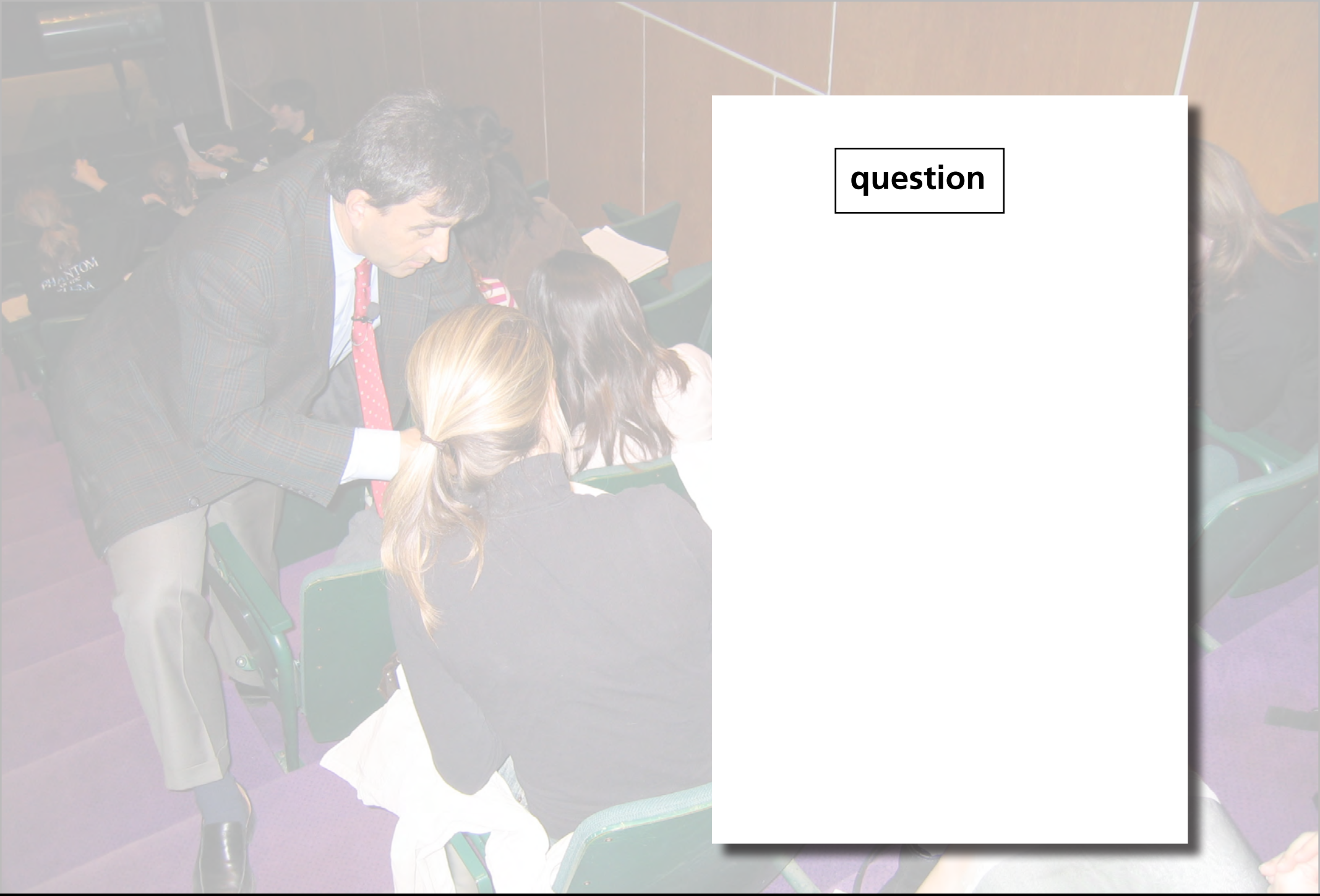


1. transfer of information (out of class)

2. assimilation of that information (in class)

1 lecture

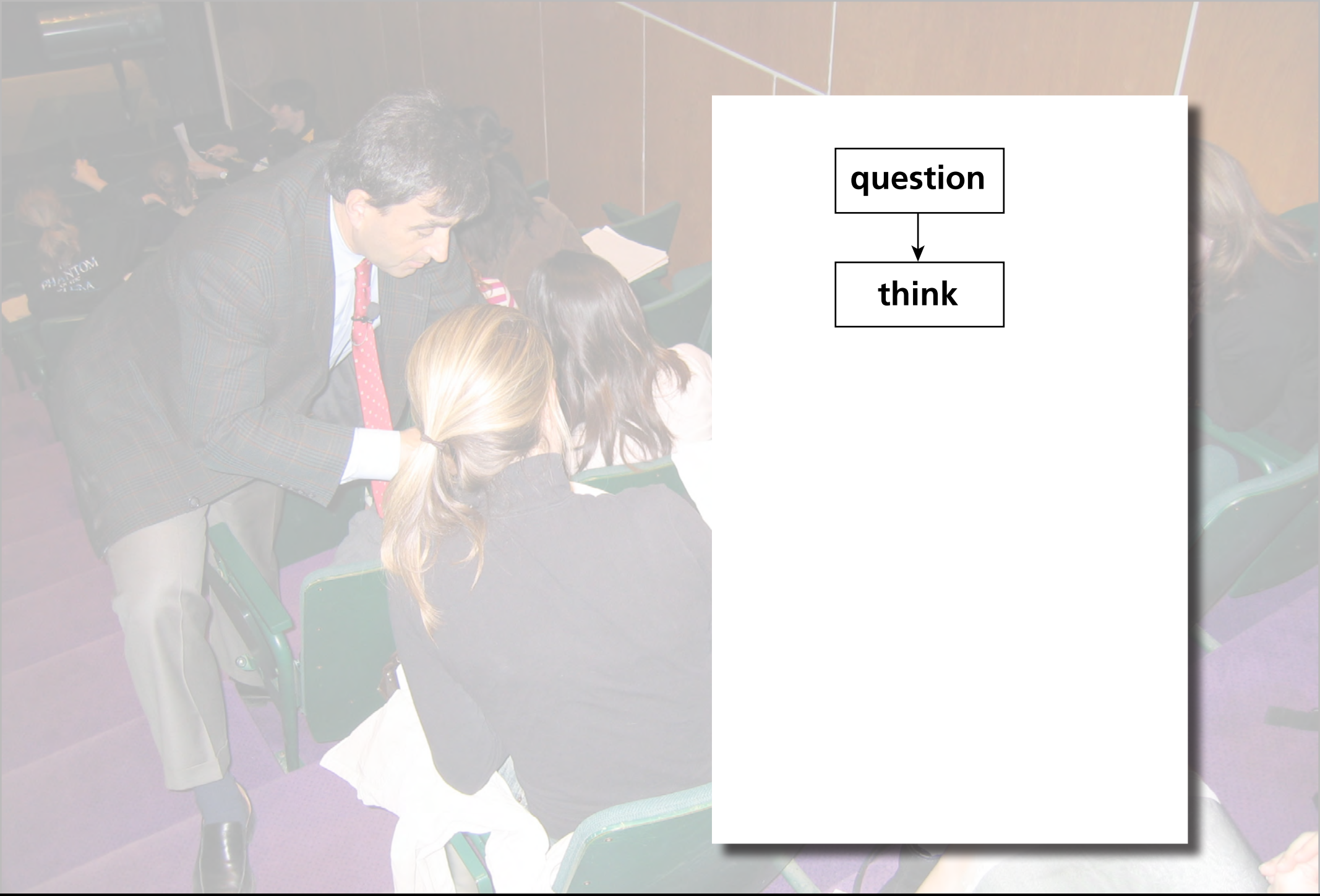
2 PI



question

1 lecture

2 PI



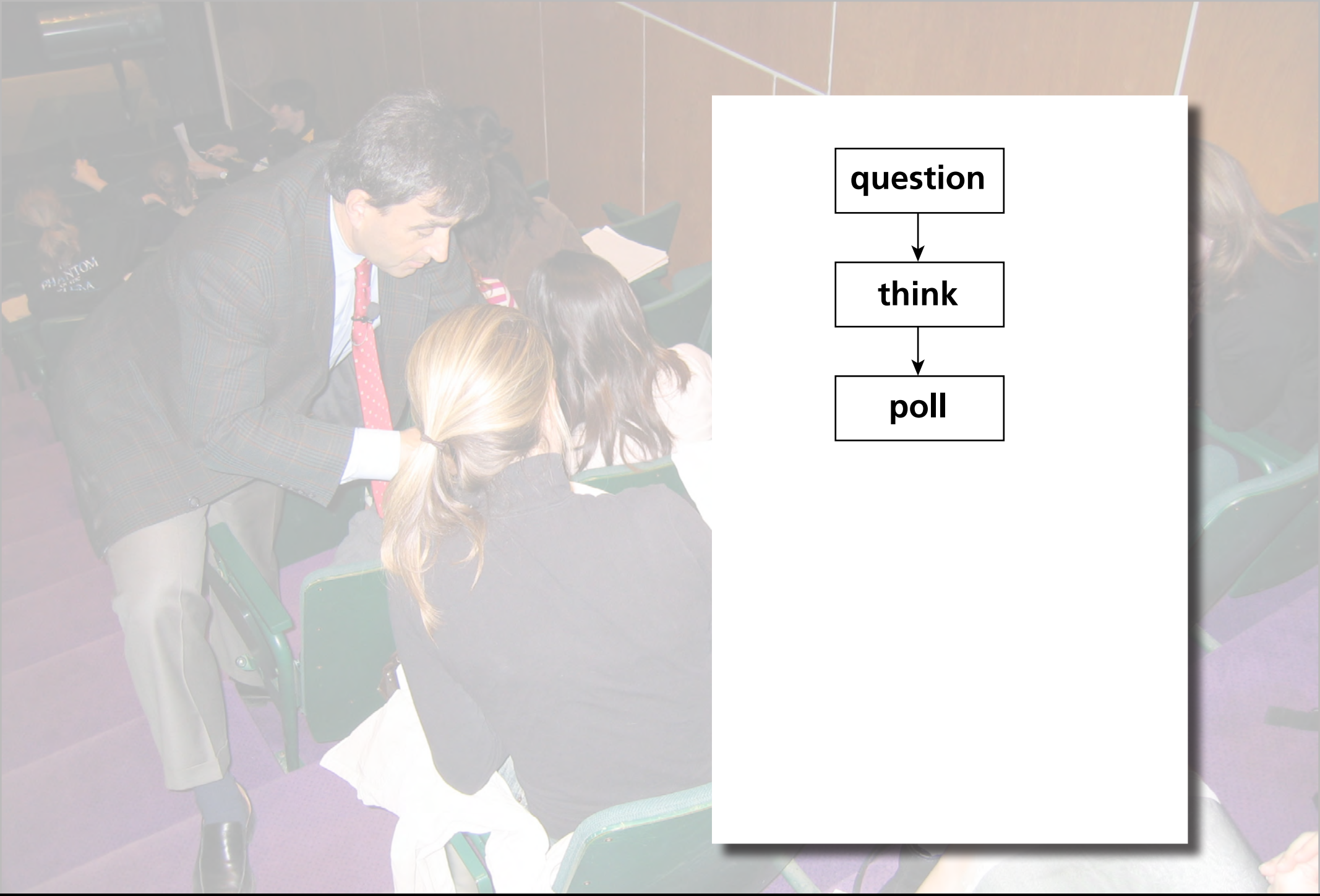
question

↓

think

1 lecture

2 PI



question

↓

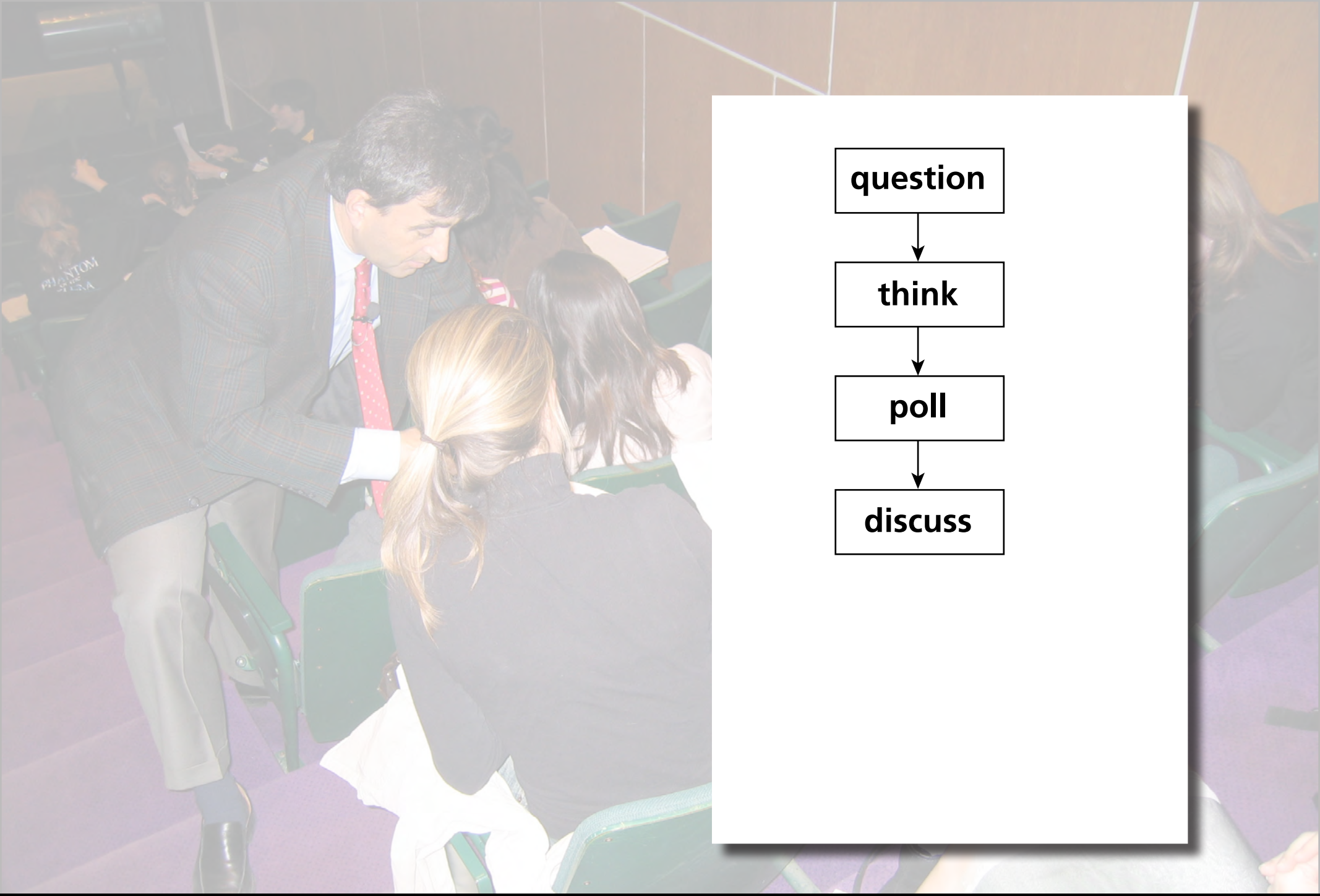
think

↓

poll

1 lecture

2 PI



question

↓

think

↓

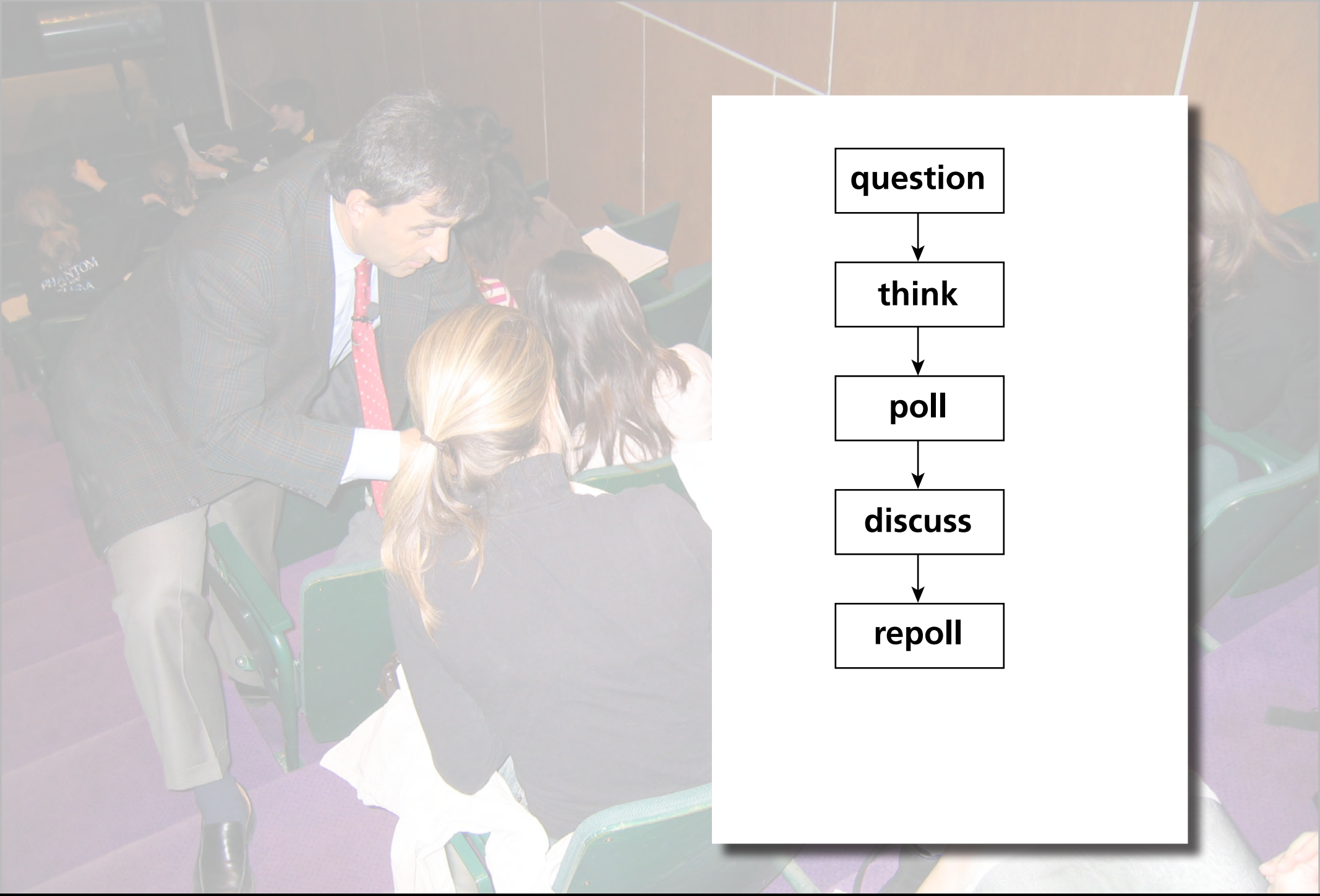
poll

↓

discuss

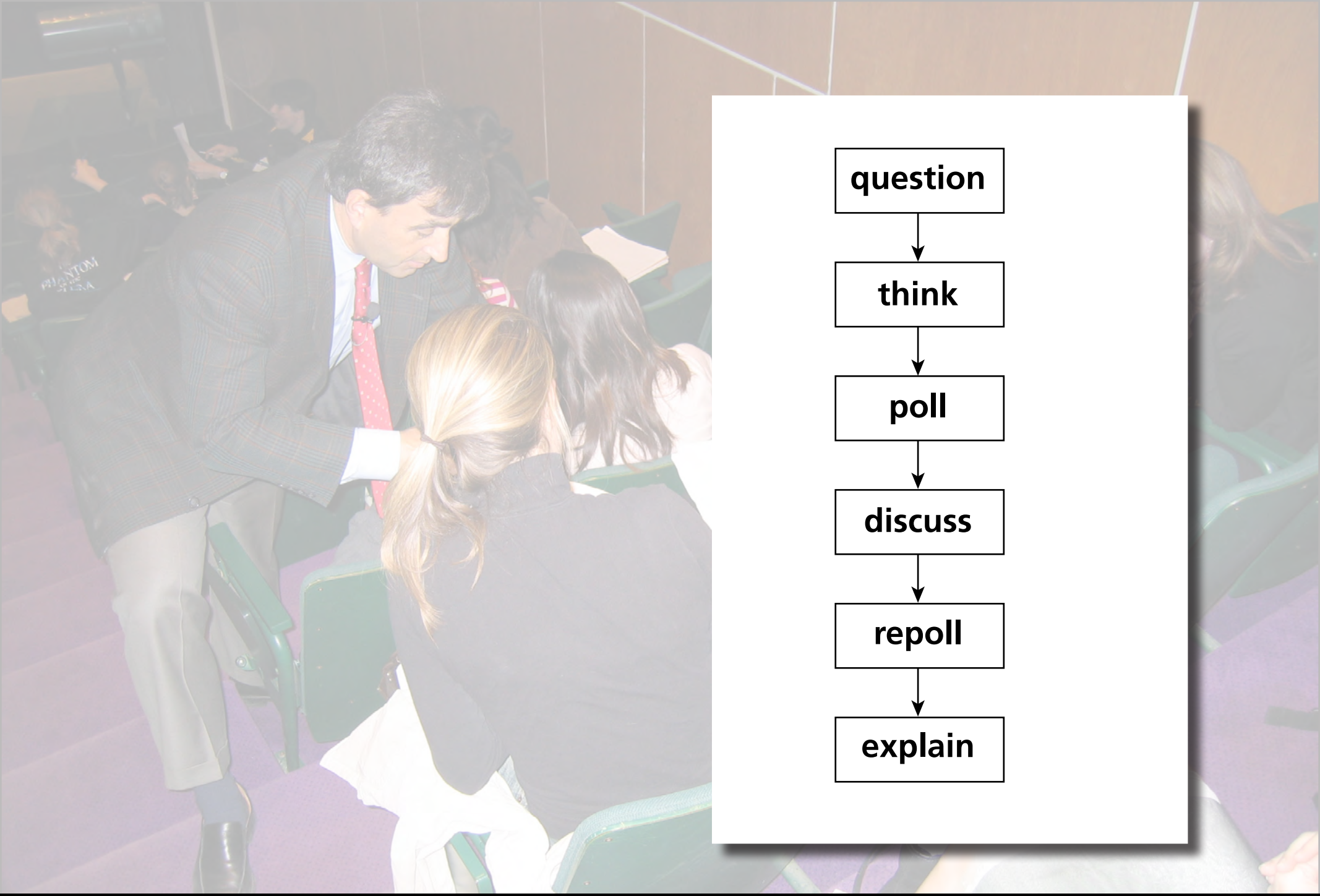
1 lecture

2 PI



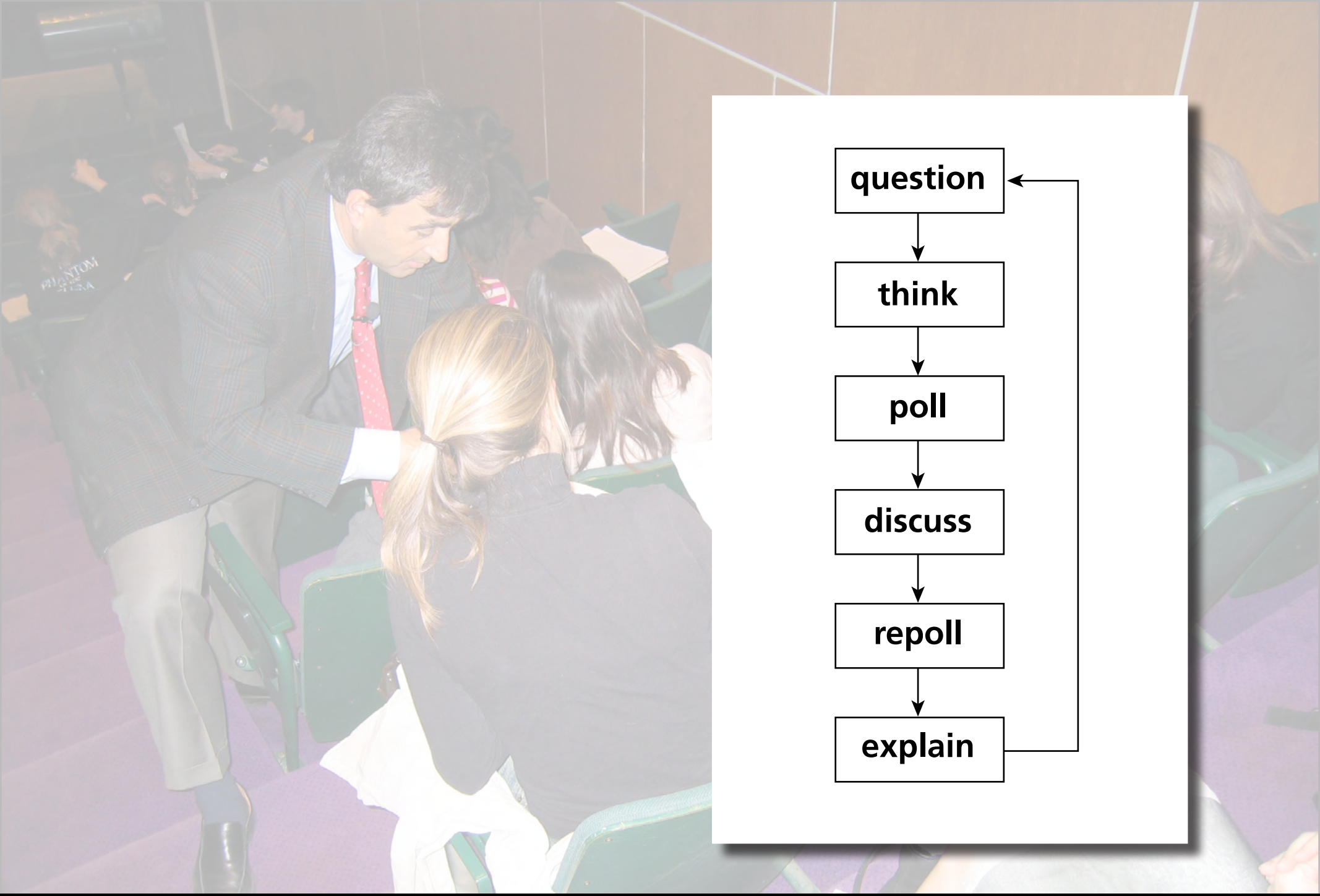
1 lecture

2 PI



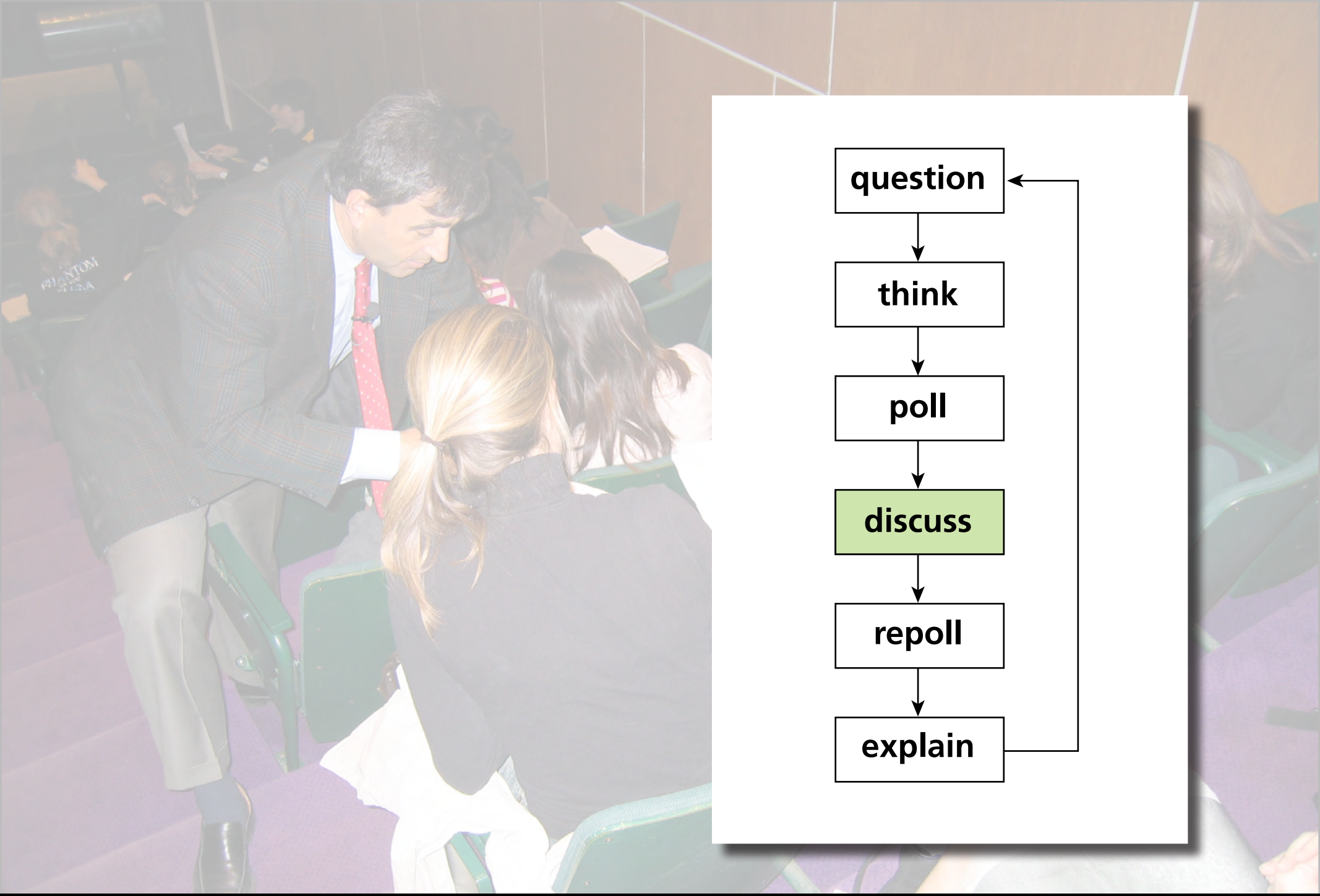
1 lecture

2 PI



1 lecture

2 PI



1 lecture

2 PI

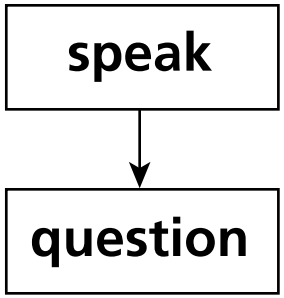
1 lecture

2 PI

speak

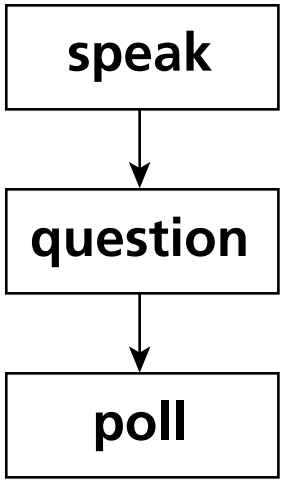
1 lecture

2 PI



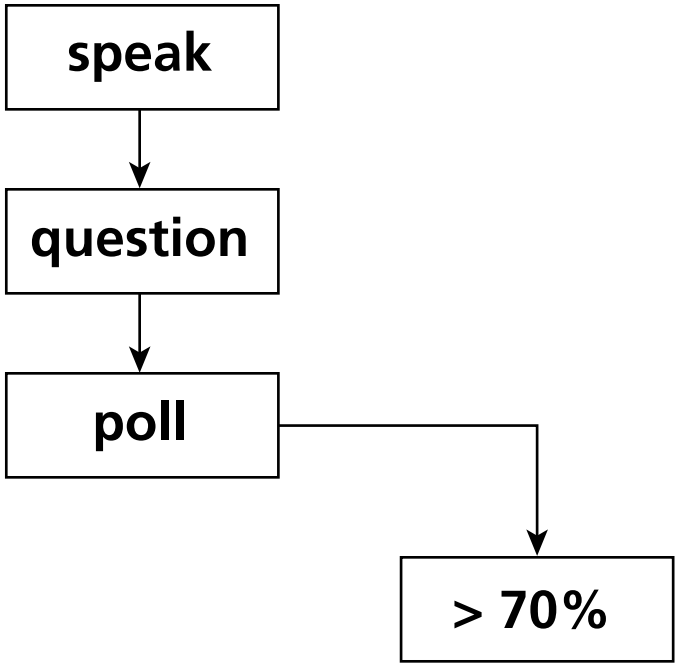
1 lecture

2 PI



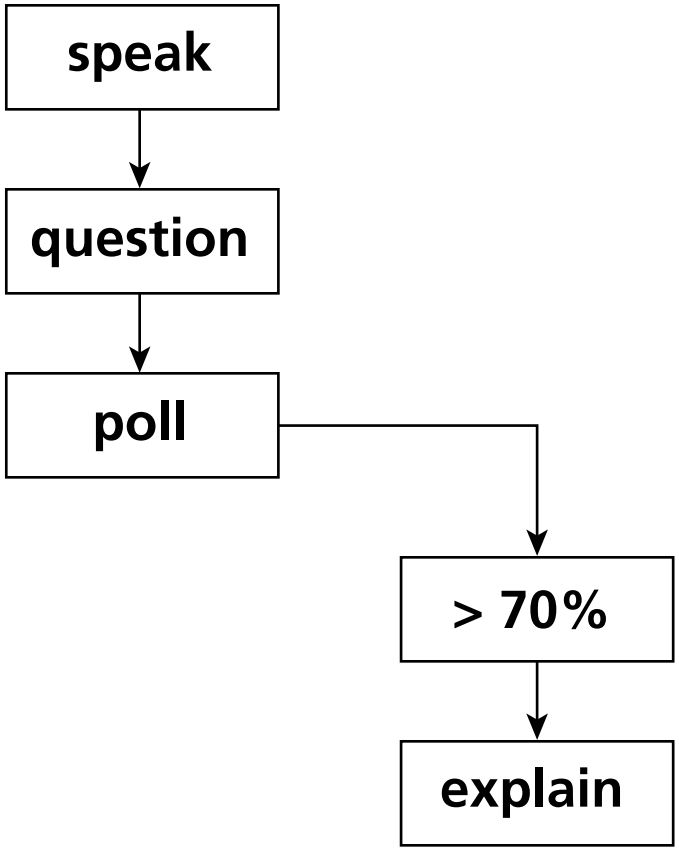
1 lecture

2 PI



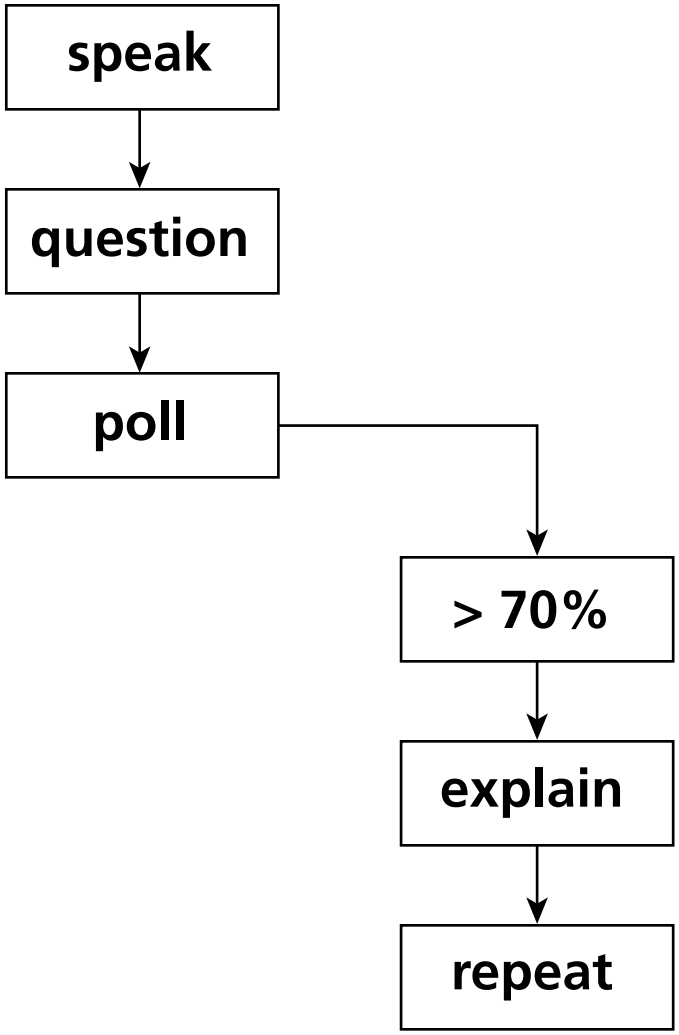
1 lecture

2 PI



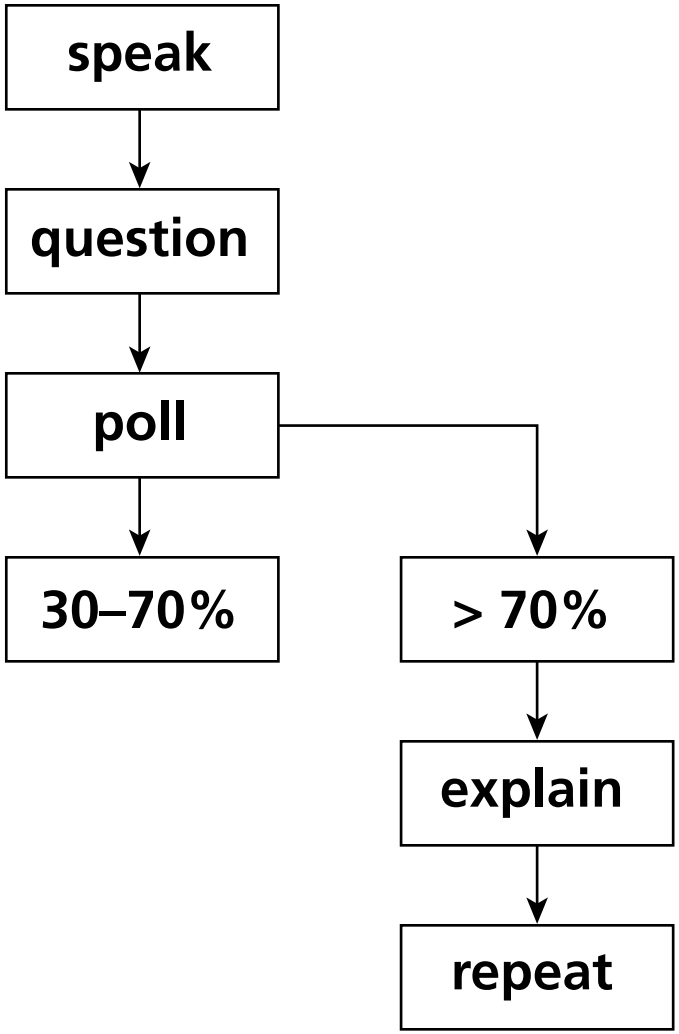
1 lecture

2 PI



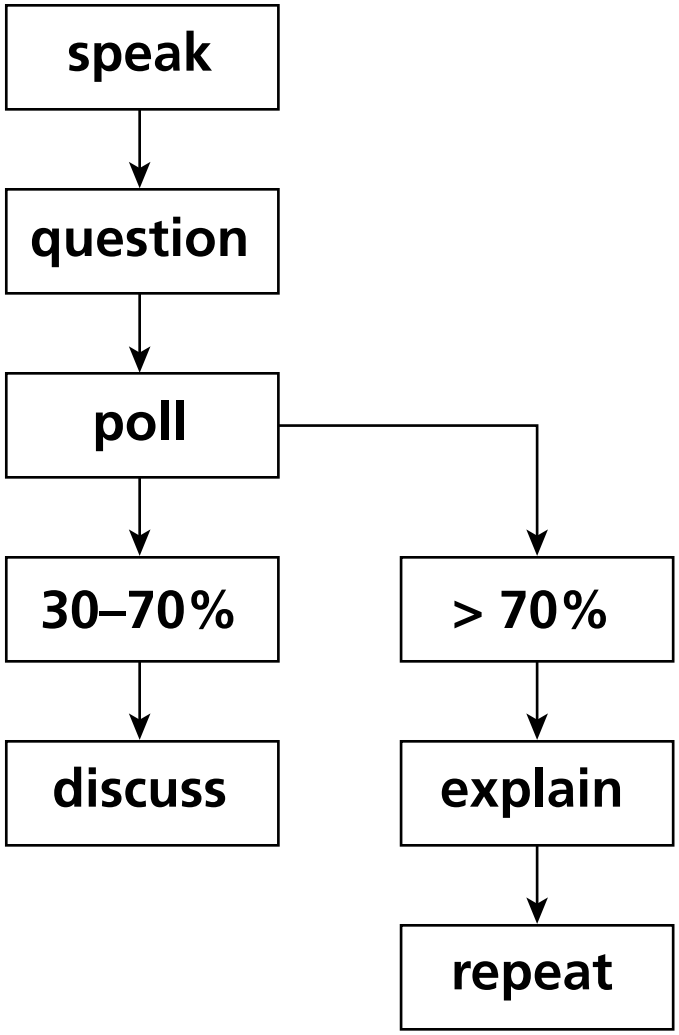
1 lecture

2 PI



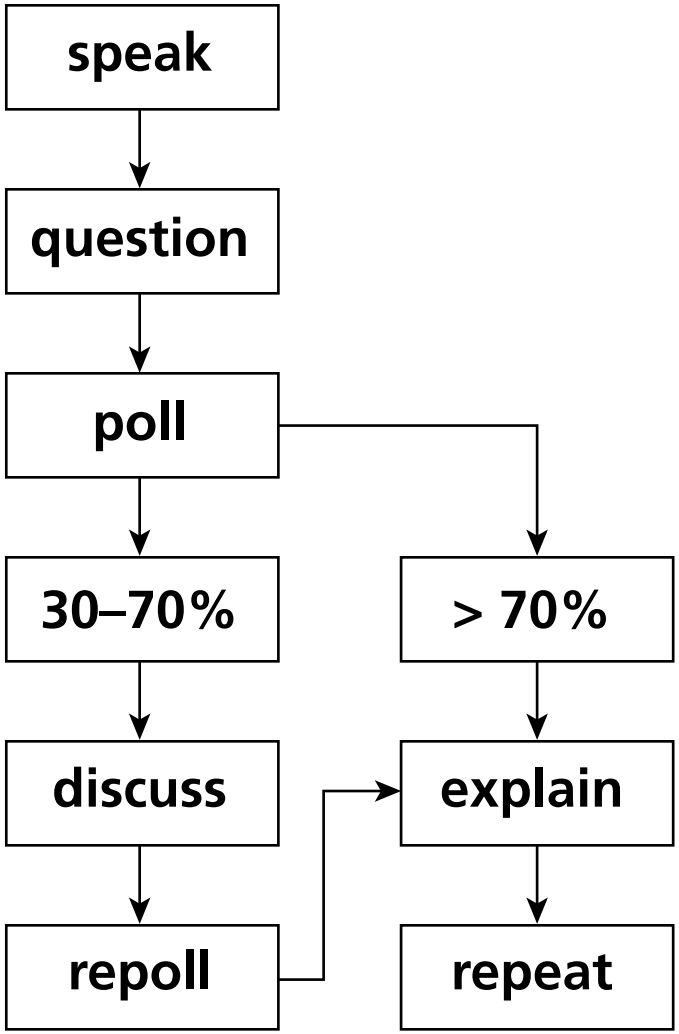
1 lecture

2 PI



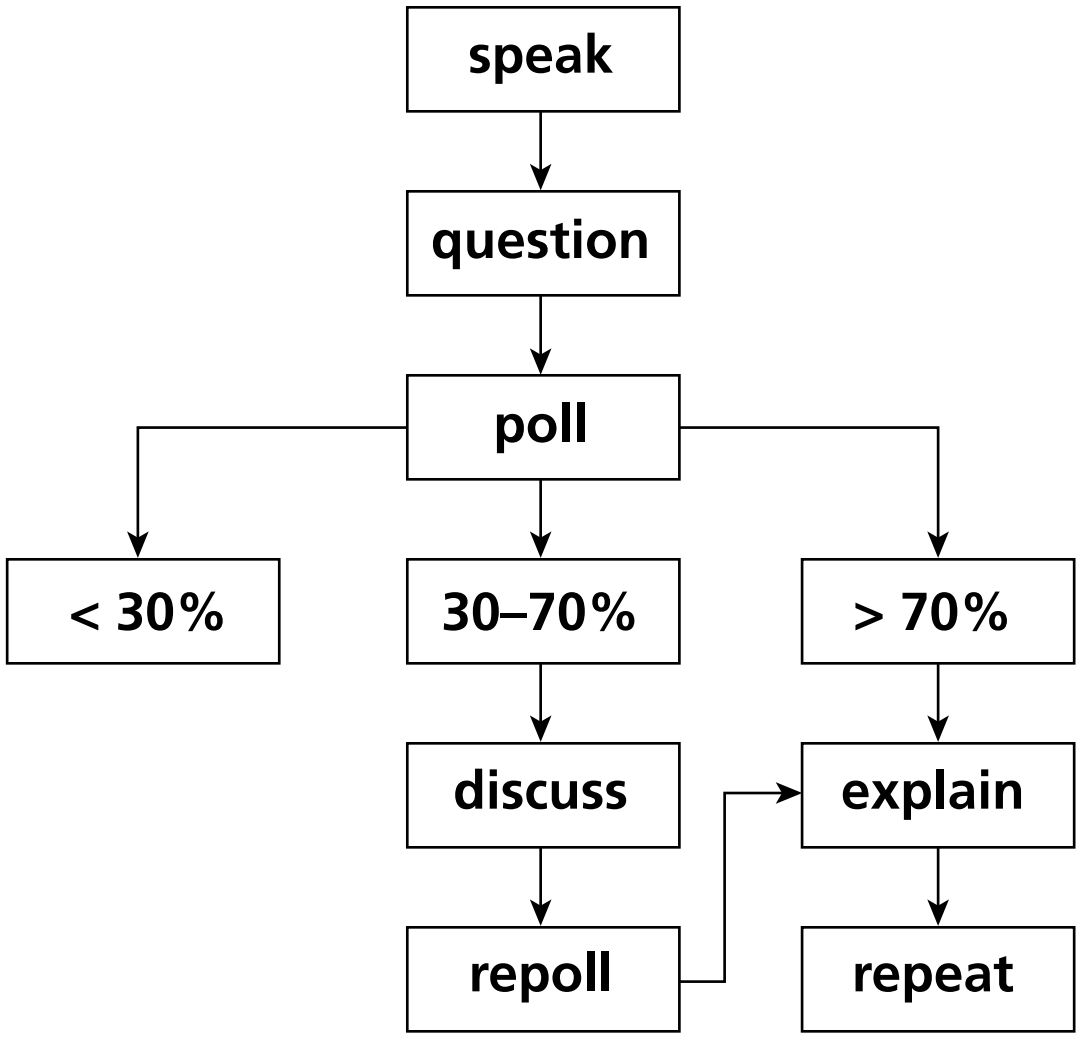
1 lecture

2 PI



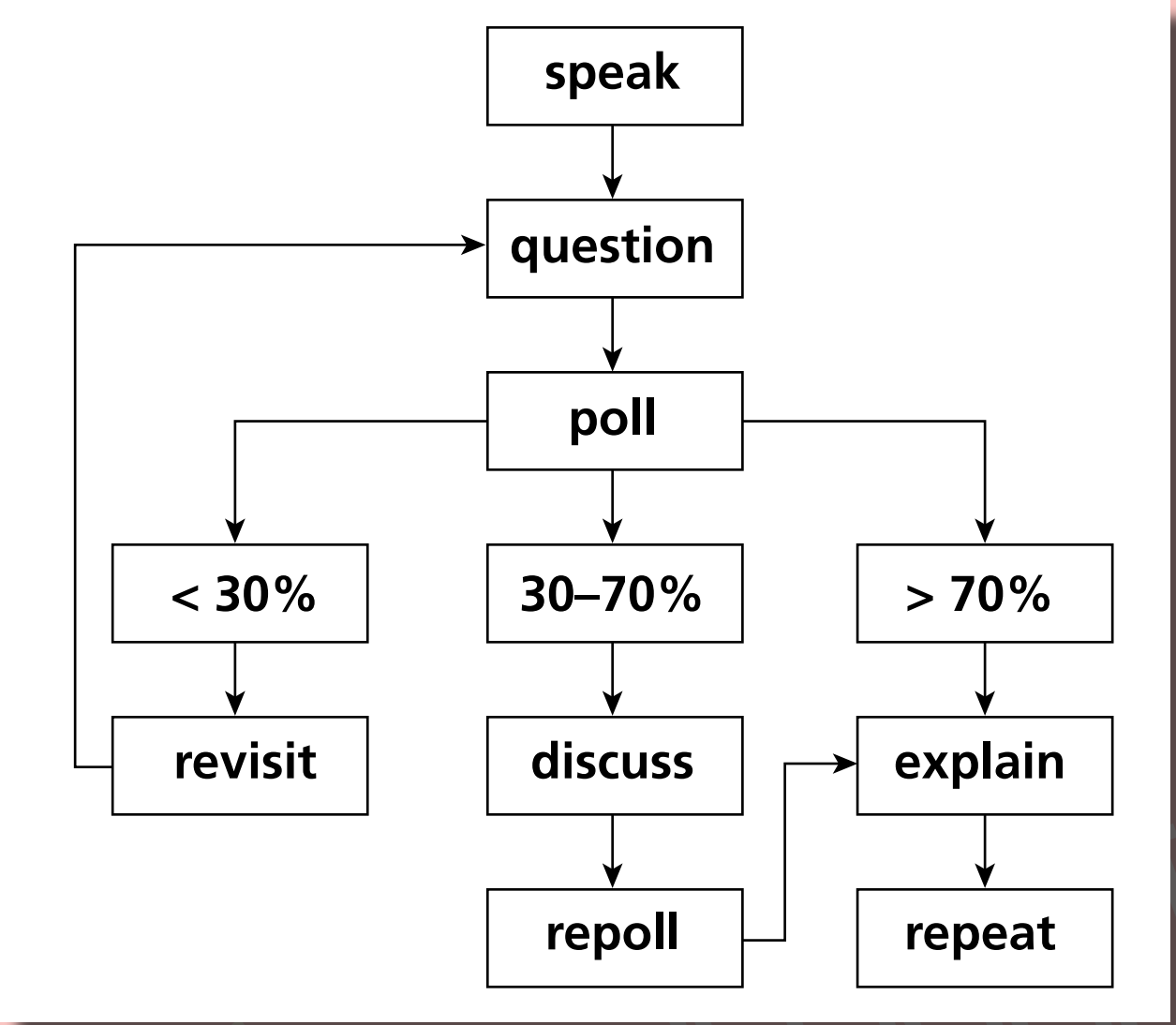
1 lecture

2 PI



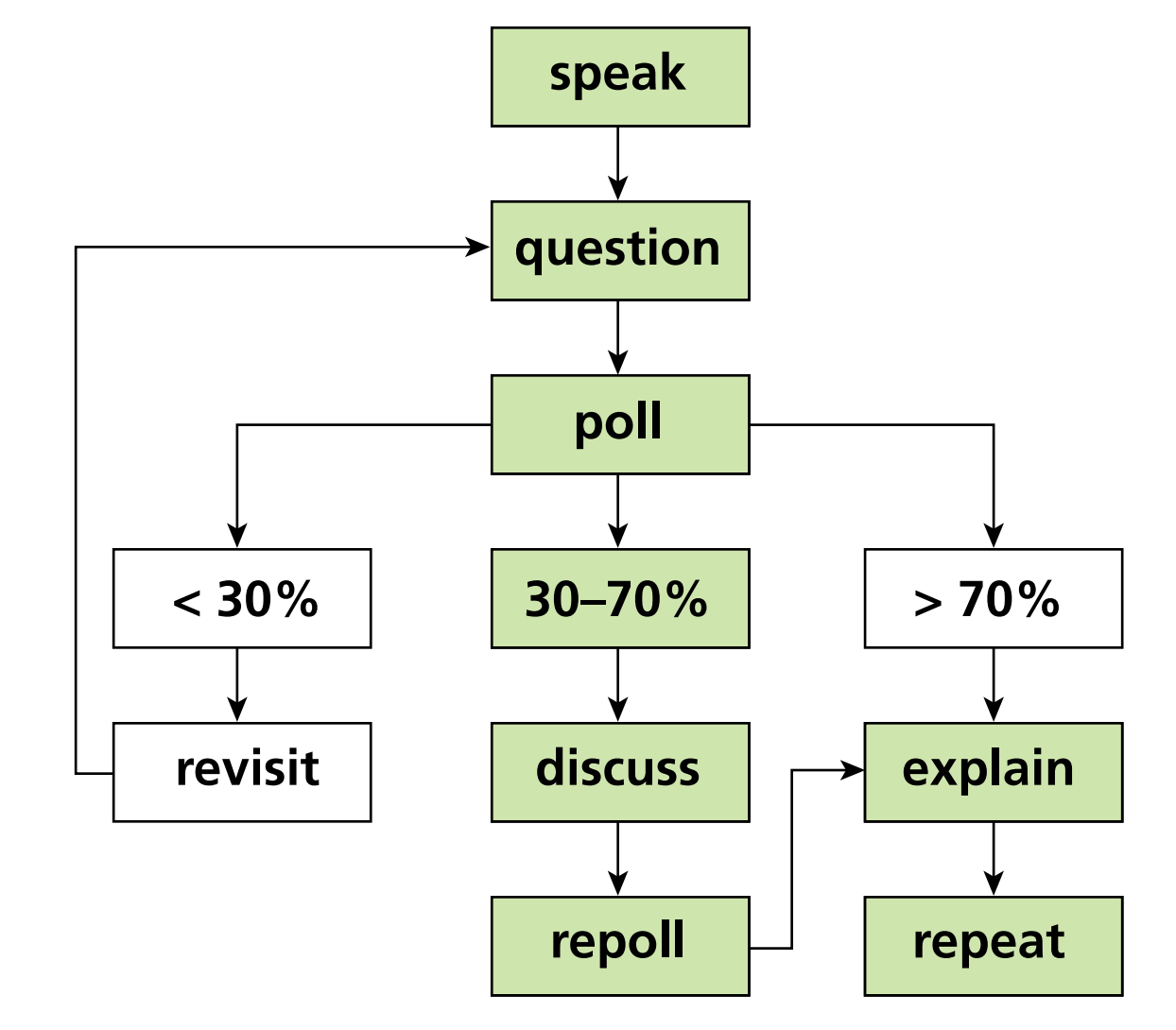
1 lecture

2 PI



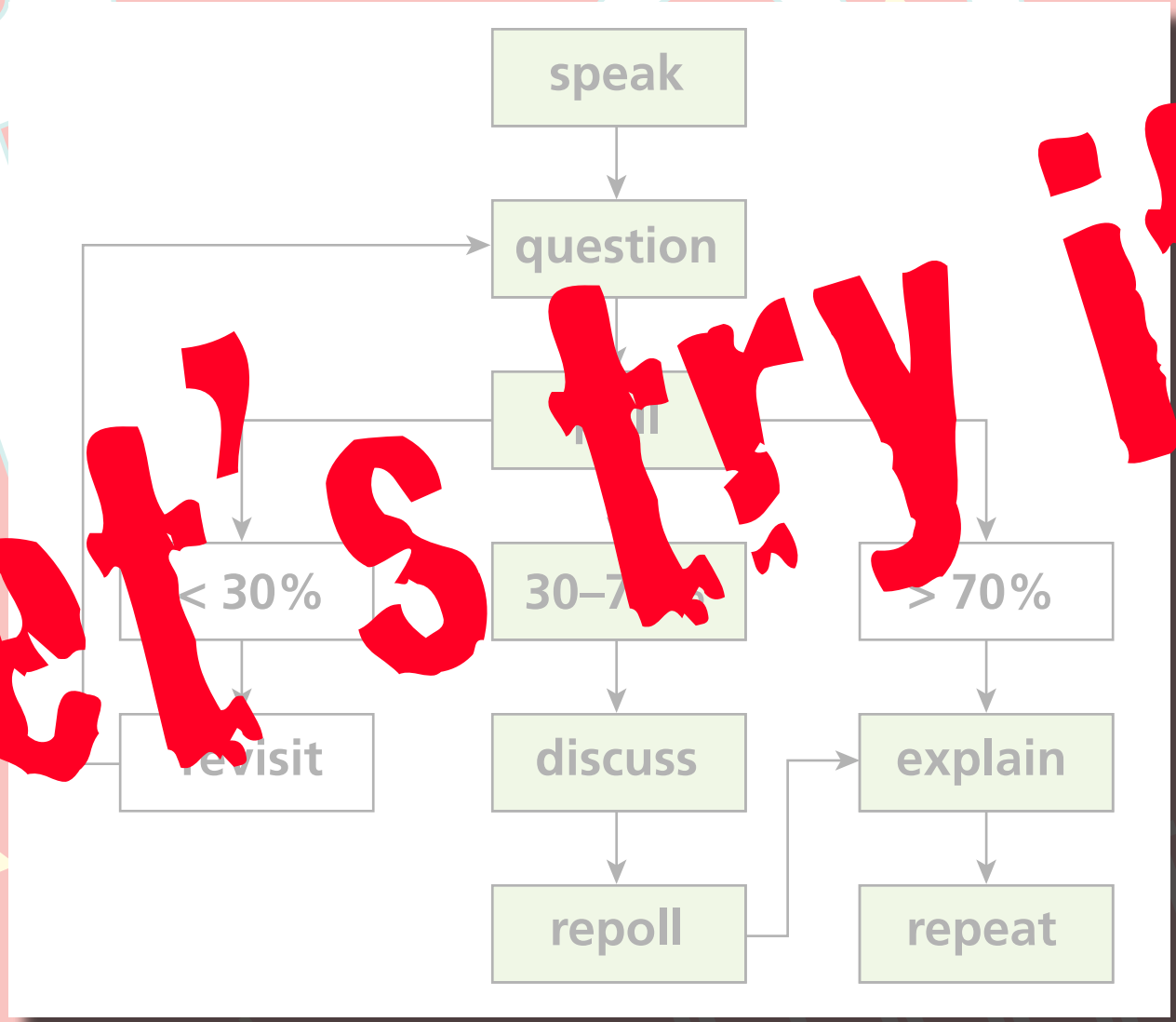
1 lecture

2 PI



1 lecture

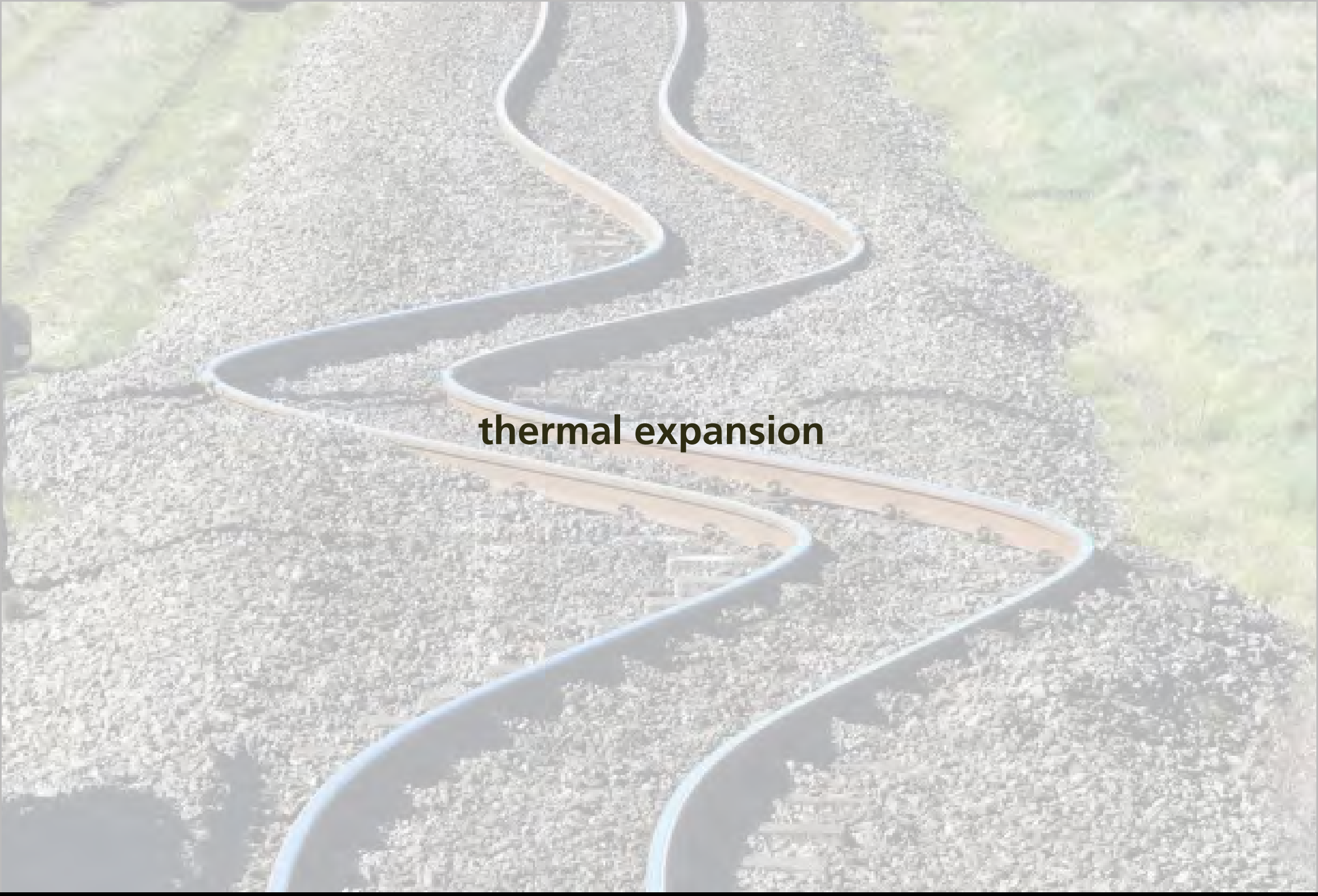
2 PI



Let's try it!

1 lecture

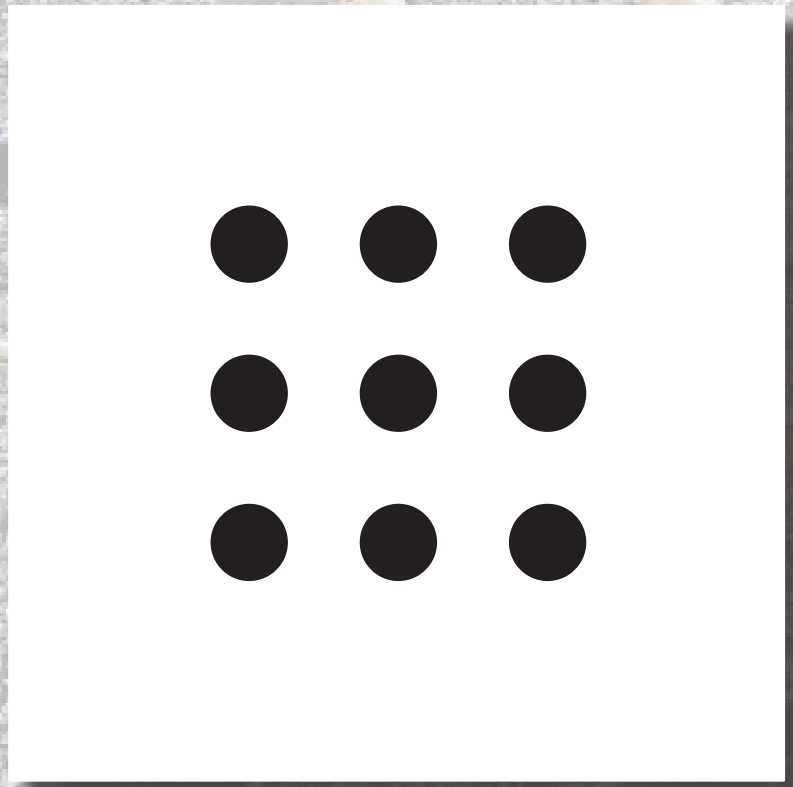
2 PI



thermal expansion

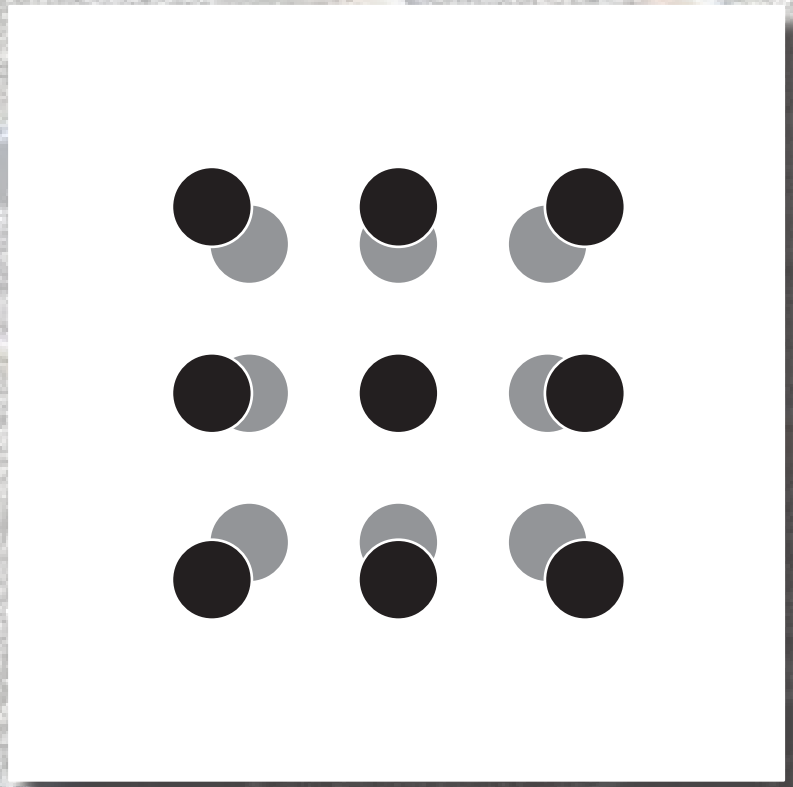
1 lecture

2 PI



1 lecture

2 PI



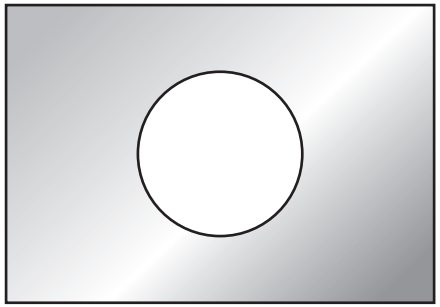
1 lecture

2 PI

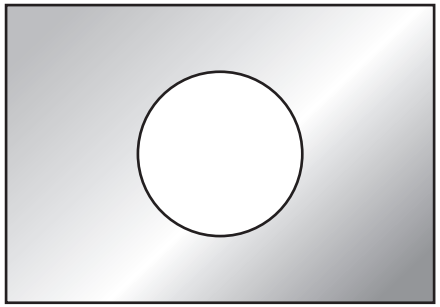
1 lecture

2 PI

Consider a rectangular metal plate with a circular hole in it.



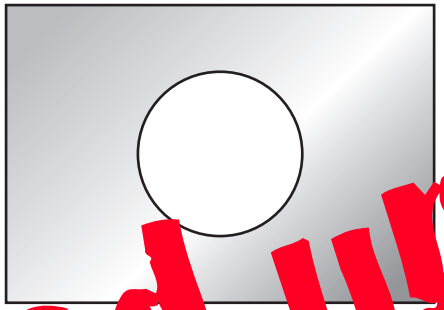
Consider a rectangular metal plate with a circular hole in it.



When the plate is uniformly heated, the diameter of the hole

1. increases.
2. stays the same.
3. decreases.

Consider a rectangular metal plate with a circular hole in it.



When the plate is uniformly heated, the diameter of the hole

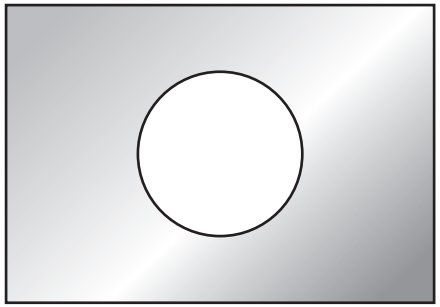
1. increases.
2. stays the same.
3. decreases.

you got all fired up!

1 lecture

2 PI

Consider a rectangular metal plate with a circular hole in it.



When the plate is uniformly heated, the diameter of the hole

1. increases.
2. stays the same.
3. decreases.

Before I tell you the answer, let's analyze what happened.

Before I tell you the answer, let's analyze what happened.

You…

Before I tell you the answer, let's analyze what happened.

You…

1. made a commitment

Before I tell you the answer, let's analyze what happened.

You…

1. made a commitment
2. externalized your answer

Before I tell you the answer, let's analyze what happened.

You…

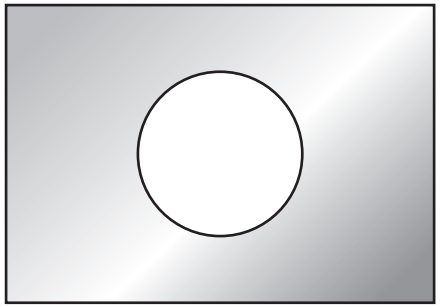
1. made a commitment
2. externalized your answer
3. moved from the answer/fact to reasoning

Before I tell you the answer, let's analyze what happened.

You…

1. made a commitment
2. externalized your answer
3. moved from the answer/fact to reasoning
4. became emotionally invested in the learning process

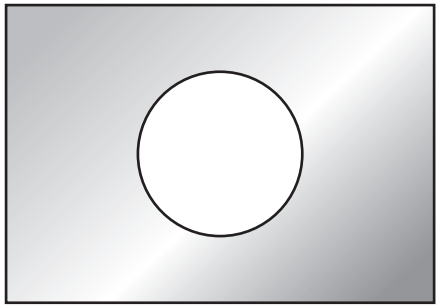
Consider a rectangular metal plate with a circular hole in it.



When the plate is uniformly heated, the diameter of the hole

1. increases.
2. stays the same.
3. decreases.

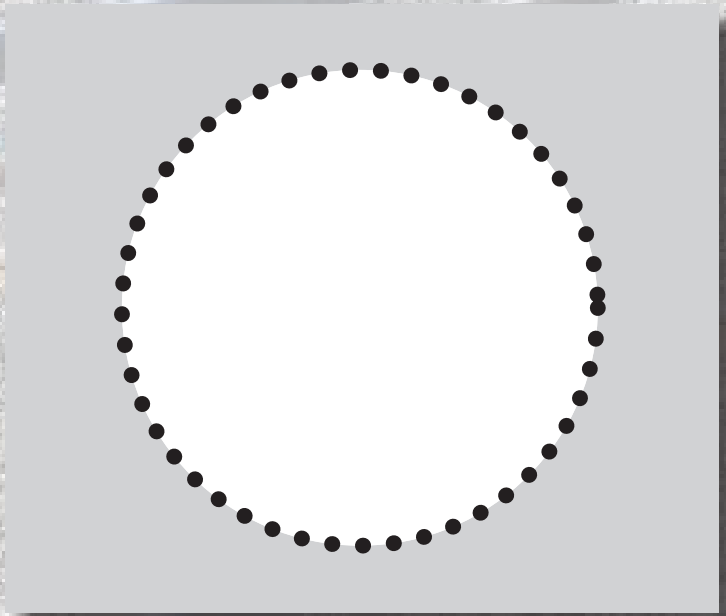
Consider a rectangular metal plate with a circular hole in it.



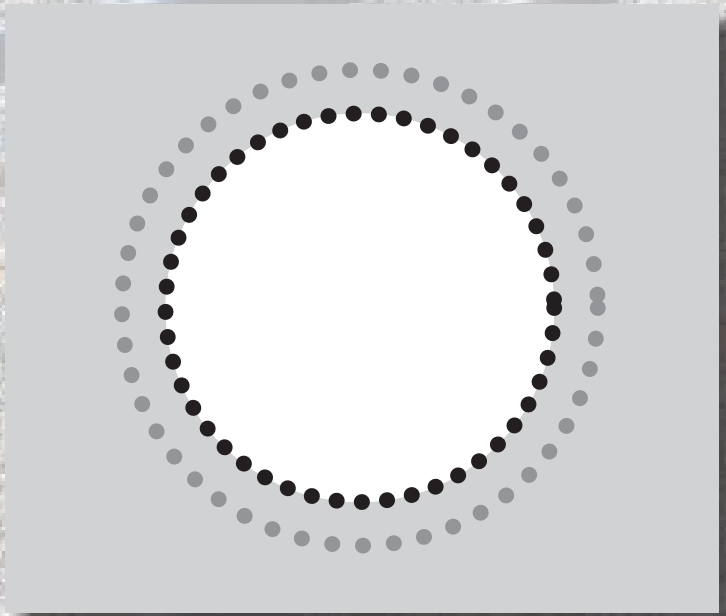
When the plate is uniformly heated, the diameter of the hole

1. increases. ✔
2. stays the same.
3. decreases.

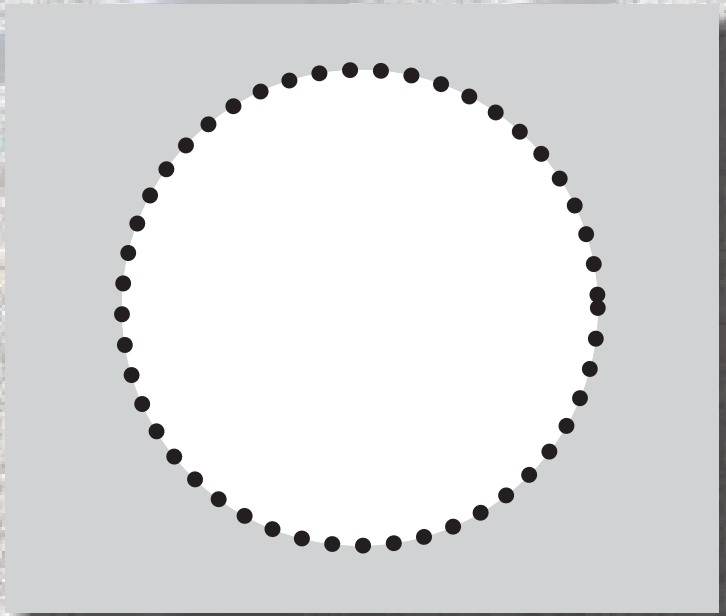
consider atoms at rim of hole



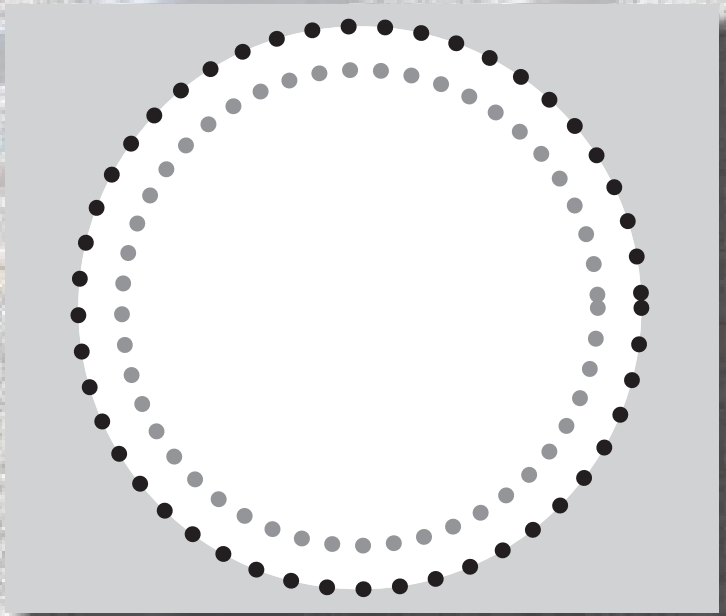
consider atoms at rim of hole



consider atoms at rim of hole



consider atoms at rim of hole



consider atoms at rim of hole

you won't forget this

1 lecture

2 PI

1 lecture

2 PI

1 lecture

2 PI

Join now!

PeerInstruction.net

1 lecture

2 PI

3 PI 2.0

feedback

1 lecture 2 PI 3 PI 2.0

1 lecture

2 PI

3 PI 2.0

1 lecture

2 PI

3 PI 2.0

1 lecture

2 PI

3 PI 2.0

1 lecture

2 PI

3 PI 2.0

technology

1 lecture

2 PI

3 PI 2.0

How do I…

- design good questions?
- optimize the discussions?
- manage time?

learning | catalytics

1 lecture

2 PI

3 PI 2.0

Use intelligent algorithms and data analytics to…

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

lowest

a. A 30-year fixed rate mortgage at
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 over
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. Assets = Liabilities + Owners' equity
b. Liabilities = Assets + Owners' equity
c. Owner's equity = Assets + Liabilities
d. Revenue = Assets – Liabilities

4. In order to present a business plan to a group of potential investors, a businessperson would most likely use which

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:

business model

preciation?

1 lecture 2 PI 3 PI 2.0

extensible plug-in architecture for question types

1 lecture

2 PI

3 PI 2.0

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

Deliver Show all results

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

feedback & support

1 lecture 2 PI 3 PI 2.0


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Deliver
Show all results
feedback & support
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session 766079
Light enters horizontally into the combination of two perpendicular mirrors as shown below. Indicate the direction of the incident light after it reflects off of both mirrors.
Submit response
Switch to text response
1 lectu
3 PI 2.0


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Deliver
Show all results
feedback & support
10:40 PM
Carrier
Logout
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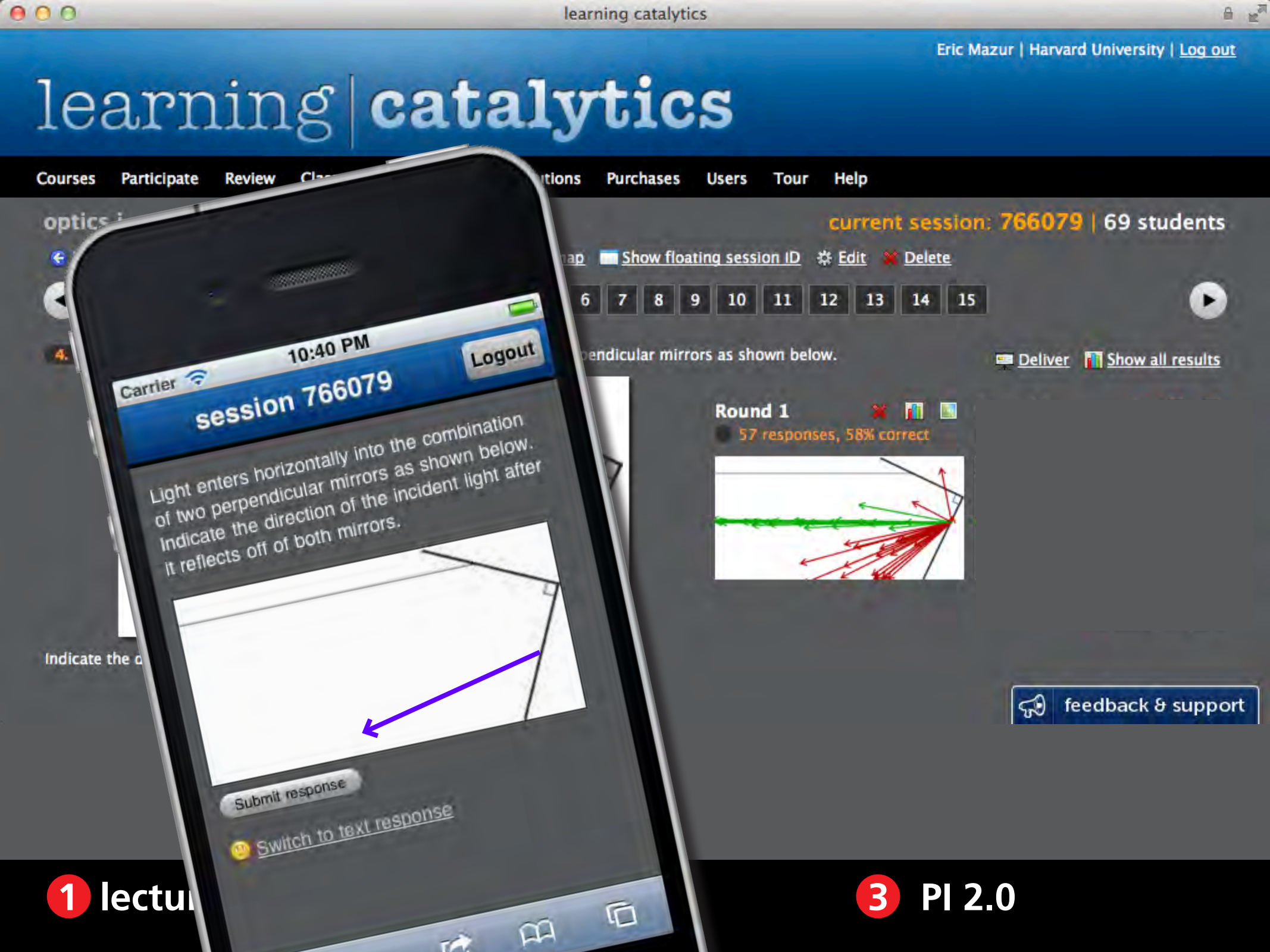
Submit response
Switch to text response
1 lectu
3 PI 2.0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current session: 766079 | 69 students
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Edit
Delete
6 7 8 9 10 11 12 13 14 15
Deliver
Show all results
Round 1
57 responses, 58% correct
feedback & support
10:40 PM
Carrier
Logout
session 766079
Light enters horizontally into the combination of two perpendicular mirrors as shown below. Indicate the direction of the incident light after it reflects off of both mirrors.
Submit response
Switch to text response
1 lectu
3 PI 2.0


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learning | catalytics
Courses
Participate
Review
Purchases
Users
Tour
Help
current session: 766079 | 69 students
Show floating session ID
Edit
Delete
6 7 8 9 10 11 12 13 14 15
Deliver
Show all results
Round 1
57 responses, 58% correct
Round 2
51 responses, 73% correct
8 get it now
0 still don't get it
feedback & support
10:40 PM
Carrier
Logout
session 766079
Light enters horizontally into the combination of two perpendicular mirrors as shown below. Indicate the direction of the incident light after it reflects off of both mirrors.
Submit response
Switch to text response
1 lectu
3 PI 2.0

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

1 lecture 2 PI 3 PI 2.0

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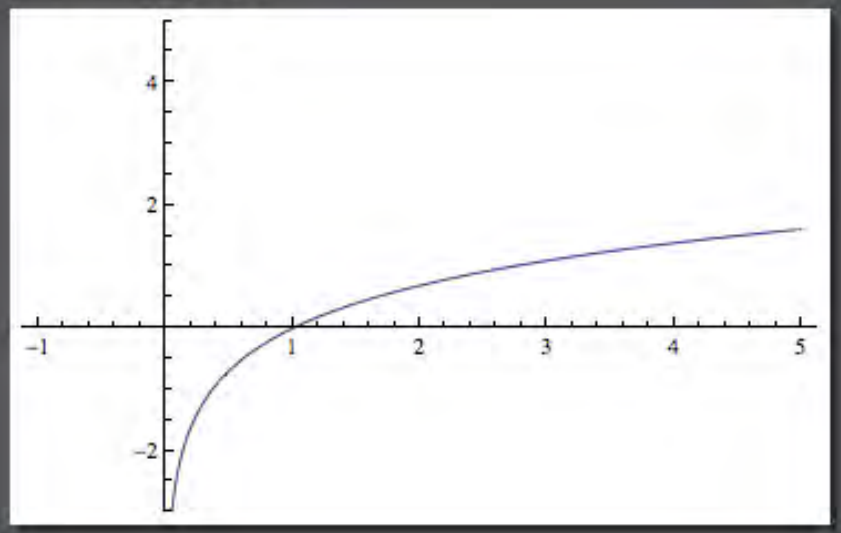
This is a graph of $f(x) = \ln x$. Sketch a graph of the derivative $f'(x)$.



1 lecture 2 PI 3 PI 2.0

1 lecture

3 PI 2.0

1 lecture

3 PI 2.0

1 lecture

2 PI

3 PI 2.0

human interaction

1 lecture

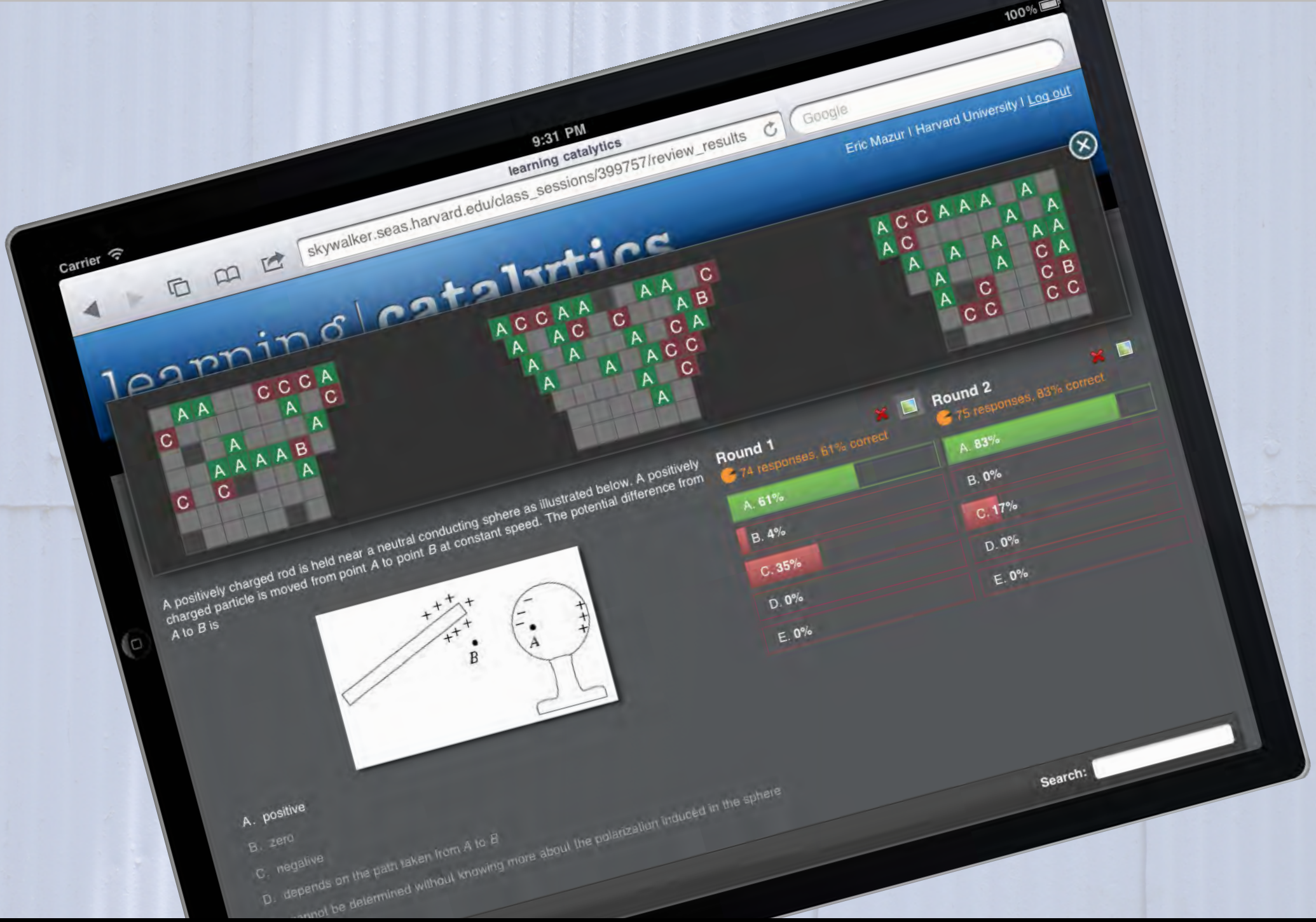
2 PI

3 PI 2.0

1 lecture

2 PI

3 PI 2.0



1 lecture

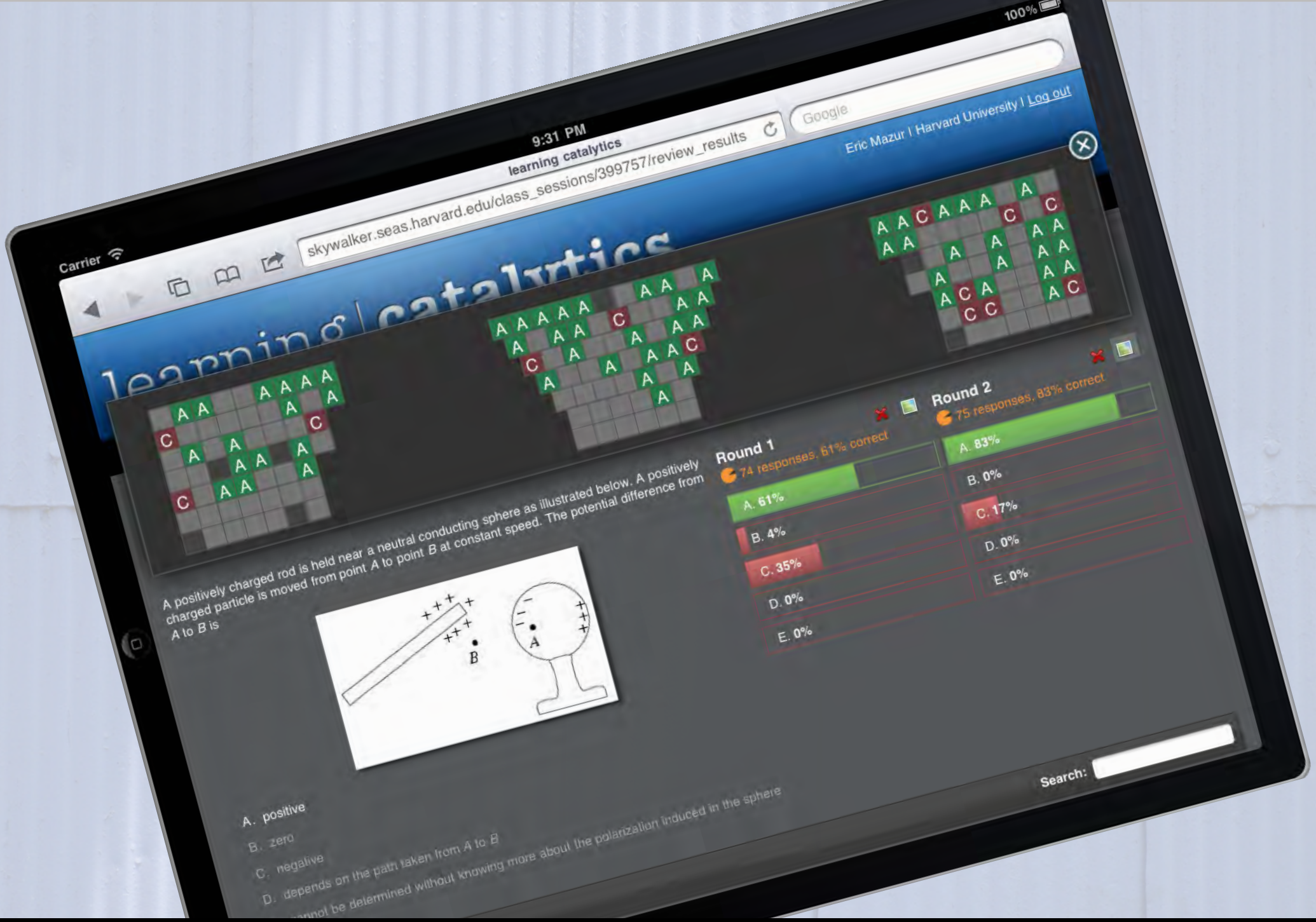
2 PI

3 PI 2.0

1 lecture

2 PI

3 PI 2.0

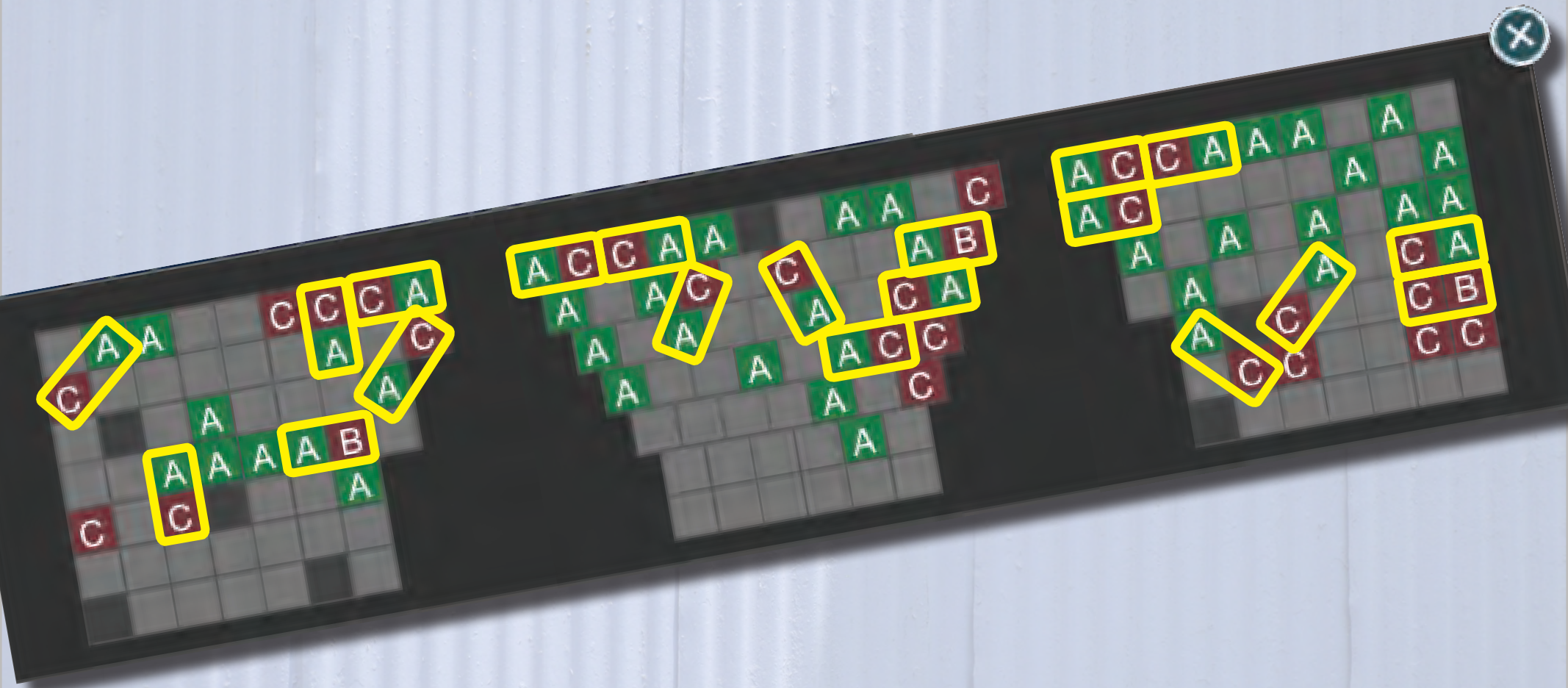


1 lecture

2 PI

3 PI 2.0

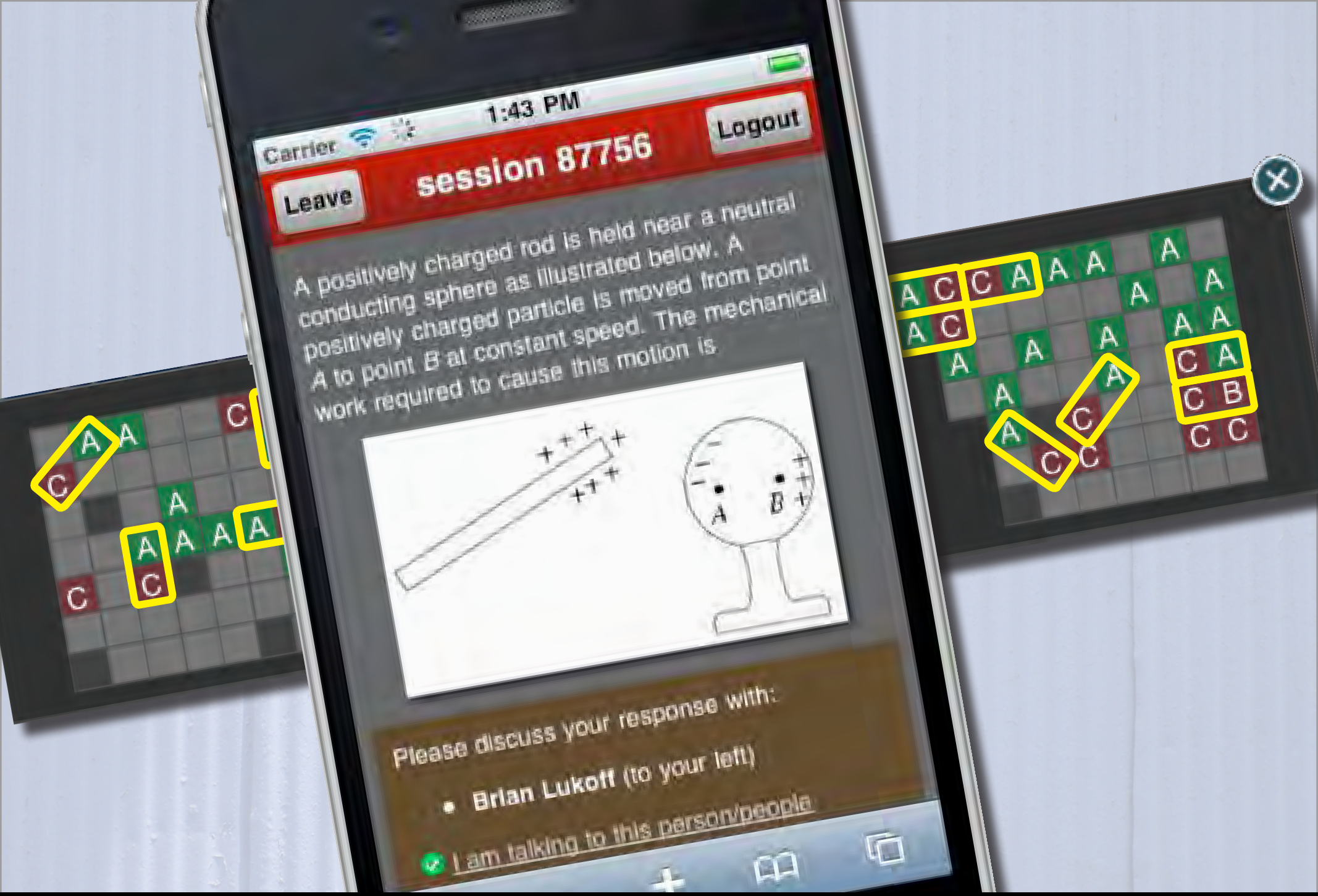
let system manage pairing



1 lecture

2 PI

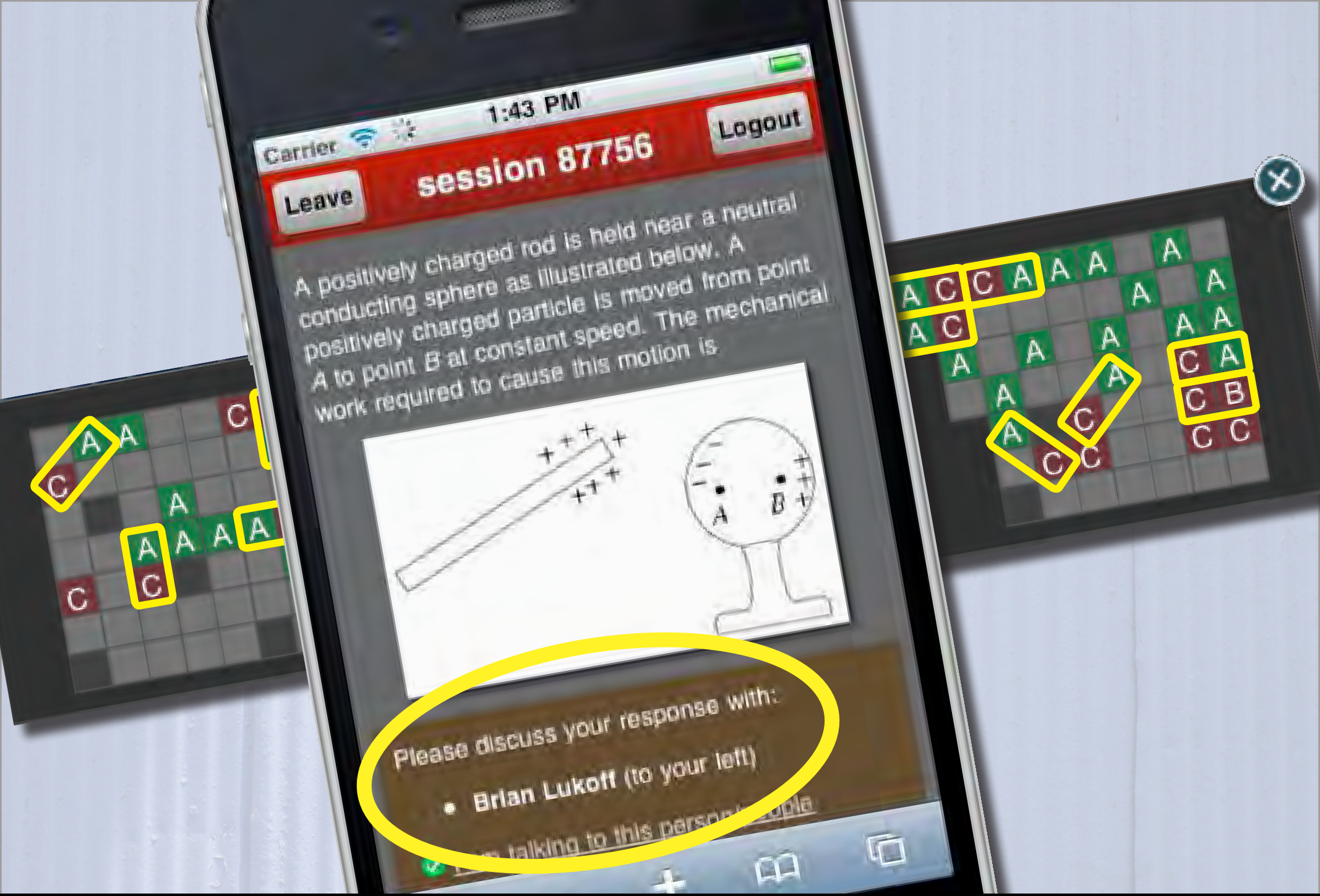
3 PI 2.0



1 lecture

2 PI

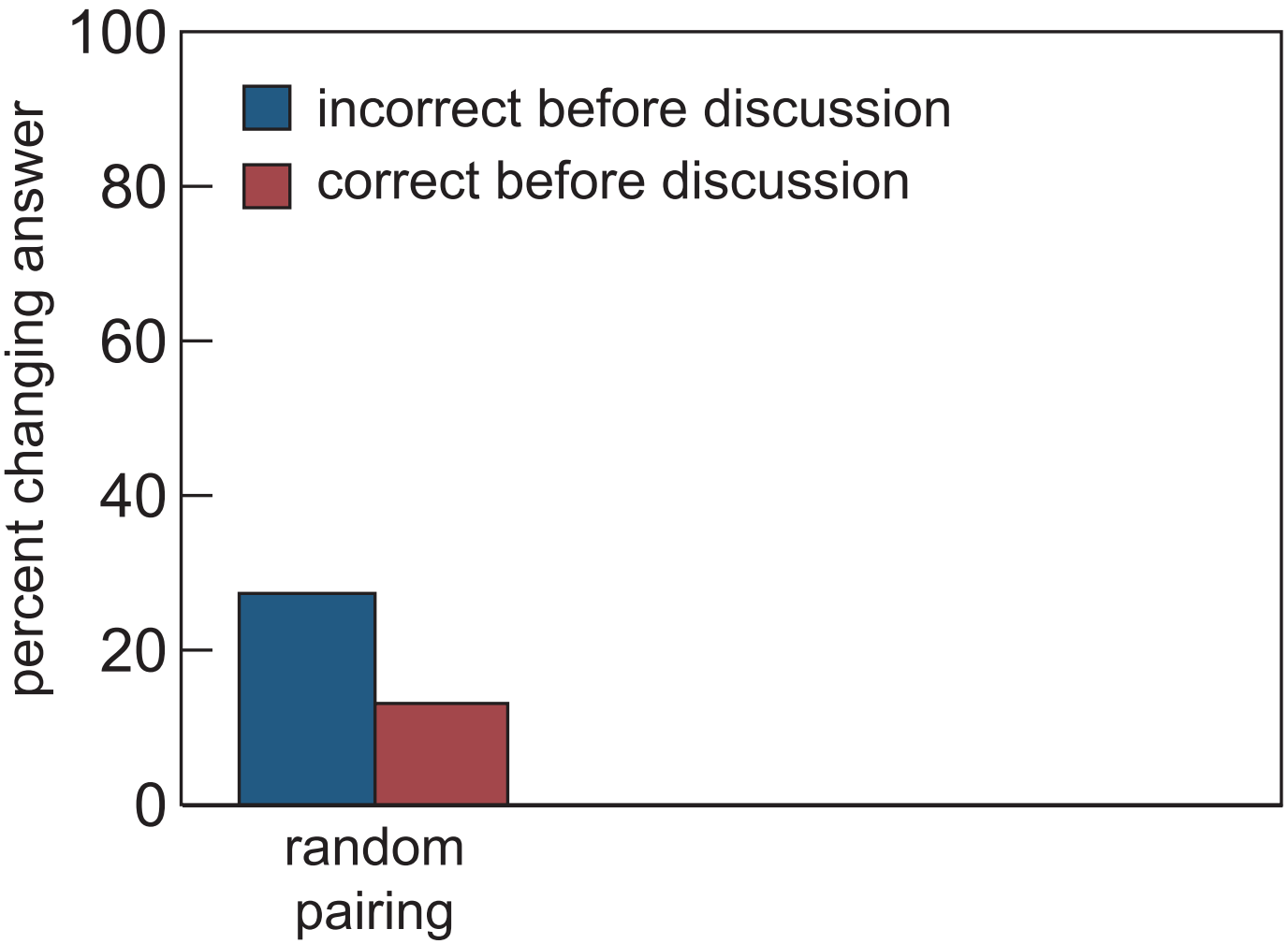
3 PI 2.0



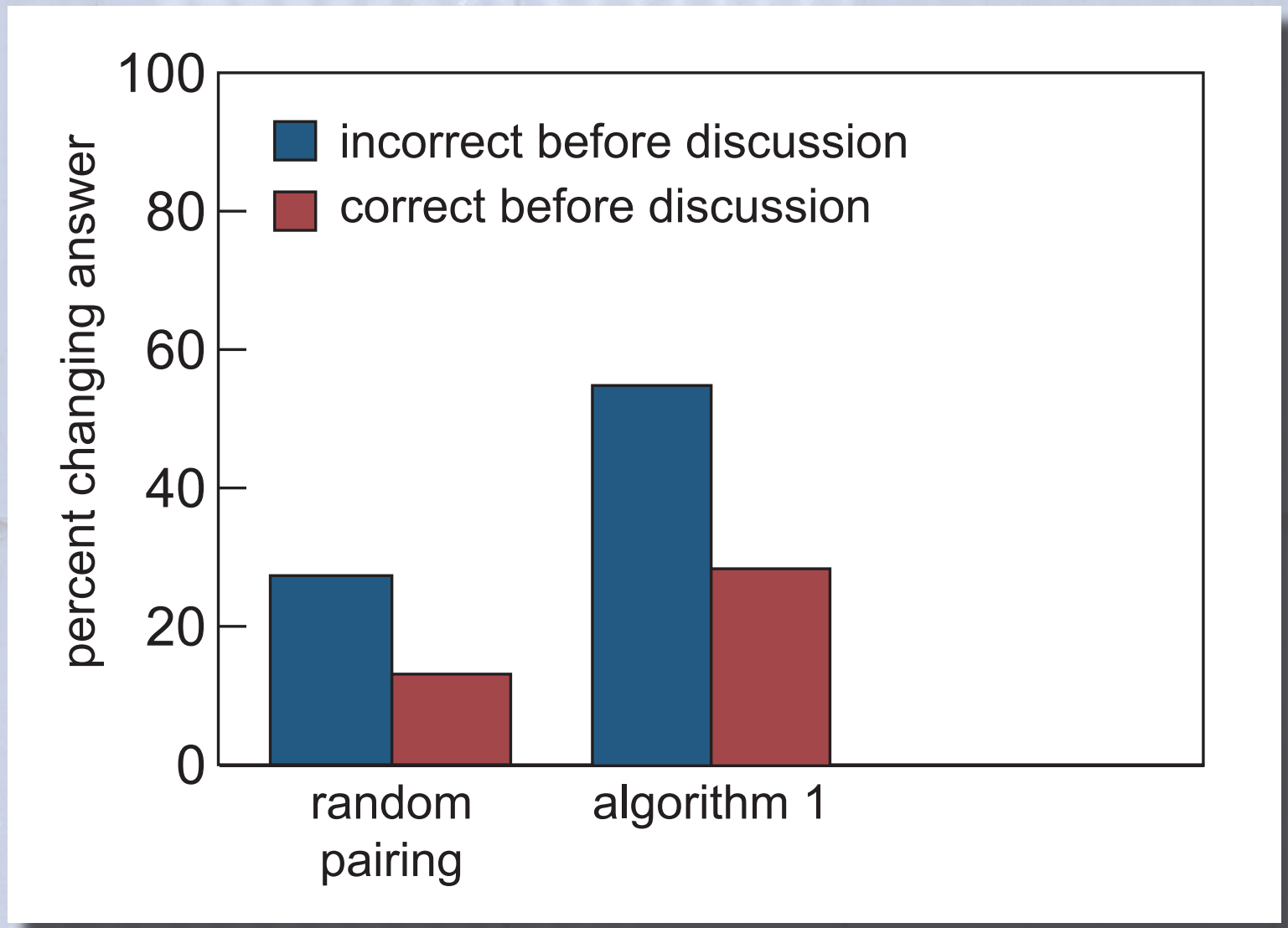
1 lecture

2 PI

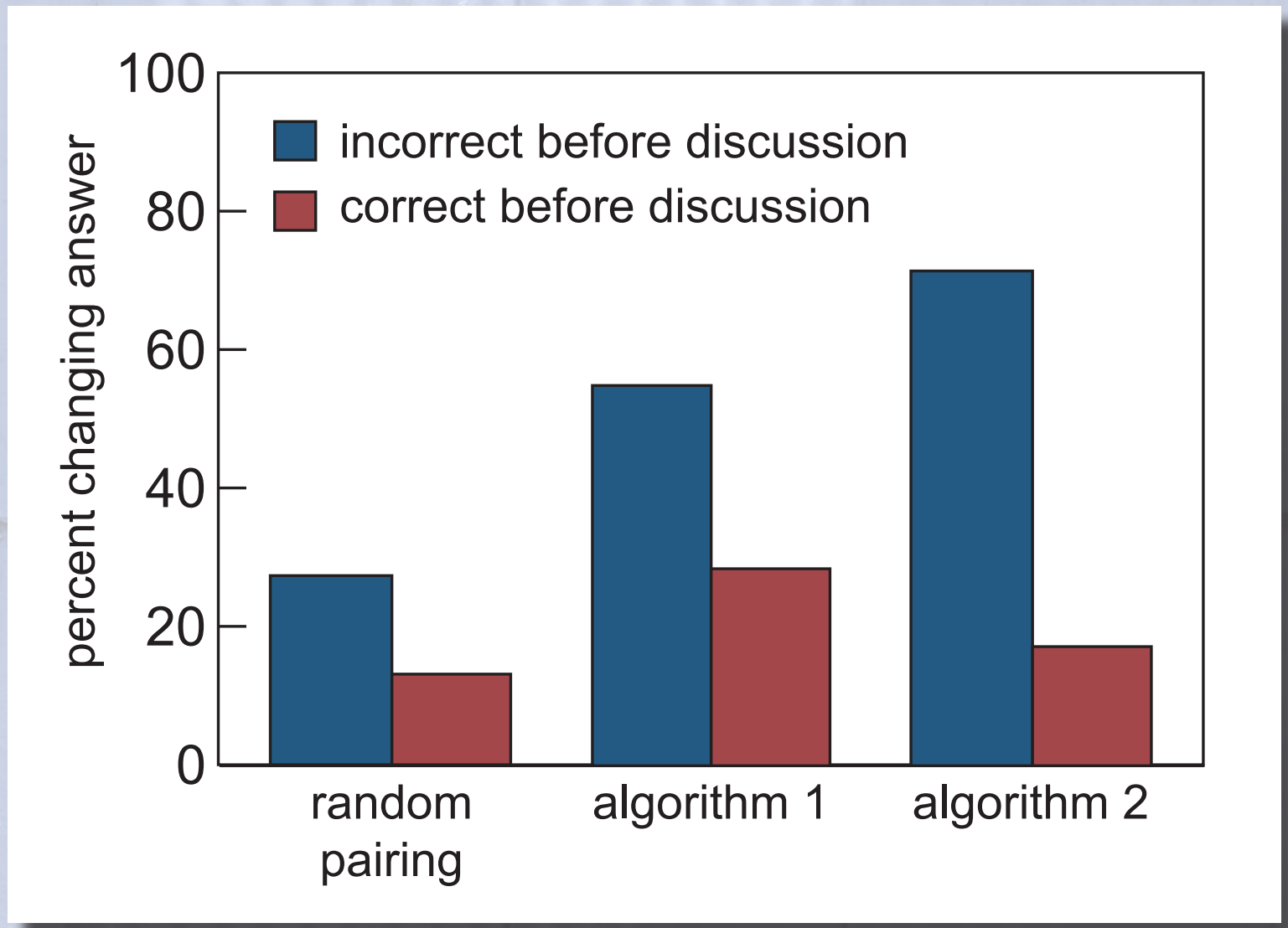
3 PI 2.0



1 lecture 2 PI 3 PI 2.0



1 lecture 2 PI 3 PI 2.0



1 lecture 2 PI 3 PI 2.0

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2 PI

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Education is not just about:

- transferring information
- getting students to do what we do

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discovery & exploration a must!

Learning Catalytics:

- implement proven, researched pedagogy

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

Funding:

National Science Foundation

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