

Confessions of a converted lecturer



KAIST

Daejeon, South Korea, 27 August 2015



Confessions of a converted lecturer



@eric_mazur

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1 education

2 PI


3 test



1 education

2 PI

3 test

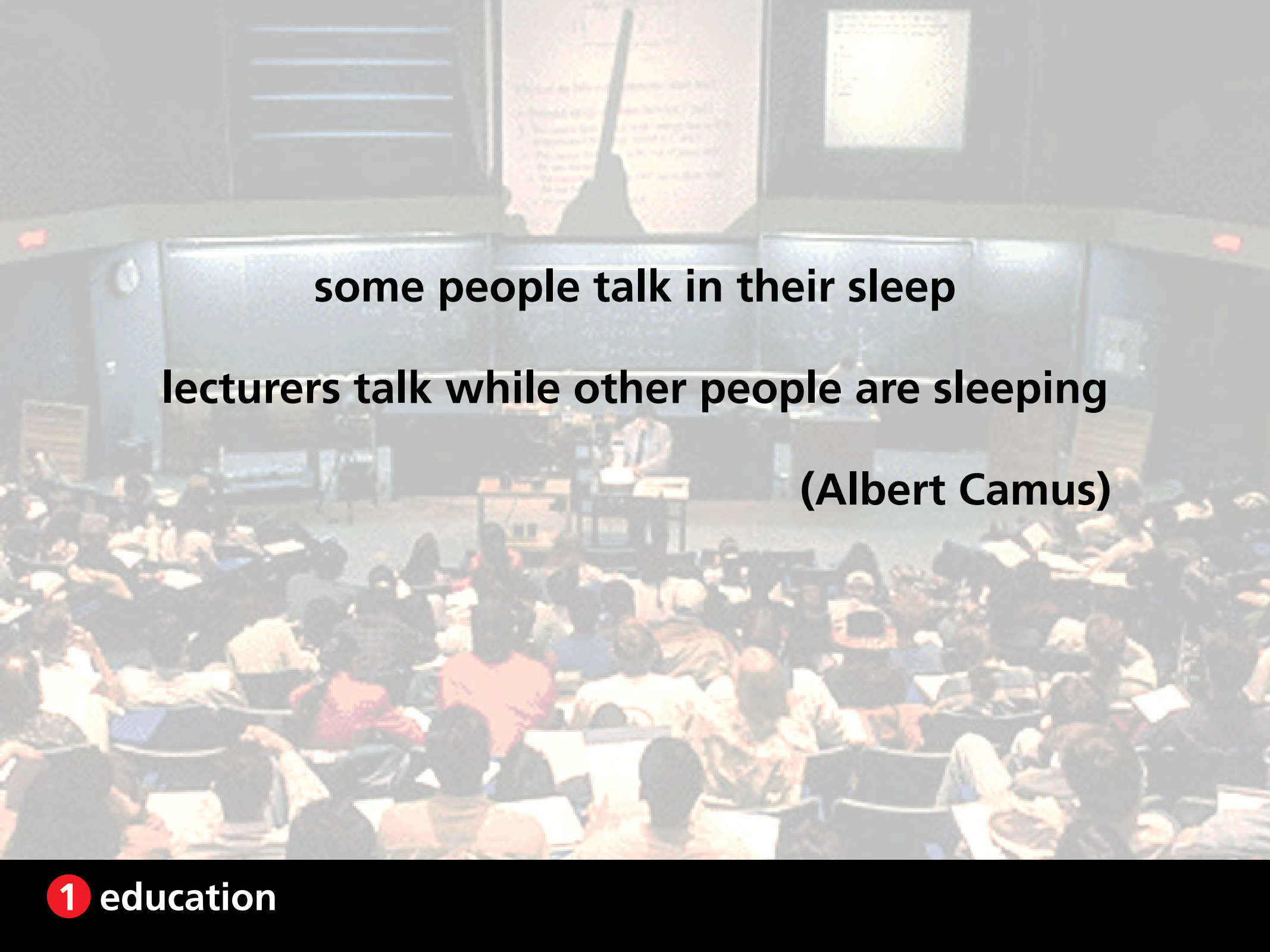


**What happens
in a lecture?**



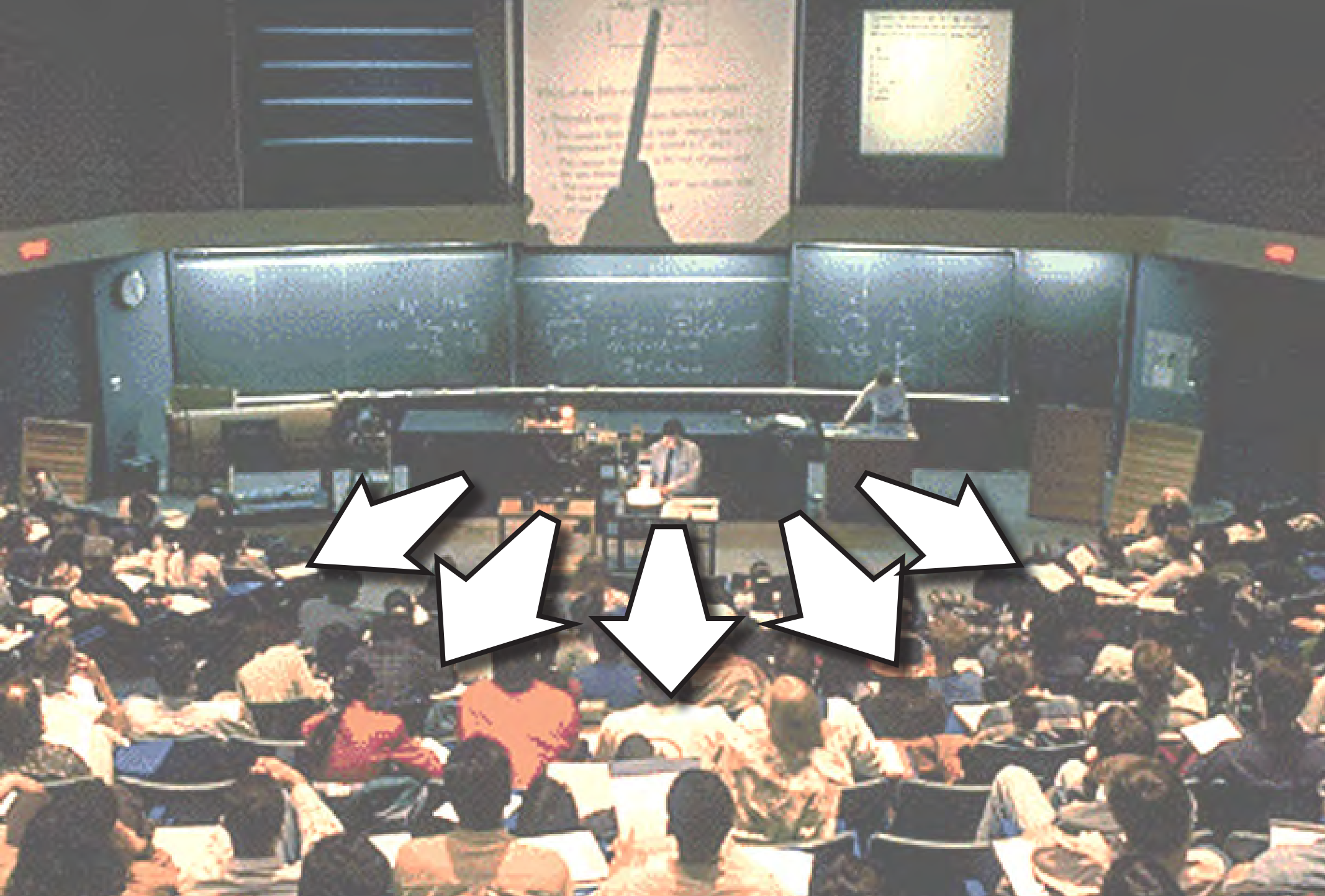
A wide-angle photograph of a large lecture hall. In the foreground, the backs of many students' heads are visible as they sit in rows of chairs, facing the front of the room. Some students have papers or laptops open. At the front of the hall, a lecturer stands behind a podium, addressing the class. Behind the lecturer is a large, curved chalkboard with some faint writing on it. Above the chalkboard, there are several large posters or screens displaying text and diagrams. The room is well-lit, and the overall atmosphere is that of a formal academic setting.

some people talk in their sleep

A large lecture hall filled with students. Many students are sleeping, with their heads resting on their desks. A lecturer is standing at the front of the hall, near a podium, addressing the class. The room has a curved wall with several large screens or posters displayed. The overall atmosphere is one of a lecture where many students are disengaged or asleep.

some people talk in their sleep
lecturers talk while other people are sleeping
(Albert Camus)





The result?

EDUCACION

Lack of learning

EDUCACION

Lack of learning

Lack of retention

not transfer but assimilation of information is key





1. transfer of information



1. transfer of information

2. assimilation of that information



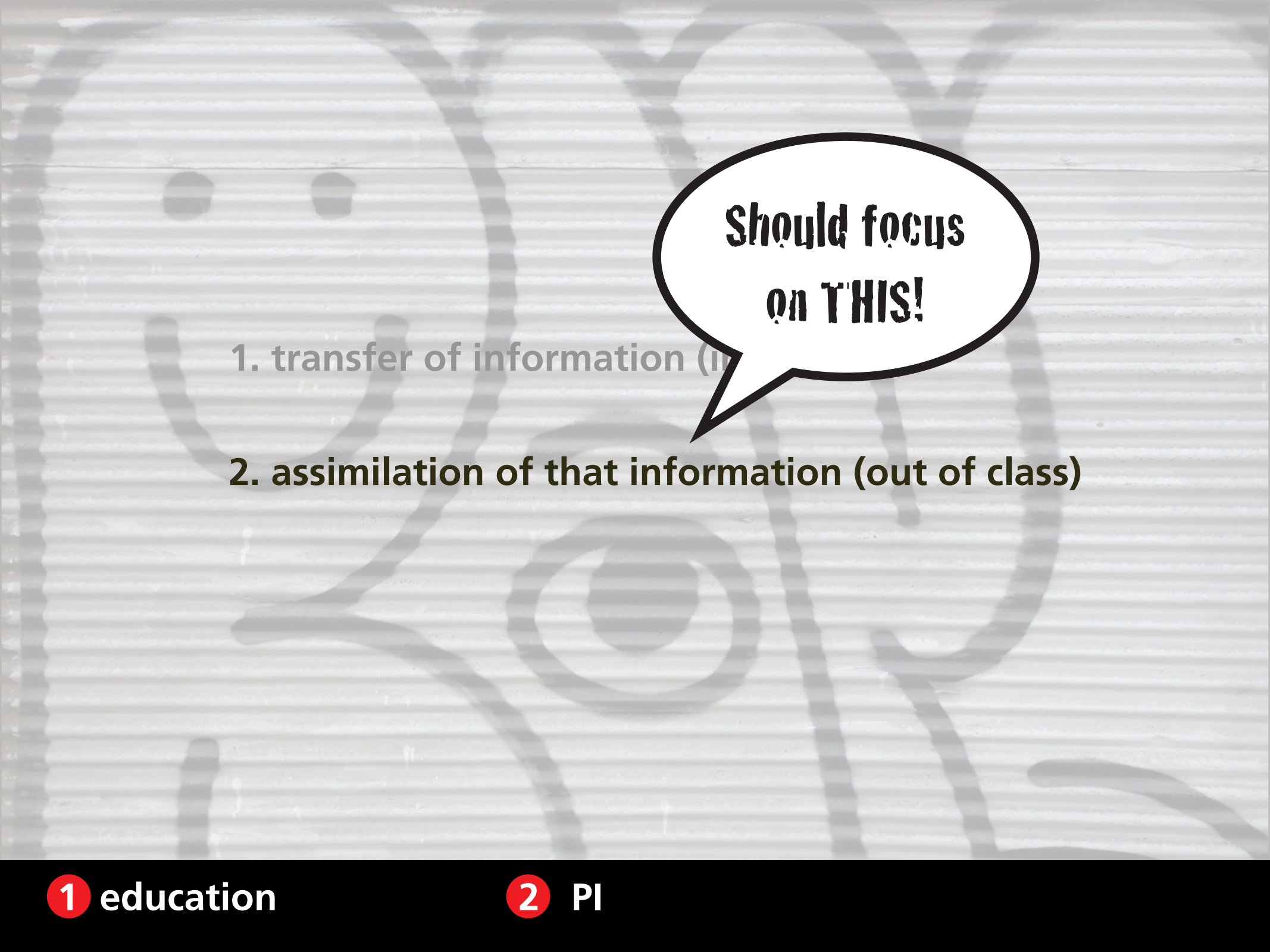
1. transfer of information (in class)

2. assimilation of that information



1. transfer of information (in class)

2. assimilation of that information (out of class)



**Should focus
on THIS!**

1. transfer of information (in class)

2. assimilation of that information (out of class)

- 
- 1. transfer of information (in class)**
 - 2. assimilation of that information (out of class)**

- 
1. transfer of information (out of class)
 2. assimilation of that information (in class)



Peer

1. transfer of information (out of class)

2. assimilation of that information (in class)

question

1 education

2 PI

question



think

question



think



poll

question



think



poll



discuss

question



think



poll



discuss



repoll

question



think



poll



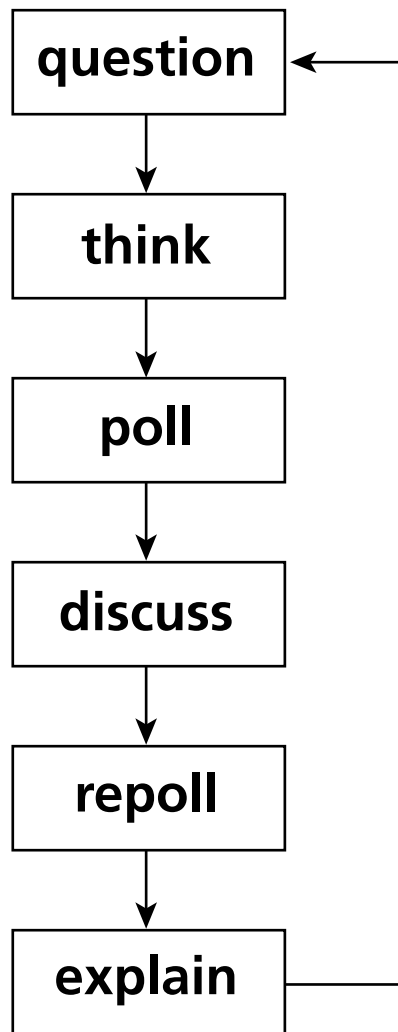
discuss



repoll



explain





1 education

2 PI

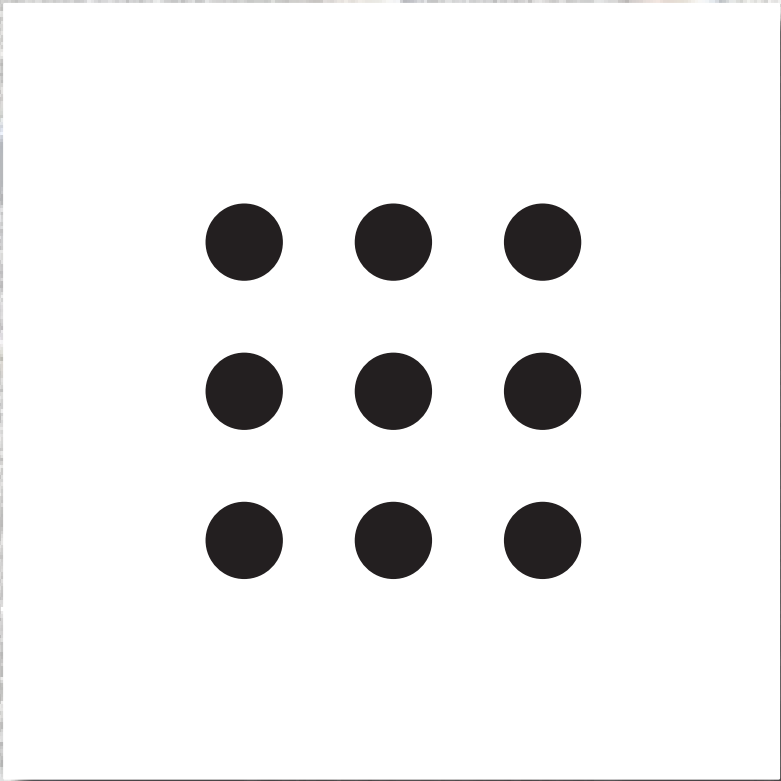


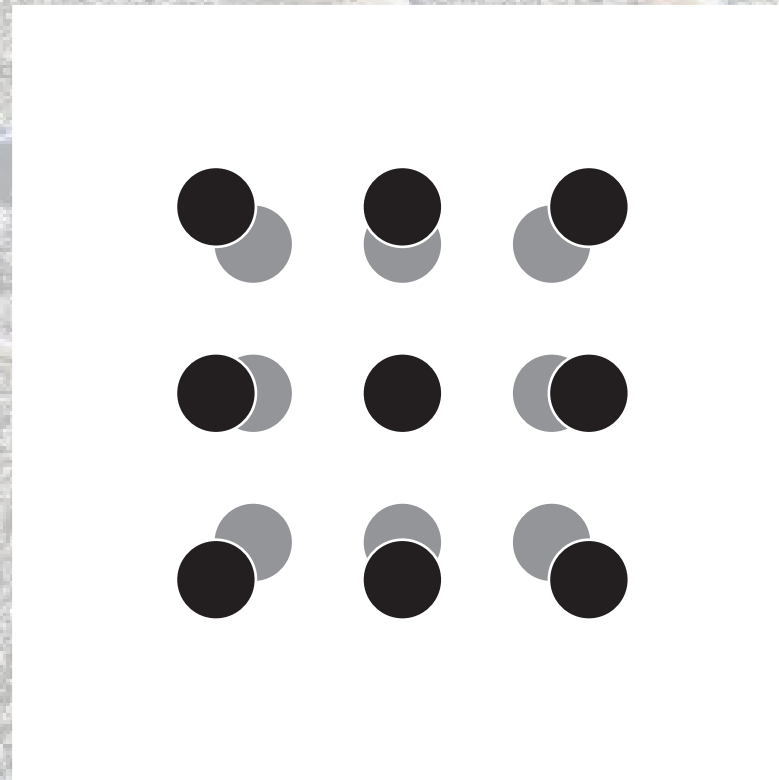
1 education

2 PI

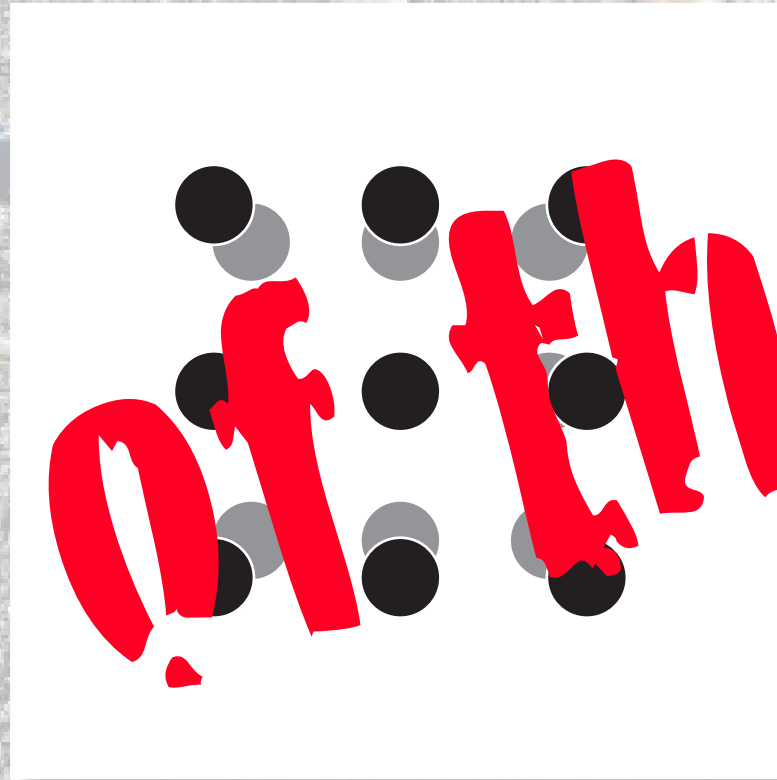
A photograph of a wavy metal track, possibly a model for a physics experiment, laid out on a bed of dark gravel. The track is made of a light-colored metal and is bent into a series of connected S-curves. The background is a blurred green lawn. The text "thermal expansion" is overlaid in the center of the image.

thermal expansion





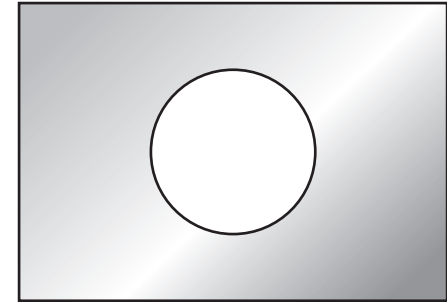
all of them



1 education

2 PI

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



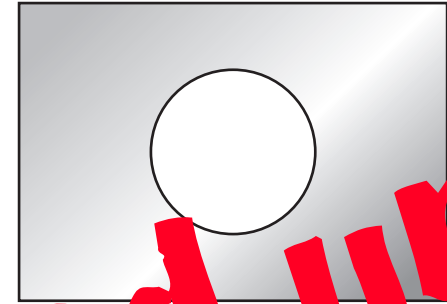
Consider a rectangular metal plate with a circular hole in it.



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.

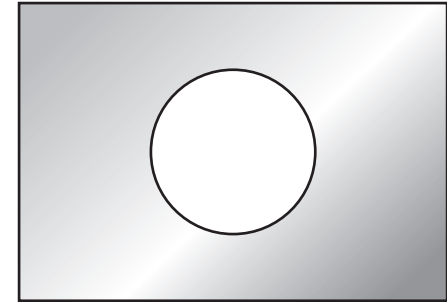


When the plate is uniformly heated, the diameter of the hole

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

you got all fired up!

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...

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**

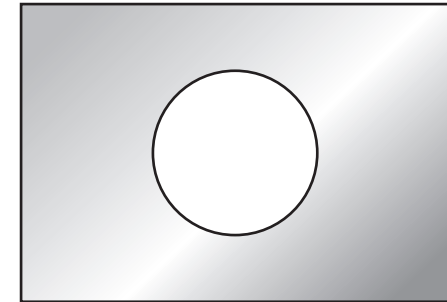
Consider a rectangular metal plate with a circular hole in it.



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- 1. increases.**
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- 3. decreases.**

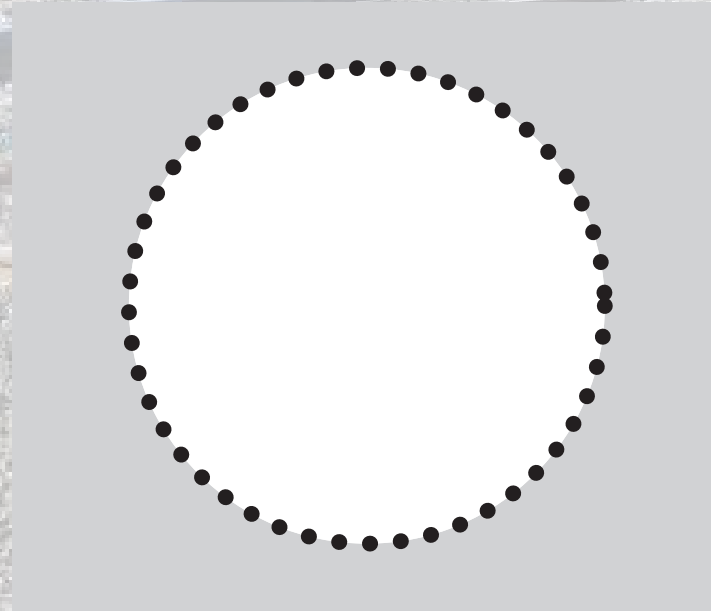
Consider a rectangular metal plate with a circular hole in it.



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

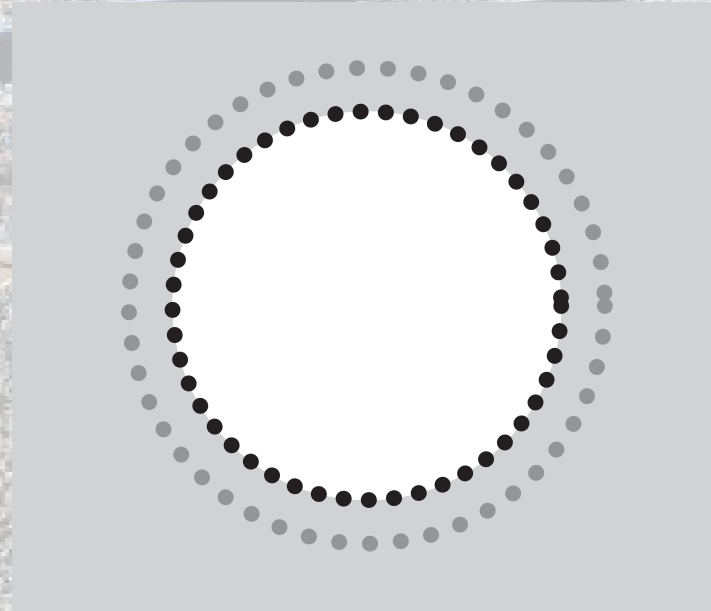


1 education

2 PI

3 test

consider atoms at rim of hole

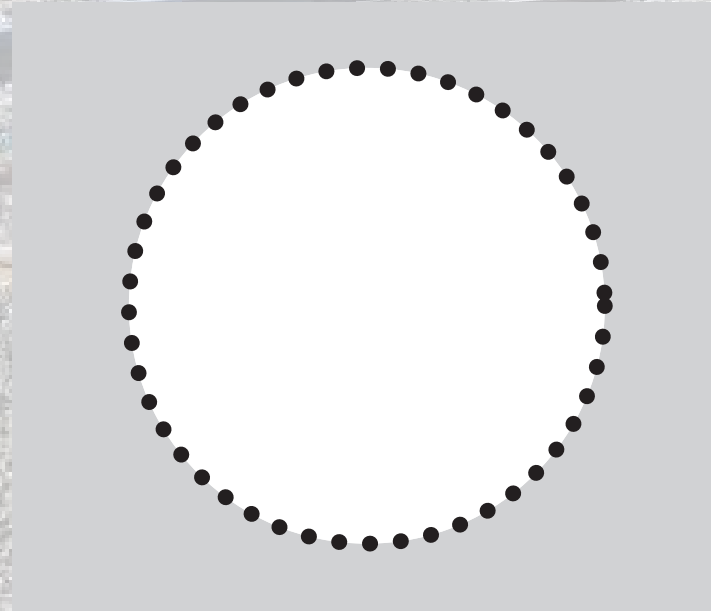


1 education

2 PI

3 test

consider atoms at rim of hole

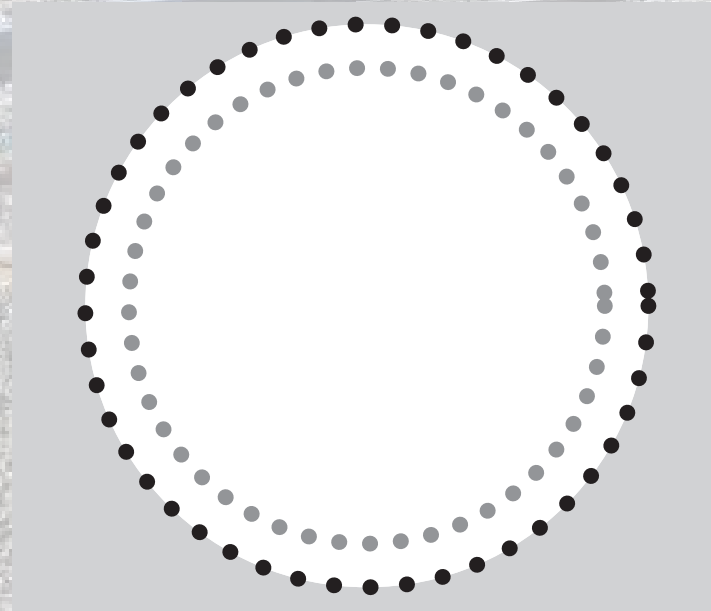


1 education

2 PI

3 test

consider atoms at rim of hole



1 education

2 PI

3 test

consider atoms at rim of hole

you won't forget this

1 education

2 PI

3 test

peer

back to pi

INSTRUCTION

1 education

2 PI

3 test

Peer
Greater learning gains



INSTRUCTION

1 education

2 PI

3 test

The diagram features a large, light blue 'Peer' in the background. A dashed yellow line with arrows forms a circular path around the word 'Peer'. A dotted blue line with arrows starts from the bottom left and points towards the word 'review'.

Greater learning gains

Better retention

INSTRUCTION

1 education

2 PI

3 test



1 education

2 PI

3 test

in a lecture, students...

1 education

2 PI

3 test

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



1 education

2 PI

3 test

The background is a faded, classical-style painting. It depicts a face, possibly a classical figure, with multiple eyes visible. The eyes are arranged vertically, with one eye at the top, a central eye, and another eye at the bottom. The face is rendered in a pale, yellowish-tan color, and the eyes are a light blue or grey. The overall style is reminiscent of a classical portrait, possibly a work by a Renaissance or Baroque painter. The text 'an illusion...' is overlaid in a bold, red, serif font.

an illusion. . .

1 education

2 PI

3 test



Education is not just about:

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

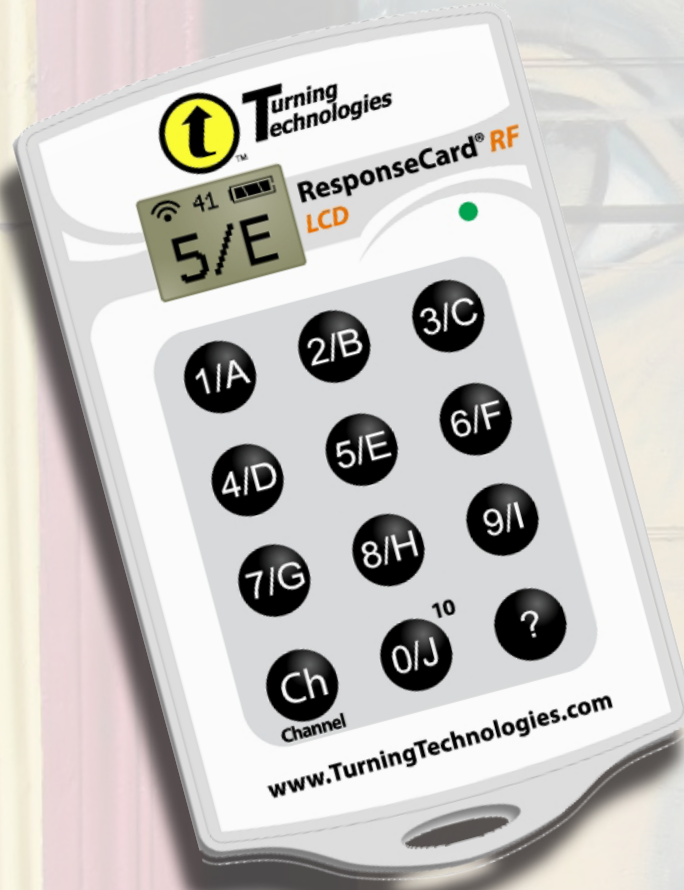


Education is not just about:

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

active participation a must!

PLEASE RETURN CLICKER



1 education

2 PI

3 test



Join now!

PeerInstruction.net

Funding:

National Science Foundation

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