

The Tyranny of the Lecture



Ohio State University
Columbus, OH, 3 April 2015



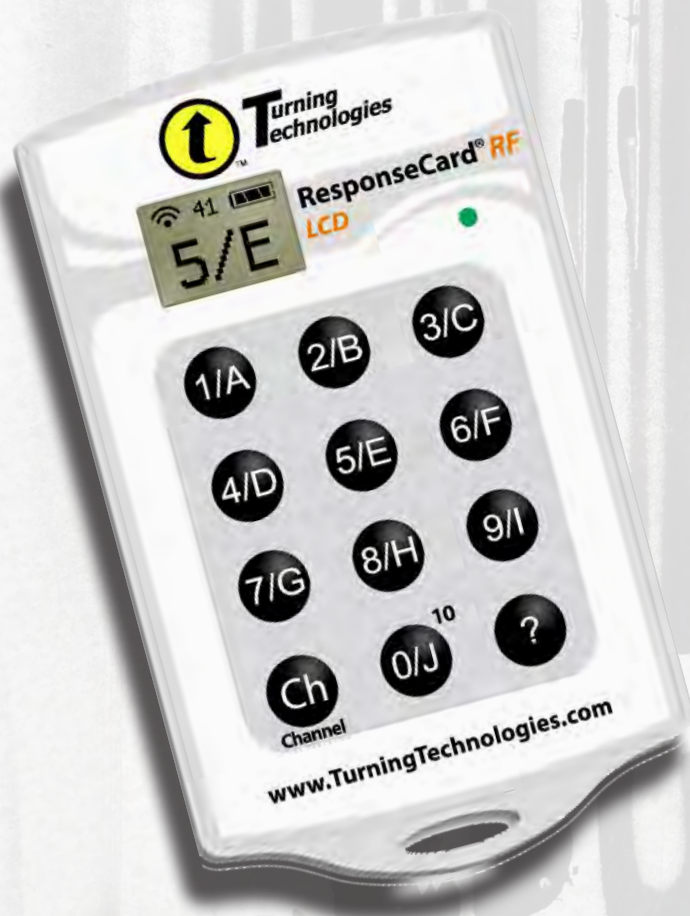
The Tyranny of the Lecture



@eric_mazur
#lectyr

Ohio State University
Columbus, OH, 3 April 2015





- no ON/OFF button
- only last “click” counts
- display shows recorded answer



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unique ID on back of clicker

Think of something you are good at

EDUCACION

Think of something you are good at

***How* did you become good at this?**

Became good at it by:

- 1. trial and error**
- 2. lectures**
- 3. practicing**
- 4. apprenticeship**
- 5. other**











1 education

2 PI

3 test




**better pay
attention!**

1 education

2 PI

3 test

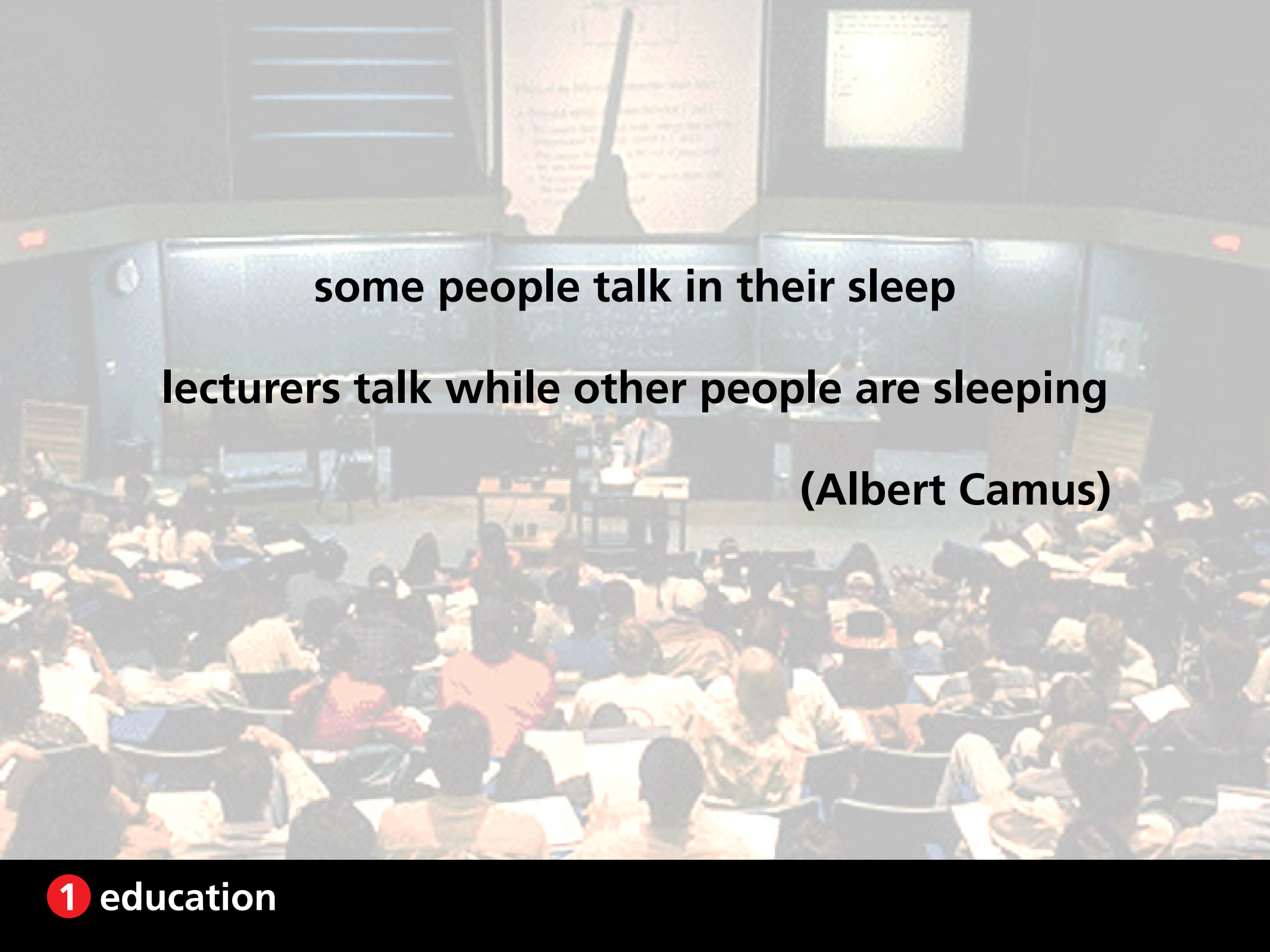


**What happens
in a lecture?**



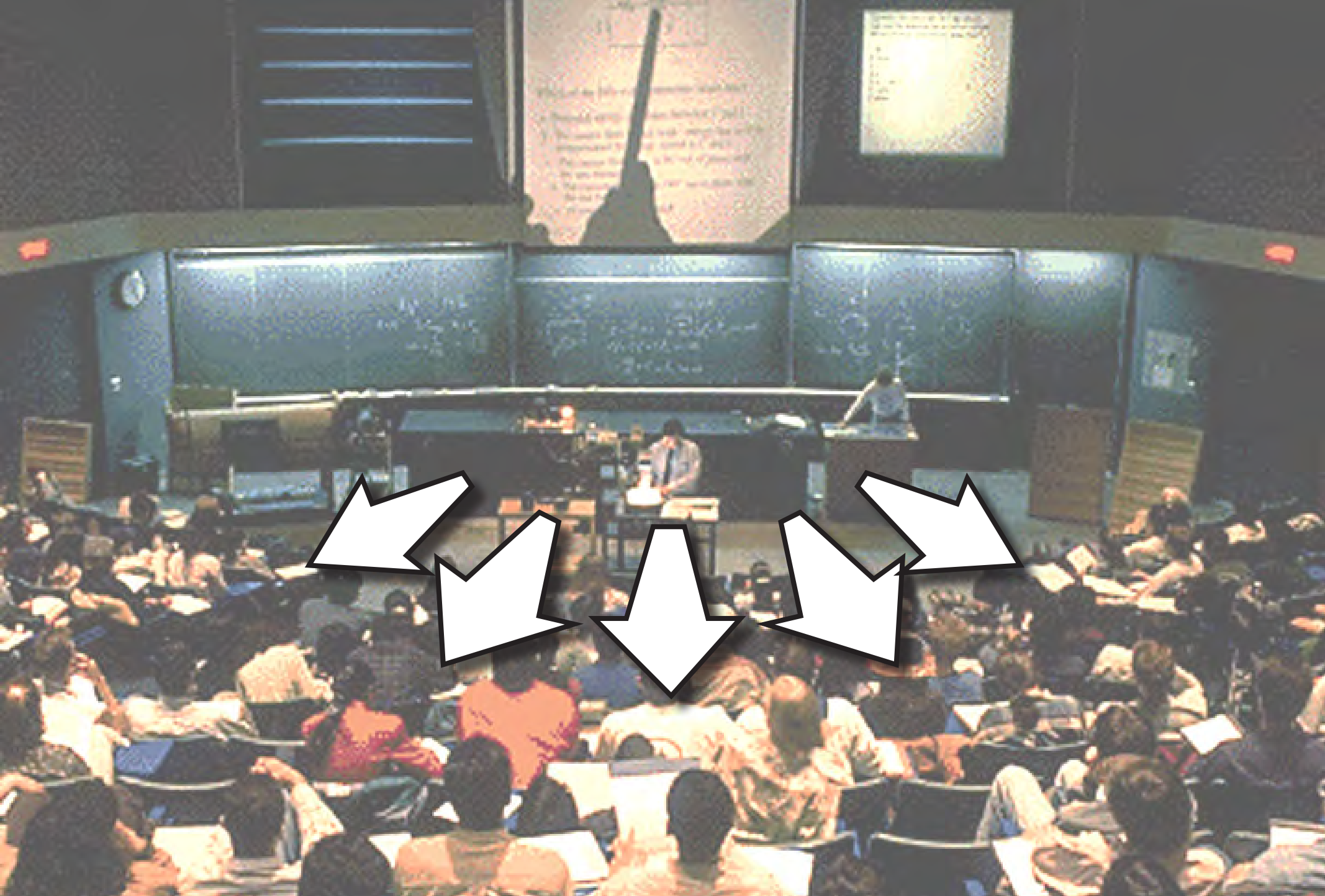
A wide-angle photograph of a large lecture hall. The room is filled with students seated in rows of chairs, facing the front. Many students appear to be asleep, with their heads resting on their desks or hands. At the front of the hall, a lecturer is standing near a podium, addressing the class. Behind the lecturer are several large projection screens displaying text and diagrams. The room has a high ceiling and a curved front wall.

some people talk in their sleep

A large lecture hall filled with students. Many students are sleeping, with their heads resting on their desks or hands. The room has a curved wall with several large screens or posters. A lecturer is visible at the front of the hall, standing near a podium.

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

Let's try it!

QUESTION

think

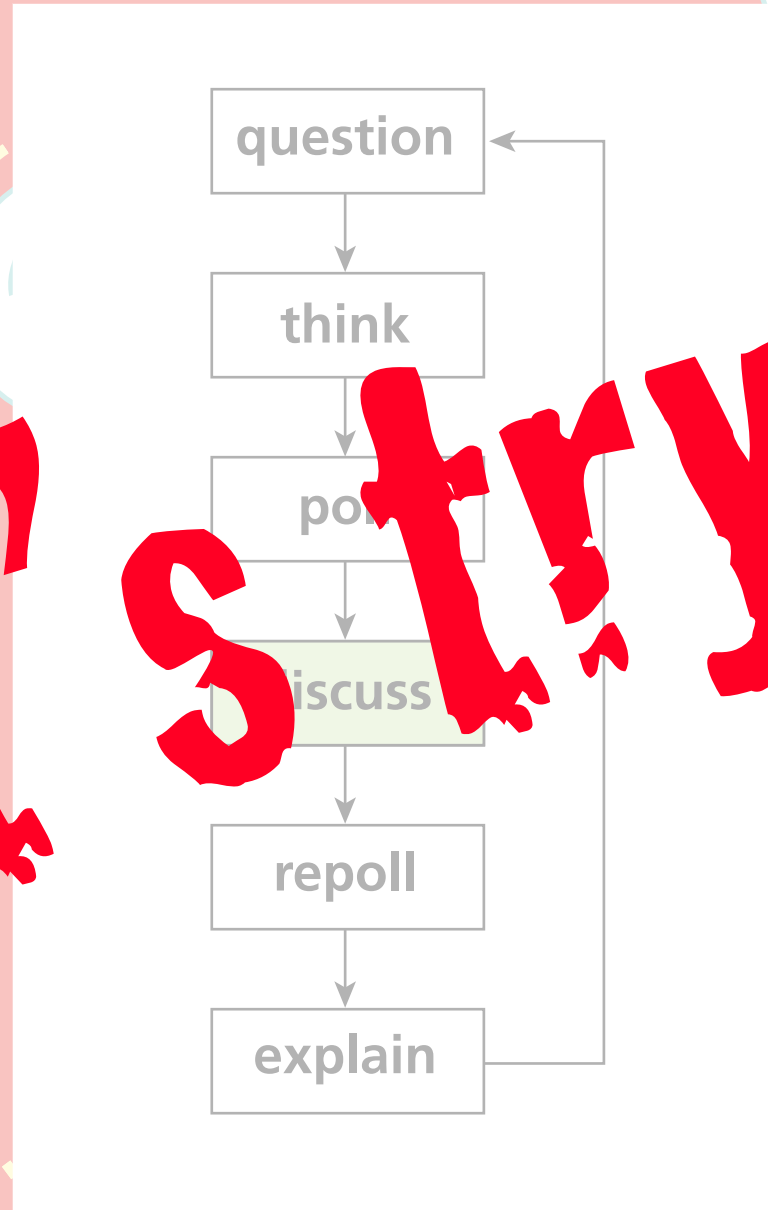
poll

discuss

repoll

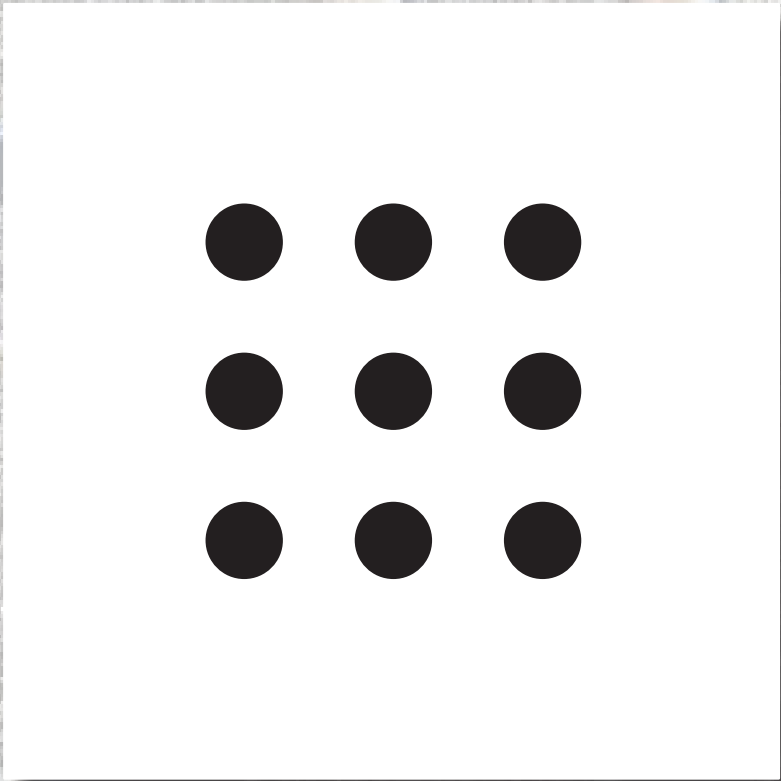
explain

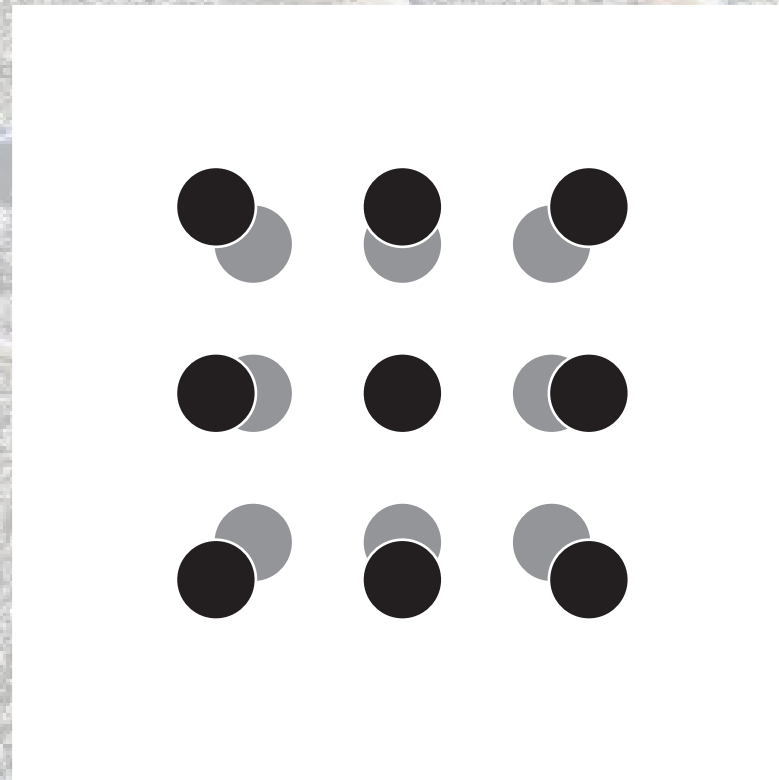
ACTION



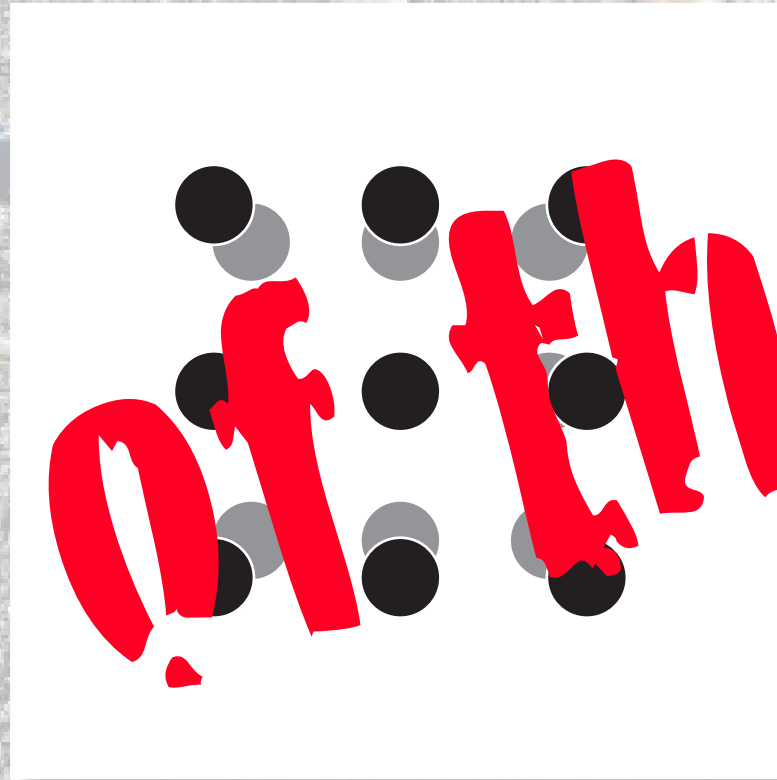
A photograph of a wavy metal track, possibly a model train track, laid out on a bed of grey gravel. The track is made of a light-colored metal and is bent into a series of connected S-curves. The background is a blurred green lawn. The text "thermal expansion" is overlaid in the center of the image.

thermal expansion





all of them



1 education

2 PI

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



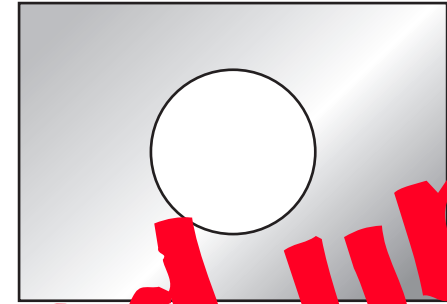
Consider a rectangular metal plate with a circular hole in it.



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**

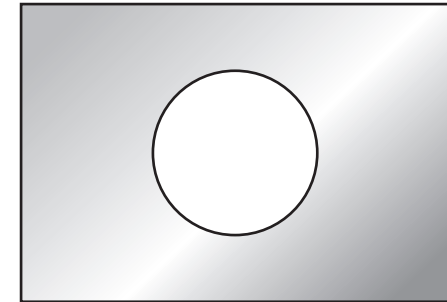
Consider a rectangular metal plate with a circular hole in it.



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

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

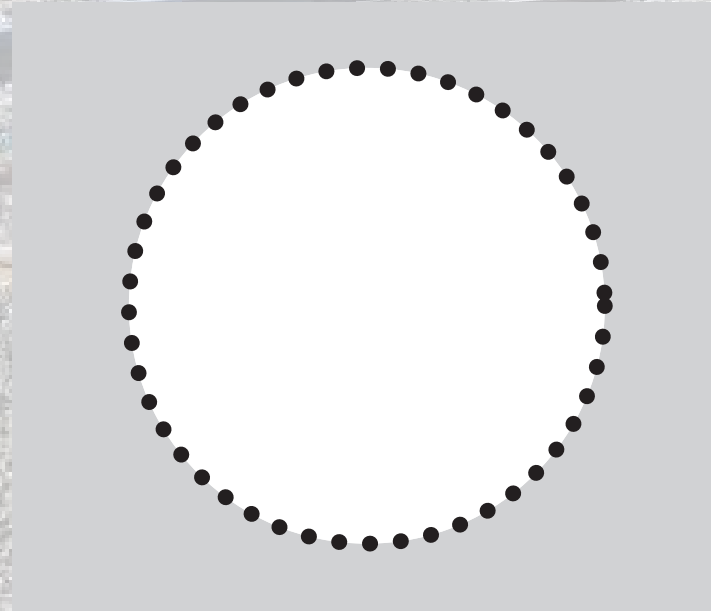
Consider a rectangular metal plate with a circular hole in it.



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

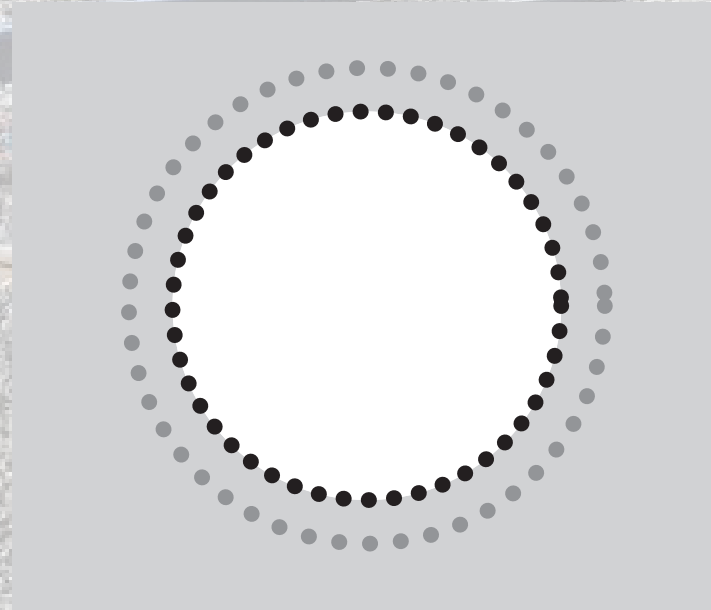


1 education

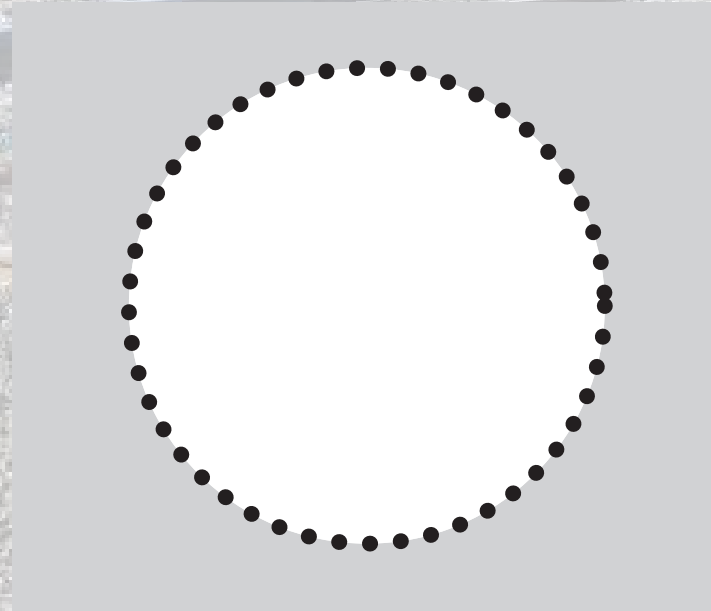
2 PI

3 test

consider atoms at rim of hole



consider atoms at rim of hole

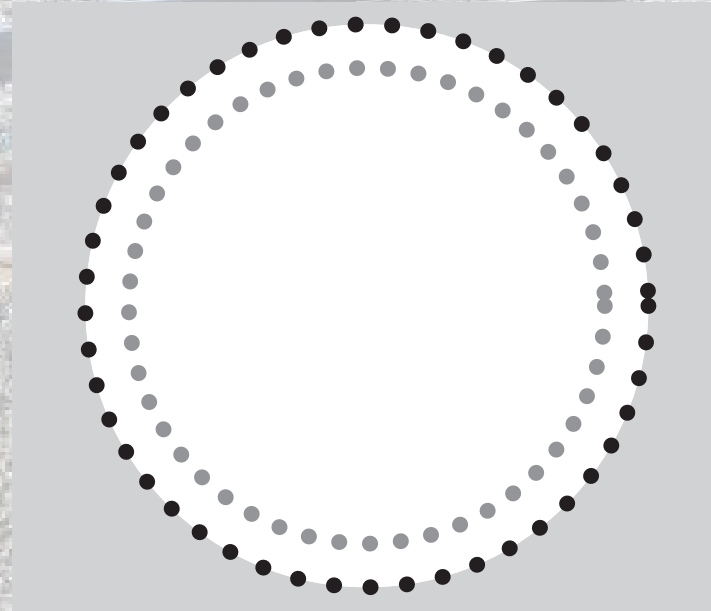


1 education

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

Greater learning gains

Better retention

INSTRUCTION

Peer

The diagram features a large, light blue, tilted word 'Peer' in the background. A dashed yellow line with arrowheads starts from the bottom left, passes through the word 'INSTRUCTION' (written in white, tilted capital letters), and then curves upwards towards the word 'Peer'. From 'Peer', a dotted blue line with arrowheads continues upwards and to the right, pointing towards the phrases 'Greater learning gains' and 'Better retention', which are written in bold red, tilted text.

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 at the bottom. The face is rendered in a pale, yellowish-tan color, and the overall style is reminiscent of a classical portrait. 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**

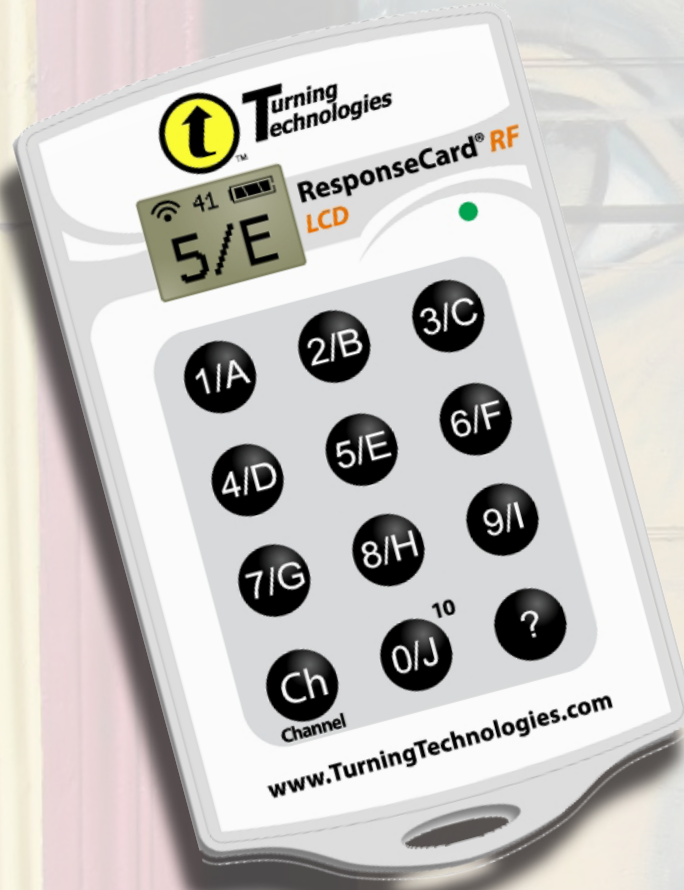


Education is not just about:

- **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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