

Transform your teaching with Perusall



Faculty Café
Waseda University
10 May 2022



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@eric_mazur

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quick reflection



The background of the slide is a faded, artistic illustration of a person's face, focusing on the eyes. The face is rendered in a sketchy, painterly style with muted colors. The eyes are large and expressive, looking directly forward. The background of the illustration consists of vertical stripes in shades of yellow and red. The text is overlaid on this background.

quick reflection

think of something you are good at

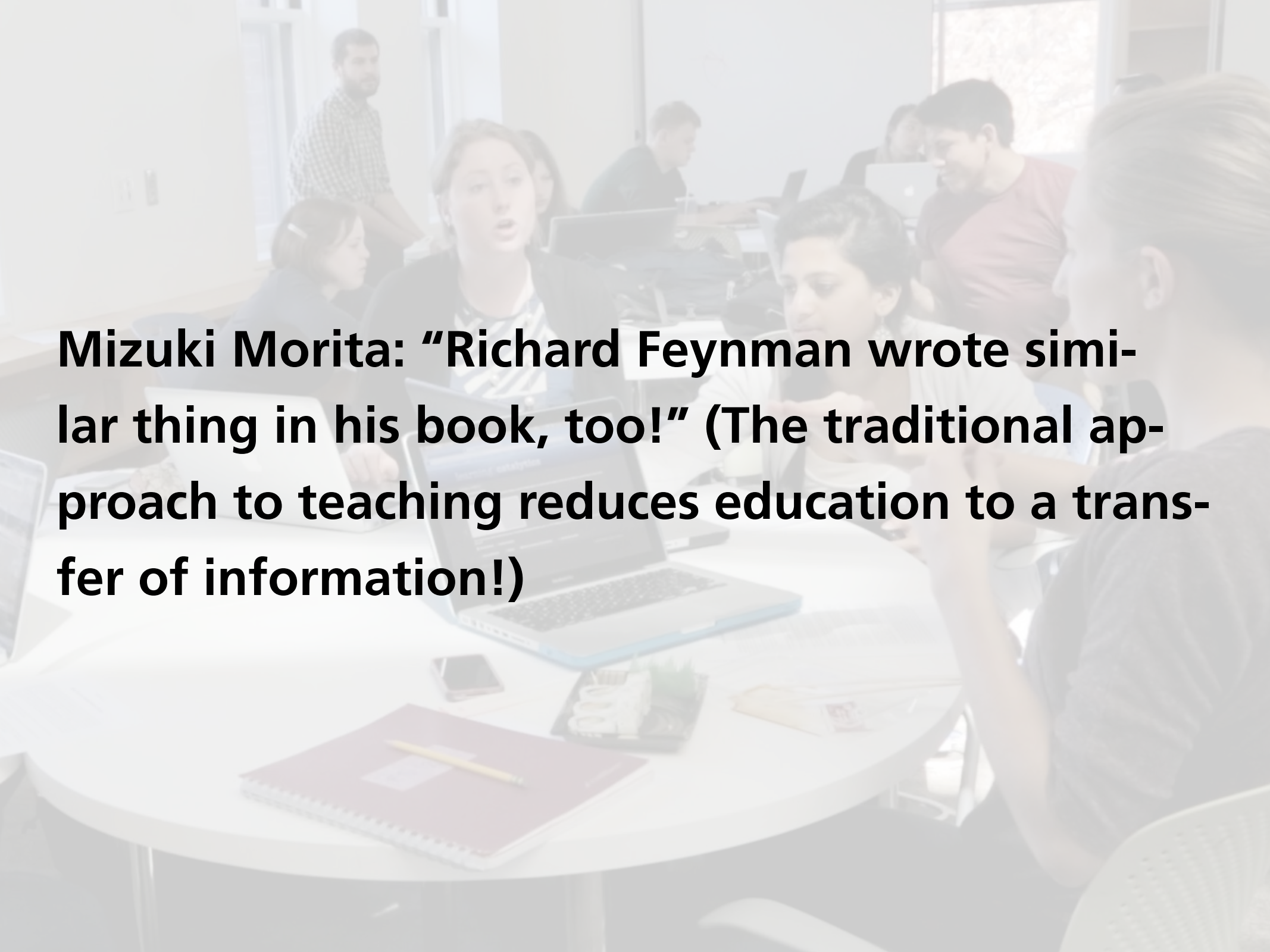
The background is a faded, artistic illustration of a man's face, possibly a historical figure, with a focus on his eyes and nose. The image is overlaid with a semi-transparent grey rectangle. The text 'quick reflection' is written in a bold, black, sans-serif font, centered horizontally and positioned in the upper half of the image. The overall aesthetic is that of a book cover or a presentation slide.

quick reflection

how did you become good at that?





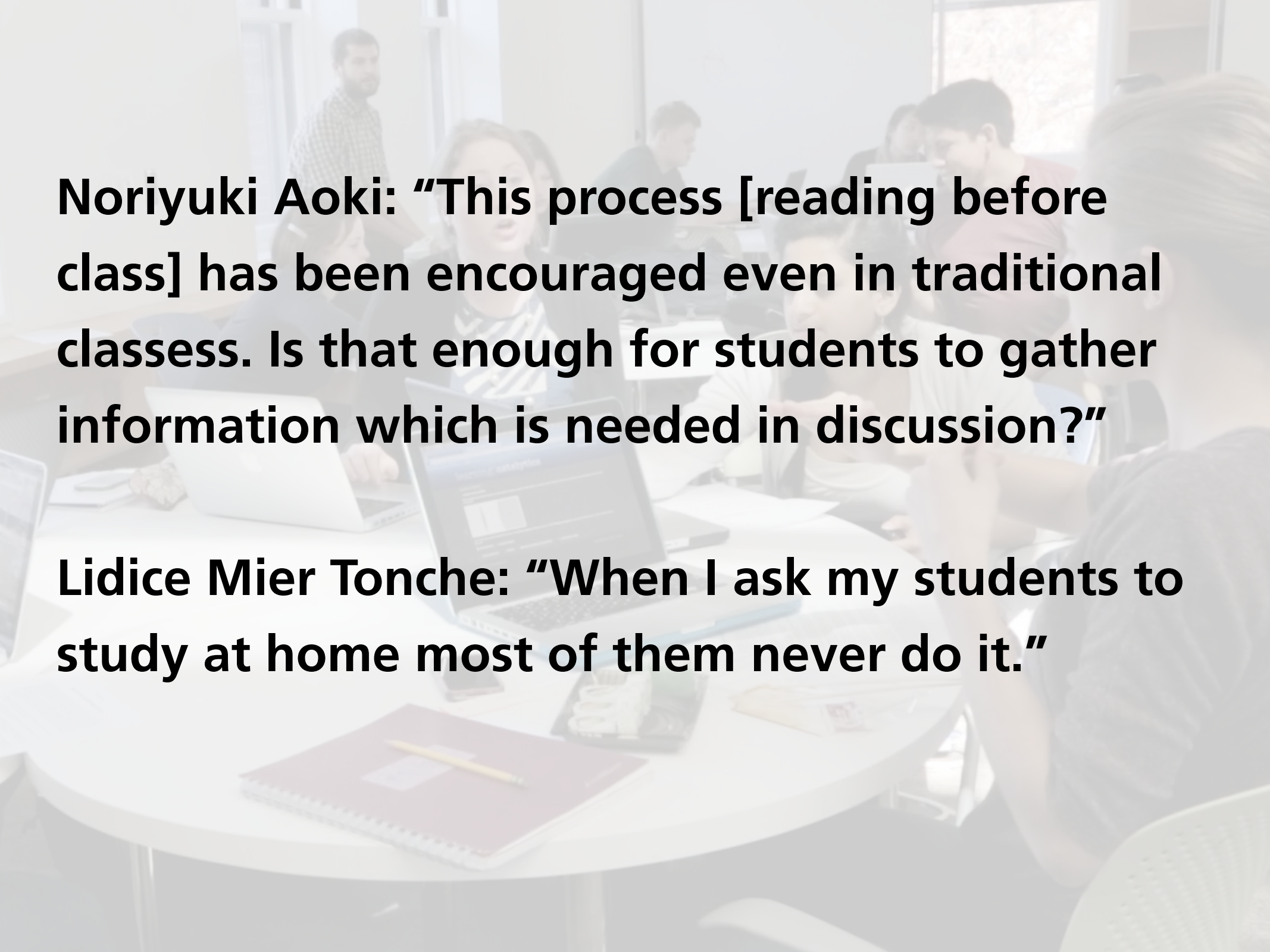


Mizuki Morita: “Richard Feynman wrote similar thing in his book, too!” (The traditional approach to teaching reduces education to a transfer of information!)

A group of people in a modern office setting, working on laptops and discussing projects. The scene is brightly lit with large windows in the background. Several individuals are seated at round tables, focused on their work. One woman in the foreground is looking at a laptop screen, while others are engaged in conversation. The overall atmosphere is collaborative and professional.

Goal of this session

**demonstrate how to integrate
Peer Instruction in your teaching approach**



Noriyuki Aoki: "This process [reading before class] has been encouraged even in traditional classess. Is that enough for students to gather information which is needed in discussion?"

Lidice Mier Tonche: "When I ask my students to study at home most of them never do it."



Getting to know each other

Did you have fun doing the pre-assignment?

A. It was fun!

B. Meh!

C. I hate preassignments

D. I hate to admit it, but I didn't do it

Getting to know each other

Did you gain a new insight from the pre-assignment?

- A. Yes, from the article or video**
- B. Yes, from the discussion with others**
- C. Both!**
- D. No**
- E. I already told you, I didn't do the pre-assignment**

Getting to know each other

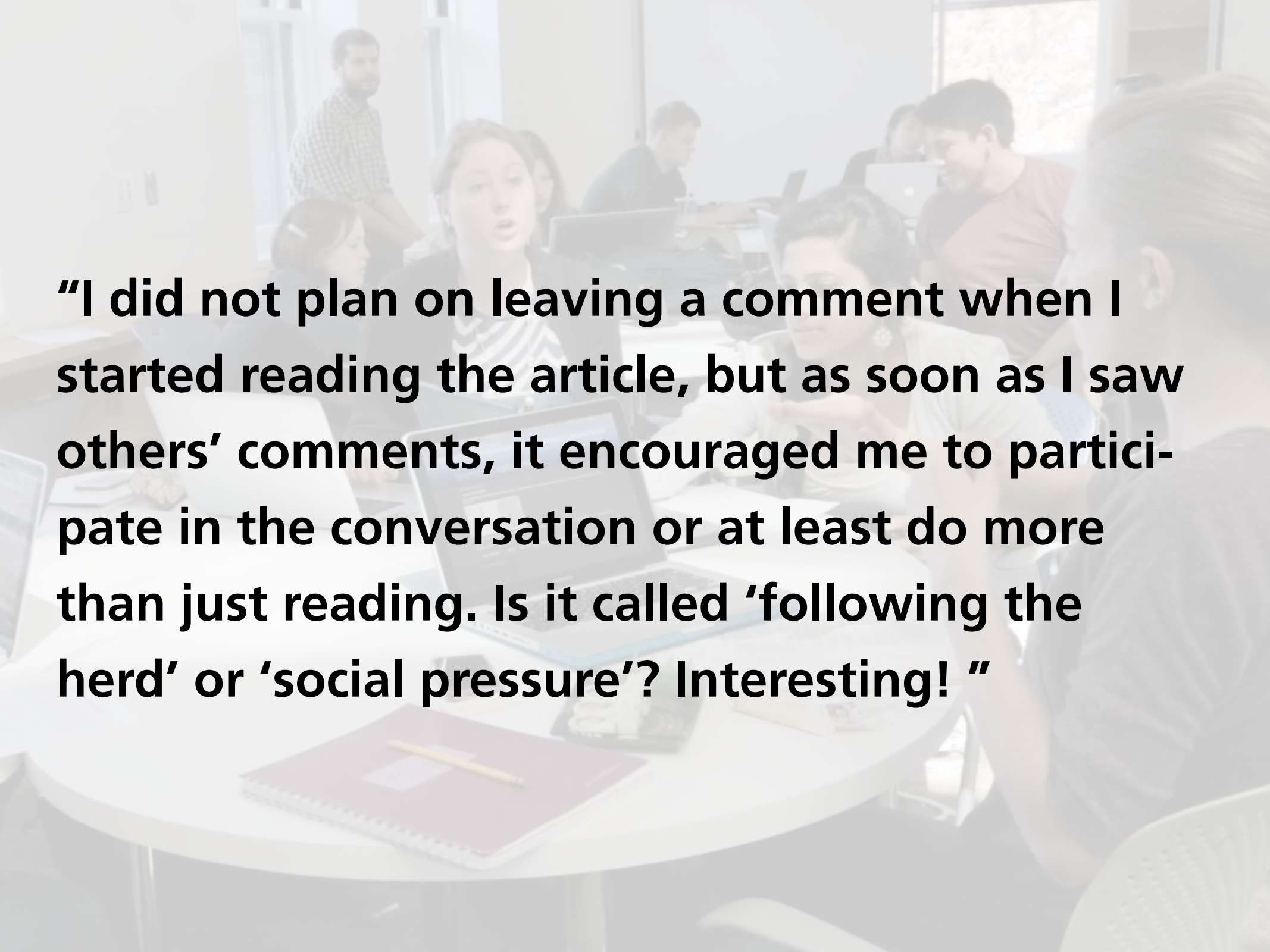
When you were a student in college, averaging over all the classes you attended in all your courses, for what percentage of all these classes did you prepare yourself by reading the material ahead of class?

- A. Every single class of all of the classes I took**
- B. About 90% of the classes**
- C. Three quarters of the classes**
- D. Half the classes**
- E. One quarter of the classes**
- F. A few or none of the classes**

A group of students in a modern classroom setting, sitting at round tables with laptops, engaged in discussion. The image is faded to serve as a background for the text.

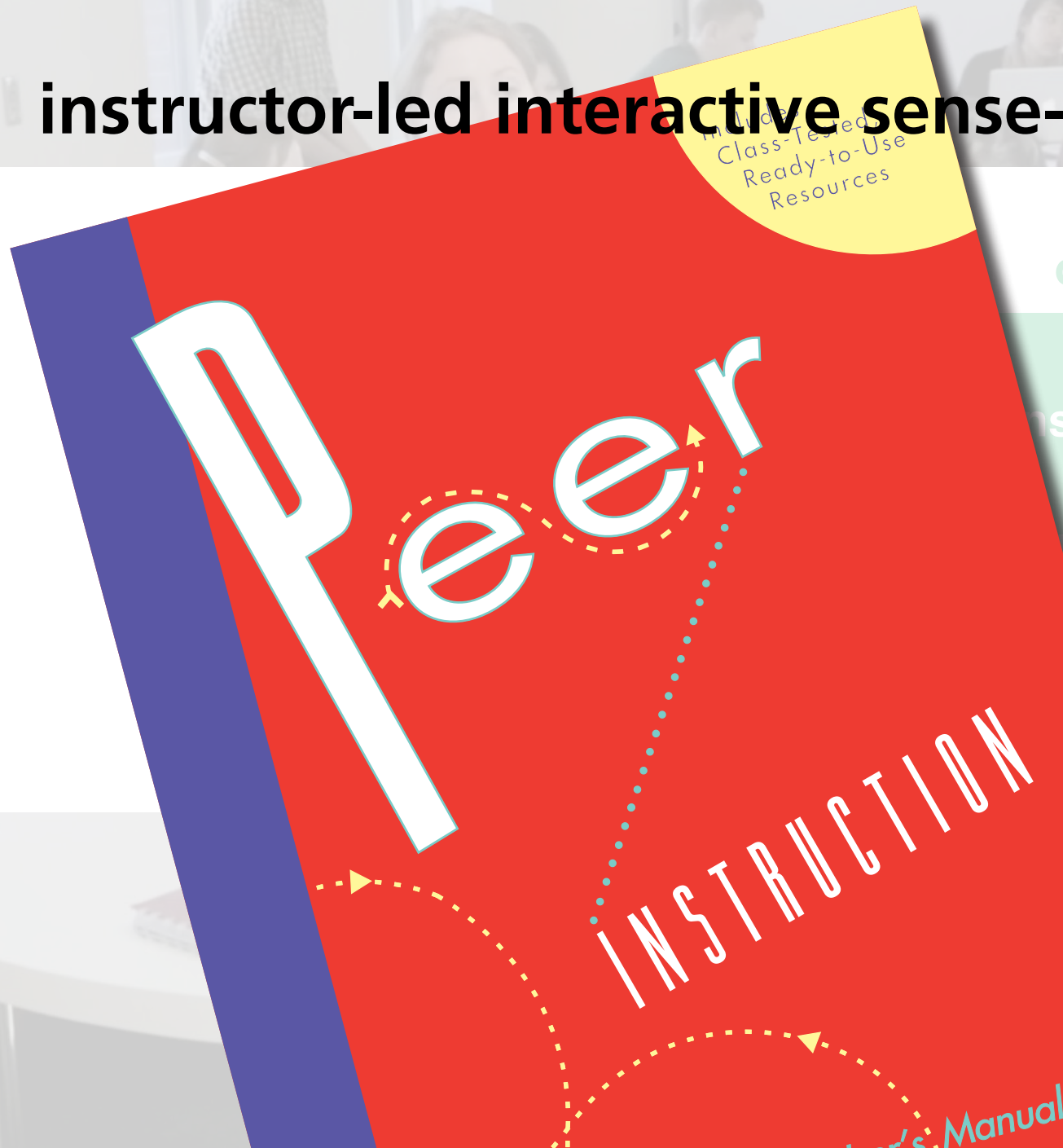
Icebreaker

Discuss pre-assignment on Perusall



“I did not plan on leaving a comment when I started reading the article, but as soon as I saw others’ comments, it encouraged me to participate in the conversation or at least do more than just reading. Is it called ‘following the herd’ or ‘social pressure’? Interesting! ”

instructor-led interactive sense-making



online

se-making

uctor-led
hronous

instructor-led interactive sense-making

Peer Instruction...

- interactive teaching method
- promotes meaningful thinking

online

information
transfer

online

sense-making

self-paced
asynchronous

instructor-led
synchronous



instructor-led interactive sense-making

You will experience Peer Instruction by...

- 1. answering question individually**
- 2. discussing question in breakout rooms**
- 3. reanswering question**

instructor-led interactive sense-making

online

information
transfer

self-paced
asynchronous

online

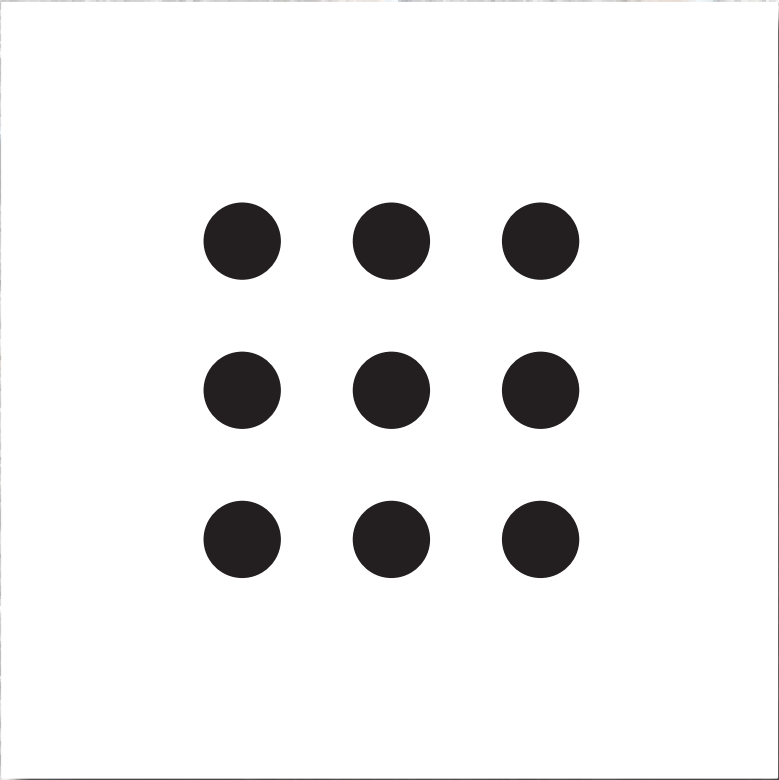
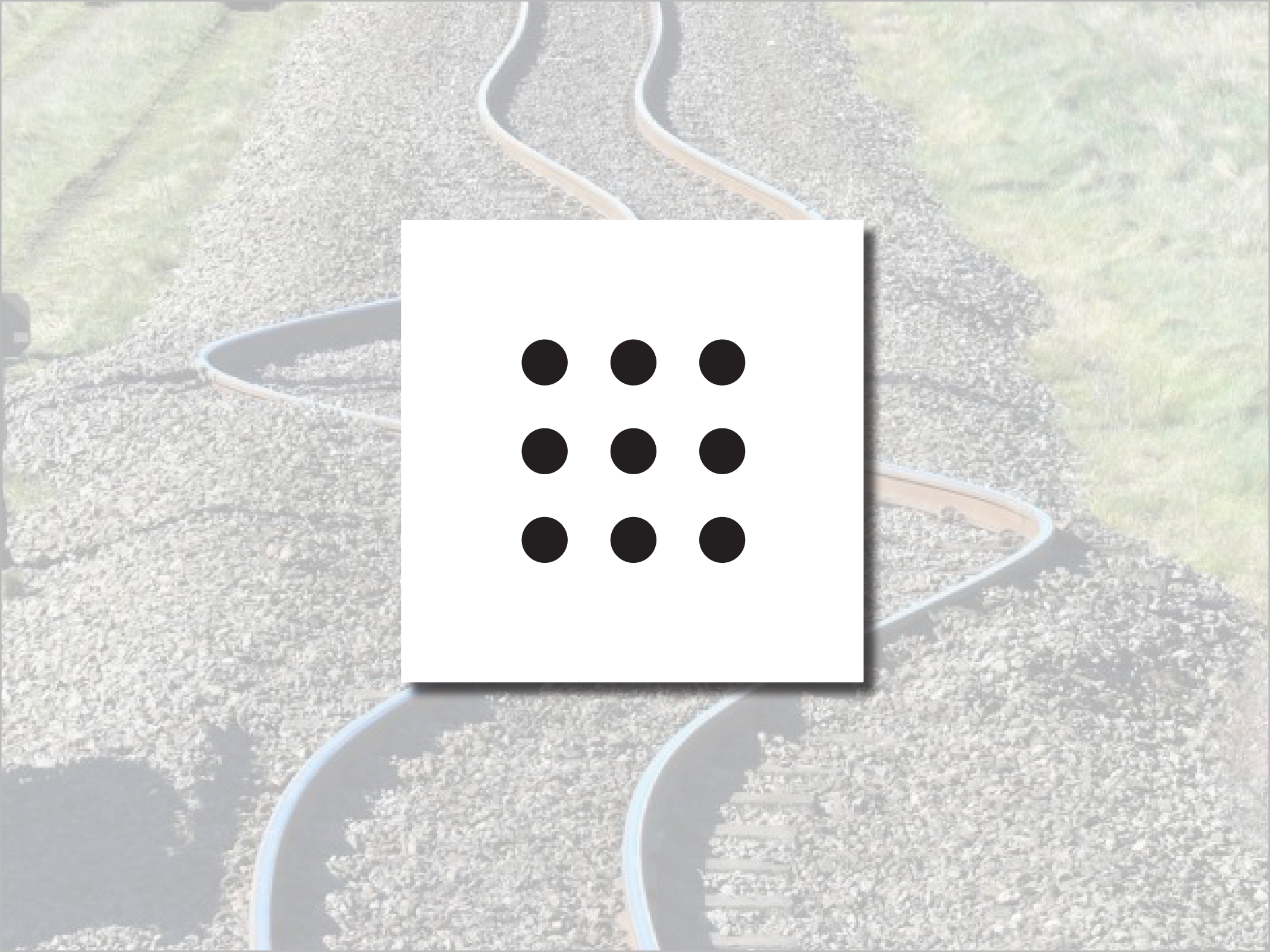
sense-making

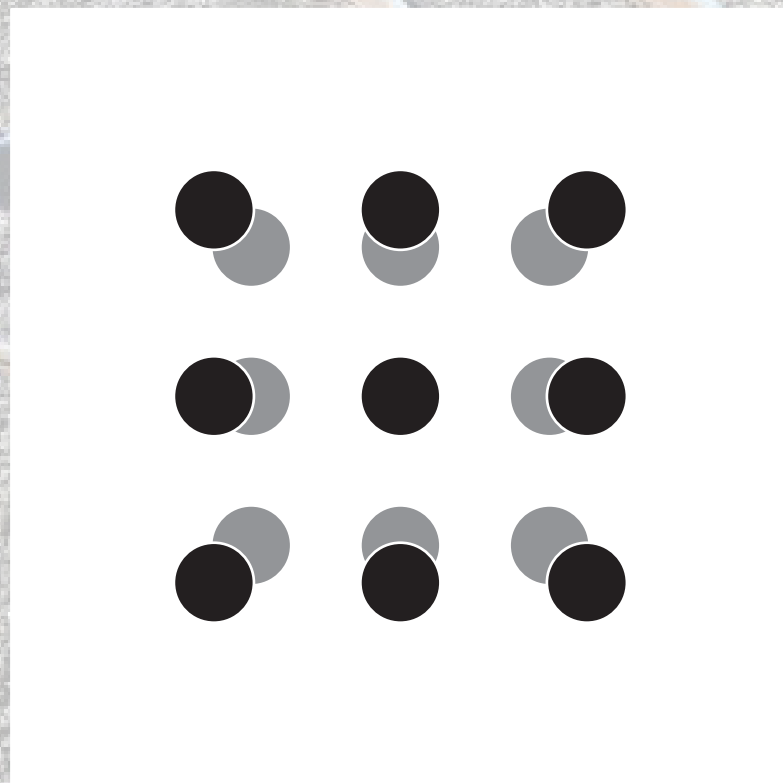
instructor-led
synchronous

Go to: **Pollev.com/ericmazur615**

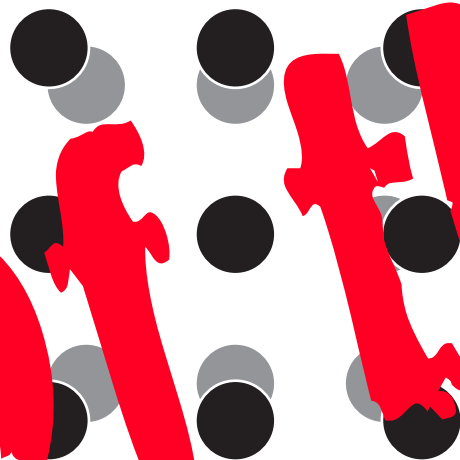
A photograph of a railway track with a wavy, undulating path, illustrating the concept of thermal expansion. The track is composed of gravel and wooden sleepers, and the rails are curved in a series of S-shapes. The text "thermal expansion" is overlaid on the image.

thermal expansion

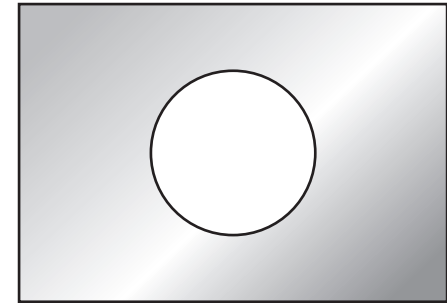




all of them

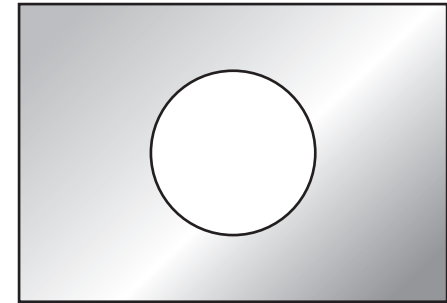


**Consider a rectangular metal plate
with a circular hole in it.**



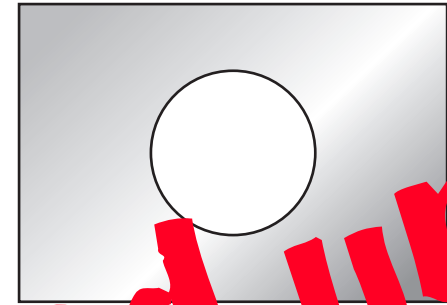
Consider a rectangular metal plate with a circular hole in it.

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.

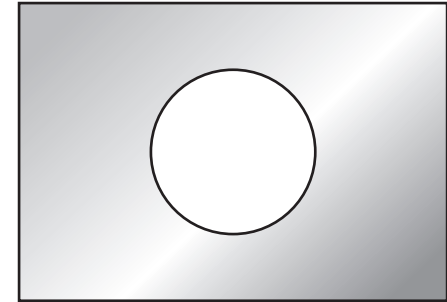


When the plate is uniformly heated, the diameter of the hole

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, let's analyze what happened.

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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**

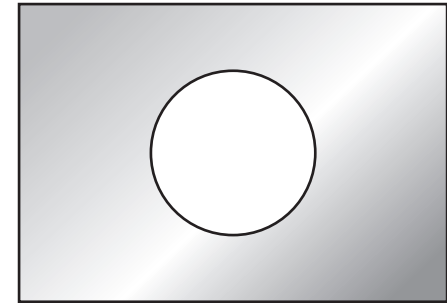
Before I tell you the answer, let's analyze what happened.

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**

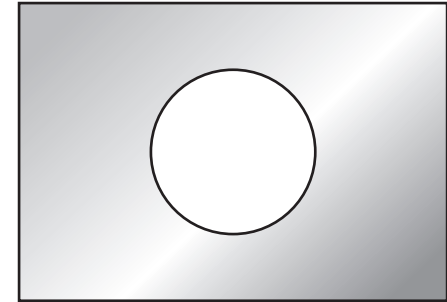
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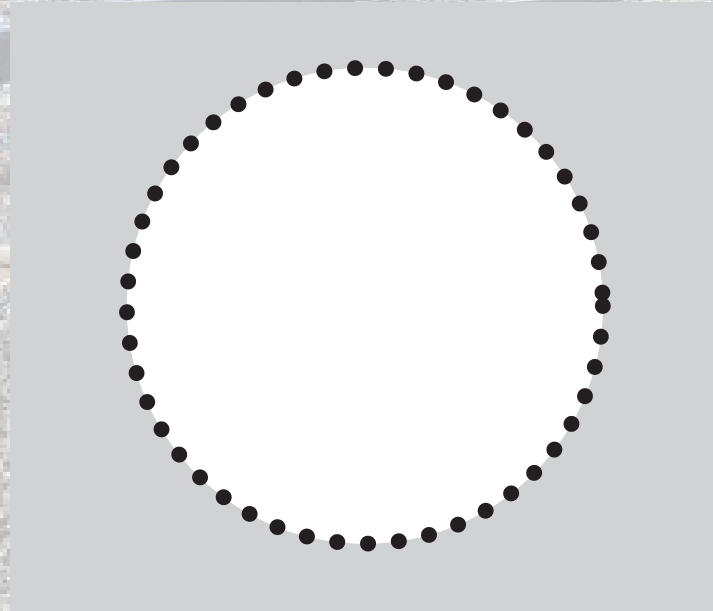
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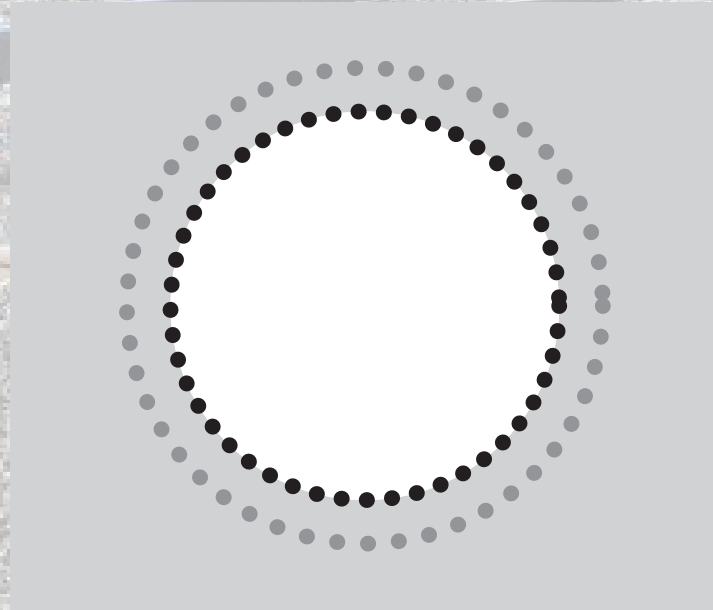
When the plate is uniformly heated, the diameter of the hole

- 1. increases. ✓**
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- 3. decreases.

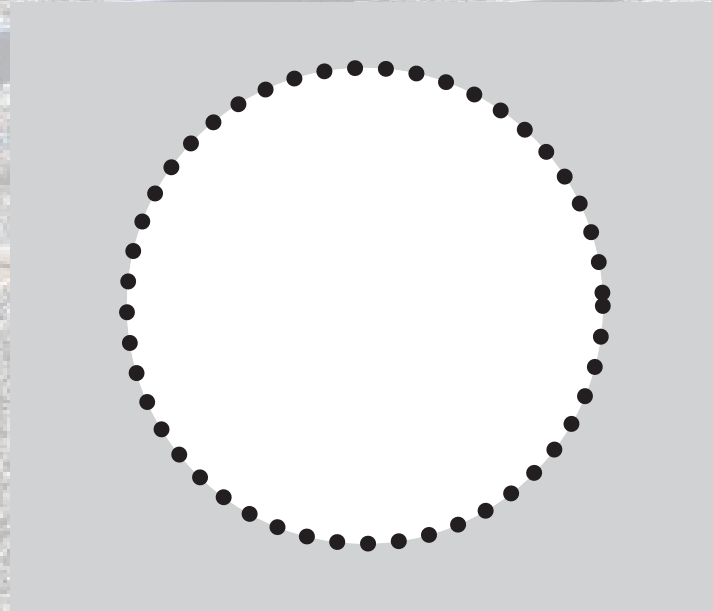
consider atoms at rim of hole



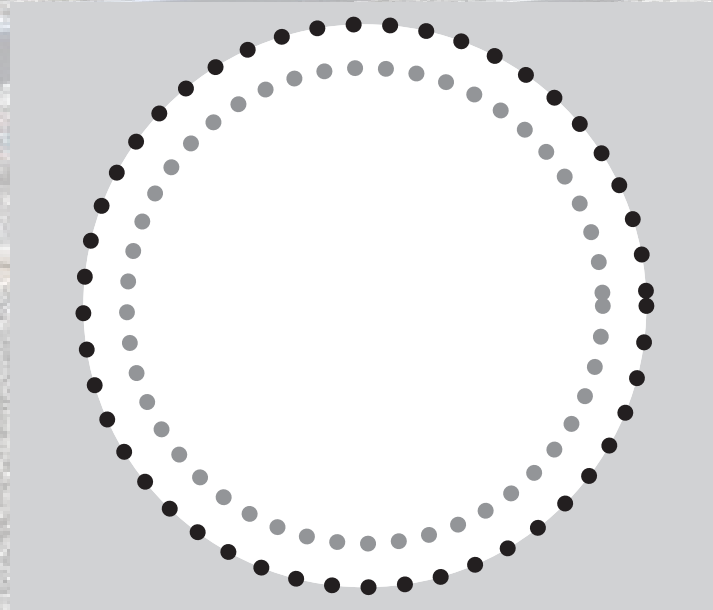
consider atoms at rim of hole



consider atoms at rim of hole



consider atoms at rim of hole



consider atoms at rim of hole

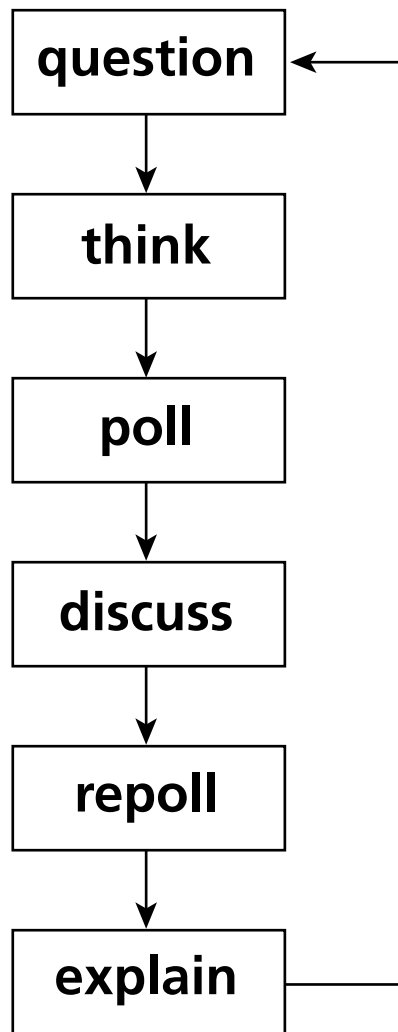
you won't forget this

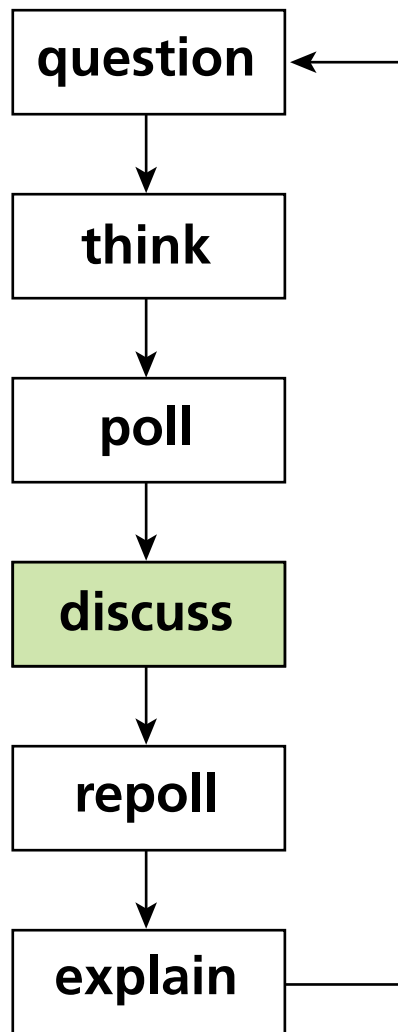
The image features a light red background with a diagonal split into a light blue section on the left and a light red section on the right. The word 'Peer' is written in a large, white, sans-serif font, tilted upwards from left to right. A dashed yellow line with a yellow arrow at its end curves around the 'ee' portion of the word. Below 'Peer', the phrase 'back to pl' is written in a smaller, red, sans-serif font, also tilted upwards. A dotted blue line with a yellow arrow at its end starts from the bottom left and points towards the 'pl' in 'back to pl'. At the bottom right, the word 'INSTRUCTION' is written in a large, white, sans-serif font, tilted upwards.

Peer

back to pl

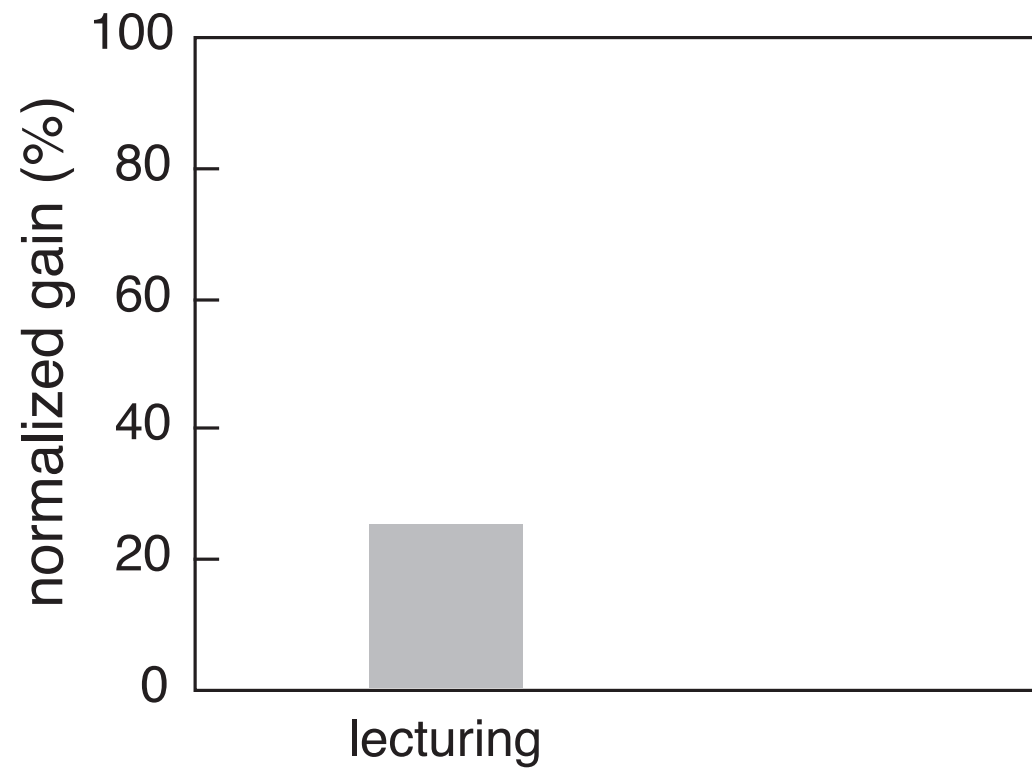
INSTRUCTION

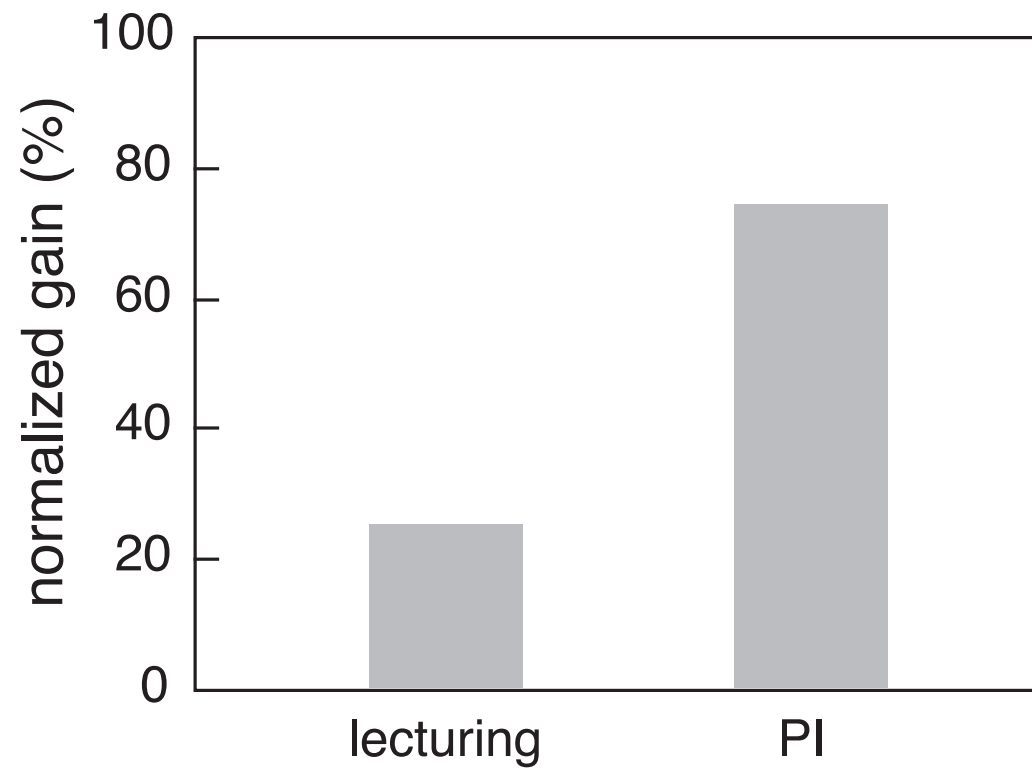




Higher learning gains

INSTRUCTION



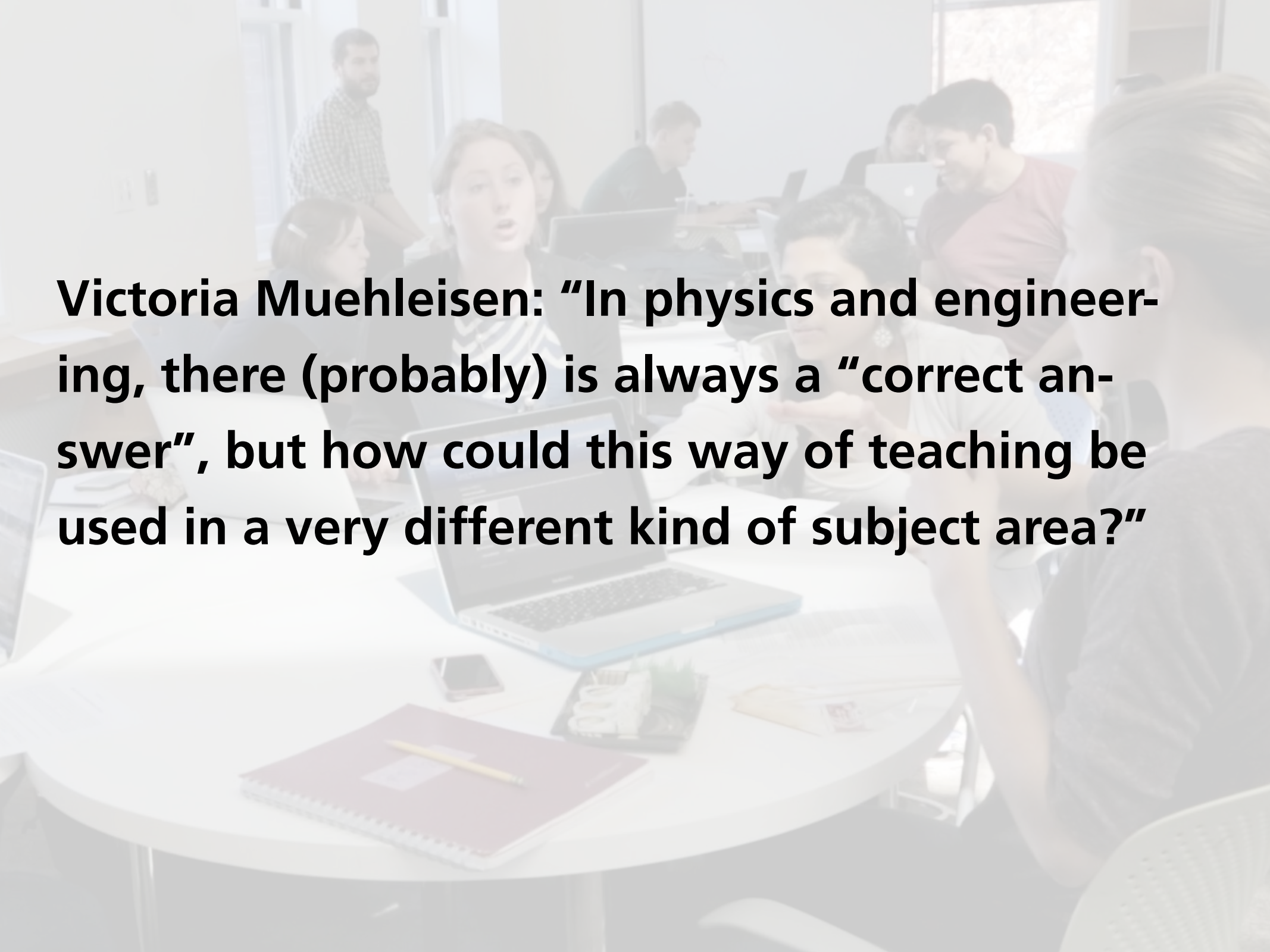




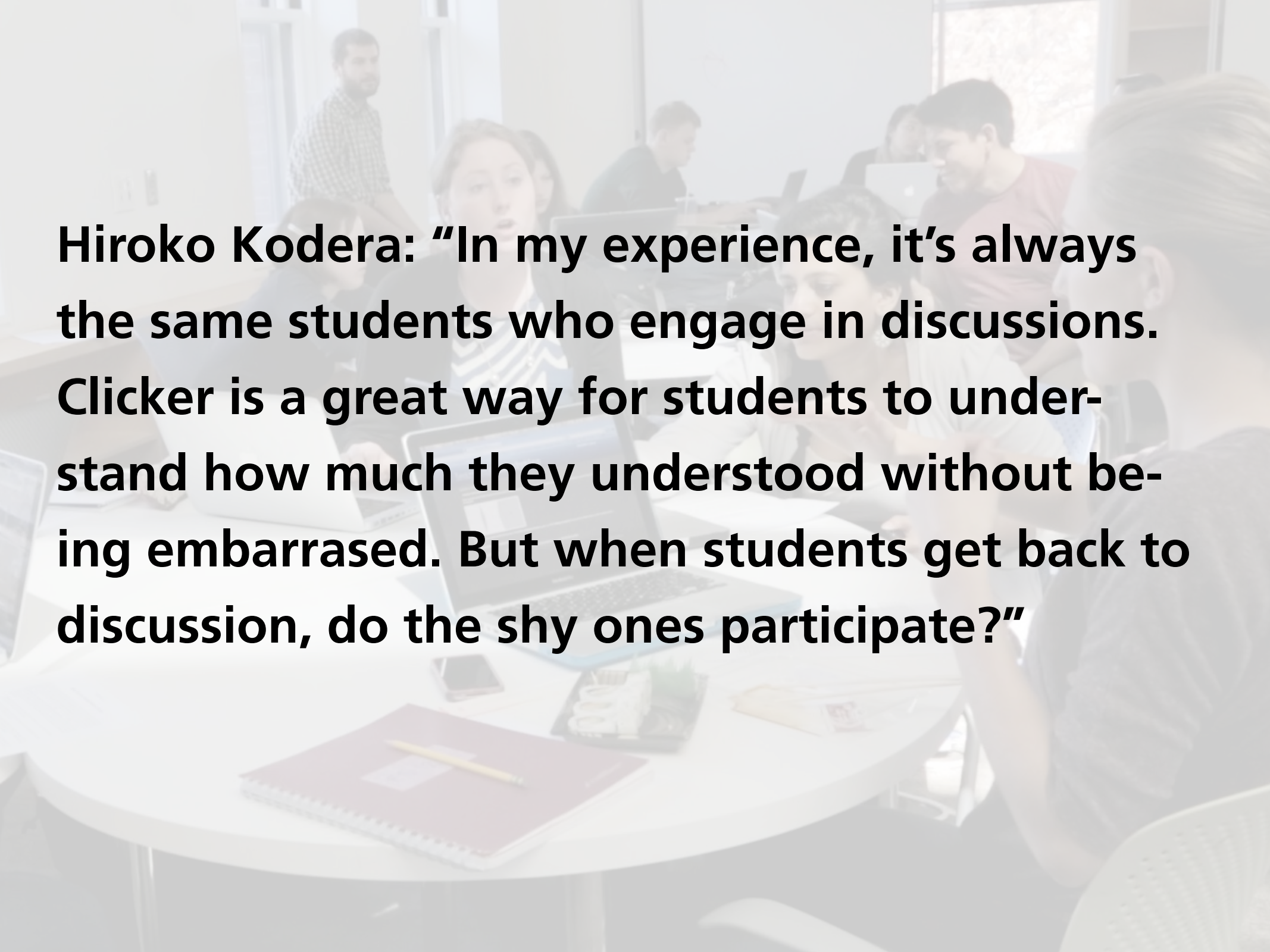
Higher learning gains

Better retention

INSTRUCTION



Victoria Muehleisen: “In physics and engineering, there (probably) is always a “correct answer”, but how could this way of teaching be used in a very different kind of subject area?”



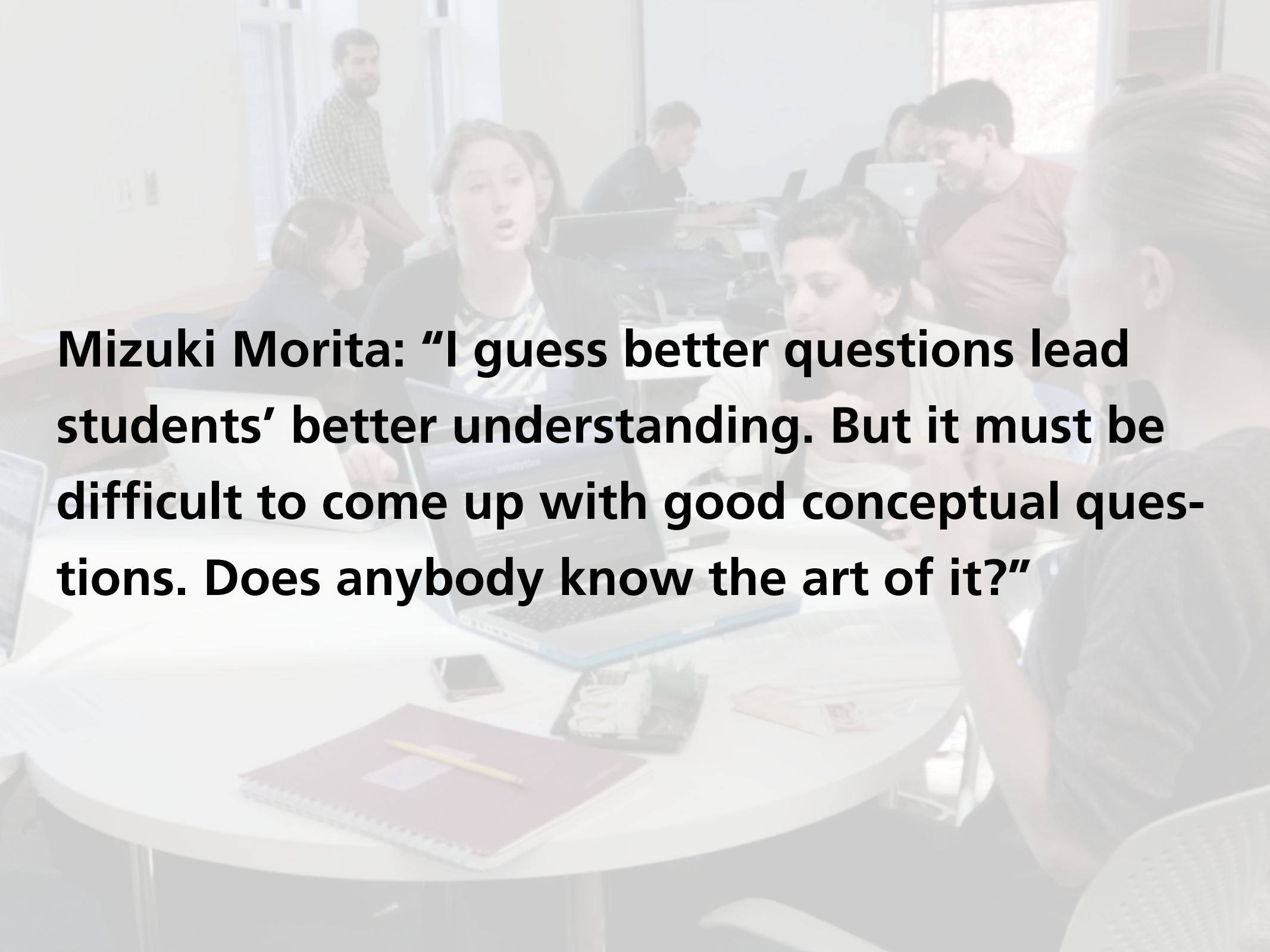
Hiroko Koderu: "In my experience, it's always the same students who engage in discussions. Clicker is a great way for students to understand how much they understood without being embarrassed. But when students get back to discussion, do the shy ones participate?"

Professor Mizokami's psychology class Kyoto University



Why Peer Instruction works

- engages students to think
- individualizes learning
- students use similar discourse
- helps avoid the “expert blind spot”

A group of students in a modern classroom setting, working on laptops and discussing concepts. The students are seated around a white circular table, with laptops open in front of them. In the background, other students are visible, some standing and some sitting at desks. The overall atmosphere is collaborative and focused.

Mizuki Morita: “I guess better questions lead students’ better understanding. But it must be difficult to come up with good conceptual questions. Does anybody know the art of it?”

asynchronous information transfer

Perusall...

- is a social learning platform
- takes information transfer out of classroom

online

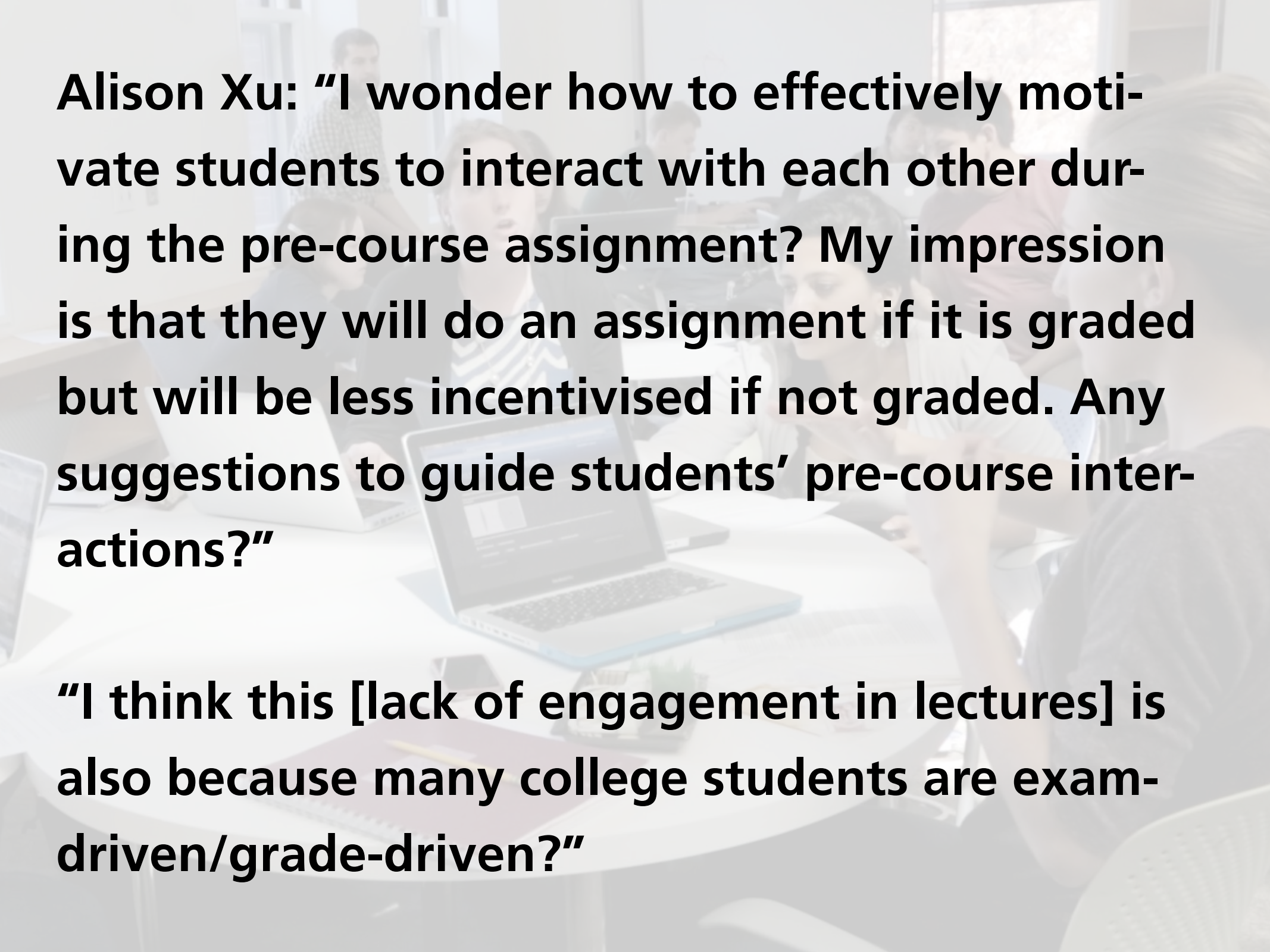
information
transfer

online

sense-making

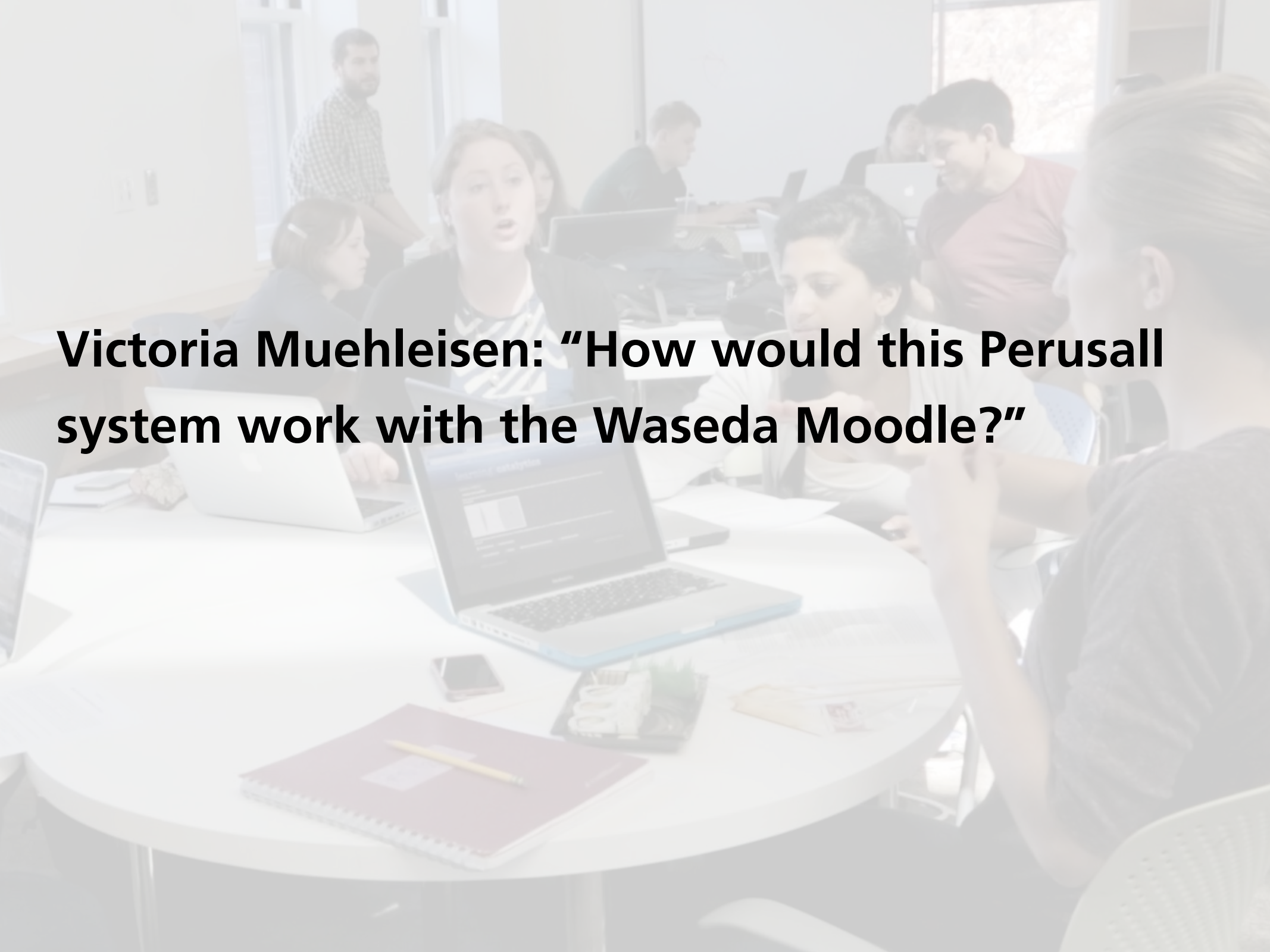
self-paced
asynchronous

instructor-led
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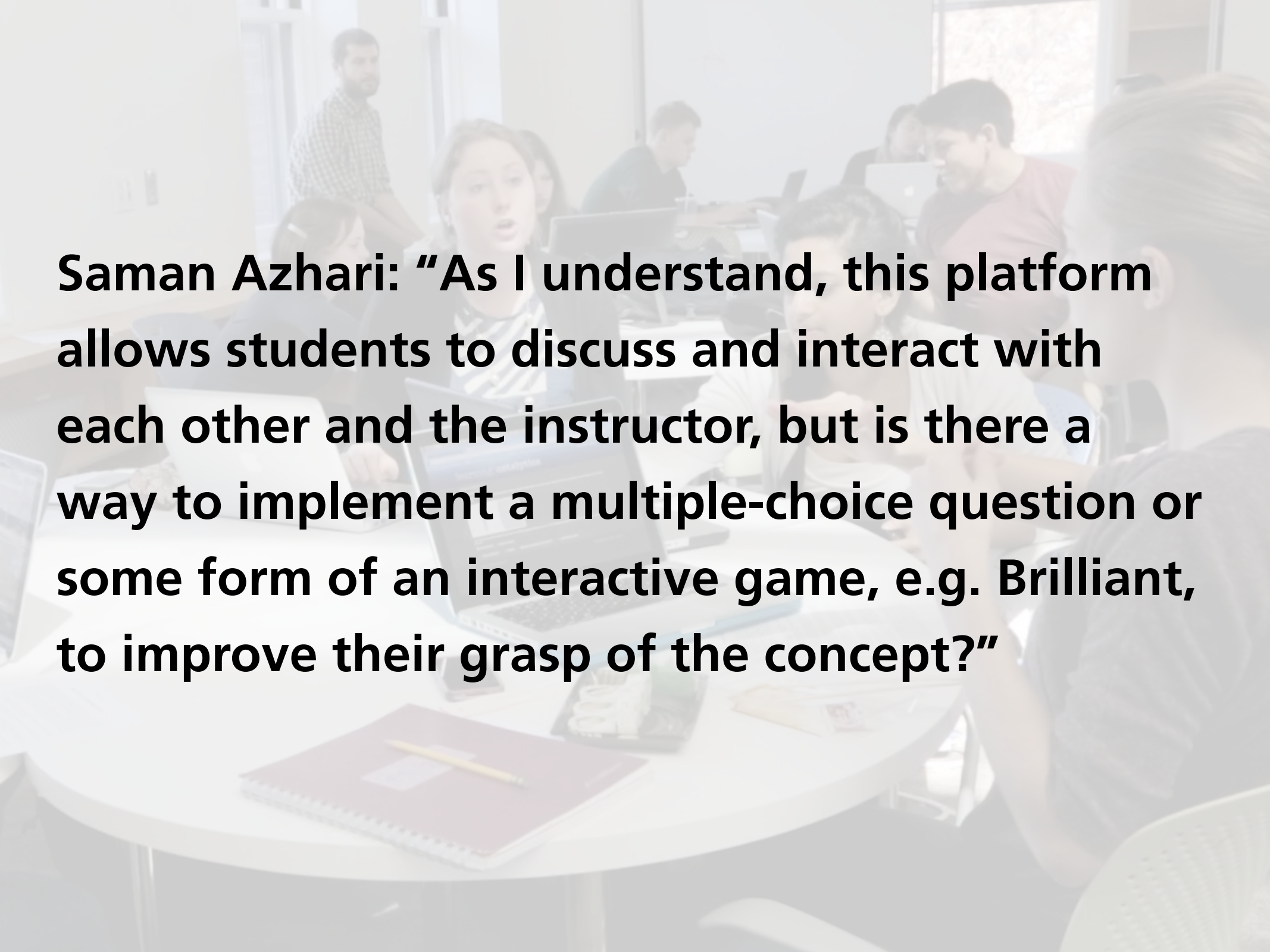
A background image showing a group of students in a classroom or study hall. They are seated at tables, some using laptops. The image is faded and serves as a backdrop for the text.

Alison Xu: "I wonder how to effectively motivate students to interact with each other during the pre-course assignment? My impression is that they will do an assignment if it is graded but will be less incentivised if not graded. Any suggestions to guide students' pre-course interactions?"

"I think this [lack of engagement in lectures] is also because many college students are exam-driven/grade-driven?"



Victoria Muehleisen: “How would this Perusall system work with the Waseda Moodle?”



Saman Azhari: “As I understand, this platform allows students to discuss and interact with each other and the instructor, but is there a way to implement a multiple-choice question or some form of an interactive game, e.g. Brilliant, to improve their grasp of the concept?”

Documents you can use with Perusall

- **PDF, Word, html, or ePub files (free)**
- **video—YouTube, Vimeo, Google Drive, Dropbox (free)**
- **open access material (free)**
- **source code with syntax highlighting (free)**
- **books (purchased by students or institution)**

Reflection

- asynchronous preparation
- synchronous time for discussion

A group of people in a modern office setting, working on laptops and discussing projects. The image is faded to serve as a background for the text.

Reflection

- **asynchronous preparation**
- **synchronous time for discussion**
- **dig deeper post-session**

for a copy of this presentation:

mazur.harvard.edu

resource sheet: bit.ly/fliponline

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