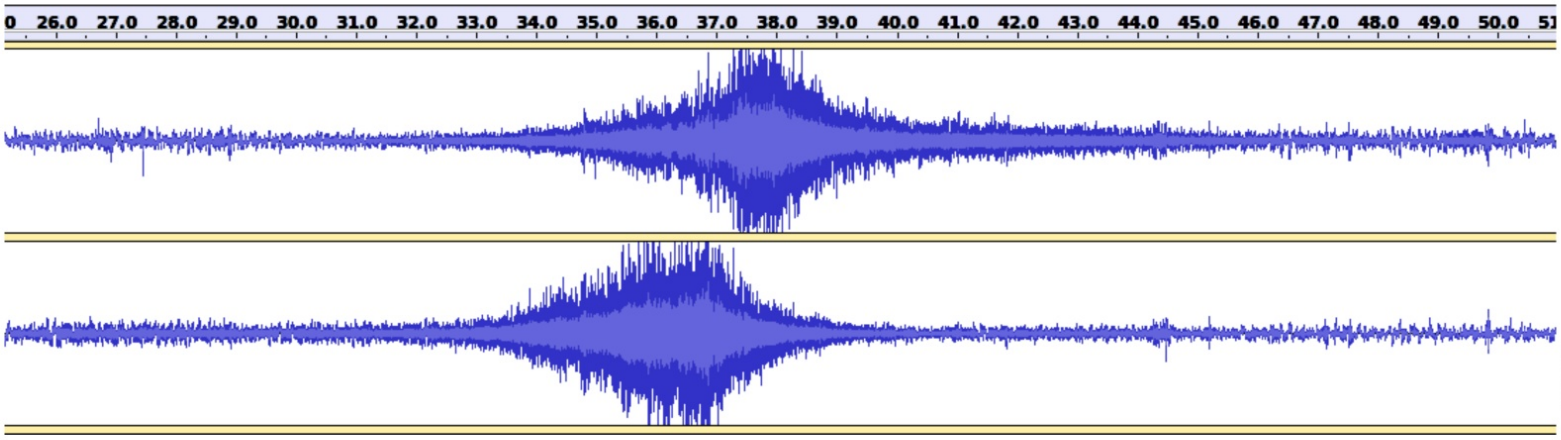


Teaching in Stereo

Strategies for Class Participation

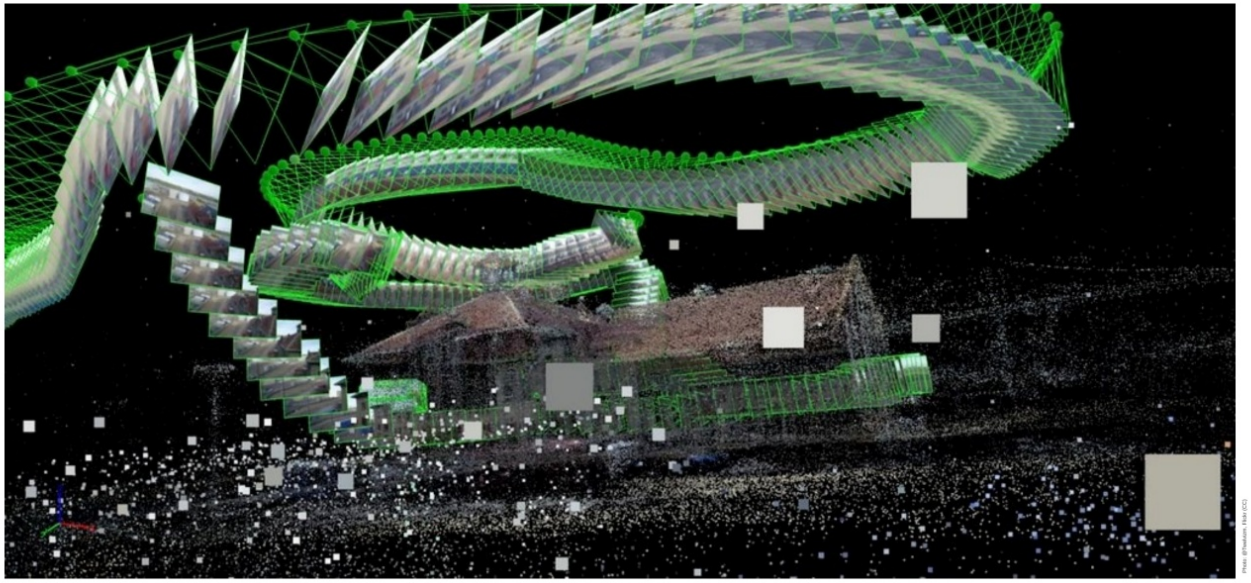
Derek Bruff / derekbruff.org / @derekbruff

Stereoscopes

View of Boston, c. 1860

View-Master, c. 1980

Photogrammetry



According to Howard (2015), how many students will account for 75 to 95 percent of college classroom discussion, regardless of class size?

A. 5 to 8

B. 10 to 13

C. 15 to 18

D. 20 to 23

"Colourful army," maistora, Flickr

Structured ways for students to learn from and with each other can enhance the learning experience for all students.

"Colourful army," maistora, Flickr

Medium

"Solid, Liquid, Gas," Scott Hecker, Flickr CC BY

Colleges ar
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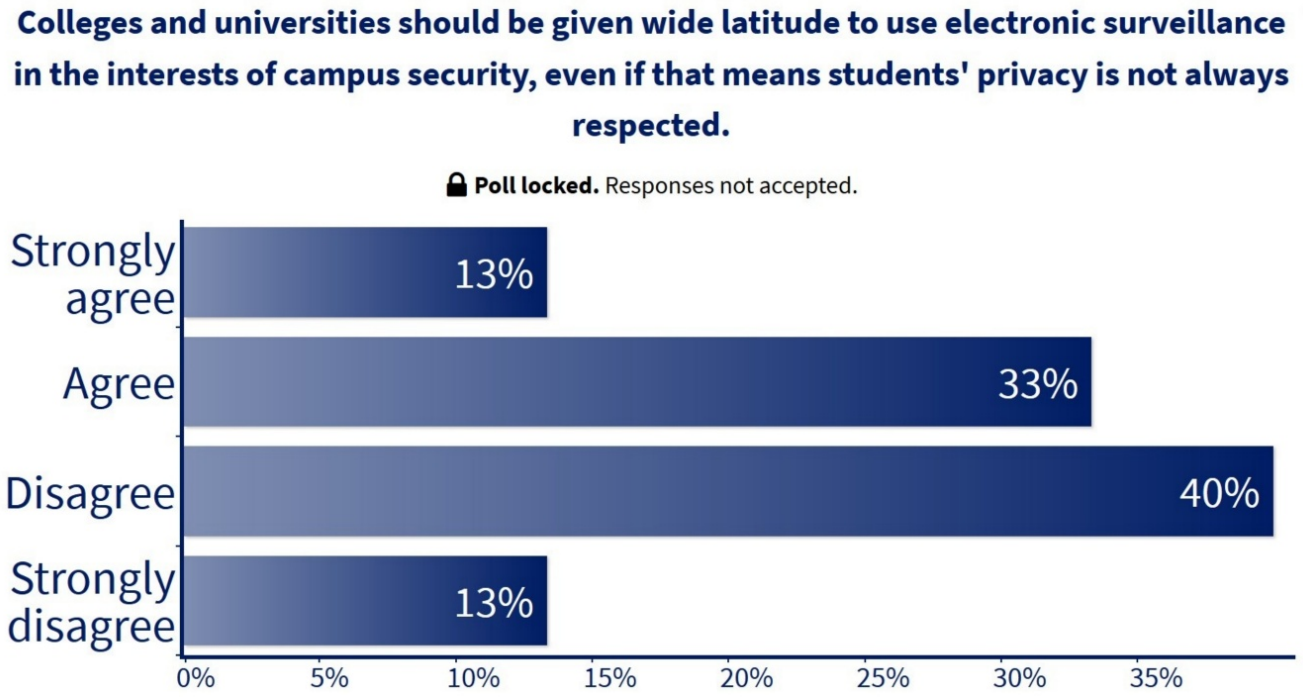
Strongly agree

Agree

Disagree

Strongly disagree

In-Class Polling



Misconception Questions

Your sister calls to say she's having twins. Which of the following is more likely? (Assume she's not having identical twins.)

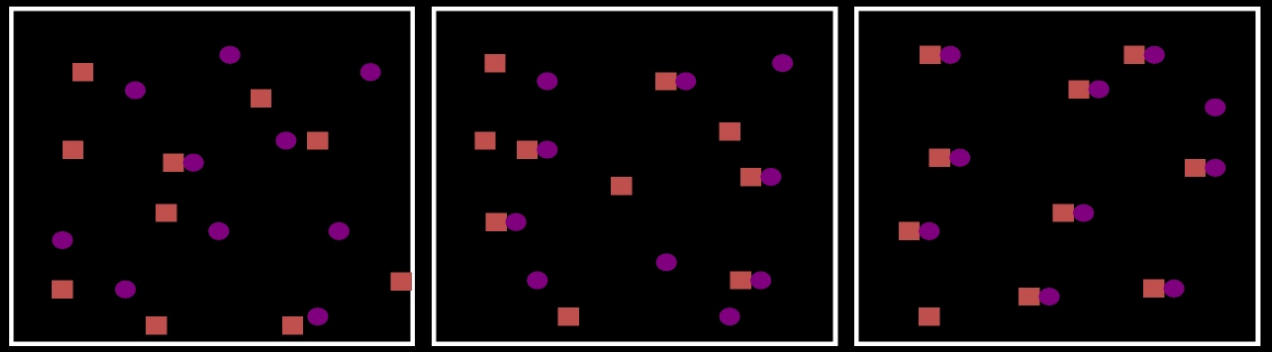
A. Twin boys
B. Twin girls
C. One girl and one boy
D. All are equally likely.

"Prams," Rich Brooks, Flickr (CC-BY)

Representation Questions

Which solution best represents HF disassociation in solution? (What does the equilibrium picture look like?)

$$HF(aq) \rightleftharpoons H^{+}(aq) + F^{-}(aq) \qquad K = 6.8 \times 10^{-4}$$



A B C

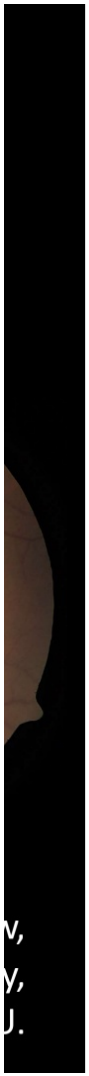
Barbara Reisner, Chemistry, James Madison University

Critical Thinking Questions

64-year-old female. Two months blurred vision. 20/200. How would you treat?

A. Focal laser
B. Bevacizumab
C. Intravitreal triescence
D. Vitrectomy
E. Intravitreal jetrea

Janice Law,
Ophthalmology,
Vanderbilt U.



Counterfactual Questions

If a Viking and a samurai fought, who would win?

A. Viking

B. Samurai

Rob MacDougall,
History, Univ. of
Western Ontario

Advanced Polling

Draft an intro (first 2 sentences) to a blog post on the Vigenere Cipher

Poll locked. Responses not accepted.

"What if you could send messages that were completely secure? At the time of its creation, the Vigenere cipher did just that."
7 months ago

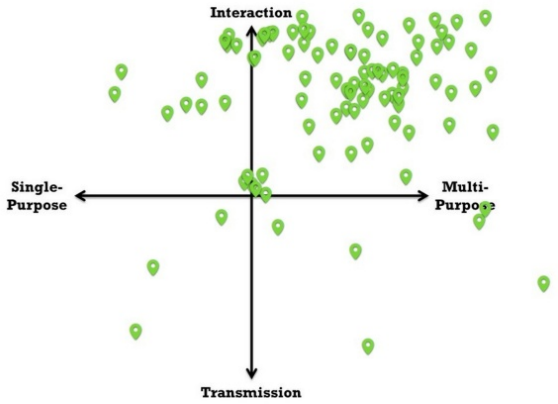
"For centuries, cryptanalysts held the advantage over cryptographers when monoalphabetic substitution ciphers were the most secure forms of encryption available. This changed overnight with the invention of "the indecipherable" Vigenere cipher."
7 months ago

"Growing up, my brother and I used to pass notes encrypted with simple substitution ciphers. At 10 years old, we thought our code was advanced; we could never have imagined a cipher as complicated as the Vigenere."
7 months ago

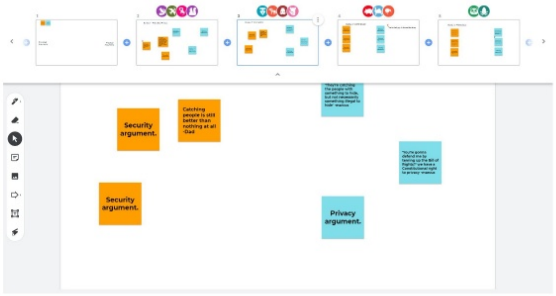
"The Vigenere Cipher was also known as "le chiffre indéchiffrable" because it remained unsolved for three centuries. It has now been reworked in many different ways and continues to be a commonly used cipher."
7 months ago

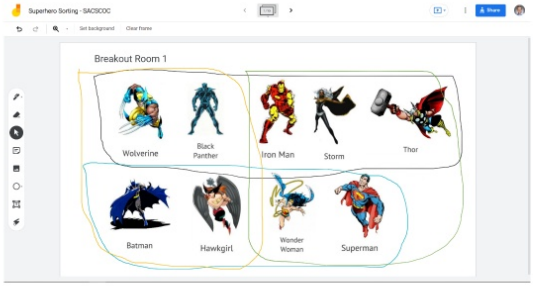
Place Classroom #1 on the flexibility-paradigm axes below.

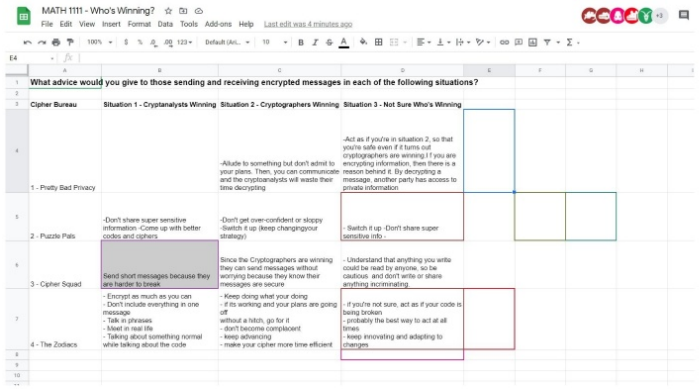
Start this poll to accept responses



Visual Organizers







Ready-Set-Go Questions

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Ready-Set-Go Questions

15:16:04 From Derek Bruff: Q2: What challenges do you expect when teaching this year?
15:16:32 From Derek Bruff :

Ready-Set-Go Questions

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_____

15:16:55 From Naomi: Students are focused on trying to finish their program efficiently. The class I teach is in a topic recently removed as a requirement for their capstone projects. So I fear there will be less commitment to the class.
15:16:55 From Romina: equal engagement, technology challenges
15:16:56 From Ronnie: Virtual complications, Worry, Concern, Frustration,
15:16:56 From Kevin: quarantines, remote students, technology issues
15:16:56 From Joanne: restrictions, expectations, communication, uncertainty
15:16:56 From Dylan: Keeping students engaged in a rotating hybrid course, and adapting on the fly.

Backchannel

- Notetaking
- Sharing resources
- Commenting
- Amplifying
- Asking questions
- Answering questions
- Offering suggestions
- Building community
- Opening the classroom

https://derekbruff.org/?p=472

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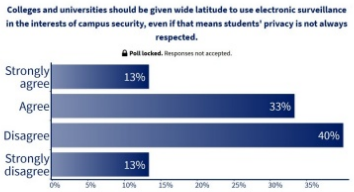
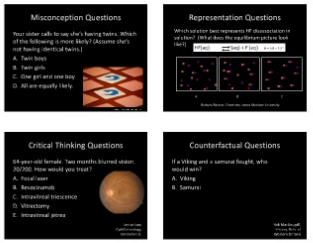
In-Class Polling





Advanced Polling

Backchannel

- Notetaking
- Sharing resources
- Commenting
- Amplifying
- Asking questions
- Answering questions
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https://derekbruff.org/?p=472

Ready-Set-Go Questions

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Visual Organizers

Structure

"Trusses," Derek Bruff, Flickr (C)

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Ready Set Go

What ideas do you have for structuring discussion or group work to foster more student participation?

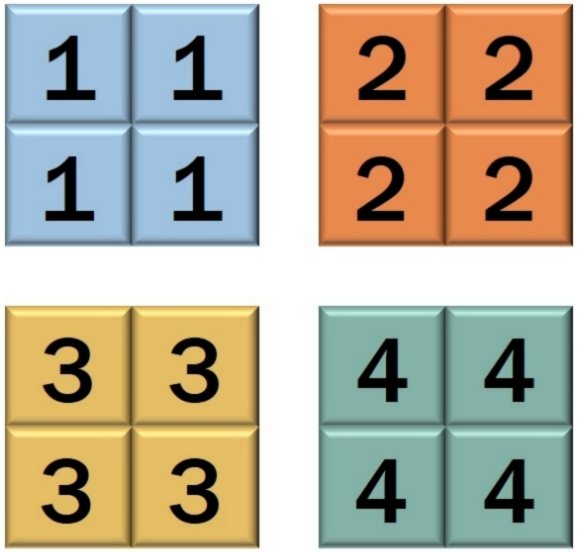
THINK - PAIR - SHARE

THINK	PAIR	SHARE
Ask students to respond to a question independently.	Have students compare answers in small groups.	Ask students to share their work with the class.
for 30 seconds	turn to your neighbor	with the whole class
for 1 minute	walk across the room	with another group
during class	group size = 2	verbally
before class	group size = 3 or 4	in writing
with pen and paper	come to consensus	via polling software
or a laptop	agree to disagree	via whiteboard
in writing	explain your reasoning	class discussion
as you doodle	share your opinion	time for telling

JIGSAW

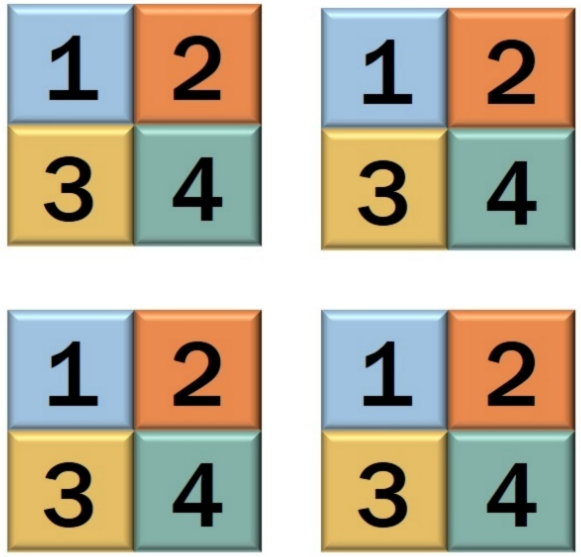
Round 1 – Focus Groups

Divide students into groups and give each group a different text to read and discuss.



Round 2 – Task Groups

Mix the groups so that students can bring their specific focus to a common task or problem.

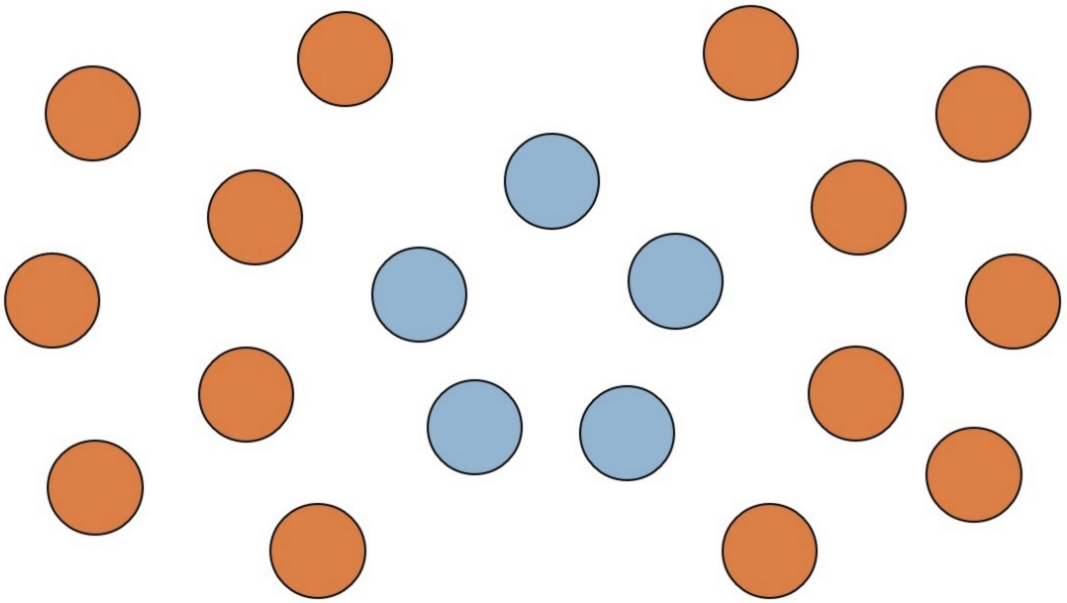


Vanderbilt University Center for Teaching

Jigsaw developed by Aronson (1978)

FISHBOWL

Students in the fishbowl discuss the topic or reading at hand.



Students outside the fishbowl observe and reflect on the discussion.

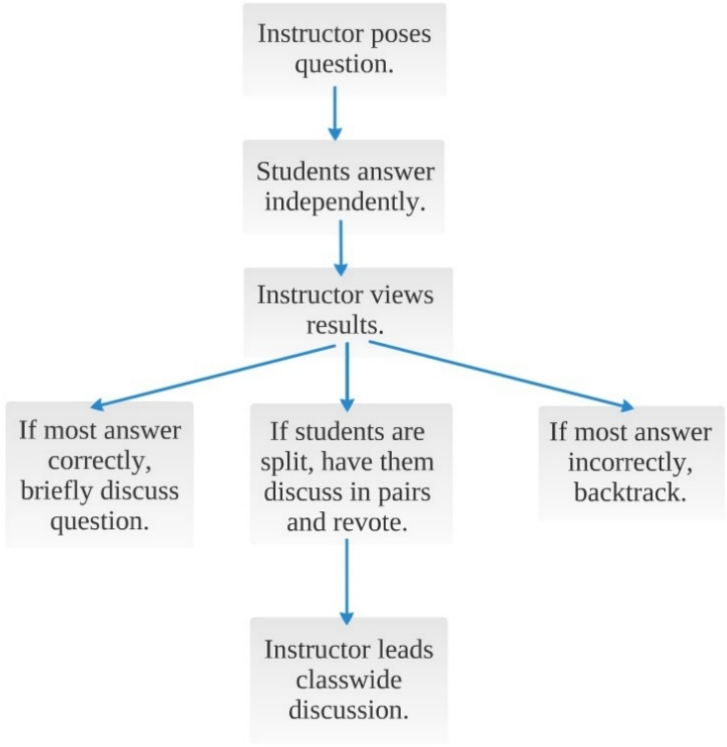
Vanderbilt University Center for Teaching

Structured Reading Groups

- Discussion leader
- Passage master
- Devil's advocate
- Creative connector
- Reporter

Parrott & Cherry (2011)

Peer Instruction



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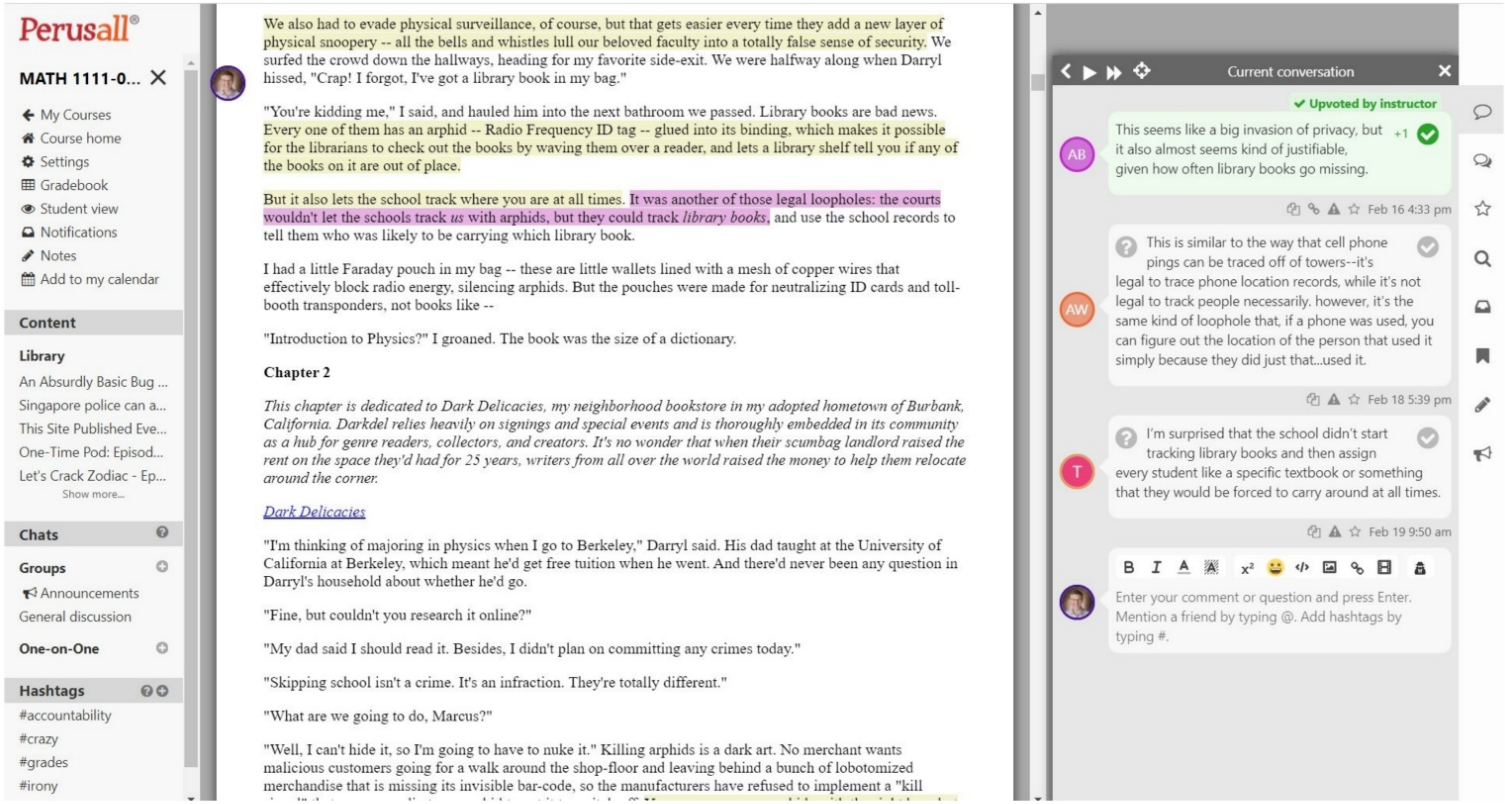
Social Annotation



Gallery Walk

Ground Rules

- Listen respectfully, without interrupting.
- Allow everyone the opportunity to speak.
- Criticize ideas, not individuals or groups.
- Avoid inflammatory language, including name-calling.
- Ask questions when you don't understand; don't assume you know how others are thinking.
- Don't expect any individuals to speak on behalf of their gender, ethnic group, class, etc.

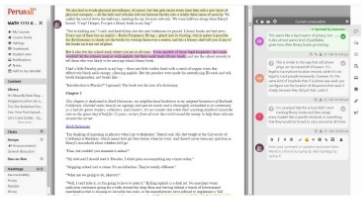
Source: Center for Innovative Teaching and Learning, IU-Bloomington, https://is.gd/ZtidVu

Structure

Ready Set Go

What ideas do you have for structuring discussion or group work to foster more student participation?

Social Annotation



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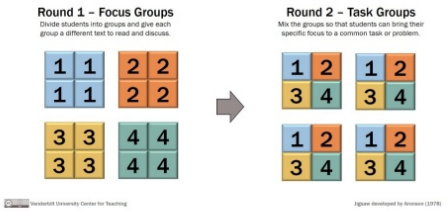

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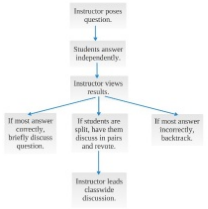

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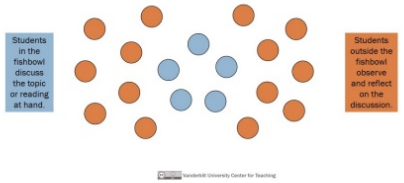

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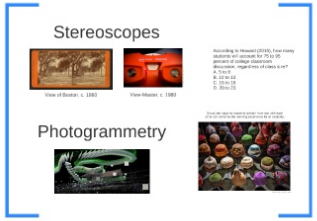
Source: Center for Innovative Teaching and Learning, IU-Bloomington, https://is.gd/2wlvlu

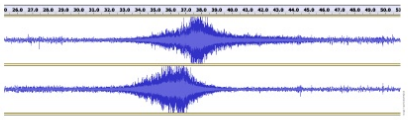
What ideas do you have for "teaching in stereo" in your courses?

Add your idea as a sticky note on this Jamboard: https://is.gd/StereoIdeas

Agile Teaching

"29 valley," Simon Williams, Flickr (CC)





Teaching in Stereo

Strategies for Class Participation

Derek Bruff / derekbruff.org / @derekbruff

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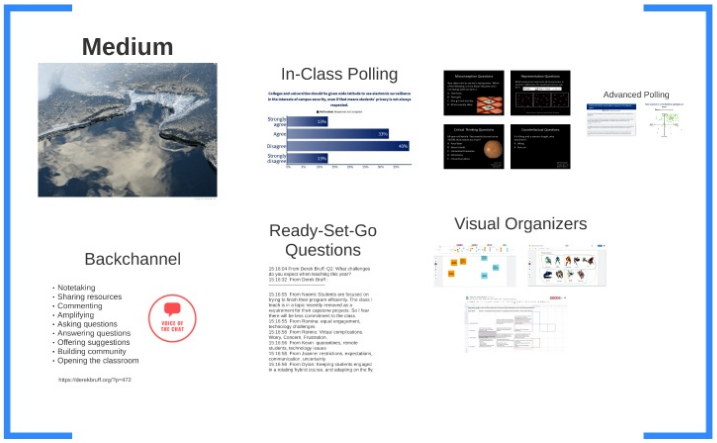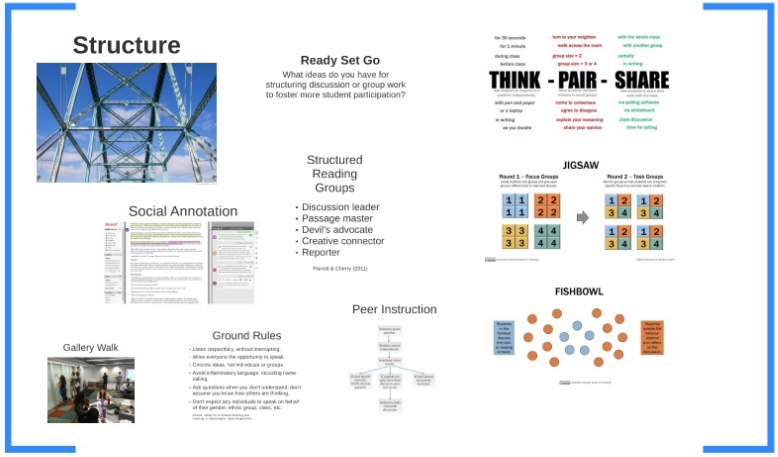
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