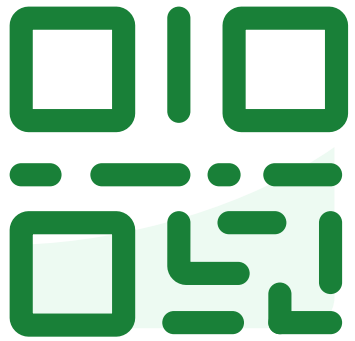




Engaging Every Learner

Effective Use of the Slido Audience Response Systems in Medical Education

Petra Lewis MBBS, FAAR, FACR
Professor of Radiology and OBGYN
Geisel Medical School at Dartmouth
Dartmouth-Hitchcock Medical Center



**Join at slido.com
#7617310**

Disclosures

Educational Consultant and Author: Medality Inc

Member DSMC: CairnSurgical

Radiology Director: Aquifer

Learning Objectives

By the end of this workshop, participants will be able to:

1. Create and deploy interactive Slido activities to enhance learner engagement
2. Apply evidence-based principles of audience response systems to promote active learning,
3. Design effective audience response questions and integrate Slido strategically into presentations
4. Write AI prompts to aid in the development of audience response questions

Workshop Roadmap

1. Why audience response systems?
2. Educational science
3. Hands-on Slido creation of different question types
4. (Item writing skills)
5. ARS best practices
6. Using AI to generate Slido questions



hands
on

The logo consists of the words "hands" and "on" in a black serif font. The word "hands" is positioned above "on". To the left of the word "on" is a large, textured blue handprint. To the right of "on" is another large, textured blue handprint. Several smaller blue fingerprints are scattered around the larger handprints, particularly near the word "hands".



Slido.com

slido

Log in to your account

Haven't signed up yet? [Create account](#)

 Log in with Webex

 Log in with Google

or

Email

Continue



Download and install

slido Dartmouth Health Member

My slides

Tutorials

Integrations

PowerPoint

Google Slides

Microsoft Teams

Webex

Zoom

← Back to integrations

Slido for PowerPoint

Add Slido directly to your presentation and launch your slides.

macOS

Download

1.00

Team



How often do you currently use audience response systems?

Why do we need interaction?

Attention declines during lectures

Learners overestimate understanding

Interactivity increases learning

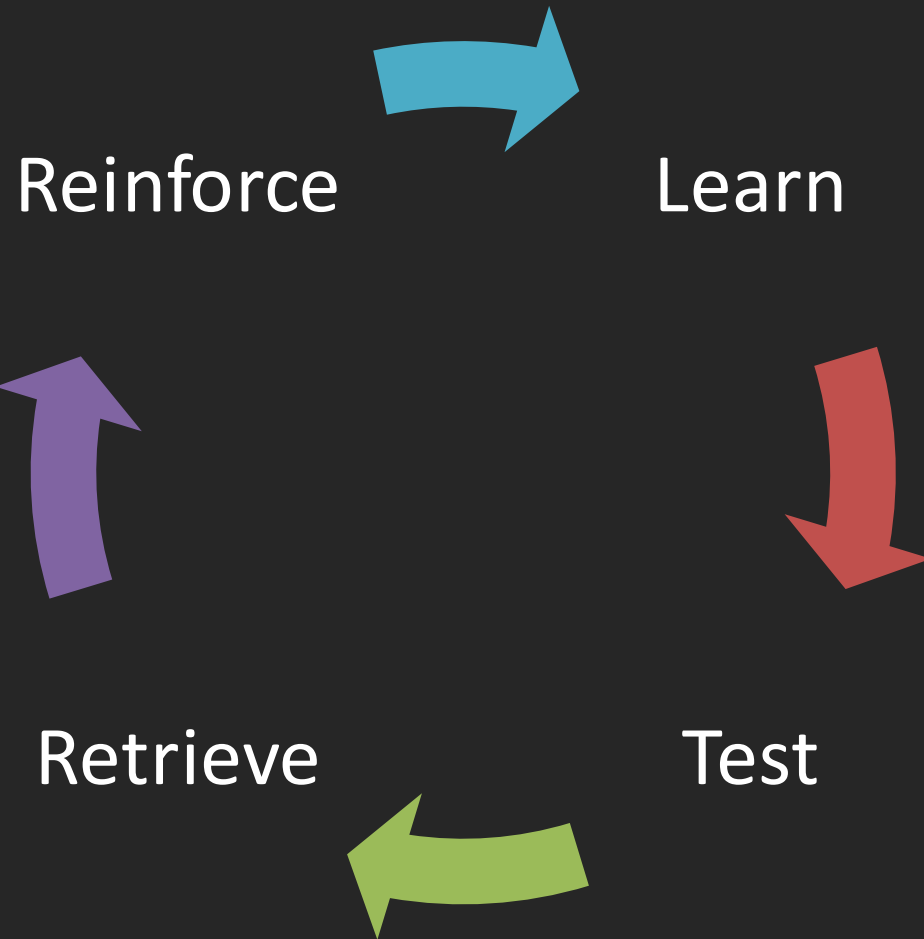
Faculty need real-time feedback

Identify knowledge gaps



Audience Response Systems

Retrieval Practice



ARS versus live questioning

Psychological safety

Anonymous responses increase participation from quieter learners

Group rather than individual responses

Low stakes testing

The act of trying to answer is what creates learning

Efficiency

CAUTION



Caution!

Adding technology does not always increase learning

- May detract from it

- Can add frustration

- Don't use as entertainment

Benefits greater when higher order thinking is tested

- Versus retrieval

Audience response question categories

Knowledge checks

Clinical reasoning

Reflection

Needs assessment

Feedback

Audience Response Applications

The logo for Slido, featuring the word "slido" in a green, lowercase, sans-serif font.

Slido



Poll Everywhere



Mentimeter



Vevox



Kahoot!



AhaSlides

The logo for Wooclap, featuring the word "wooclap" in a blue, lowercase, sans-serif font.

Wooclap



Pigeonhole Live



Microsoft Forms



Google Forms



What audience response systems have you used previously? Select one or more

Features to consider

Cost

- Institutional contracts

- Most otherwise \$8-15 month

- Free versions limited features or participants

Question format options

- Image location questions

Features to consider

Integration into PowerPoint

Technological restrictions

e.g. firewalls

Other features

Gaming

Ease of use

Faculty, audience

Audience response options

Slido – FREE at DH, easy to use, good PPT integration

PollEverywhere - FREE at Geisel, challenging to use

Kahoot- gamified, expensive, free version limited

Aha slides – gamified, reasonable price, PPT integration poor

slido

**I'M NOT AN
EXPERT
BUT, I HAVE
WATCHED
A NUMBER OF
YOUTUBE
VIDEOS**

Slido interaction options

Imbedded in Powerpoint

Imbedded in Google Slides

Standalone browser application

Integrated into WebEx

Slido key concepts

Slido app must be installed on presenting computer

If integrated into PowerPoint

Present via browser or Google Slides

You must be logged in to Slido via DH Webex login

Slido key concepts

Interactive slides can be built within PPT or on website

And later inserted into Powerpoint

Audience needs smartphones/tablet to respond

Audience connects via QR code or link/code

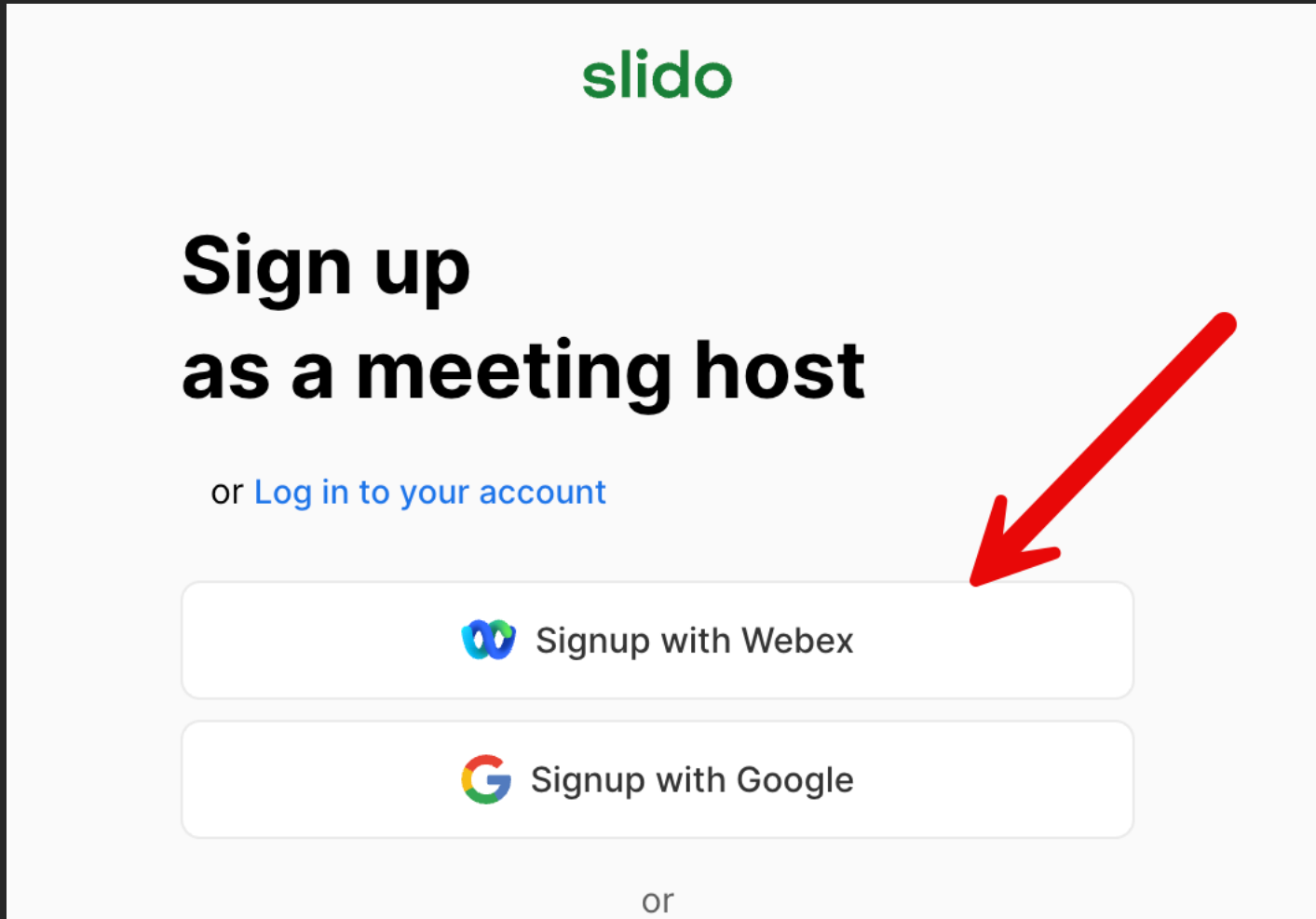
Displayed on each slide



Late To The Party

Create an Account

Visit Slido.com
Create account



The screenshot shows the Slido website's sign-up page for meeting hosts. At the top, the 'slido' logo is in green. Below it, the text 'Sign up as a meeting host' is in large, bold black font. Underneath, there is a link 'or Log in to your account' in blue. Two large, light gray buttons are stacked vertically. The top button features the Webex logo and the text 'Signup with Webex'. A large red arrow points from the right side of the image towards this button. The bottom button features the Google logo and the text 'Signup with Google'. At the very bottom, the word 'or' is centered.

slido

**Sign up
as a meeting host**

or [Log in to your account](#)

 Signup with Webex

 Signup with Google

or

Download

The screenshot shows the Slido web interface. At the top left is the Slido logo and the user's name 'Dartmouth Health Member' next to a profile icon. A sidebar on the left contains navigation links: 'My slidos', 'Tutorials', 'Integrations', 'PowerPoint', 'Google Slides', 'Microsoft Teams', 'Webex', and 'Zoom'. A red circle with the number '1' and an arrow points to the 'Integrations' link. The main content area is titled 'Slido for PowerPoint' and includes a sub-header 'Add Slido directly to your presentation and launch your slides.' Below this, there is a dropdown menu showing 'macOS' and a green 'Download' button. A red circle with the number '2' and an arrow points to the 'macOS' dropdown, and a red circle with the number '3' and an arrow points to the 'Download' button. At the bottom, there is a preview of a PowerPoint slide titled 'Team Meeting' with a 'Slido' logo and a version number '1.00' in the top right corner.

slido Dartmouth Health Member

My slidos

Tutorials

Integrations

PowerPoint

Google Slides

Microsoft Teams

Webex

Zoom

← Back to integrations

Slido for PowerPoint

Add Slido directly to your presentation and launch your slides.

macOS

Download

1.00

Team

Install Slido

PowerPoint → Tools → Add-ins → Search 'Slido' → Add

It should appear as an icon on the ribbon

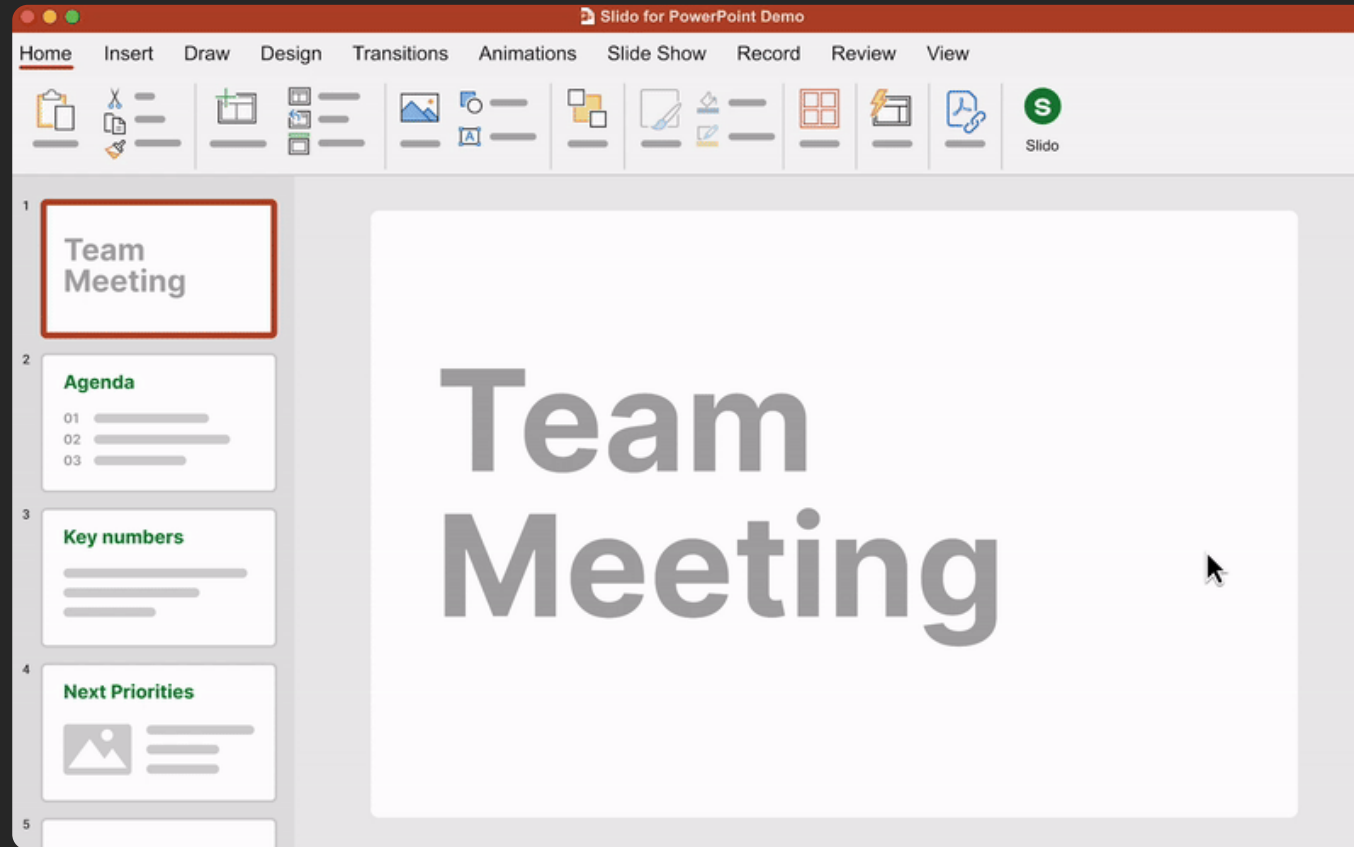
Google slides → Extensions → Add ons → get add ons → Search 'Slido' → Add

Connect Slido to PowerPoint

1. Click Slido icon on ribbon
2. Select interaction type
3. Complete the options
4. Select the response (immediate or on click)
5. It will autosave on the website
6. Insert slide

1

Open the Slido sidebar
from the PowerPoint menu



2

Add a poll or Q&A

The screenshot displays the Slido for PowerPoint Demo interface. The main presentation slide is titled "Team Meeting" and features a large "Team Meeting" text overlay. The left sidebar contains a table of contents with five items: "Team Meeting", "Agenda", "Key numbers", "Next Priorities", and an empty item. The right sidebar, labeled "Slido", shows a "Present" button and a "New interaction" section with options: Multiple choice, Word cloud, Open text, Rating, Ranking, Quiz, AI Quiz, and Joining slide. Below this is an "Audience Q&A" section with a toggle switch and an "Audience Q&A" button. The bottom of the Slido panel shows the version "version 9.25.0 1487 (Support ID 1346707)".

Home Insert Draw Design Transitions Animations Slide Show Record Review View

1 Team Meeting

2 Agenda

01

02

03

3 Key numbers

4 Next Priorities

5

Slido

Present

New interaction

Multiple choice Word cloud

Open text Rating

Ranking Quiz

AI Quiz Joining slide

Audience Q&A

Audience Q&A

version 9.25.0 1487 (Support ID 1346707)

slido

3

Run the presentation

Start
You
from

The screenshot displays the Slido for PowerPoint Demo interface. The top menu bar includes tabs for Home, Insert, Draw, Design, Transitions, Animations, Slide Show, Record, Review, and View. Below the menu is a toolbar with various icons for editing and presentation controls. The main slide area shows a presentation slide titled "Team Meeting" with a poll question: "How familiar are you with the topic?". The poll options are "I'm an expert", "I have some solid background", and "I'm completely green", each with a 0% progress bar. A "Present" button is visible in the top right corner of the slide area. The left sidebar shows a list of slides, with the current slide highlighted. The right sidebar shows the "Slido" panel with a "Present" button and a "Show results immediately" option.

Slido for PowerPoint Demo

Home Insert Draw Design Transitions Animations Slide Show Record Review View

1 Team Meeting

2 How familiar are you with the topic?

3 Agenda

4 Key numbers

5 Next priorities

slido

How familiar are you with the topic?

I'm an expert 0%

I have some solid background 0%

I'm completely green 0%

Show results immediately

+ Add interaction

Start presenting to display the poll results on this slide.

version 0.25.0 1487 (Support @ 1346707)

Question Types Overview

Multiple choice

Quiz

Word cloud

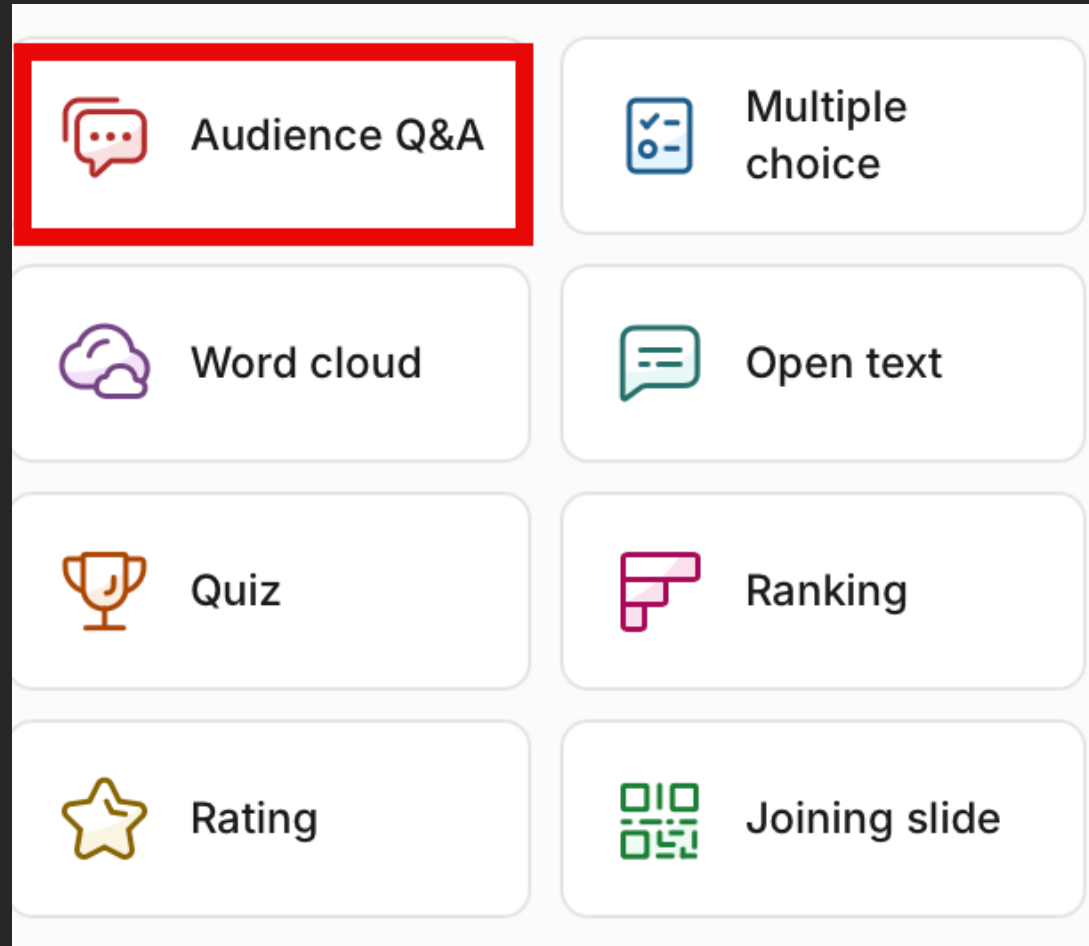
Open text

Ranking

Q&A

Hands-On Exercise #1

Enable Q&A





Audience Q&A

① The Slido app must be installed on every computer you're presenting from

slido

Q&A

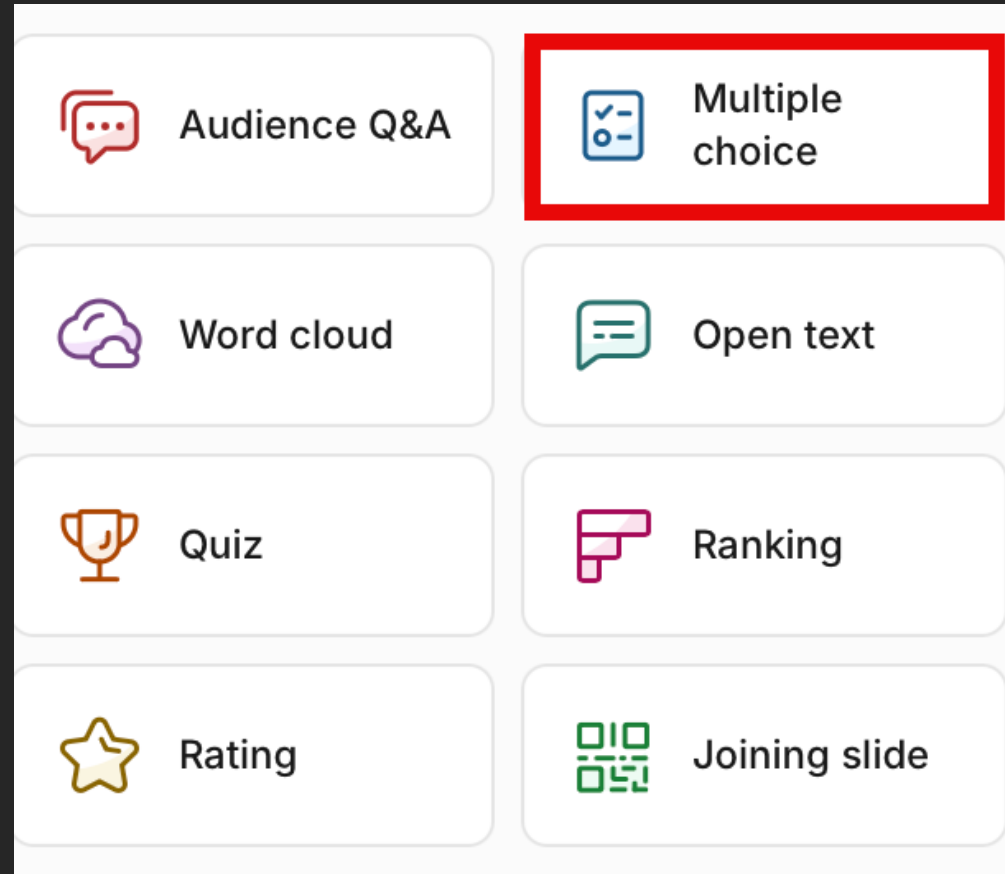
Insert at set points (will run in background)

Run in browser window

Same or different computer

Hands-On Exercise #2

Build a multiple-choice poll





Best for

Retrieval practice

Clinical reasoning

Identifying misconceptions

Peer instruction

Vote-discuss-revote

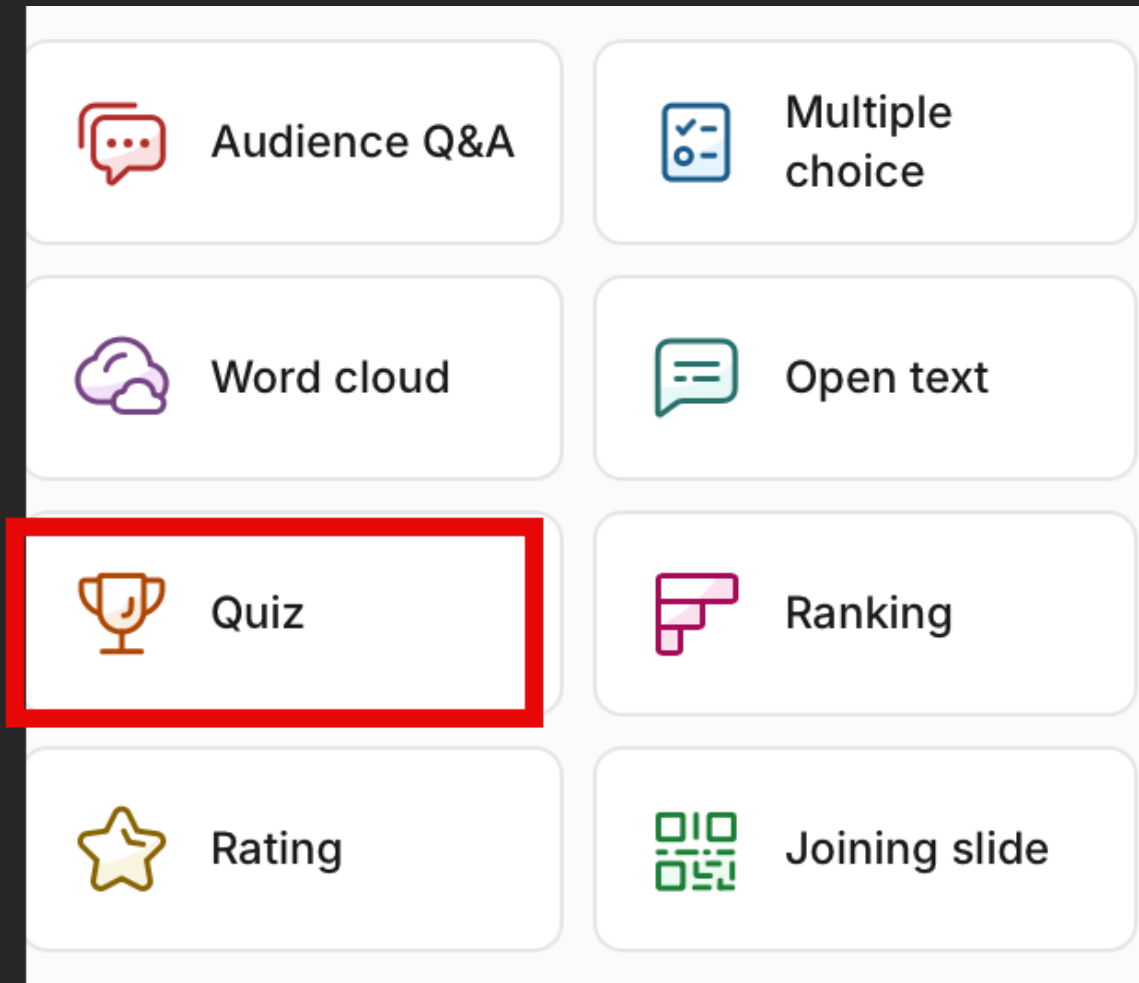
Checking understanding



What is the most likely source of this hemorrhage?

Hands-On Exercise #3

Build a quiz



Quiz differences from regular multiple choice

Adds a gaming component

Can use own name or nickname

Participants receive points

Leaderboard can be displayed

Speed can contribute to score

More game-like



At what age does the USPSTF recommend starting screening mammography for average risk women?



What is the most common cell type of breast cancer?

Quiz disadvantages

Can increase anxiety

Speed $\neq$ Understanding

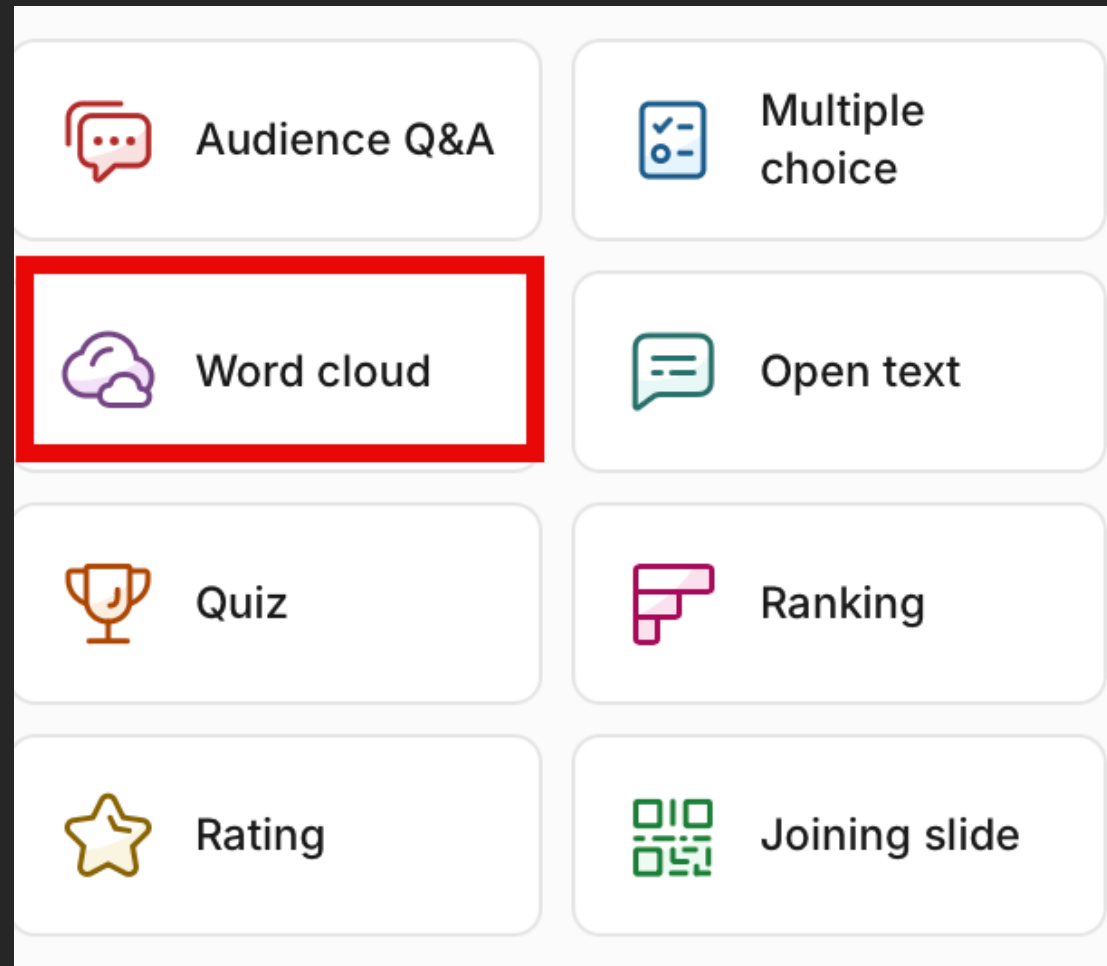
Fast answers are not always thoughtful answers.

Focus can shift to winning

Participants may focus on points rather than learning.

Hands-On Exercise #4

Build a word cloud



Best for:

One-word answers

Exploring attitudes

In one word, how do you feel about AI in medical education?

Assess prior knowledge

What is the first word that comes to mind when you hear "sepsis"?

Best for:

Needs assessments/barriers

What is your biggest challenge in teaching residents?

Reflection

What is one thing you learned today?

Generating ideas

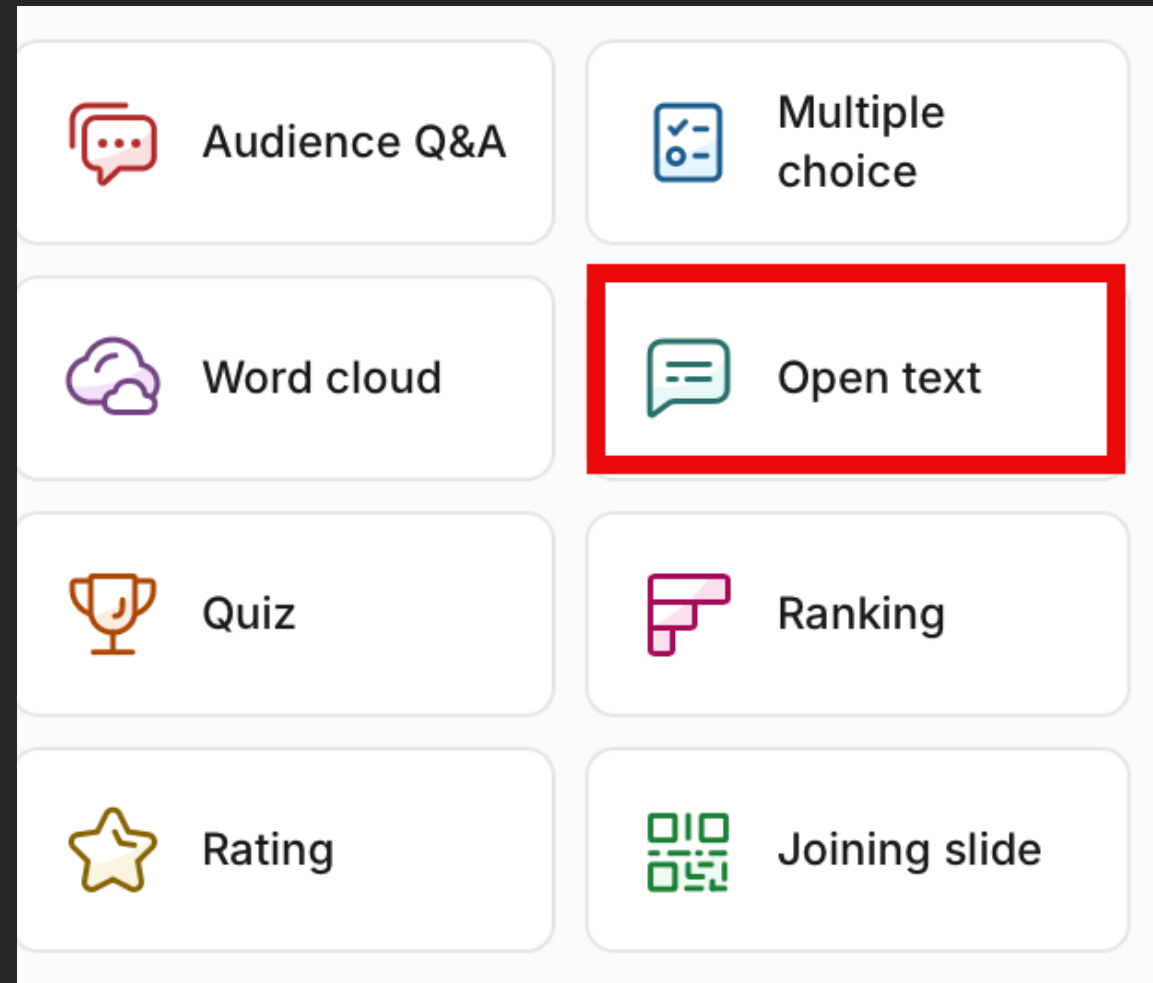
What teaching strategy has been most effective for you?



What one word describes the biggest challenge you face in keeping learners engaged?

Hands-On Exercise #5

Build an open text question



Best for:

Explaining clinical reasoning

What feature of this case most strongly supports your diagnosis?

Generating discussion

What is the biggest misconception about screening mammography?

Reflection

What is one idea you plan to apply in your teaching?

Best for:

Needs assessment

What do you hope to learn during today's session?

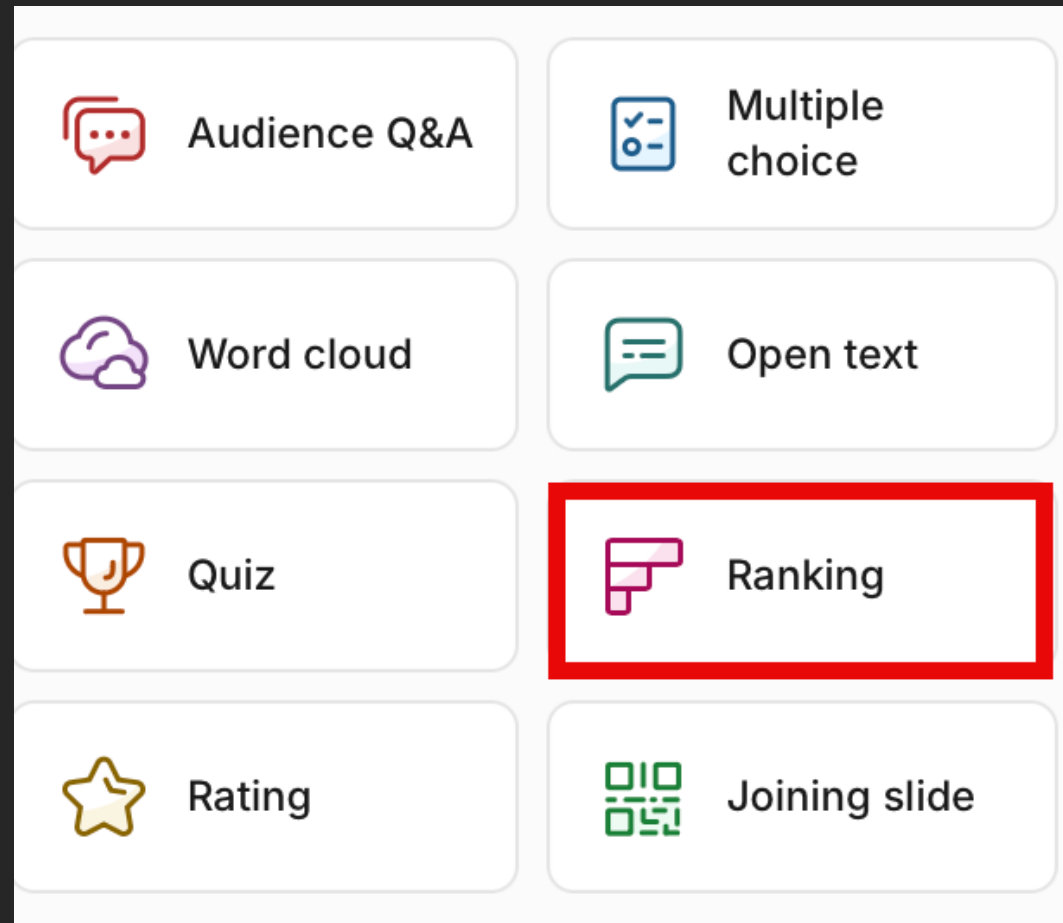
Better for smaller audiences



What concerns do you have about AI in education?

Hands-On Exercise #6

Build a ranking poll



Best for

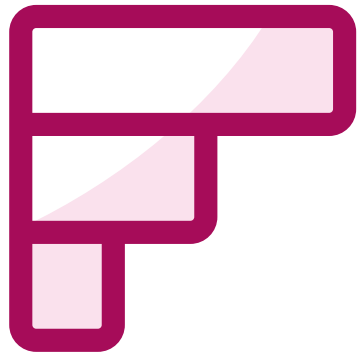
No single correct answer

Prioritization to engender discussion

Rank the biggest barriers to using active learning in your teaching

Rank the most valuable uses of AI in medical education

Which findings most increase your concern for breast malignancy? Rank from most to least important



**Rank your concerns about AI in
medical education from greatest to
least concern:**

Best practices



How many questions?

60-minute interactive medical education session

3–4 MCQs (clinical reasoning/retrieval)

1 Word cloud (engagement or reflection)

1 Open-text question (reasoning or take-home message)

Final quiz

Q&A throughout



Great

Questions

Anatomy of a great question

Targets misconceptions

Requires reasoning

Promotes discussion

Weak

Simple factual
recall



Better

Clinical
application and
decision making



Best

Creates
uncertainty and
discussion

How long should you wait?



How long should you wait?

Too short: poor answers

Too long: gets very boring

15-20s simple Q

30-45s reasoning Q

I wait for about $\frac{3}{4}$ to respond



Common mistakes

Too many polls

Poorly written questions

No discussion

Polling for attendance only

Polling for entertainment

Best practices

Question every 8–12 minutes

Ask before teaching a concept

Activate prior knowledge and create curiosity

“Priming”

Discuss the results before revealing the correct answer

Why distractors are wrong

Best practices

Split responses (e.g., 30–70%)

- Learners discuss with a neighbor and revote

- Peer learning

- Learning through debating and explaining

Post poll discussion often more educational than the poll itself

Creating strong multiple-choice questions

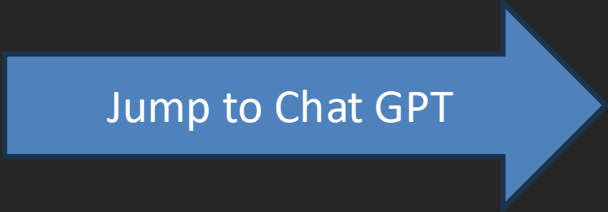
‘Poor’ questions are very irritating to the audience

Especially if used for assessment

Keep to standard item writing rules

e.g. NBME

[YouTube Item Writing Guide](#)



Jump to Chat GPT

Key item writing rules

Single positive answers only

Avoid clueing

Questions should pass the cover test

Avoid absolutes and relatives

Sometimes, occasionally, usually

Always, never, must be

Single positive answer format

No negative questions

‘least likely’ or ‘is not’

No true/false

No $a+b$, a , $b + c$

No all/none of above

Clueing and false clueing

Smart test taker

Directs them to correct answer in absence of knowledge

Directs them to incorrect answer even if have knowledge

Clueing

A 60-year-old man arrives in the ED in ventricular fibrillation. After resuscitation, a cardiac CT scan is performed. What is the most likely diagnosis?

- A. Ventricular aneurysm
- B. Coronary artery stenosis
- C. Atrial myxoma
- D. Cardiomyopathy

Clueing

A 60 year old man arrives in the ED in ventricular fibrillation. After resuscitation a cardiac CT scan is performed. What is the most likely diagnosis?

- A. Ventricular aneurysm
- B. Atrial lipoma
- C. Atrial myxoma
- D. Cardiomyopathy

Matched pairs

A 60-year-old man arrives in the ED after a cardiac arrest. After resuscitation a cardiac CT scan is performed. What is the most likely diagnosis?

- A. Ventricular aneurysm
- B. Ventricular infarction
- C. Atrial lipoma
- D. Atrial myxoma

Pass the Cover Test

Which of the following is the most common type of breast cancer?

a) Invasive

b)



Cover test failure

Regarding breast cancer, which of the following is true?

- A. Invasive ductal carcinoma is the most common type
- B. The 5 year survival for stage 1 is 85%
- C. Peak age of incidence is 60
- D. Screening mammography increases survival rates by 30%

Passes the cover test

In patients with Stage I breast cancer, what is the 5 year survival rate (%)?

- A. 70
- B. 75
- C. 80
- D. 90
- E. 95

Cover test failures

Which of the following is true?

Which of the following statements is the most correct?

Regarding the image above:

Distractors = The Wrong Answers

All plausible but unambiguously wrong

Test common misconceptions

Similar in length and format

Balanced

E.g. 2 'increased' and 2 'decreased'

Focused answers

Test one concept

e.g. Anatomy, treatment, diagnosis, all artifacts, or all diseases

Improves testing

Reduces clueing

Unfocused/Heterogeneous answers

Which of the following is true?

- A. Milk of calcium is premalignant
- B. Ductal carcinoma is more common than invasive lobular
- C. IDC usually presents as a spiculated mass
- D. The radiation dose from mammography is approximately 10mSv

Focused Answers

Which of the following is the most common type of breast cancer?

- A. Ductal
- B. Lobular
- C. Medullary
- D. Mucinous

Overlapping Values

What is the lifetime likelihood of a woman developing breast cancer?

- a) 0-5%
- b) 5-10%
- c) 10-15%
- d) 15-20%

Using ChatGPT with Slido



ChatGPT

More secure option

<https://chat.dartmouth.edu/>

Use your netID to login

Various models

Are we just cheating?

Rapid generation of

Poll questions

Distractors

Clinical scenarios

Peer instruction questions

Discussion prompts

Word clouds

Reflection questions

Are we just cheating?

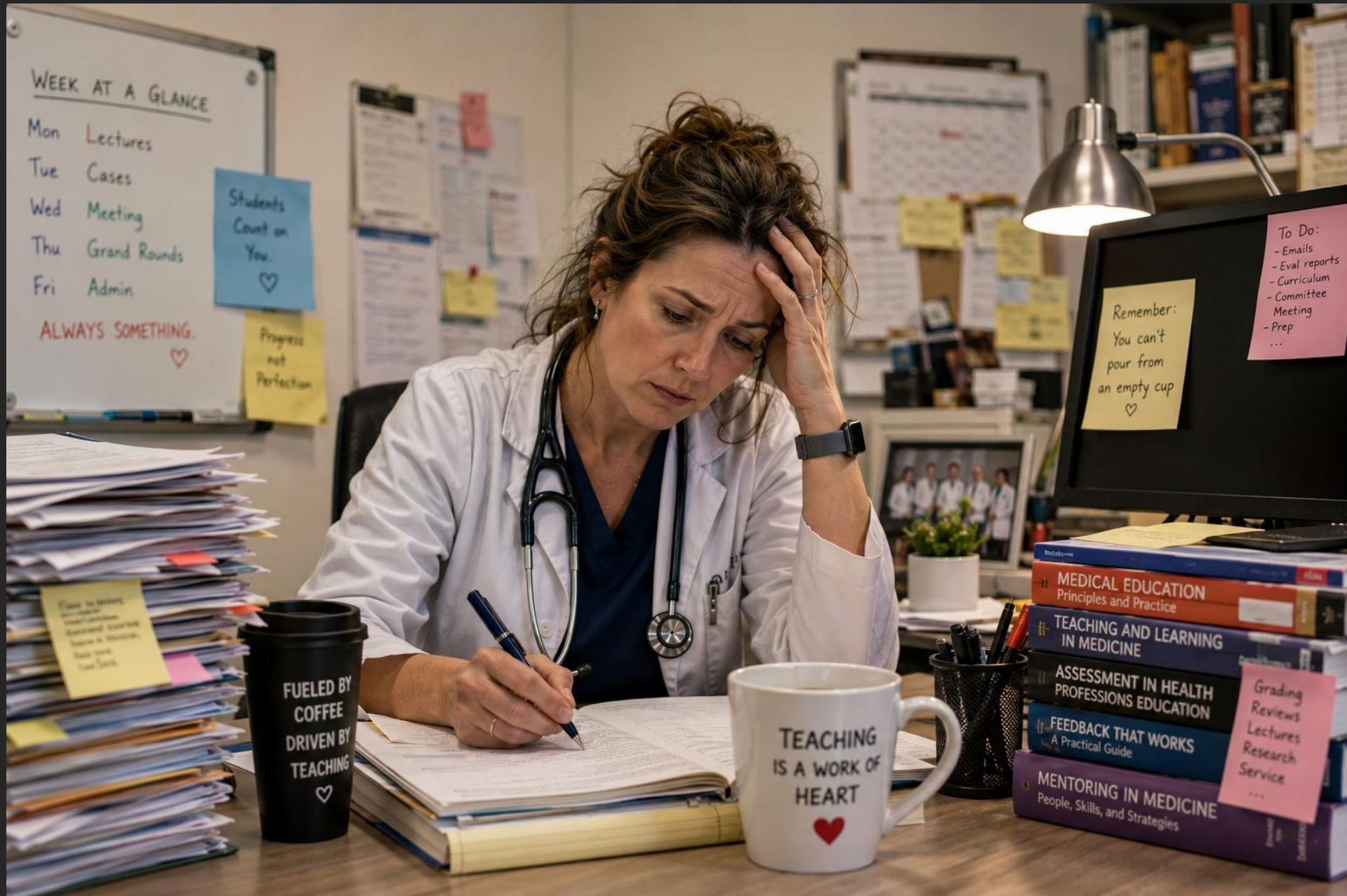
The faculty member still provides

- Content expertise

- Educational judgment

- Fact checking

- Selection of the best questions



What are the risks?

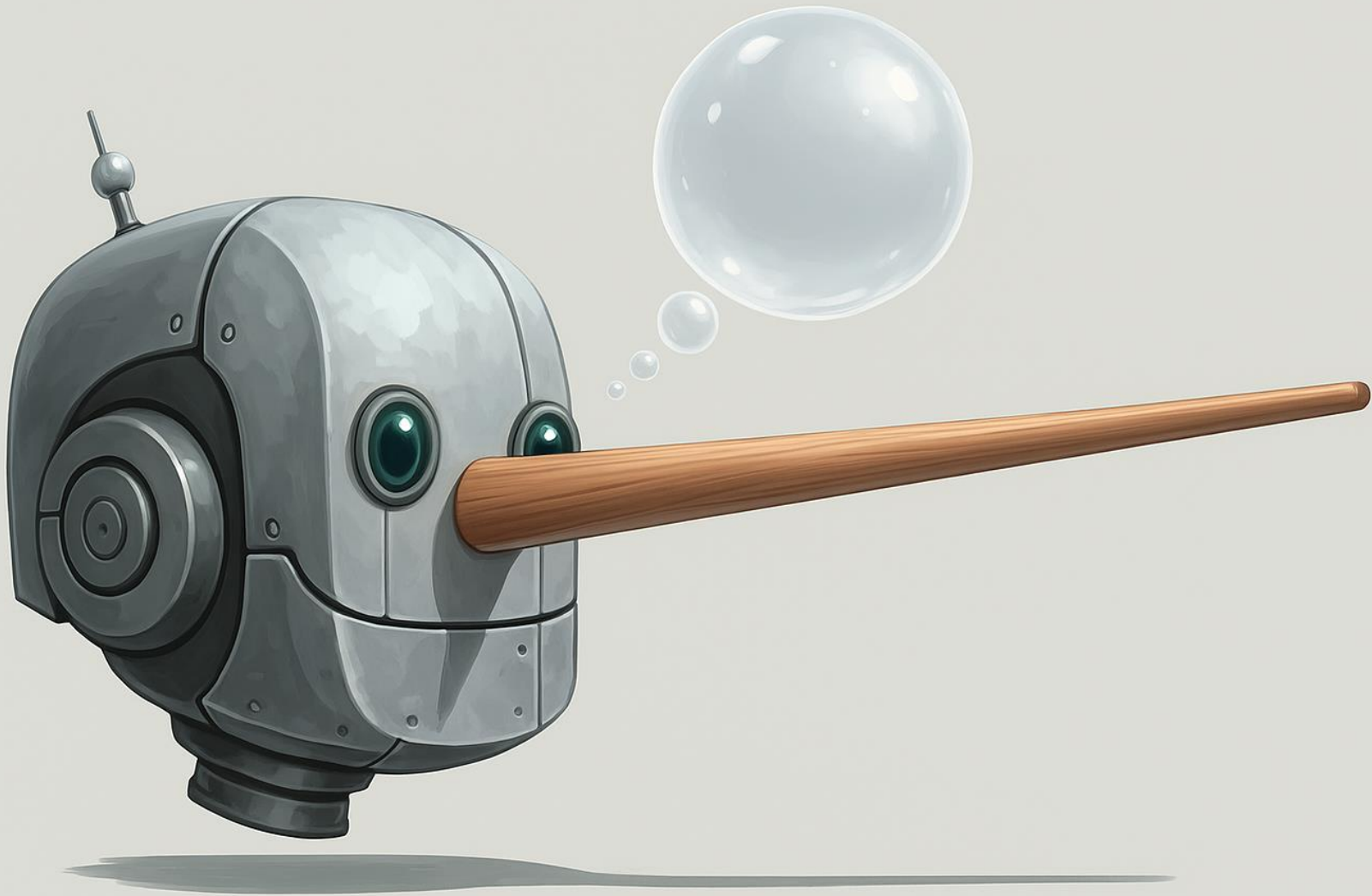
Loss of personal cognitive skills

Generation of 'fake' data (AI hallucinations)

Audience cynicism

Biased data

Distribution of sensitive data



Inaccurate information ("Hallucinations")

AI can generate:

- Incorrect facts

- Incorrect references

- Fabricated studies

- Outdated recommendations

- Misleading clinical advice

ChatGPT Use Case #1

Generate MCQs and distractors

Prompt:

Create a Slido single positive choice multiple-choice question for third-year medical students learning about heart failure. Include one correct answer and four plausible distractors that reflect common misconceptions. Include explanations and ideas for discussion

Generates several question options in seconds

ChatGPT Use Case #2

Convert lecture content into polls

Upload the talk into ChatGPT

Prompt:

Write 7 Slido questions to integrate into this presentation including 4 single positive answer multiple choice , one word cloud and one open text and one ranking question focusing on the learning objectives. Add a quiz at the end that includes 10 additional questions. These should be suitable for a R3 radiology resident

ChatGPT Use Case #3

Generate clinical cases quickly

Prompt:

Create a one-paragraph case of acute cholecystitis suitable for a polling question for medical students.

ChatGPT Use Case #4

Create sequential polling

Prompt:

Create a case-based sequence of five Slido questions that progressively reveal information and require learners to revise their diagnosis. Use the case of a patient with pulmonary edema, suitable for an M2 student

Clinical reasoning exercises

Decision-making pathways

Interactive case conferences

ChatGPT Use Case #5

Analyze Slido results after a session

Paste responses into ChatGPT

Prompt:

These are comments from faculty after a workshop. Group them into themes and identify actionable recommendations.

Particularly useful for:

- Course evaluations

- Faculty retreats

- Strategic planning sessions

Additional ChatGPT educational uses

Identify references and resources

Always check!

Summarize papers

Combine and shorten text

Write learning objectives

Make creative talk titles

Provide copyright free images

Improve grammar, shorten text

AI recommendations

Use selectively

Do not upload HIPAA

Do not upload copyright or secure information

E.g. papers you are reviewing, a summative exam

Unless secure system e.g. Dartmouth Chat

Use very specific prompts

Identify setting, format, timings, audience

AI recommendations

Ask it to modify if needed

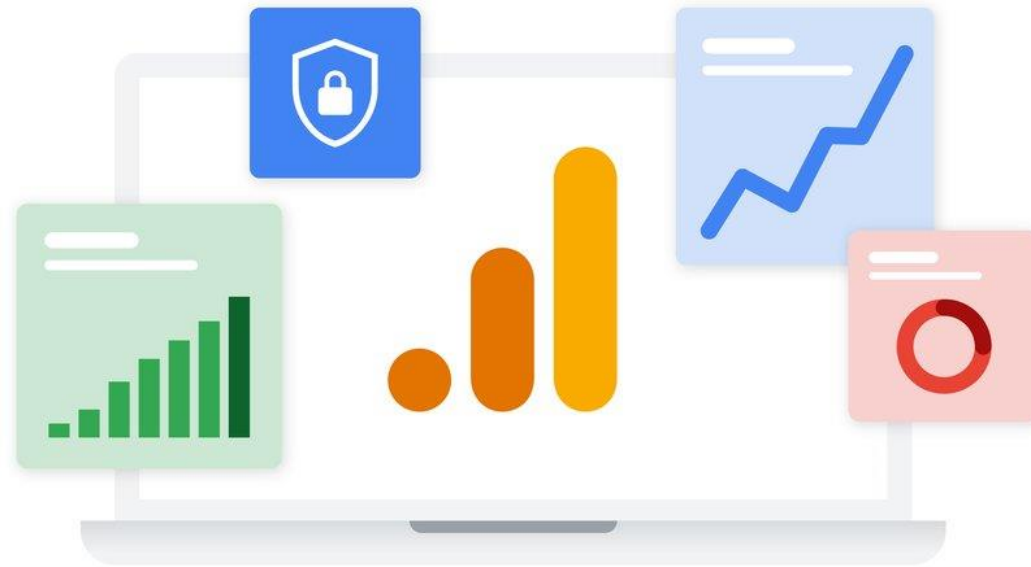
E.g: provide references used, change the learner level

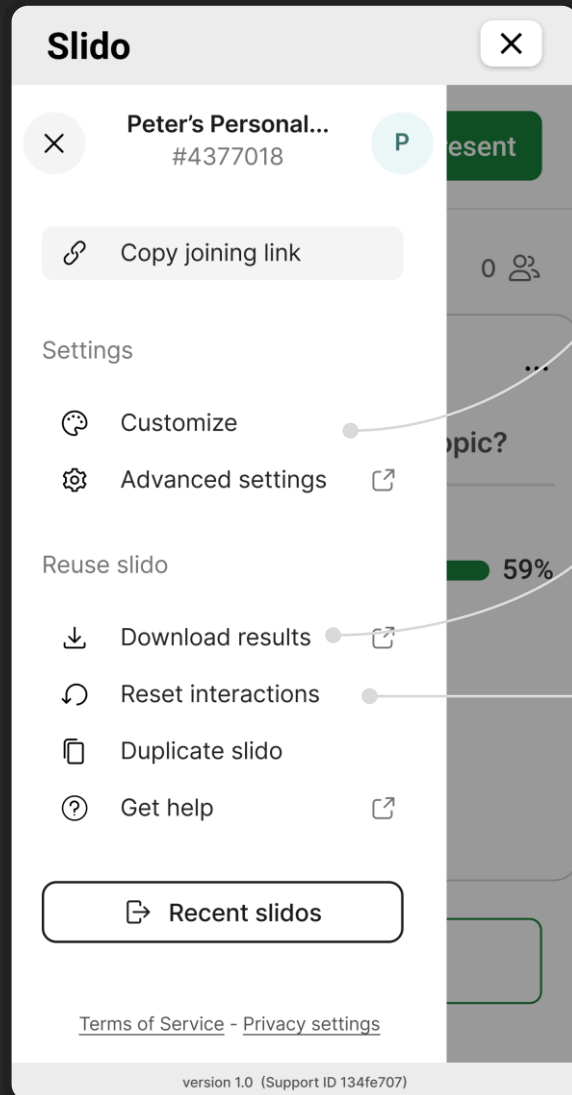
Provide the content

Lecture, paper, learning objectives

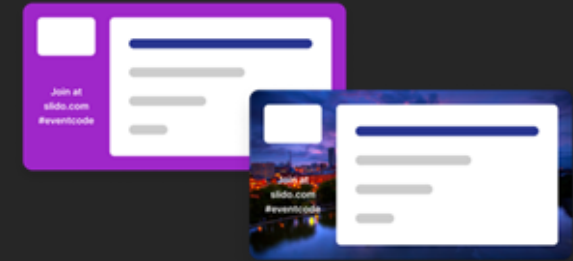
Check the output

Slido analytics

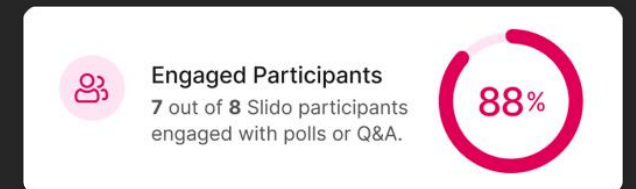




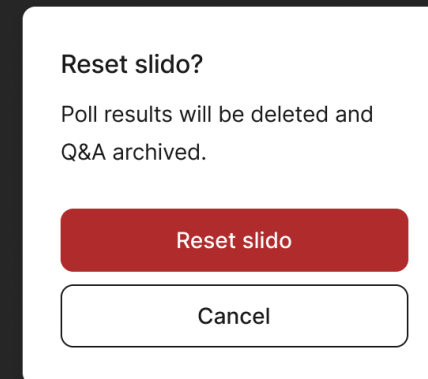
Theme & colours



Session analytics



Reset results



slido

Take-home messages

Polling is learning

Slido is free and easy (relatively)

Aim for higher cognitive skills

Discussion matters

Take-home messages

Use fewer, better questions

Ask before teaching ('priming')

Wait longer than feels comfortable

Selected References

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Iskander et al. BMJ Simul Technol Enhanc Learn 2018

Agarwal et al. Educ Psychol Rev 2021

Trumble et al. Adv Health Sci Educ Theory Pract 2023

Premkumar & Coupal Med Teach 2008

Questions & Discussion

Thank you