NSSA Conference

How Can Language Technology Empower Tutors?

Dora Demszky

ChatGPT has blown up the education world

CLASSROOM TECHNOLOGY OPINION

What ChatGPT Means for How We Teach Writing

Existential dread? More personalized writing assignments? What to make of the new AI tool

By Anne Bruder — January 04, 2023 4 min read

'I'll just stop grading': Students, faculty reflect on ChatGPT after computer science course turns to paper exams

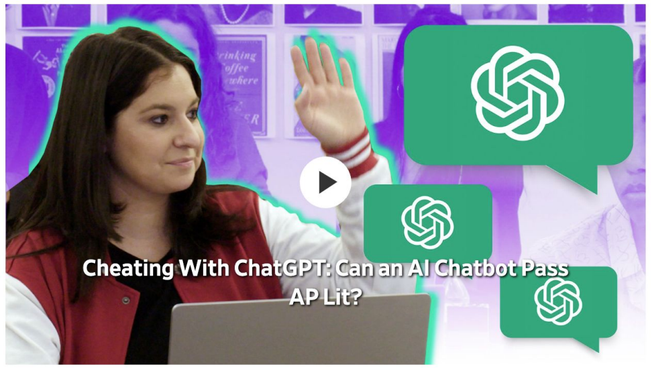
Students and faculty discussed how ChatGPT may change how homework assignments are completed and how students are assessed.

by Charlotte Hampton | 2/7/23 5:10am

TECH | PERSONAL TECH | PERSONAL TECHNOLOGY: JOANNA STERN

ChatGPT Wrote My AP English Essay—and I Passed

Our columnist went back to high school, this time bringing an AI chatbot to complete her assignments



ChatGPT, OpenAI's new artificially intelligent chatbot, can write essays on complex topics. WSJ's Joanna Stern went back to high-school AP Literature for a day to see if she could pass the class using just AI. Photo illustration: Elena Scotti

By Joanna Stern Follow
Dec. 21, 2022 9:00 am ET

AI bot ChatGPT stuns academics with essay-writing skills and usability

Latest chatbot from Elon Musk-founded OpenAI can identify incorrect premises and refuse to answer inappropriate requests

... and also raised new challenges

The Stanford Daily

News • Science & Technology

Scores of Stanford students used ChatGPT on final exams, survey suggests

TECHNOLOGY

The College Essay Is Dead

Nobody is prepared for how AI will transform academia.

By Stephen Marche

Did a Fourth Grader Write This? Or the New Chatbot?

Don't be surprised if you can't always tell. Neither could a fourth-grade teacher — or Judy Blume.

By Claire Cain Miller, Adam Playford, Larry Buchanan and Aaron Krolik Dec. 26, 2022

SOFIA BARNETT CULTURE JAN 30, 2023 1:21 PM

ChatGPT Is Making Universities Rethink Plagiarism

Students and professors can't decide whether the AI chatbot is a research tool—or a cheating engine.

ARTIFICIAL INTELLIGENCE

Why detecting AI-generated text is so difficult (and what to do about it)

Plus: AI models generate copyrighted images and photos of real people.

By Melissa Heikkilä February 7, 2023

Current discussions have overlooked a powerful application for supporting educators.

What is central medium of instruction?

What is central medium of instruction?

Teacher-student discourse

New Knowledge

Foster a culture of curiosity.

Growth Mindset

Help students embrace challenge as an opportunity for growth.

Feeling of Belonging

Creating a nurturing community.

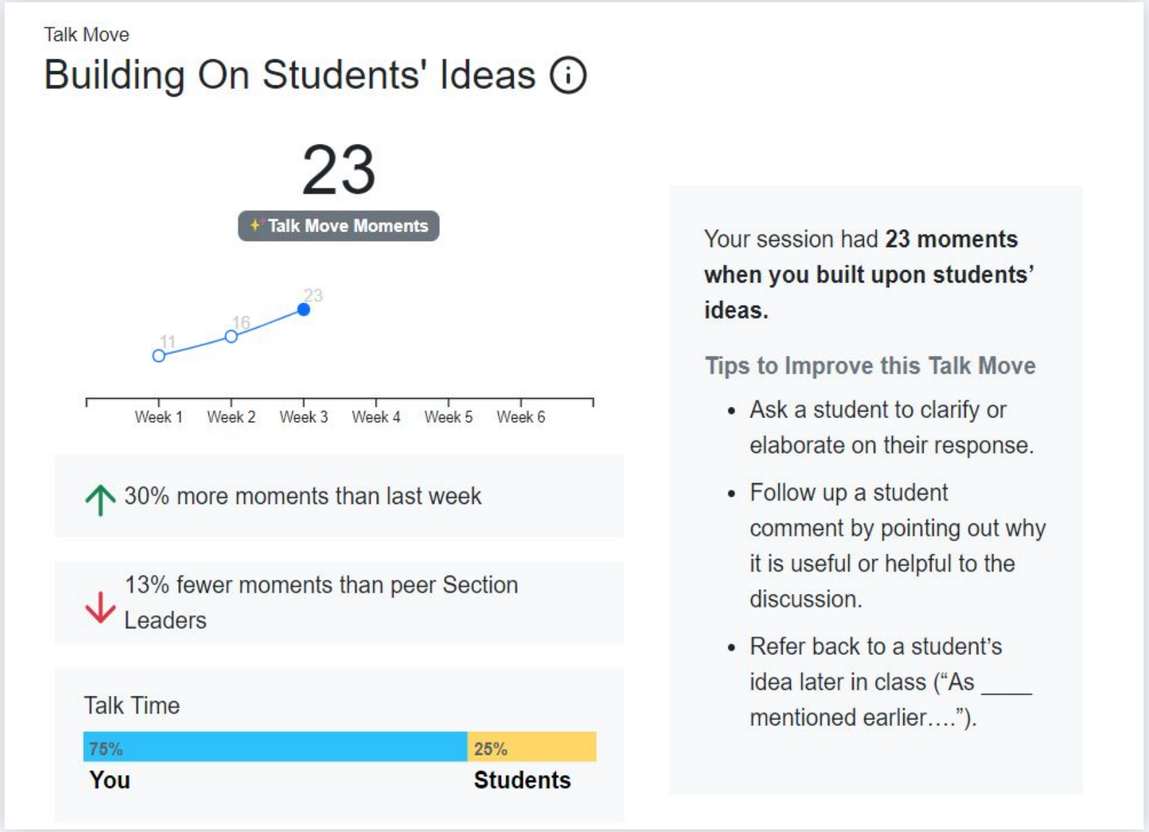
How do we empower the **key expert — the tutor** in what they do?

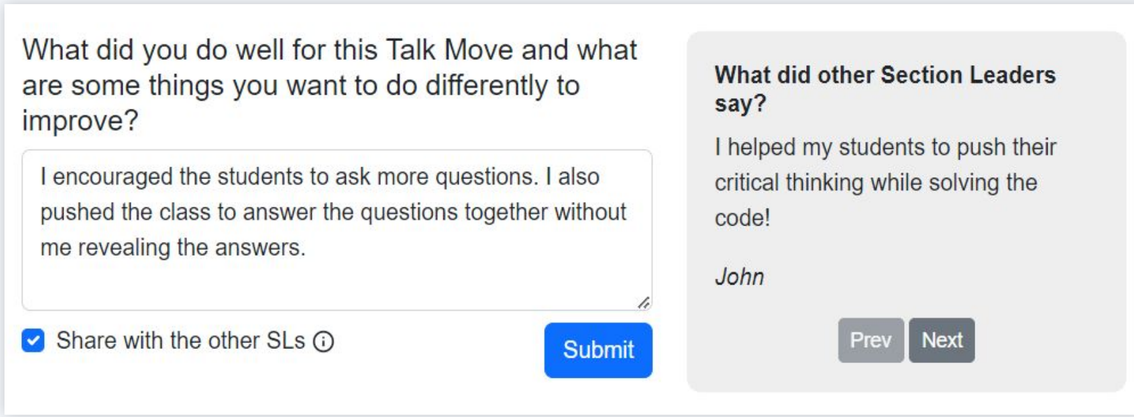
Challenges of conventional tutor training

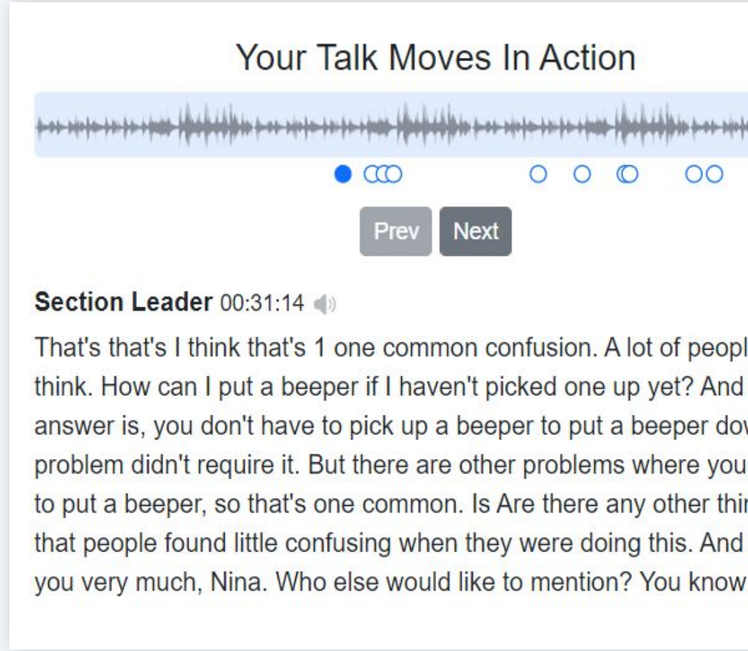
- Not scalable: requires expertise, consistency, regularity
- Usually not personalized, evidence-driven, nor adaptive

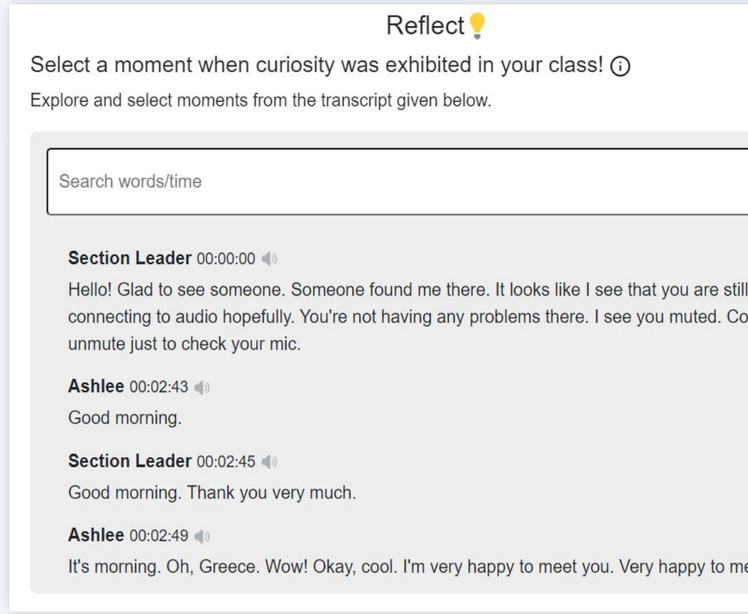
Can we complement these approaches using AI?

Automated feedback powered by NLP





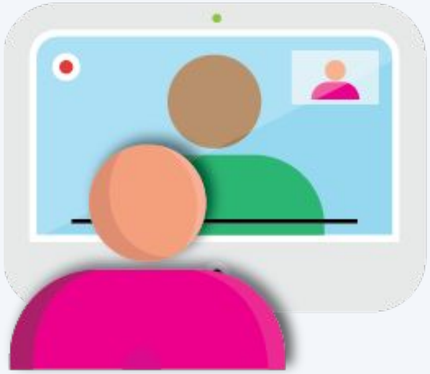




Automated feedback improves instruction & student outcomes!

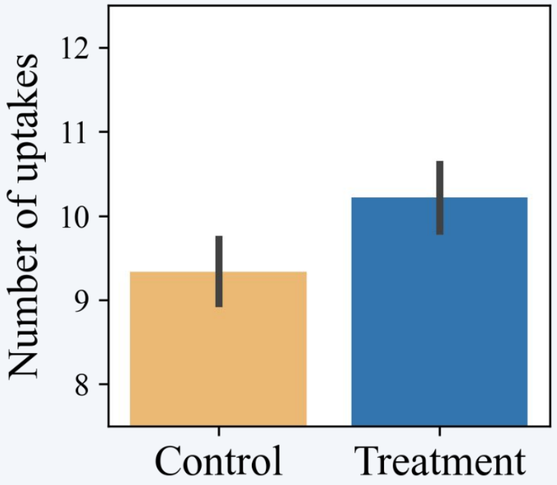
Teachers...

- take up student ideas 16% more
- ask 14% more questions
- gave 2% higher course ratings



Students...

- talk 6% more
- are 7% more likely to submit assignments
- gave 4%-20% higher course ratings
- feel more optimistic about their academic future!



How can tutors use AI to improve?

Practice Teaching w/ Simulated Students

1

I'm stuck with [...]

This is indeed a difficult problem. Can you walk me through your code?

Real-time Suggestions

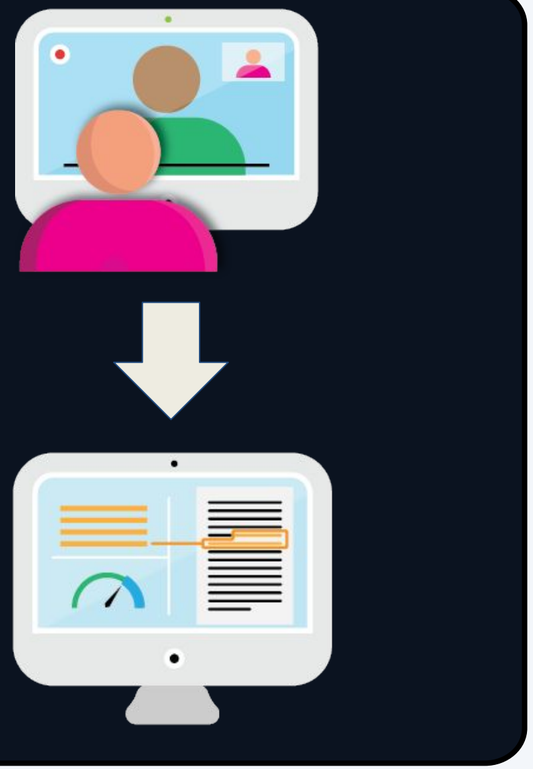
2

Incorrect.

You're on the right track, but when we write 40 hundred, we actually mean 40 x 100. Do you want to try again?

Post-Teaching Feedback

3



What can we measure?

- Uptake of student ideas
- Funneling vs focusing questions
- Student reasoning
- On vs off task instruction
- Punitive vs restorative behavior management
- Praise
- Accountable talk moves
  - Eliciting student ideas
  - Building on student ideas
  - Connecting ideas

Ethical use

Bias

- Involve expert teachers from a diverse backgrounds in each step of the research process
- Ensure that the training data represents the target population

Ground truth?

- Incorporate ambiguity and intersubjectivity into the model
- Rely more on extrinsic rather than intrinsic (ground truth) evaluation

Privacy

- De-identify data
- Tools should be private to teacher
- Oversight of data use

Team & Partners

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Chris Piech

Susanna Loeb

TeachFX

Microsoft

fev tutor

schoolhouse

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thank you!

resource page

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