MTDA's Work in Edge Technology

Responsible Innovation Via The Frontier Learning Lab

Jason Neiffer, Ed.D.
Executive Director, MTDA

MTDA
Montana Digital Academy

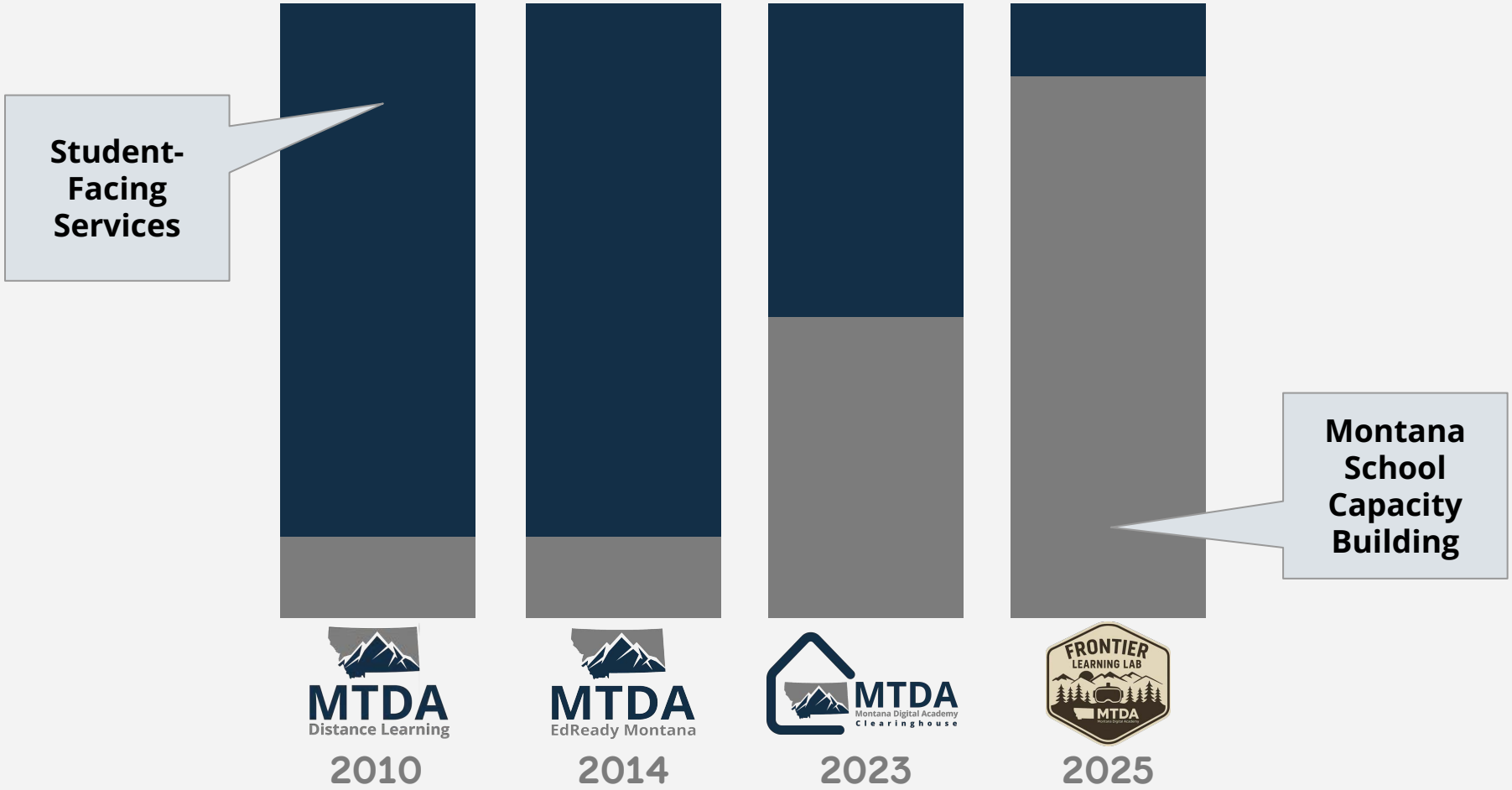
The Programs of MTDA

MTDA
Distance Learning

FRONTIER
LEARNING LAB
MTDA
Montana Digital Academy

MTDA
Montana Digital Academy
Clearinghouse

MTDA
EdReady Montana


Student-Facing Services
Montana School Capacity Building
MTDA
Distance Learning
2010
MTDA
EdReady Montana
2014
MTDA
Montana Digital Academy
Clearinghouse
2023
FRONTIER
LEARNING LAB
MTDA
2025

At *your* service!

Distance Learning

High School Original Credit (including AP and Dual Credit Courses)

FlexCAP

Middle School Courses

Individualized Pathway Course (IPC)

Frontier Learning Lab

AI Help Desk

AI and VR use in the classroom

Professional Learning Workshops

Pop-up VR Labs

Digital Learning Clearinghouse

Digital Content and Platforms

MTDA Learning Modules

Vendor Learning Modules

EdReady

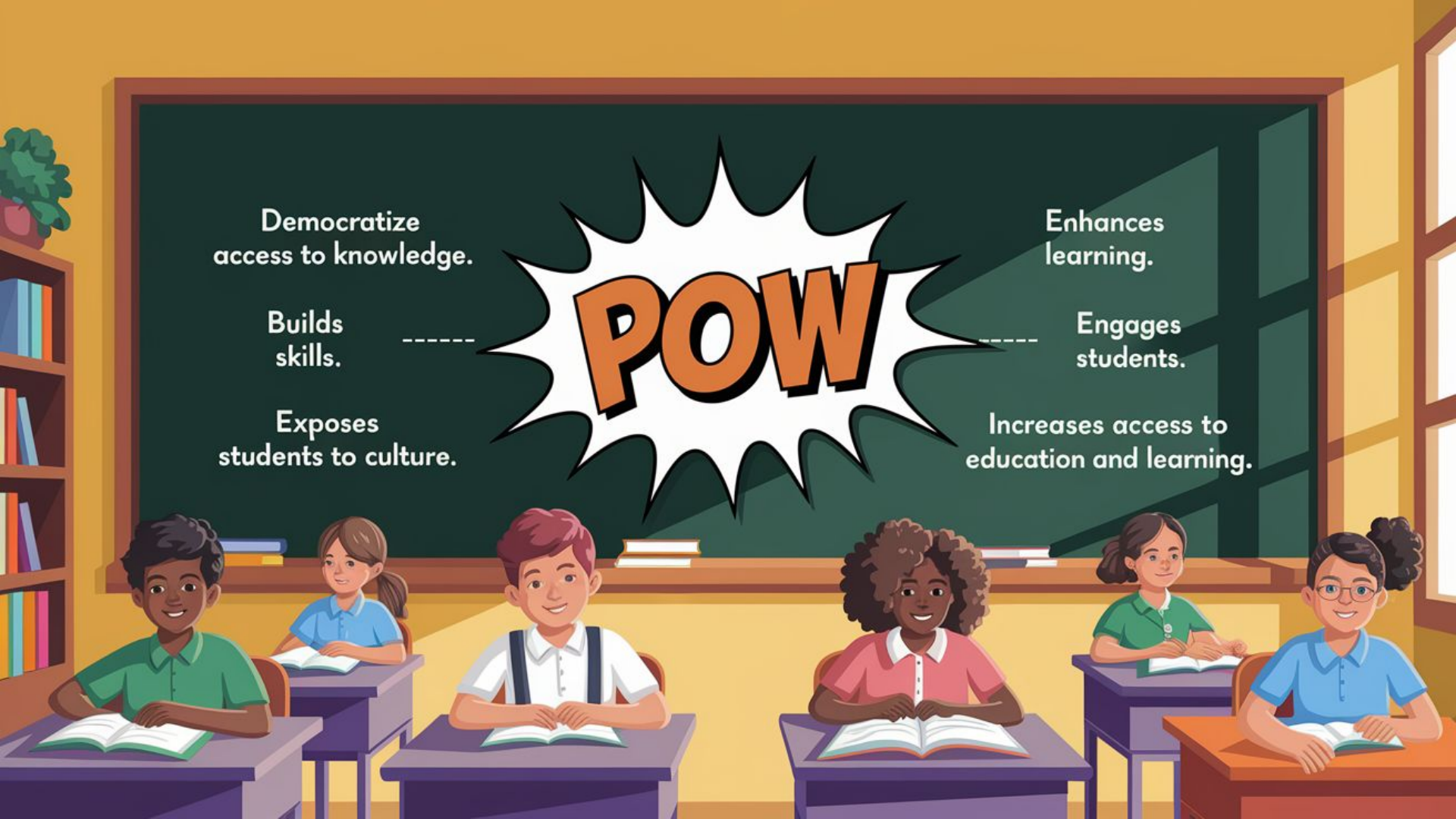
Pathway to Algebra

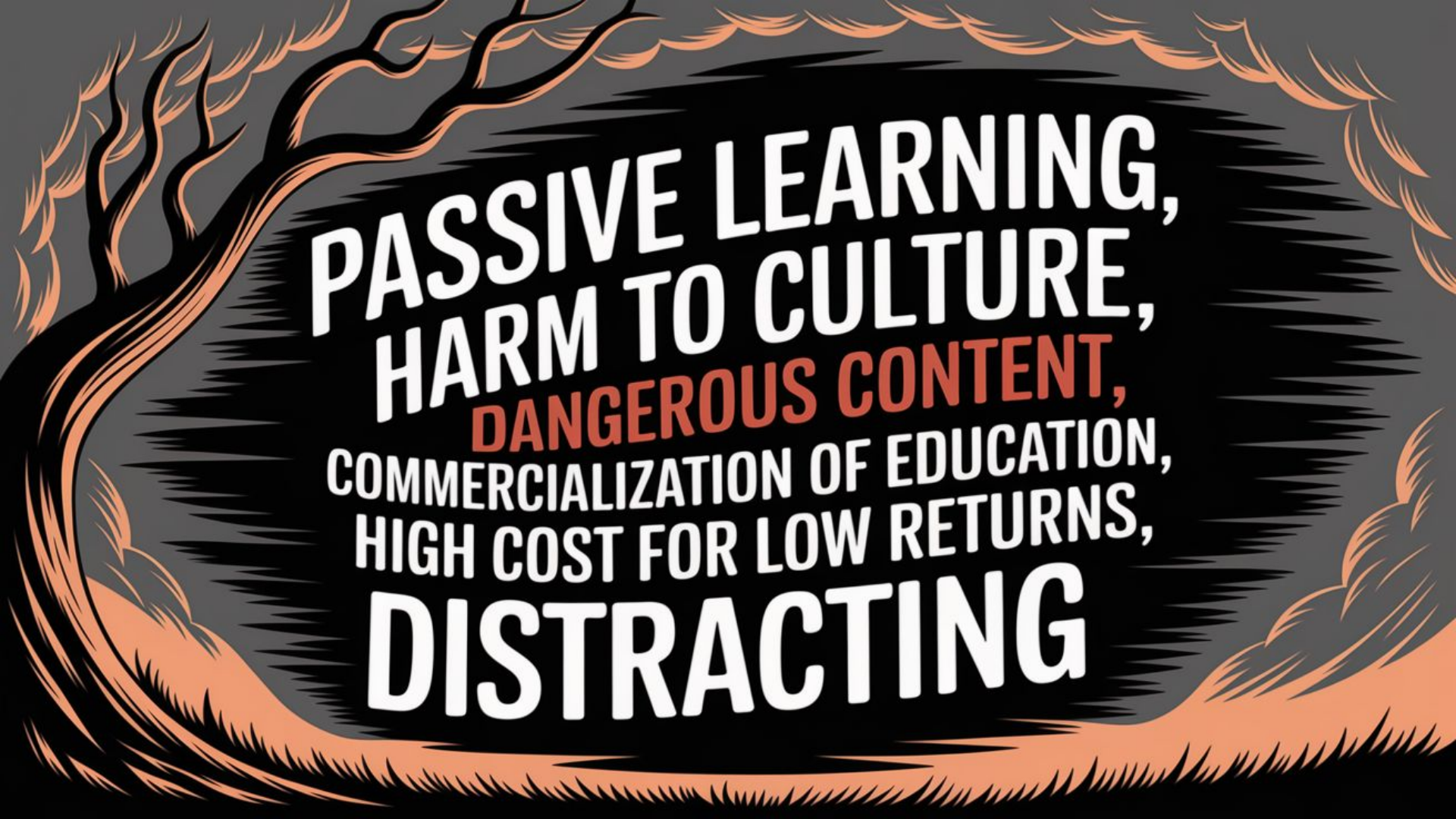
Algebra Companion

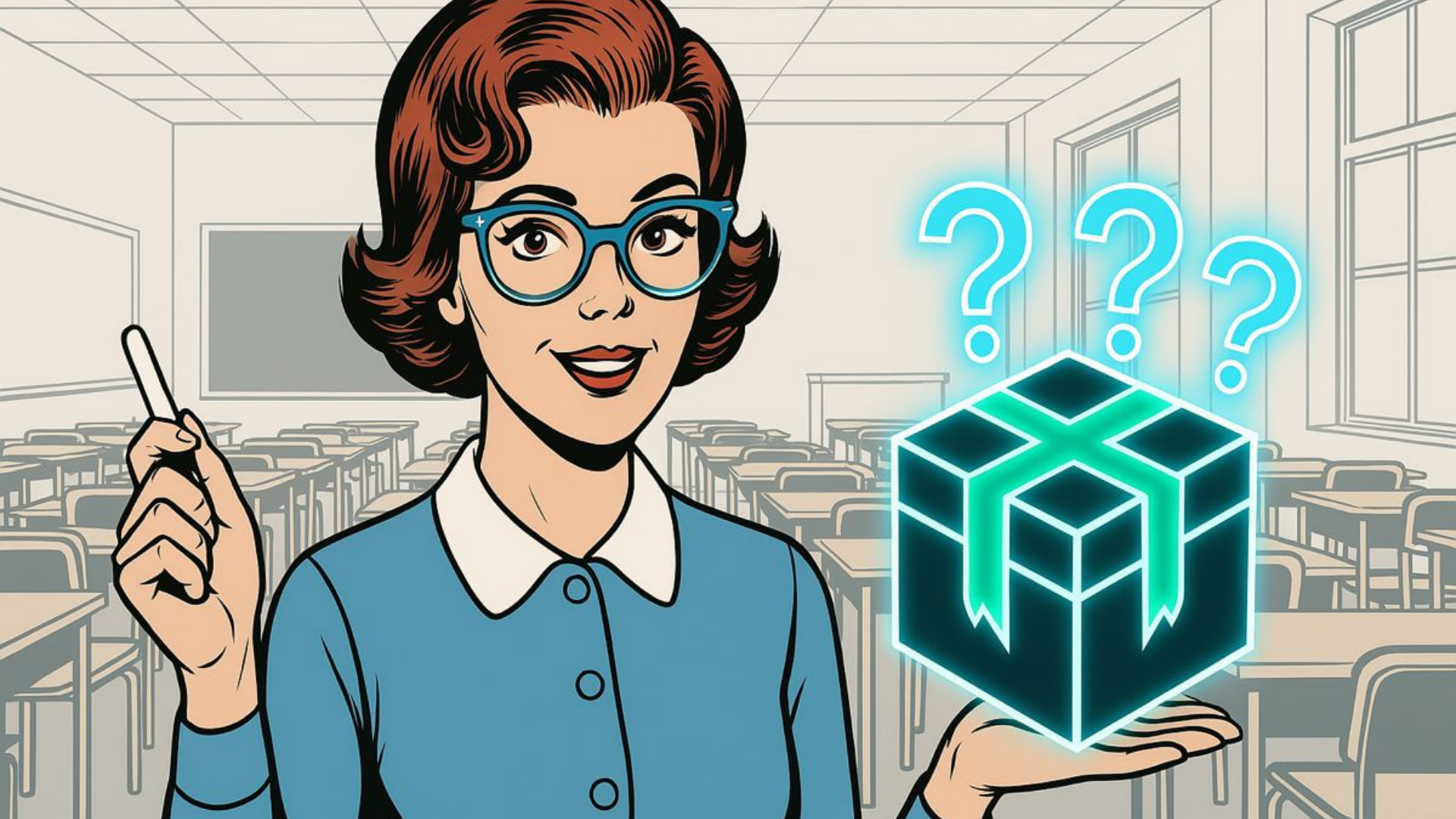
English Support

MAST & ACT Prep

Pathway to College


Democratize access to knowledge.
Builds skills.
Exposes students to culture.
POW
Enhances learning.
Engages students.
Increases access to education and learning.


PASSIVE LEARNING,
HARM TO CULTURE,
DANGEROUS CONTENT,
COMMERCIALIZATION OF EDUCATION,
HIGH COST FOR LOW RETURNS,
DISTRACTING



CHANNEL TUNING

Courier

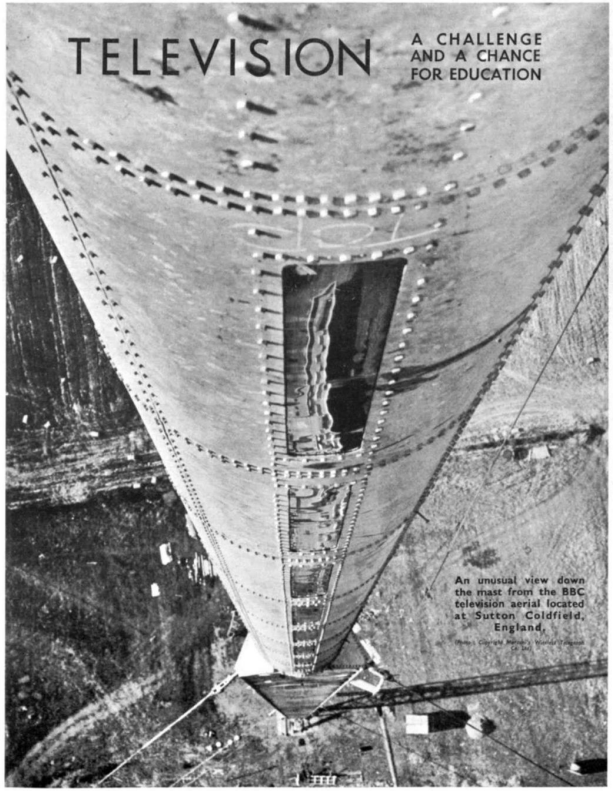
PUBLICATION OF THE UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANIZATION

Price : 20 cents (U.S.). 1 shilling (U.K.) or 50 Fr. (FRANCE).

VOLUME VI. — N° 3. — MARCH 1953

TELEVISION

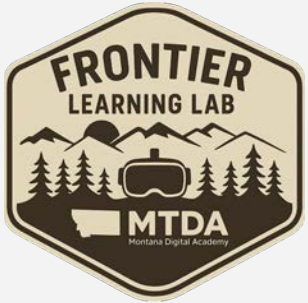
A CHALLENGE AND A CHANCE FOR EDUCATION



An unusual view down the mast from the BBC television aerial located at Sutton Coldfield, England.

(Photo: Central Press - United Nations)

MTDA’s Frontier Learning Lab



The Frontier Learning Lab

AI Help Desk

Access real people at MTDA to assist with ANY question about AI!
ai.help@mtda.org

Professional Learning

This workshop, plus future workshops. PLCs, online courses, and other opportunities coming soon!

Substack Newsletter

Read insights on future technology in MONTANA classrooms.
Field Notes from the Frontier Learning Lab

AI Platform Access

Coming soon, access to additional AI tools for teachers from MTDA.

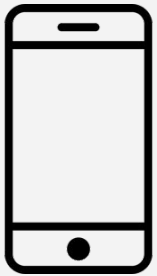
What is happening with AI in Education?

And… is *our* approach working?

30 Years of Technology Innovation

Internet

Social Media



Mobile

1:1 Devices

November 30, 2022 Product
Introducing ChatGPT
Try ChatGPT ↗
Try ChatGPT for Work ›
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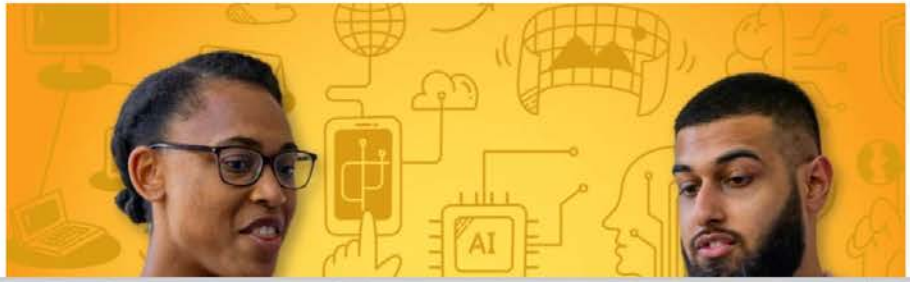
We've trained a model called ChatGPT which interacts in a conversational way. The dialogue format makes it possible for ChatGPT to answer followup questions, admit its mistakes, challenge incorrect premises, and reject inappropriate requests.
ChatGPT is a sibling model to InstructGPT, which is trained to follow an instruction in a prompt and provide a detailed response.
Ask ChatGPT
We are excited to introduce ChatGPT to get user's feedback and learn about its

ARTIFICIAL INTELLIGENCE FROM OUR RESEARCH CENTER

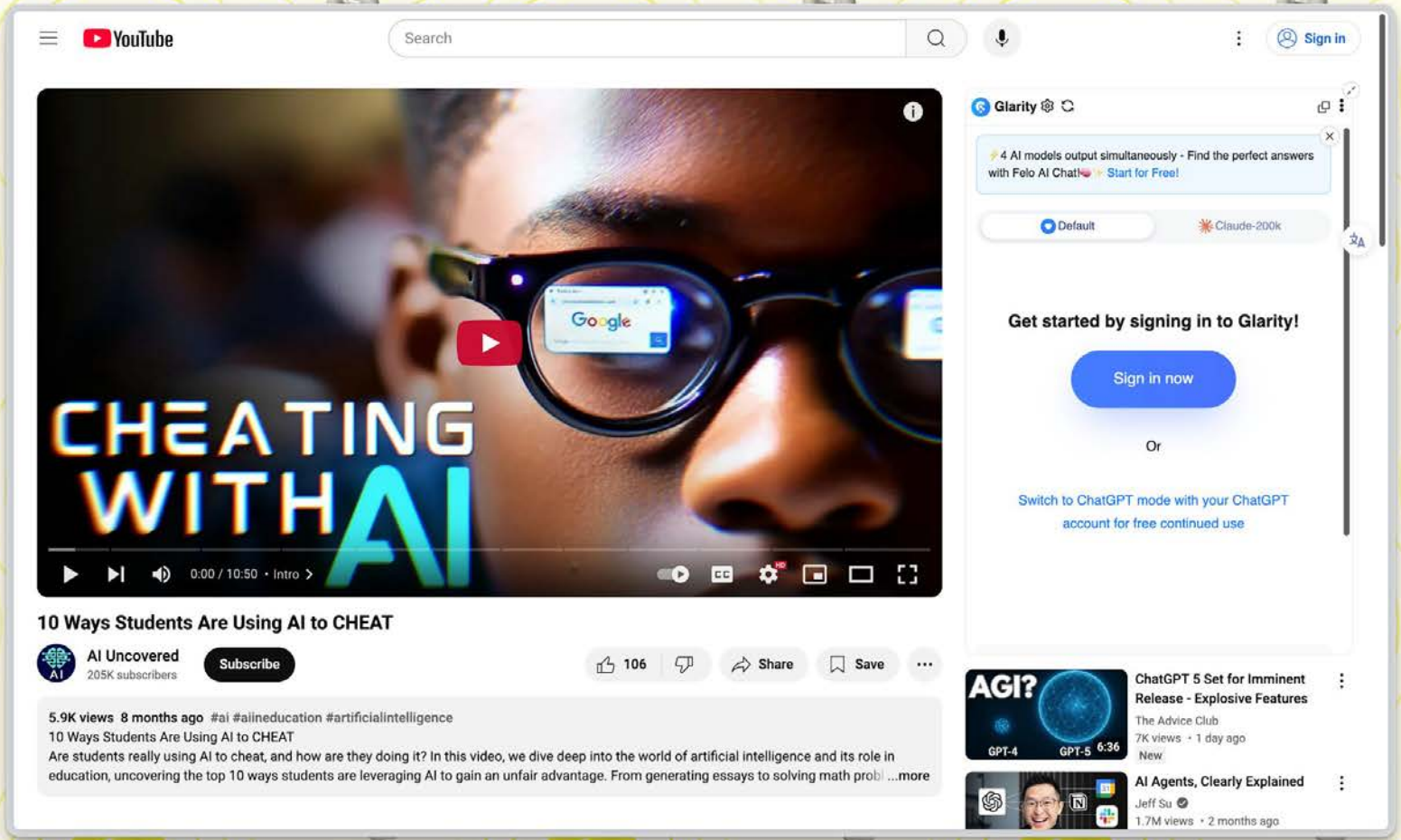
Here's How Teachers Are Using AI to Save Time

By Madeline Will — February 14, 2025 2 min read



FROM THE SPECIAL REPORT

Narrative #1:
AI Saves You Time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CHEATING WITH AI
0:00 / 10:50 • Intro
10 Ways Students Are Using AI to CHEAT
AI Uncovered
205K subscribers
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5.9K views 8 months ago #ai #aiineducation #artificialintelligence
10 Ways Students Are Using AI to CHEAT
Are students really using AI to cheat, and how are they doing it? In this video, we dive deep into the world of artificial intelligence and its role in education, uncovering the top 10 ways students are leveraging AI to gain an unfair advantage. From generating essays to solving math prob ...more
Glarity
4 AI models output simultaneously - Find the perfect answers with Felo AI Chat! Start for Free!
Default
Claude-200k
Get started by signing in to Glarity!
Sign in now
Or
Switch to ChatGPT mode with your ChatGPT account for free continued use
AGI?
GPT-4
GPT-5
6:36
ChatGPT 5 Set for Imminent Release - Explosive Features
The Advice Club
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New
AI Agents, Clearly Explained
Jeff Su
1.7M views • 2 months ago

HIGHER EDUCATION

Everyone Is Cheating Their Way Through College

ChatGPT has unraveled the entire academic project.

By James D. Walsh, Intelligencer features writer

MAY 7, 2025

SAVE

Illustration: New York Magazine

0:00 / 0:00

Audio: Listen to this article.

This article was featured in One Great Story, New York's reading recommendation newsletter. Sign up here to get it nightly.

Chungin "Roy" Lee stepped onto Columbia University's campus this past fall and, by his own admission, proceeded to use generative artificial intelligence to cheat on nearly every assignment. As a computer-science major, he depended on AI for his introductory programming classes: "I'd just dump the prompt into ChatGPT and hand in whatever it spat out." By his rough math, AI wrote 80 percent of every essay he turned in. "At the end, I'd put on the finishing touches. I'd just insert 20 percent of my humanity, my voice, into it," Lee told me recently.

Narrative #2: AI is a Cheating Machine

STYLE

The New York Times

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A New Headache for Honest Students: Proving They Didn't Use A.I.

Students are resorting to extreme measures t enc accusations of cheating, including hou g s een r gs of their homework sessions.

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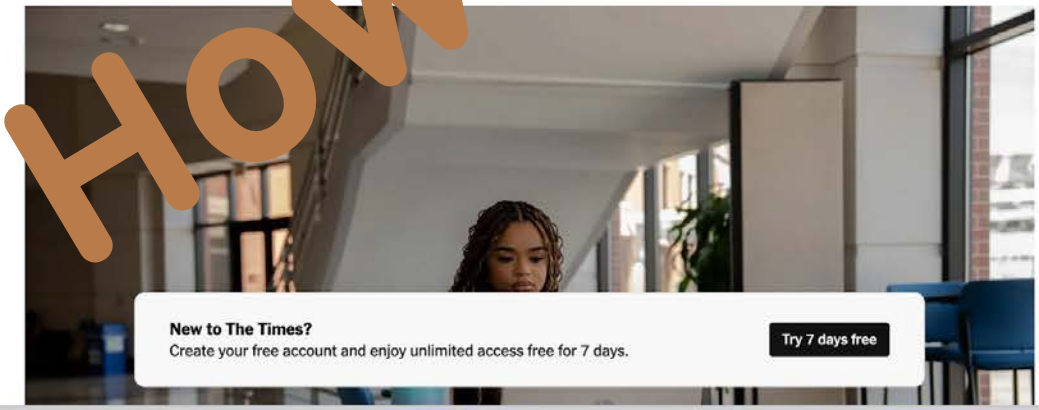

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However ...

The New York Times

LOG IN

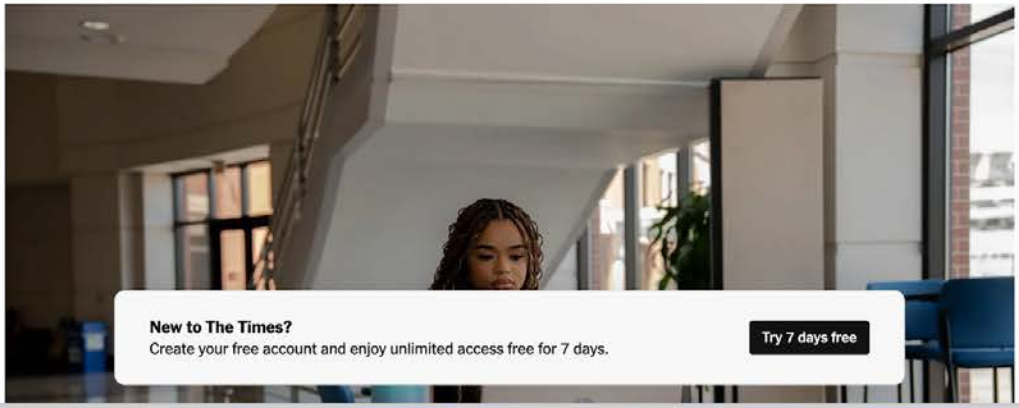
A New Headache for Honest Students: Proving They Didn't Use A.I.

Students are resorting to extreme measures to fend off accusations of cheating, including hourslong screen recordings of their homework sessions.

Listen to this article · 8:52 min Learn more

Share full article

284



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by **Sigal Samuel**
Jun 2, 2025, 4:00 AM MDT

★ THE HIGHLIGHT ADVICE

My students think it's fine to cheat with AI. Maybe they're onto something.

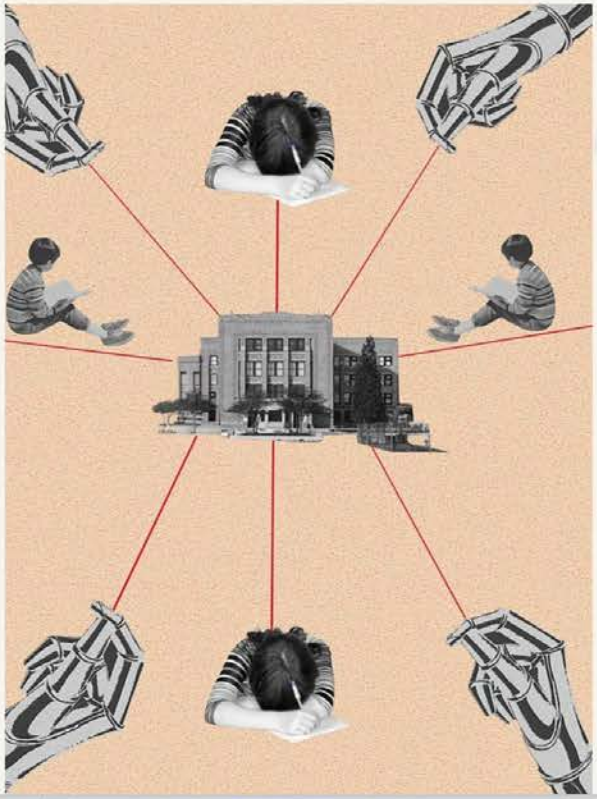
To save the humanities, we need to rethink our assumptions about AI — and education.

Everyone's Using AI To Cheat at School. That's a Good Thing.

It's not just the college students. I'm a professor—and these AI models offer keener, smarter, and more thorough suggestions than I do.

By Tyler Cowen

05.18.25 — Tyler Cowen Must Know



The Homework Apocalypse

Fall is going to be very different this year. Educators need to be ready.

ETHAN MOLLICK
JUL 01, 2023

360 50 26 Share

Not enough educators (and parents) are preparing for the Homework Apocalypse that is coming this Fall, as AI becomes ubiquitous among students.

Of course, the ease of cheating with AI is a part of the Homework Apocalypse, but only one part. Cheating was already common in schools. One study of eleven years of college courses found that when students did their homework in 2008, it improved test grades for 86% of them, but only helped 45% of students in 2017. Why? Because over half students were looking up homework answers on the Internet by 2017, so they never got the benefits of homework. And that isn't all. By 2017, 15% of students had paid someone to do an assignment, usually through essay mills online. Before AI, 20,000 people in Kenya earned a living writing essays full-time. Yes, cheating will be easier with AI, but it was easy before, and cheating is not the only reason that AI challenges the idea of homework

Instead, think of how the calculator completely changed what was valuable to teach.

Narrative #3:

AI is The End of An Already Broken Educational System

EDITORS' PICK | INNOVATION > SCIENCE

Your Brain On AI: 'Atrophied And Unprepared'

By Lars Daniel, Contributor. Lars Daniel covers digital evidence and forensi... Follow Author

Published Feb 14, 2025, 01:23pm EST, Updated Feb 14, 2025, 04:41pm EST

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Medically accurate illustration of the brain.
GETTY

Generative AI models like ChatGPT, Copilot, Claude and Gemini are increasingly embedded into workplace operations, and in conjunction, the question of AI's impact on critical thinking is under scrutiny. As these tools become more sophisticated and widely adopted, the balance

NOW PLAYING: MILEY CYRUS EXPLAINS WHY GROWING WITH HER AUDIENCE MEA...

FORBES' FEATURED VIDEO

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INNOVATION > AI

Generative AI And Brain Rot

By Lance Eliot, Contributor. Dr. Lance B. Eliot is a world-renowned AI scien...
Follow Author

Published Jun 18, 2024, 08:30am EDT

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Dare we ask whether generative AI might take us to brain rot?
GETTY

Brain rot, in general, seems to be in vogue these days.

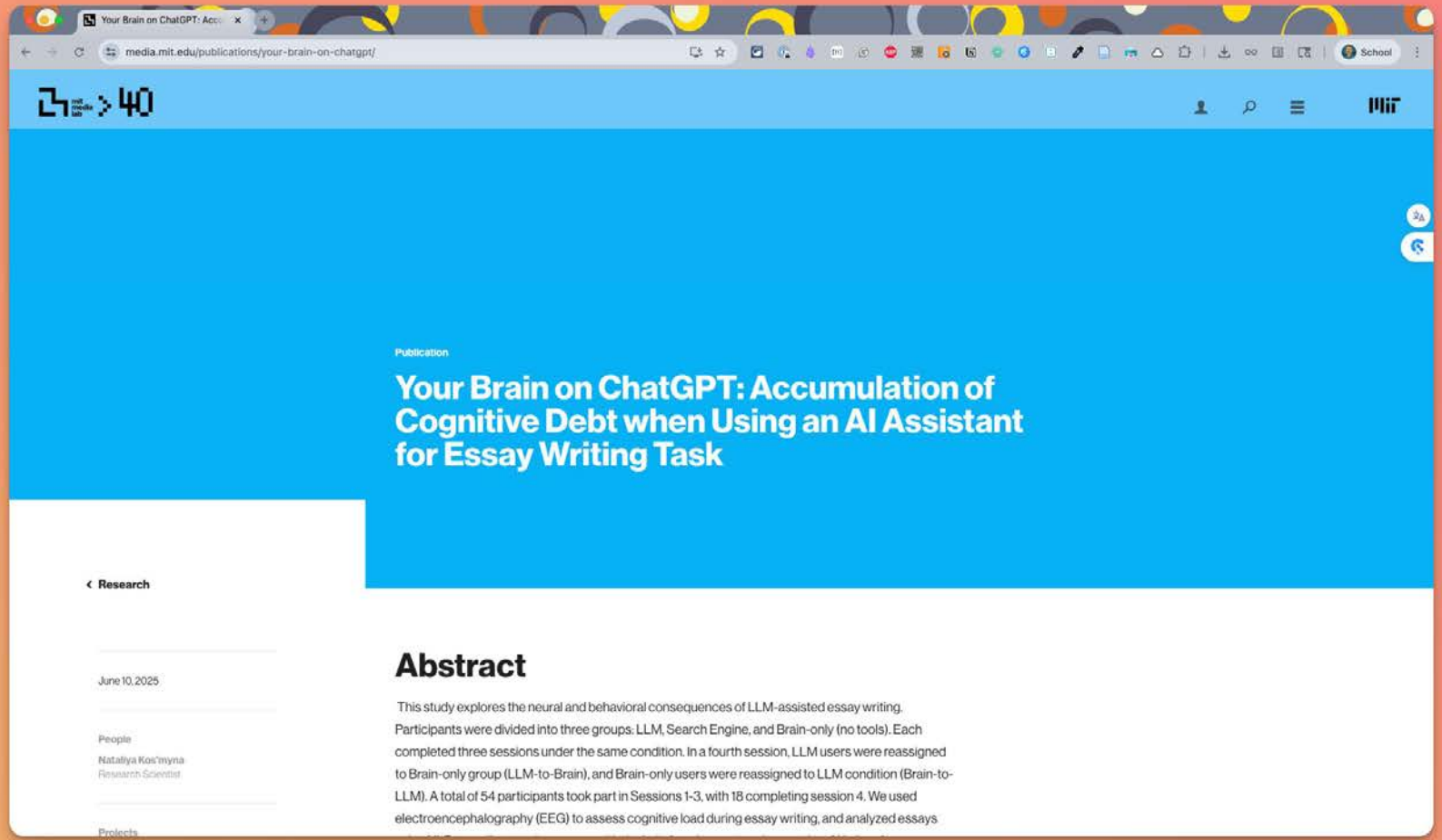
Allow me to clarify, discussions and handwringing about brain-rot are in vogue. As I will soon

AI & HUMANOIDS

AI is rotting your brain and making you stupid

By Rich Haridy
May 25, 2025

newatlas.com/subscribe/


Your Brain on ChatGPT: Acc
media.mit.edu/publications/your-brain-on-chatgpt/
School
Publication
Your Brain on ChatGPT: Accumulation of Cognitive Debt when Using an AI Assistant for Essay Writing Task
Research
June 10, 2025
People
Nataliya Kos'myna
Research Scientist
Projects
Abstract
This study explores the neural and behavioral consequences of LLM-assisted essay writing. Participants were divided into three groups: LLM, Search Engine, and Brain-only (no tools). Each completed three sessions under the same condition. In a fourth session, LLM users were reassigned to Brain-only group (LLM-to-Brain), and Brain-only users were reassigned to LLM condition (Brain-to-LLM). A total of 54 participants took part in Sessions 1-3, with 18 completing session 4. We used electroencephalography (EEG) to assess cognitive load during essay writing, and analyzed essays

Narrative #4:
AI Rots Your Brain

How AI will enable us to work smarter, faster

by **Jeanne Boillet**
EY Global Accounts Committee
Assurance Lead

4 minute read
07 Jun 2017

Related topics

Assurance **Audit**
Digital audit **AI**

Artificial intelligence has the potential to transform audit, but it will never replace the auditor.

Artificial intelligence (AI) could be a game changer for business generally, and professional services in particular. With the rapid developments in machine learning, data mining and cognitive computing, the next decade promises to see huge leaps forward.

While the excitement over the potential applications of AI is understandable, there are some misconceptions — and indeed fears — developing. Central to that is the fear that AI will in fact replace humans in the value chain — doing the tasks we currently do, but faster and more accurately, and thus rendering many of us redundant.

AI is making us smarter, says AI pioneer Terry Sejnowski

We are getting smarter as we engage in prompt engineering, but we are also still defining intelligence.

Written by **Tiernan Ray,** Senior Contributing Writer

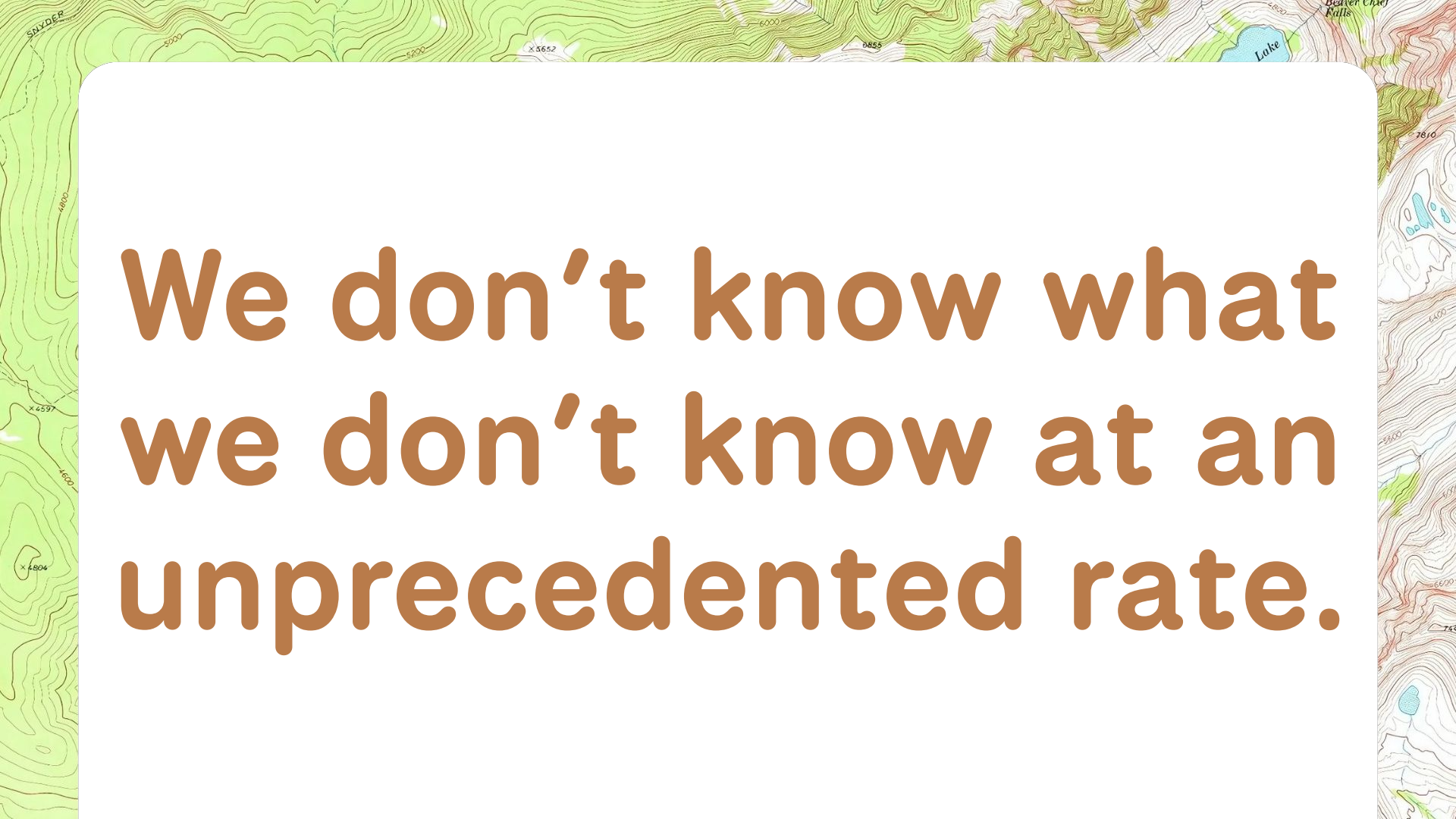
Dec. 2, 2024 at 1:45 a.m. PT

/ must read

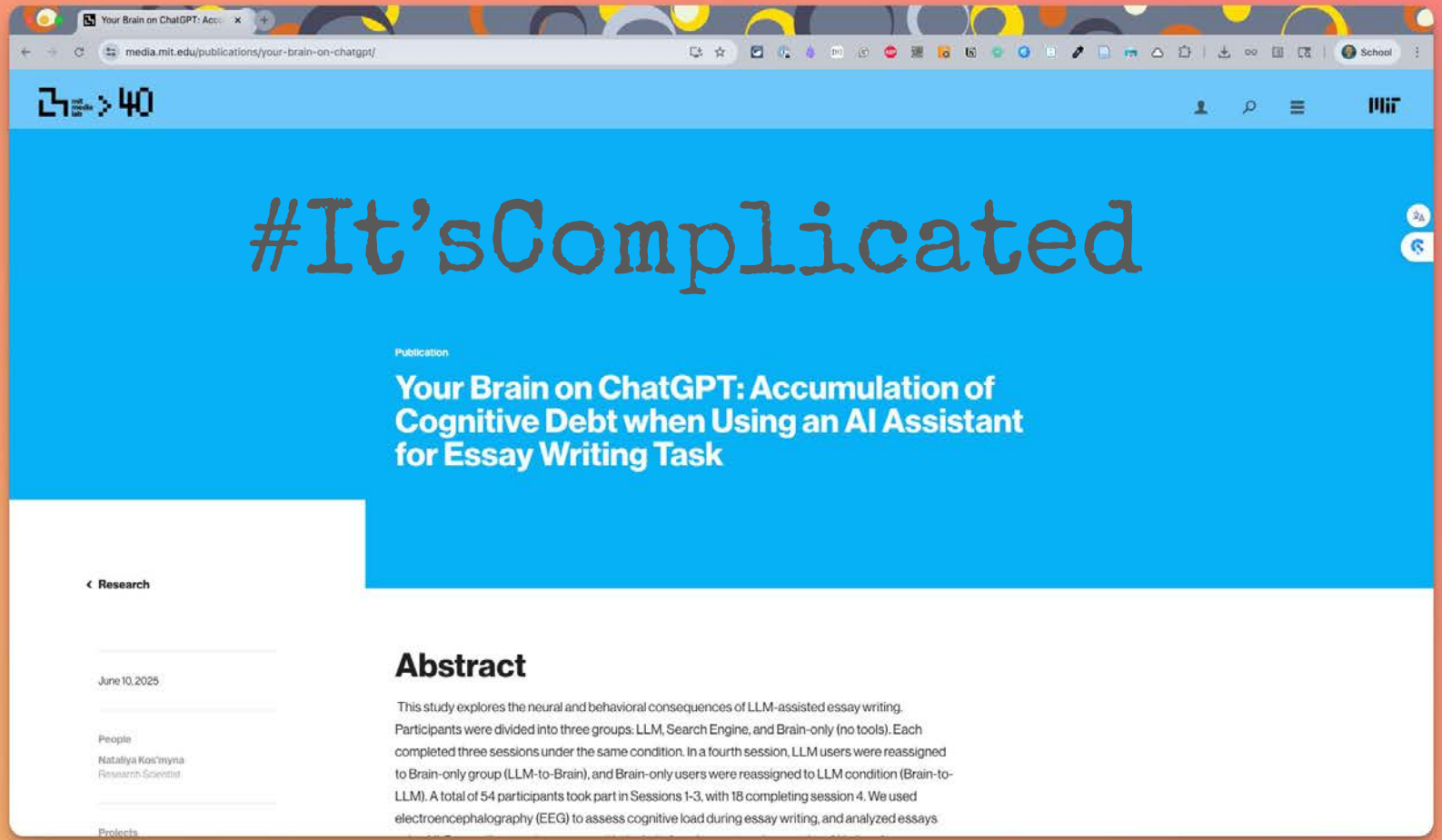
Sam Altman says the Singularity is imminent

Read now →

Narrative #5: AI Makes You *Super* Smart



We don’t know what we don’t know at an unprecedented rate.


Your Brain on ChatGPT: Acc
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School
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Publication
Your Brain on ChatGPT: Accumulation of Cognitive Debt when Using an AI Assistant for Essay Writing Task
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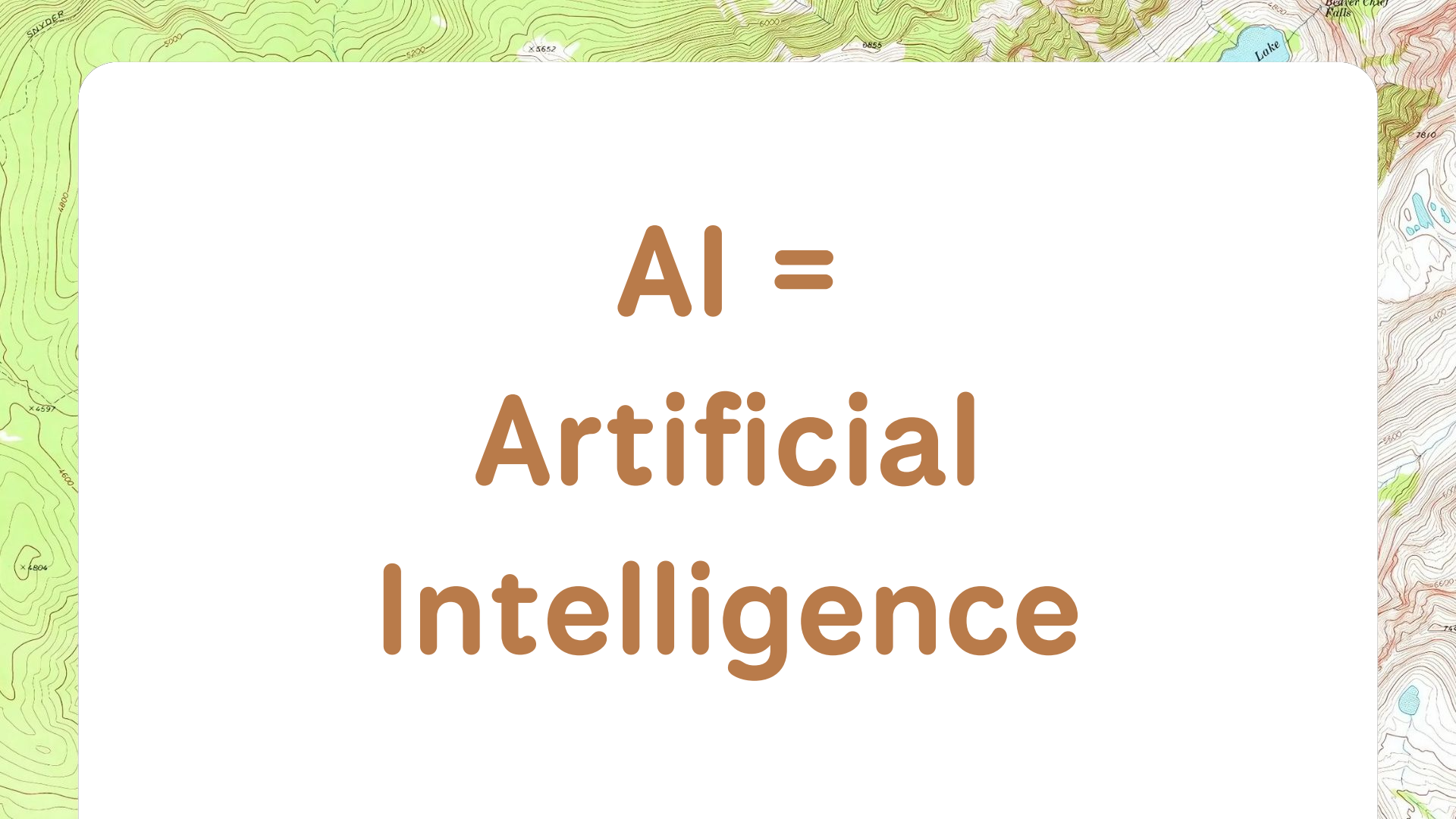
mind
shift



AI = Artificial Intelligence

AI =

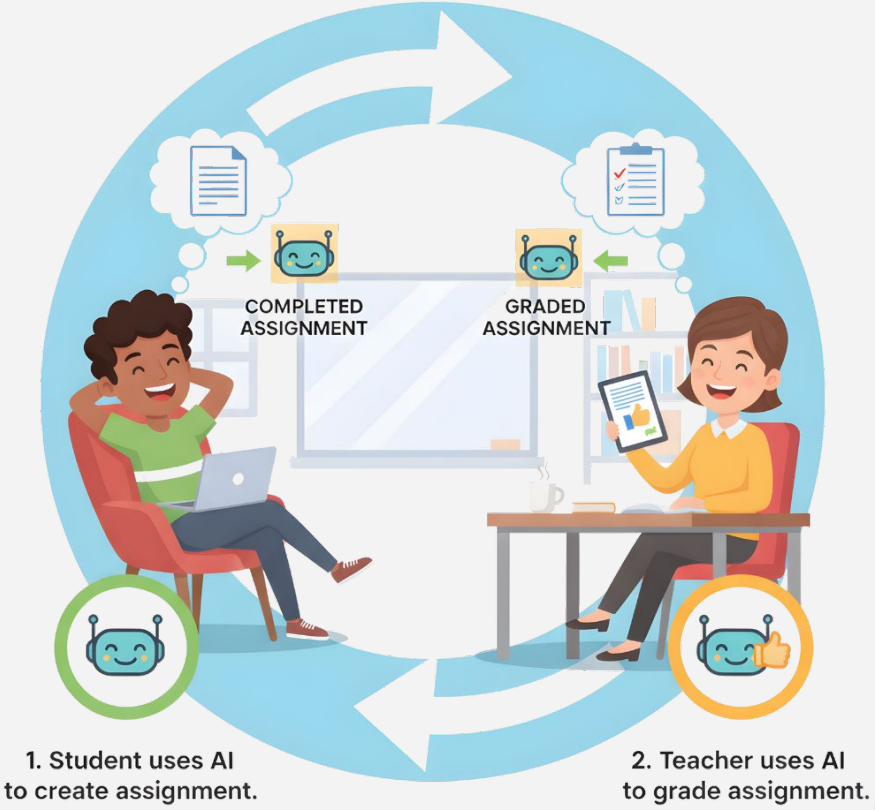
Augmented Intelligence

AI is a Vending Machine → AI as Thought Partner

Faster → Better

AI as Education Replacement → AI as an Incredible Education Toolset… Perhaps Teacher Multiplier?

Probably the Worse Case Scenario (for learning)



We need to start with adults.

(Teachers)

We need to start with adults.

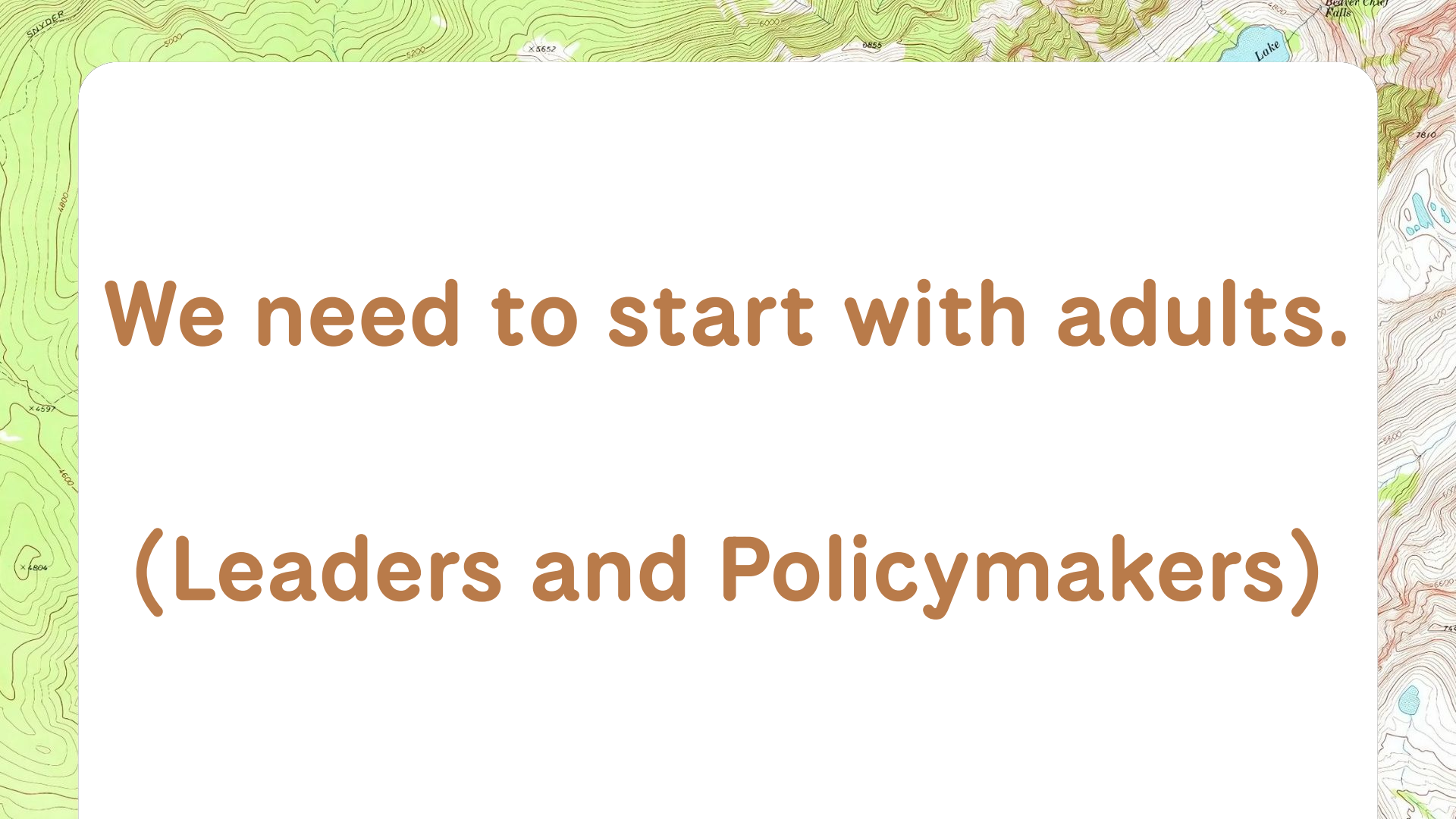
(Administrators)

We need to start with adults.

(Librarians)

We need to start with adults.

(Parents)



We need to start with adults.

(Leaders and Policymakers)

"Assuming early studies are true and we see productivity improvements of 20 to 80 percent on various high-value professional tasks, I fear the natural instinct among many managers is 'fire people, save money.' But it does not need to be that way. There are many reasons for companies to not turn efficiency gains into head-count reduction or cost reduction. Companies that figure out how to use their newly productive workforce **should be able to dominate any company** that tries to keep their post-AI output the same as their pre-AI output, just with fewer people."

Ethan Mollick

Ralph J. Roberts Distinguished Faculty Scholar
Associate Professor of Management
The Wharton School
Author, “Co-Intelligence”

"Schools that figure out how to use their newly productive teacher, administrator, and support staff workforce should be able to ***dominate*** any school that tries to keep their post-AI output the same as their pre-AI output, just with fewer people."

Jason Neiffer

A Guy Giving This Presentation

Mostly Stolen from Professor Mollick

"Schools that figure out how to use their newly productive teacher, administrator, and support staff workforce should be able to ***significantly outperform*** any school that tries to keep their post-AI output the same as their pre-AI output, just with fewer people."

Jason Neiffer

A Guy Giving This Presentation

Mostly Stolen from Professor Mollick

Learners

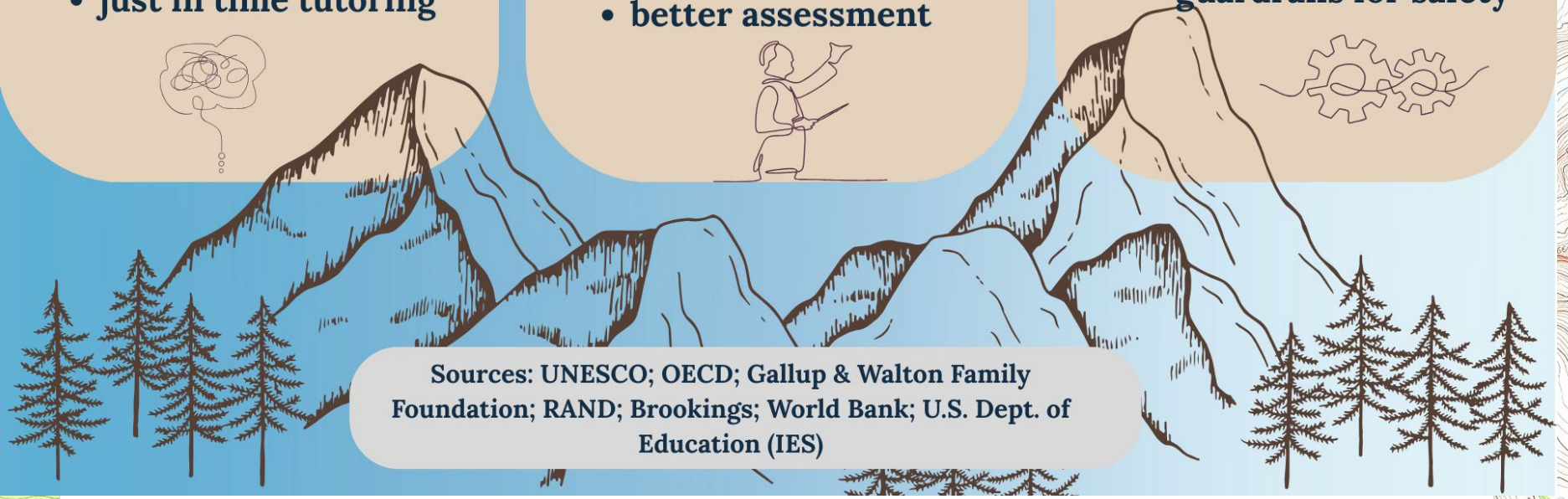
- practice and feedback that adapts
- tools that expand access
- just in time tutoring

Teachers

- time back on admin tasks
- better differentiation tools
- better assessment

Systems

- data-informed decisions
- equity by design
- guardrails for safety



Sources: UNESCO; OECD; Gallup & Walton Family Foundation; RAND; Brookings; World Bank; U.S. Dept. of Education (IES)

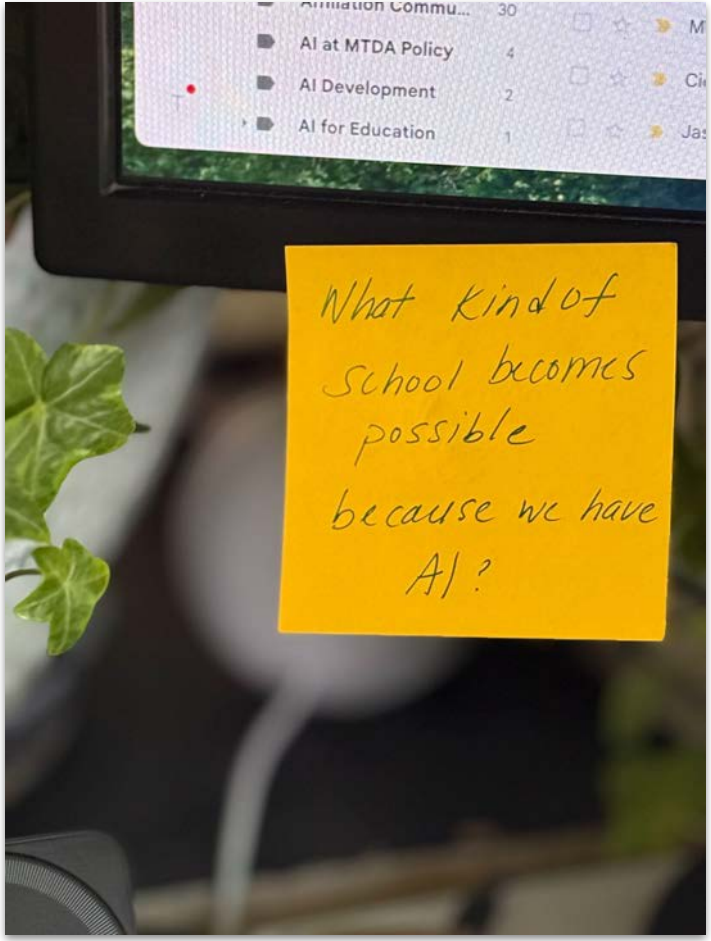
What AI can do to save you time or support tasks you already do.

What AI means for bigger questions about learning and schooling.

Because here's what's actually happening: while schools are banning AI, Google just turned on Gemini for all K-12 Workspace accounts. Students now have access to sophisticated AI through their school-issued devices, their phones, their home computers.

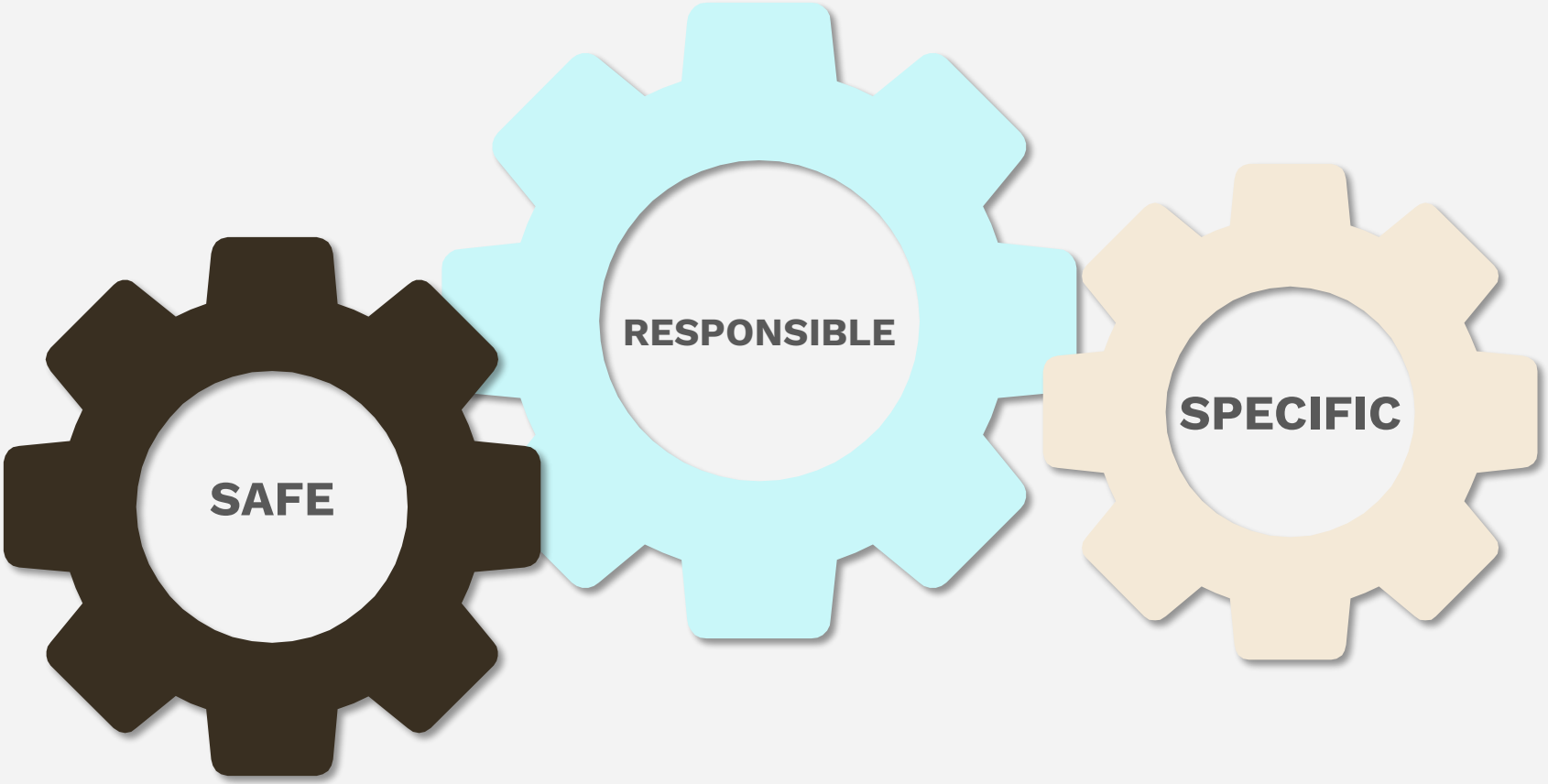
The lockdown approach isn't preventing AI use. It's just making it invisible.
Students are using AI for homework, for research, for brainstorming. They're learning to work with these tools in every context except the classroom, where we're still measuring their thinking as if these tools don't exist.

We're not maintaining academic integrity. We're creating a bizarre split where students learn to navigate AI everywhere except in the place designed for learning.



📸Caitlin Byers

AI in Education



What to know about AI. . .

1

IT BLUFFS

- ✔ Any answer is better than no answer.

2

IT SEEMS CONFIDENT

- ✔ Information is presented en masse with authority.

3

IT IS BIASED

- ✔ Garbage in, garbage out.

4

NOT (ALWAYS) CITED

- ✔ Many models are hooked to search engines, but, many source citations are made up.

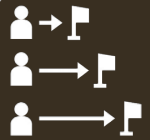
Hallucinations

Generate a topographically and politically accurate map of the United States.

Here's a map of the United States, showing both topography and political boundaries.

Power Strategies for Working With AI

1



PRACTICE MAKES PRETTY GOOD

Try, try again.

2

LEAN INTO YOUR TEACHER SOUL

Teach the LLM how you want it to work.

3

TAKE CAREFUL NOTES

What works? What doesn't? Collect good prompts.

4

LEAN ON YOUR EXPERTISE

Trust your content area knowledge and classroom experience.