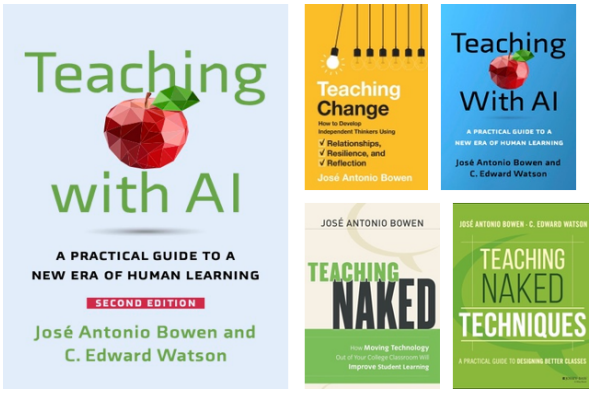
Are We Asking the Right Questions about Human Thinking and AI?



SLIDES & CITATIONS

José Antonio Bowen

Get the 2nd Edition of Teaching with AI.
Discount code HTAI25 = 30% off at JHUP.
WebSite: https://WeTeachWithAI.com/
This doc was prepared by Claude using the images, text and notes from my ppt deck.

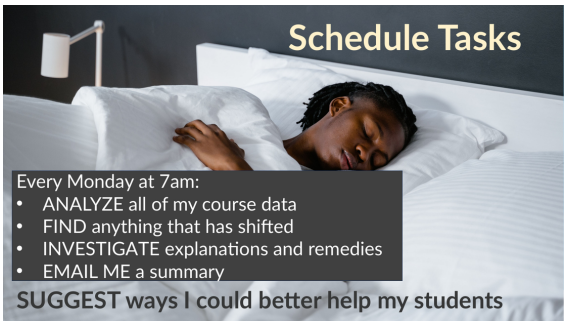
Where's Rigoletto?

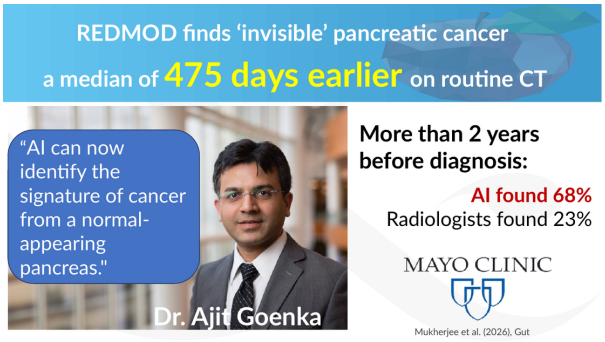
(That you can figure out on your own.)

WE ARE ALREADY ASKING A LOT OF GOOD QUESTIONS (slide 3)

How should we regulate AI?
Can we reduce the climate impact?
What (if any) AI use is ethical?
How do we manage privacy?
Do we need to provide access?
What about students who object?

HOW IS AI CHANGING WHAT IS POSSIBLE?

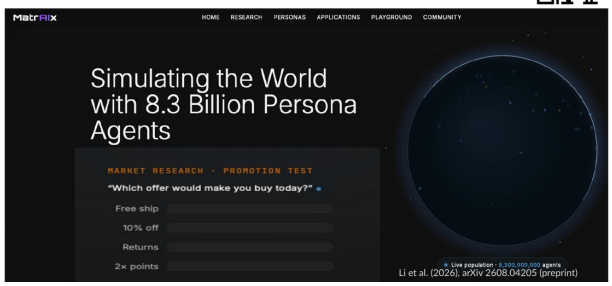




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AGA News. (2026, June). AI model flags pancreatic cancer on CT more than a year before diagnosis. [overall test-set sensitivity 73.0% vs 38.9% for radiologists; specificity 81.1%] https://news.gastro.org/issues/2026/june-2026/ai-model-flags-pancreatic-cancer-on-ct-more-than-a-year-before-diagnosis/

MatrAIx: Berkeley, Harvard and MIT researchers create synthetic test people from human profiles



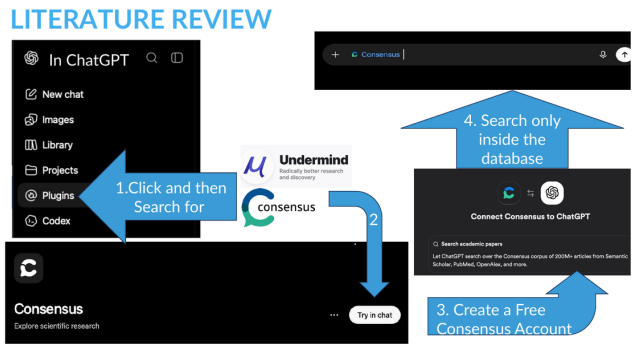
- MatrAIx

Li, X., Hao, Y., Hou, J., et al. (2026, August 4). MatrAIx: Simulating the world with 8.3 billion persona agents. arXiv [preprint]. https://arxiv.org/abs/2608.04205

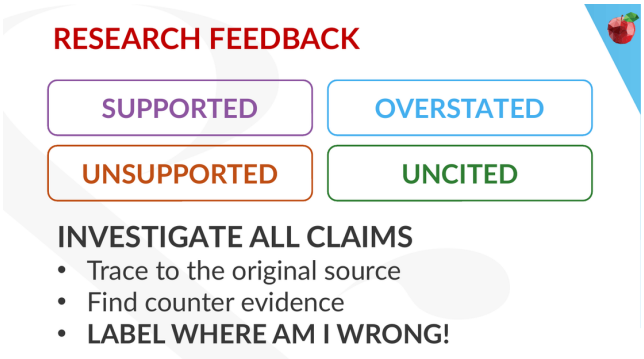


Women at the Keys: a searchable database of women composers of solo piano music, built by a coding agent from a five-step prompt.

- Women at the Keys
- Vibe coding examples



- Consensus
- Undermind

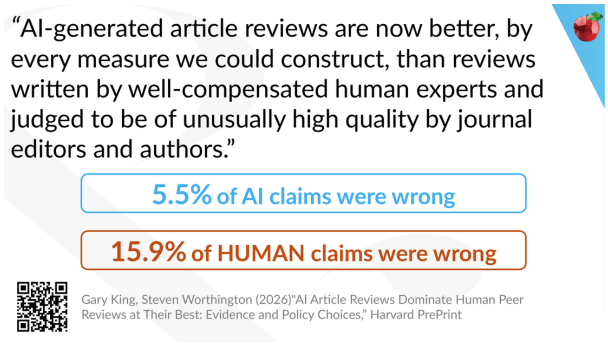


More on Research with AI workflow here:

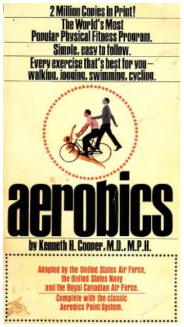
https://weteachwithai.com/ai-research-workflow/



- Devil's Advocate (Duke Office of Information Technology)
- Getting started with Devil's Advocate



King, G., & Worthington, S. (2026, October 25). AI article reviews dominate human peer reviews at their best: Evidence and policy choices [Working paper]. Harvard University. [124 manuscripts; 134 paid, double-blind pre-submission reviews from rapidPeer; each review's claims checked against the manuscript: 5.5% of AI review claims vs. 15.9% of human review claims judged incorrect; three former journal editors, blinded, preferred the AI review in 26 of 30 pairs (87%)] https://gking.harvard.edu/peerless/



Dr. Kenneth H. Cooper (1968)

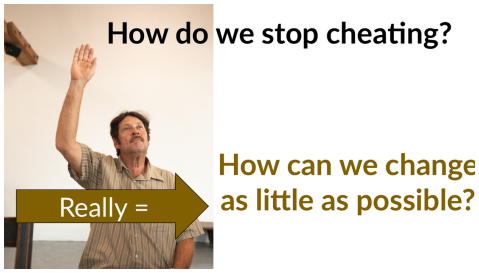
"The streets would be littered with dead joggers"

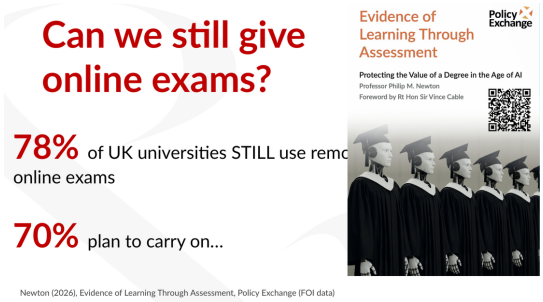
Cooper, K. H. (1968). Aerobics. M. Evans.
Texas Tech University Health Sciences Center. (2026, Winter). Father of fitness. Pulse. [Cooper recounts the warning that "the streets would be littered with dead joggers"] https://pulse.ttuhsc.edu/issue/winter-2026/father-of-fitness/

WHAT DOES THIS MEAN FOR HUMAN COGNITIVE FITNESS?

EIGHT QUESTIONS (slide 15)

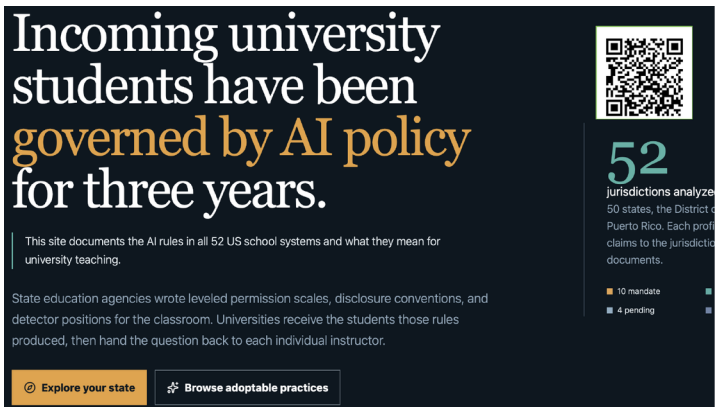
What are our principles, not just our policies?
How can we design better learning?
How will AI alter our disciplinary learning goals?
How might we amplify and raise standards?
Who will verify what AI produces and how?
How can we build more supportive relationships?
What will we do with the extra capacity?
What does AI mean for our curriculum?





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- State AI Policy Field Guide



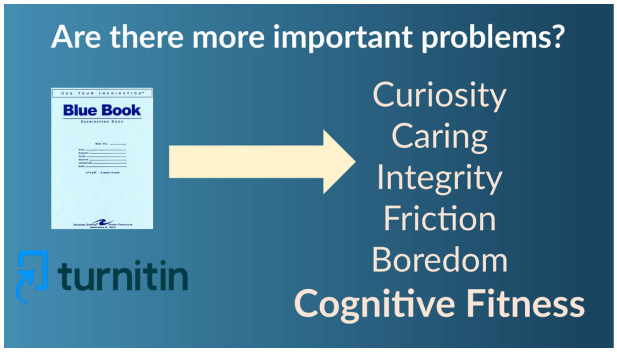


Caltech | Undergraduate Admissions

Applicants who submit research are encouraged to add a VIVA: a third-party oral verification of their own work.



▸ Caltech Undergraduate Admissions: Research Papers & Publications

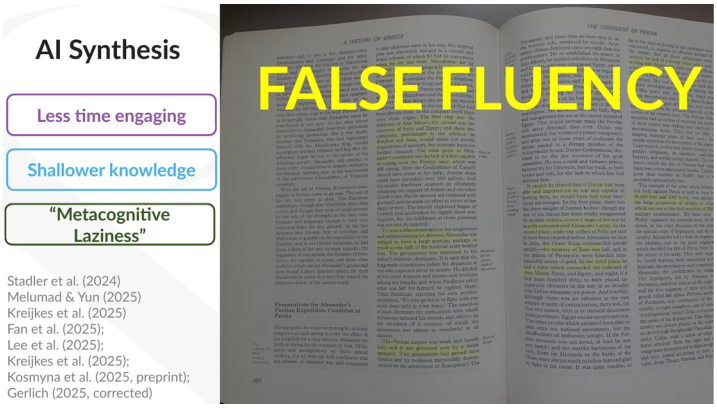




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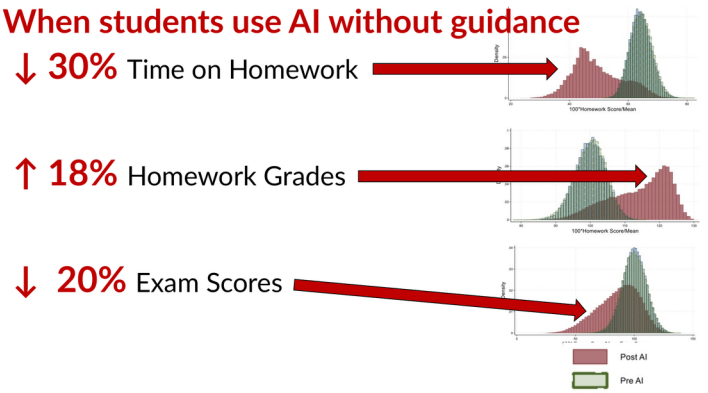
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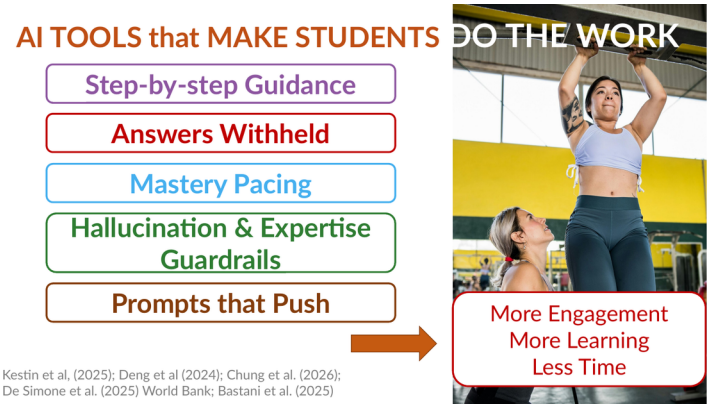
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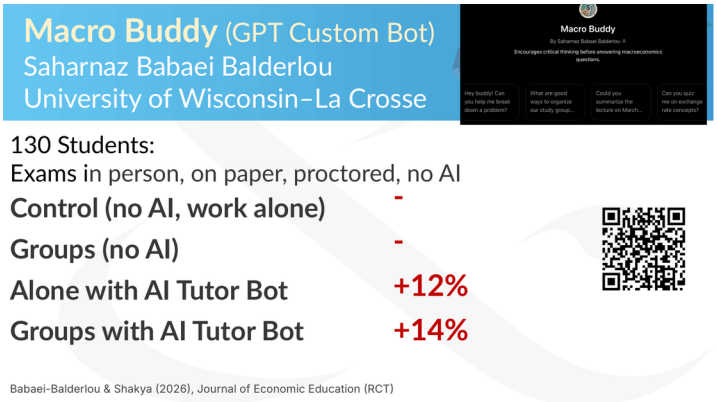
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Saharnaz Babaei-Balderlou, University of Wisconsin–La Crosse.

- Macro Buddy (GPT custom bot)

Babaei-Balderlou, S., & Shakya, S. (2026). Can structured AI tutoring and study groups improve learning outcomes? Evidence from a randomized controlled trial. The Journal of Economic Education, 1–18. [RCT, 4 sections, 130 students; the first randomized evidence of AI-enhanced learning in economics education] https://doi.org/10.1080/00220485.2026.2695361

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- Designing Learning with AI: findings, principles and examples

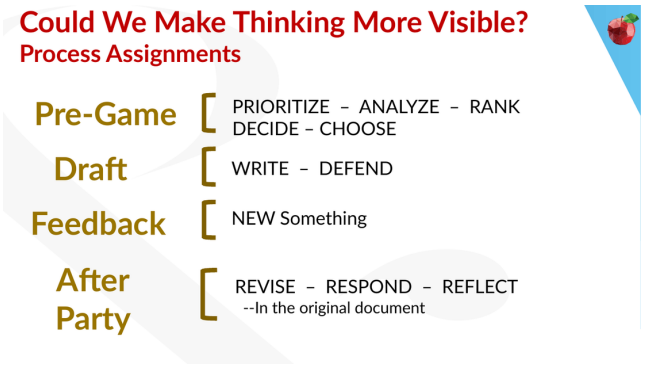
Li, C., Cui, H., & Hagedorn, L. S. (2026). The cognitive impact of ChatGPT in higher education: A systematic review of critical and creative thinking outcomes. Computers and Education: Artificial Intelligence, 10, Article 100571. [PRISMA review of 67 empirical studies, 2022–2025 — the strongest synthesis to date] https://doi.org/10.1016/j.caeai.2026.100571

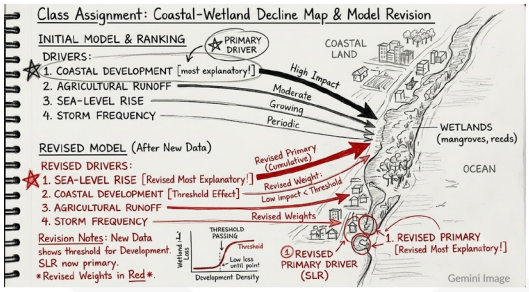
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LIMITS. The strongest evidence of harm comes from secondary students outside the United States (China, Turkey, Germany, the U.K.); the strongest evidence of benefit comes from elite, high-structure settings such as Harvard. The typical university classroom sits in the understudied middle, where age, selectivity and design are confounded. Most of these studies measure exam scores; we still lack long-term evidence about durable, transferable learning.







BUILD a map with causal arrows explaining coastal-wetland decline
RANK all four drivers by how much explanatory work each does
MARK the driver you judge most explanatory.
CONSIDER (one week later) more data on the same region.
ADD new drivers and revise the weights on your original map. Use a new color.

Daniel R. Sanford, Director, CTL, Boise State University
Artificial Intelligence, Authentic Voices: AI & Assignment Design for Critical Thinking in Higher Education (2027) Bloomsbury

This Coastal Wetlands example is from a new book by Daniel R. Sanford, Director of the CTL at Boise State University.

- Daniel R. Sanford — Artificial Intelligence, Authentic Voices

Sanford, D. R. (2027, forthcoming). Artificial intelligence, authentic voices: AI & assignment design for critical thinking in higher education. Bloomsbury.

Curation, Thinking & Meaning

Ivy Linton Stabell: The Influence Project in First-Year English

- Pick any work of art you love.
- Look expansively for artistic ancestors.
- PROMPT: a RANGE of influences for X
- Learn about parent and grandparent works.
- Find three historical context subjects for each.
- Journal about the influences and differences.
- Lots of conferences with the professor.
- Write about this journey.

Ivy Linton Stabell, Associate Professor of English and Writing Coordinator, Iona University: the Influence Project in first-year English.

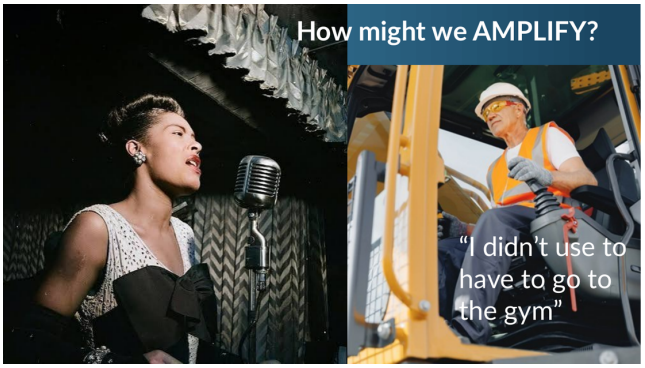
- Ivy Linton Stabell (Iona University)

How will AI alter our disciplinary learning goals?

Human must be able to do this unaided → How do we design learning & assessment?

New Hybrids → What are the new skills? What new curriculum, courses and assignments?

AI will do this without human assistance → Do all students still need to learn this skill?



Smithsonian **Revolution Crossroads**

Explore American Revolutionary-era records from multiple institutions through a single interface

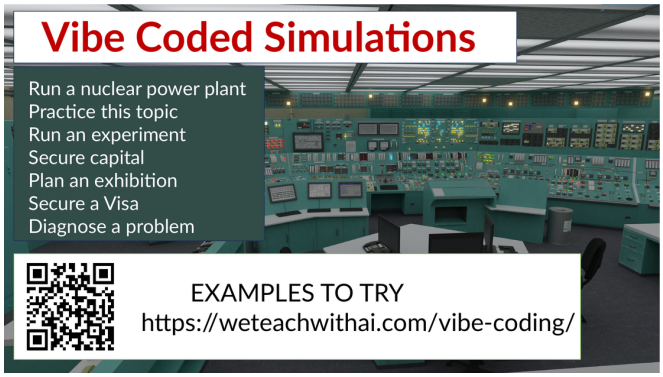


Research records, diary entries, letters and ancestral photographs to bring the story of an underrepresented character to life in an authentic historical 3D scene. For example, **Hannah Till**, George Washington's pastry chef at Valley Forge. (Retha Hill at ASU)

Retha Hill, New Media Innovation and Entrepreneurship Lab, Walter Cronkite School of Journalism and Mass Communication, Arizona State University.

- Revolution Crossroads (Smithsonian)
- Student project video (YouTube)

Arizona State University. (2023, December 7). ASU students share America's untold stories using AI, AR. [Hannah Till, George Washington's pastry chef at Valley Forge] https://tech.asu.edu/node/1231504



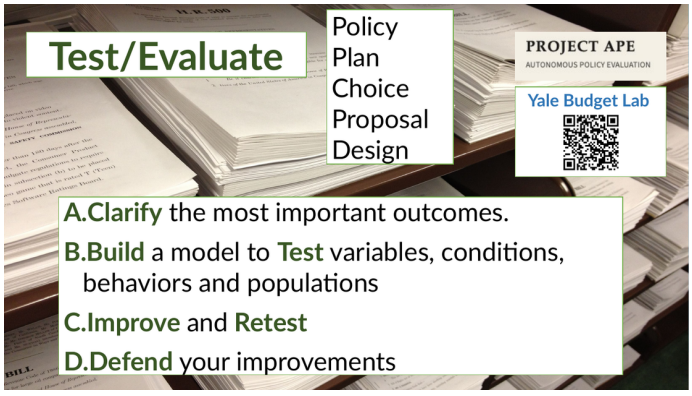
- Vibe coding examples



Broad Street, 1854 (play on a laptop)

- Three Mile Island, 1979 (play on a laptop)





- Yale Budget Lab
- Project APE: Autonomous Policy Evaluation (Social Catalyst Lab)

Epic **Concordance Score**

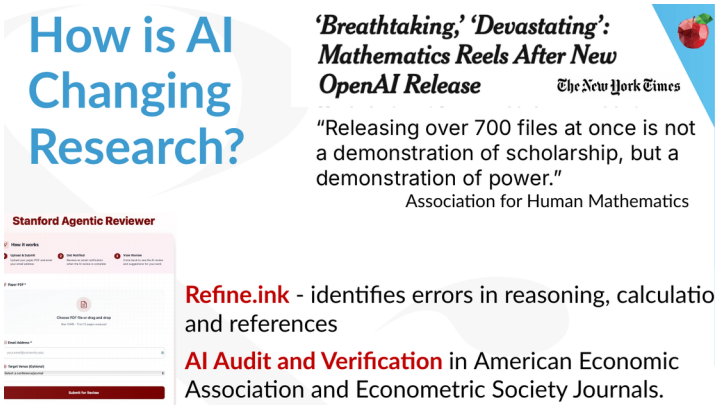
"[Of] 24,572 patients like this, 97% of them have diagnosis A and only 0.5% have diagnosis B, which is the one you've prescribed.
So do you think you should rethink it?"



Epic UGM keynote, Aug 19, 2025

Becker's Hospital Review. (2025, August 19). Judy Faulkner unveils 'healthcare intelligence.' [Epic Users Group Meeting keynote; a hypothetical of what Epic's assistant, Art, could say] https://www.beckershospitalreview.com/healthcare-information-technology/ehrs/judy-faulkner-unveils-healthcare-intelligence/

What happens when AI audits judgment?



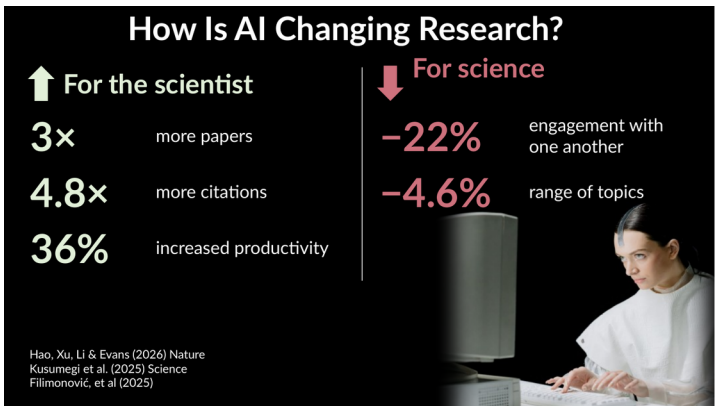
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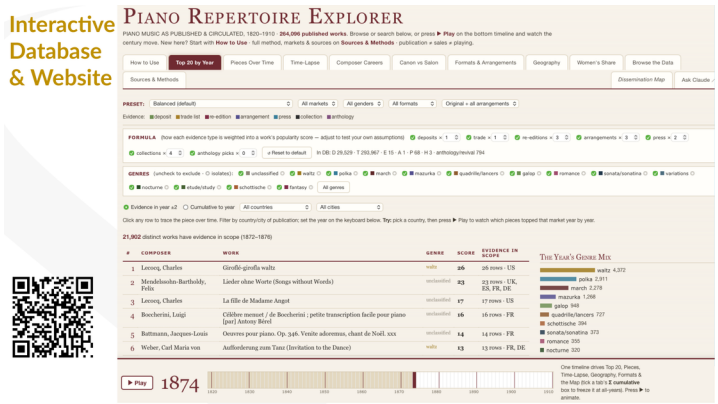
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Hao, Q., Xu, F., Li, Y., & Evans, J. (2026). Artificial intelligence tools expand scientists' impact but contract science's focus. Nature, 649(8099), 1237–1243. [41.3M papers, 1980–2025; machine-learning methods, mostly pre-LLM] https://doi.org/10.1038/s41586-025-09922-y

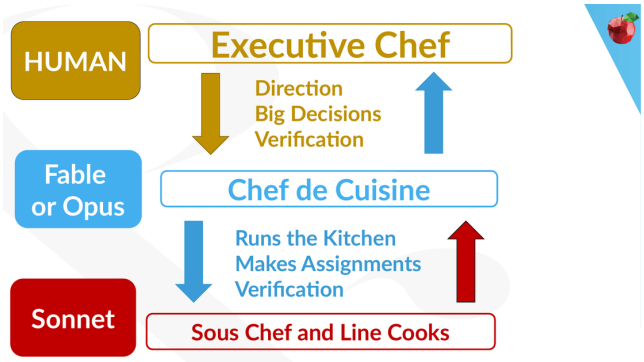
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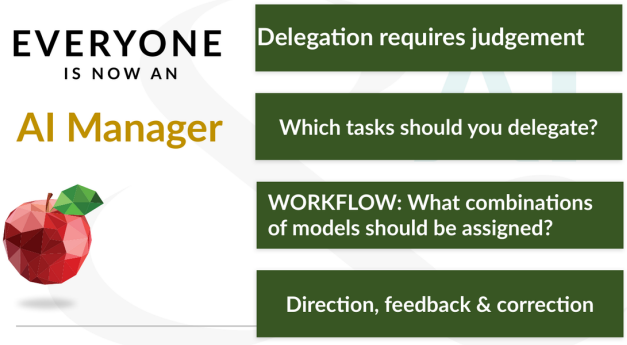
Filimonović, D., Rutzer, C., & Wunsch, C. (2025, October). Can GenAI improve academic performance? Evidence from the social and behavioral sciences. arXiv [working paper; see p. 14]. https://arxiv.org/abs/2510.02408



Piano Repertoire Explorer: over 250,000 published piano works.

- Piano Repertoire Explorer



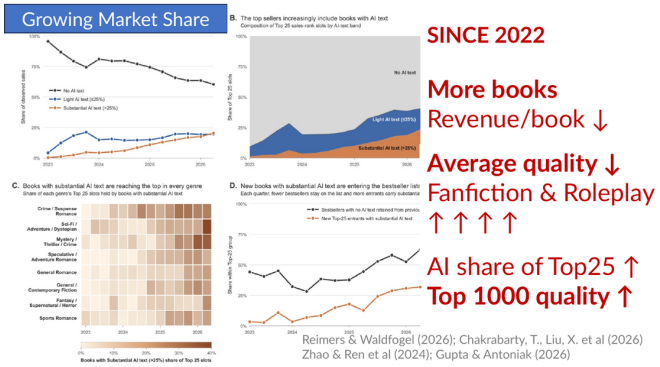




How do we prevent AI slop?

- Books By People





The fanfiction and roleplay line comes from the WildChat corpus: in more than 500,000 consented, English-language ChatGPT conversations, over a third involve generating fiction, especially fanfiction and erotica which generate what the authors call a "solipsistic reader-writer," “who both generates and consumes fiction within a closed conversational loop.”

Reimers, I., & Waldfogel, J. (2026). AI and the quantity and quality of creative products: Have LLMs boosted creation of valuable books? NBER Working Paper 34777. [working paper] https://doi.org/10.3386/w34777

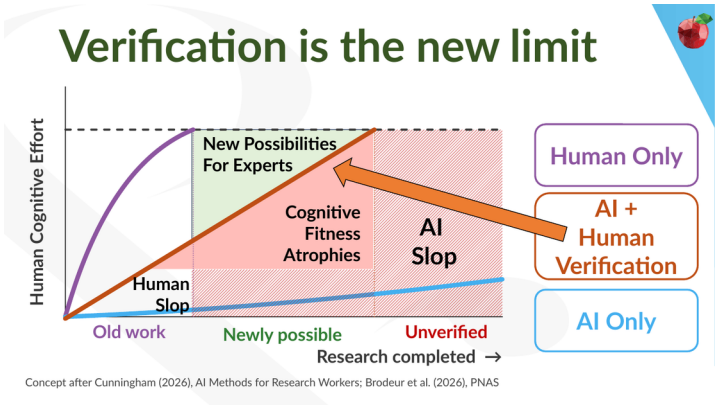
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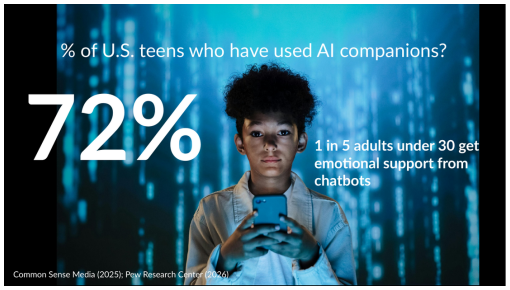
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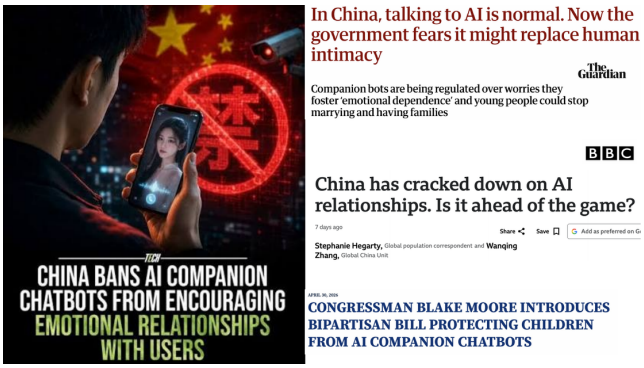
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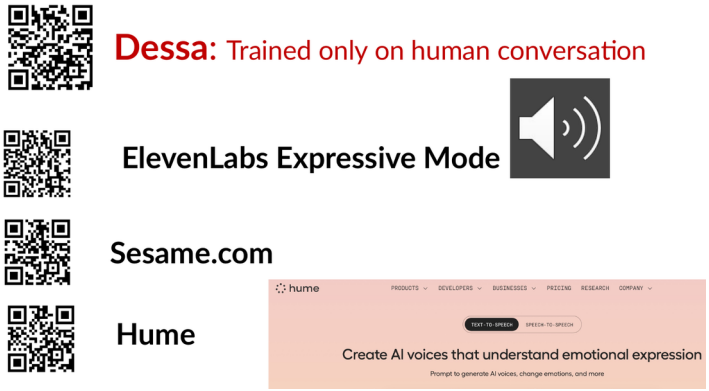




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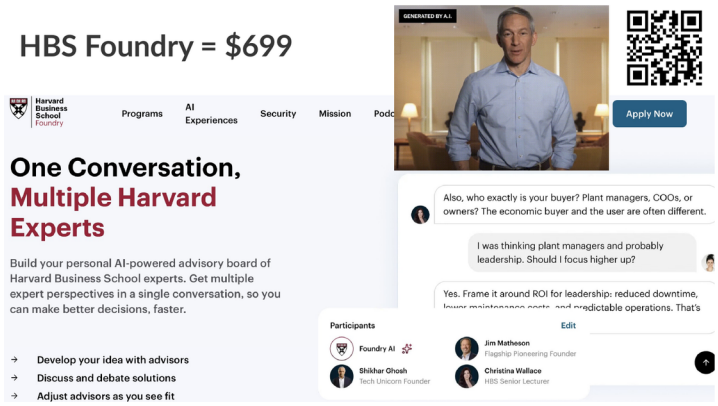




- Dessa (Block): conversation demos



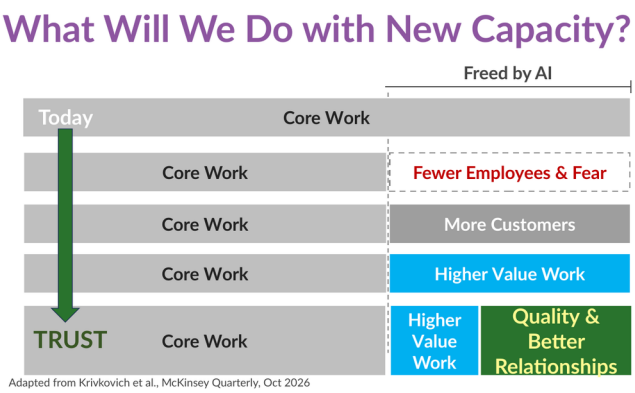
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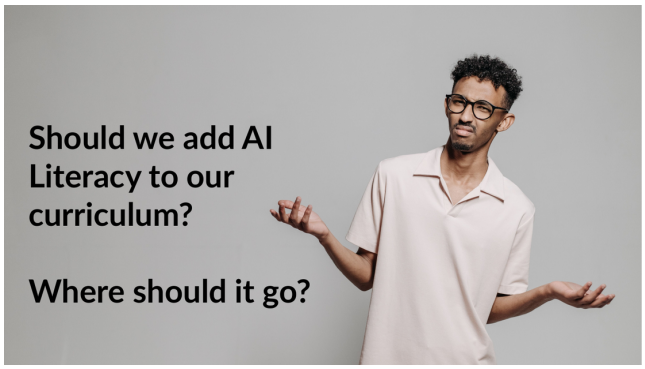
- HBS Foundry

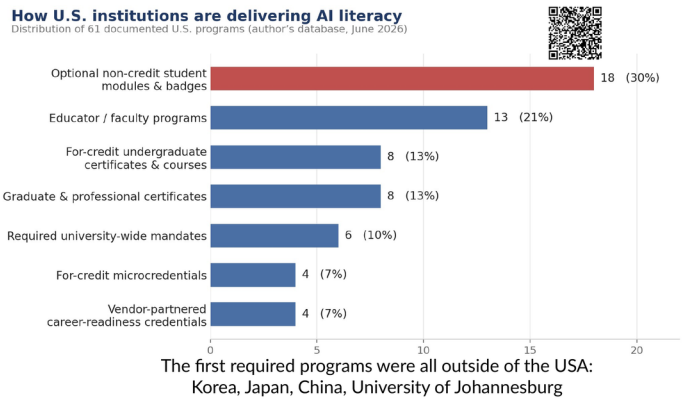
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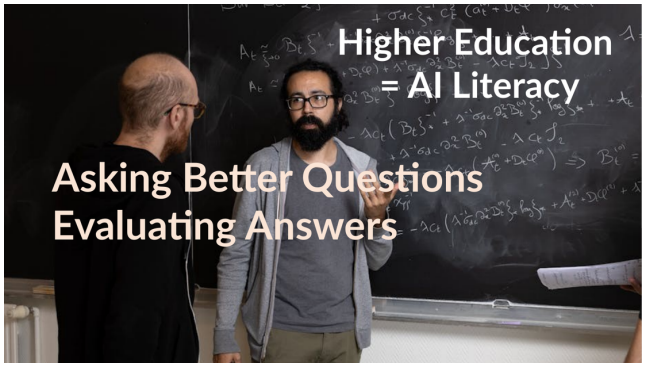
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The first required programs were all outside of the USA: Korea, Japan, China, University of Johannesburg

- AI literacy programs database (Bowen, June 2026)

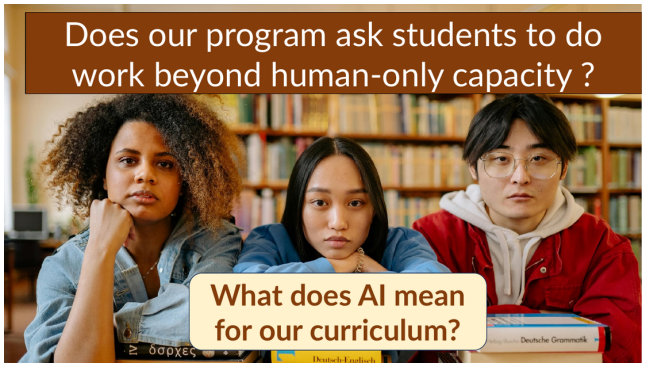


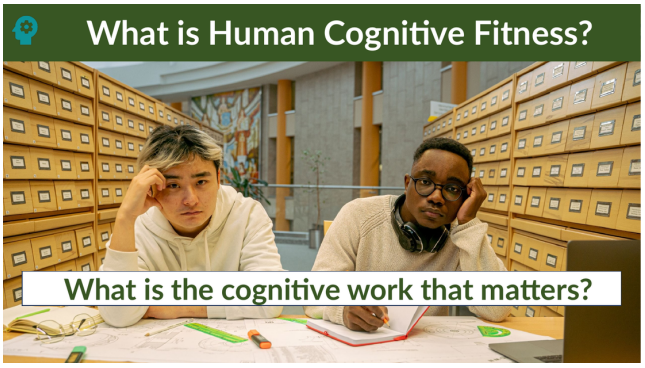
AI Disclosure

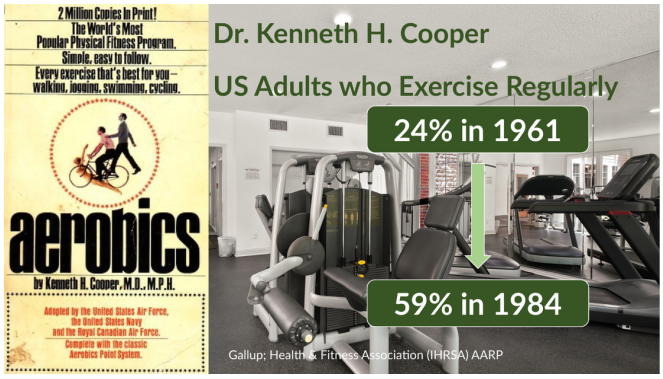
- Where did you use AI?
- What did you do without AI?

AI Literacy

- Where did AI make your work better or worse?
- What AI work did you alter?
- What would you have missed without AI?
- How did you know?







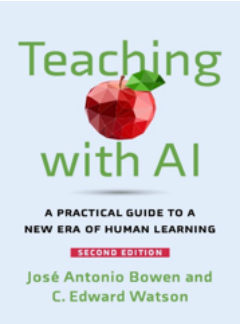
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What new HUMAN question will you bring to your campus? (slide 69)

CITATIONS & RESOURCES

- WeTeachWithAI.com contains many many more resources, prompts, assignments and links. It is updated weekly if not daily.
- Buy the book at 30% off!
- Teaching with AI at Johns Hopkins University Press — code HTAI25 for 30% off
- Teaching with AI on Amazon



- If you don't want to use AI, but want students to want to do things the hard way, then read Teaching Change: How to Develop Independent Thinkers Using Relationships, Resilience and Reflection.
- Teaching Change at Johns Hopkins University Press — code HTWN for 30% off
- Teaching Change on Amazon (often 25% off)

