

MASTER CLASS

USC ROSSIER SCHOOL OF EDUCATION

MASTER CLASS 1

**Teaching Without Humans:
How AI Could Hijack Education**

TUESDAY, FEBRUARY 6

4:00 PM - 5:00 PM | University Club – Scriptorium Room



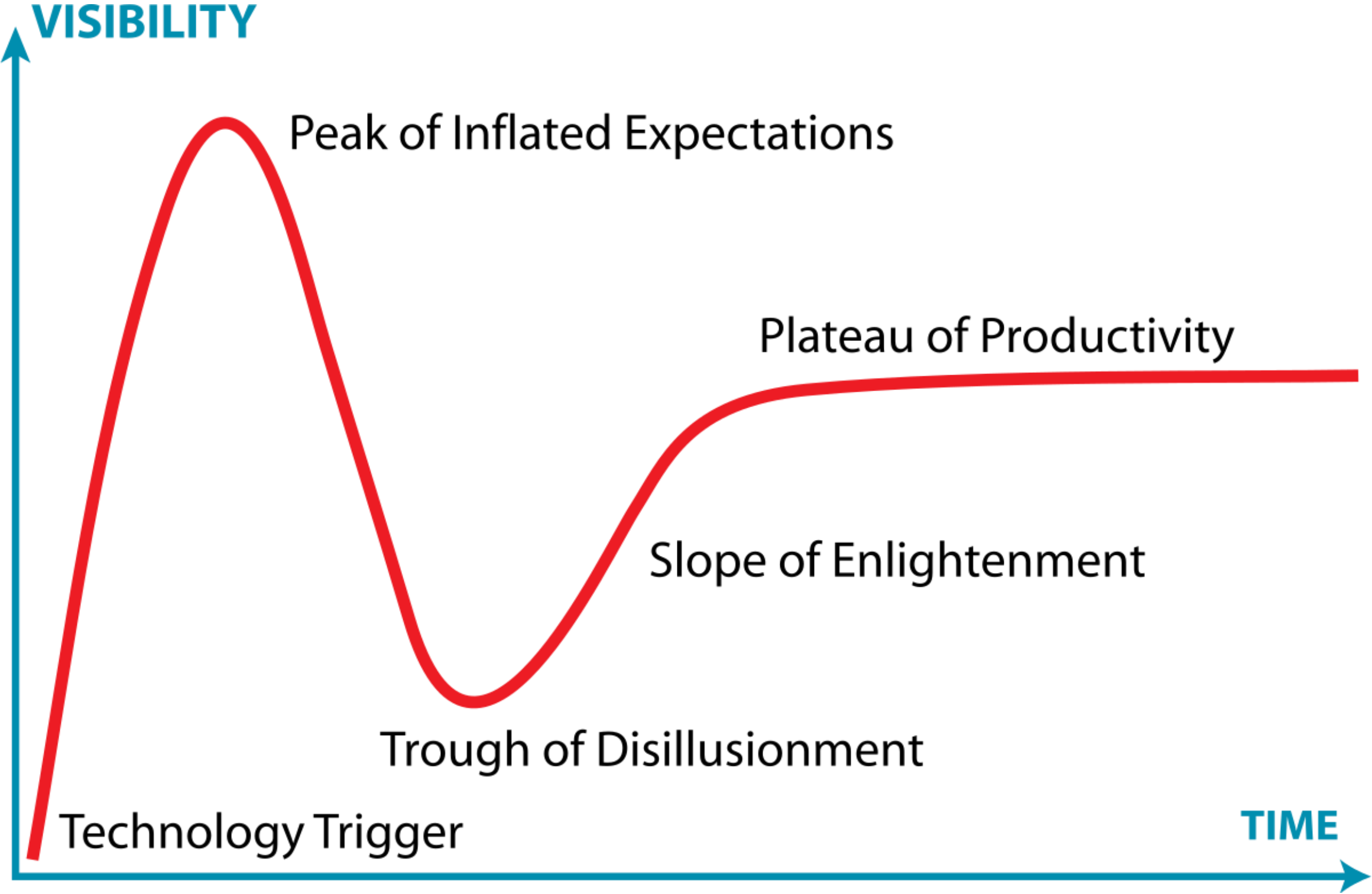
Stephen J. Aguilar

Assistant Professor of Education and
Associate Director, USC Center for
Generative AI and Society

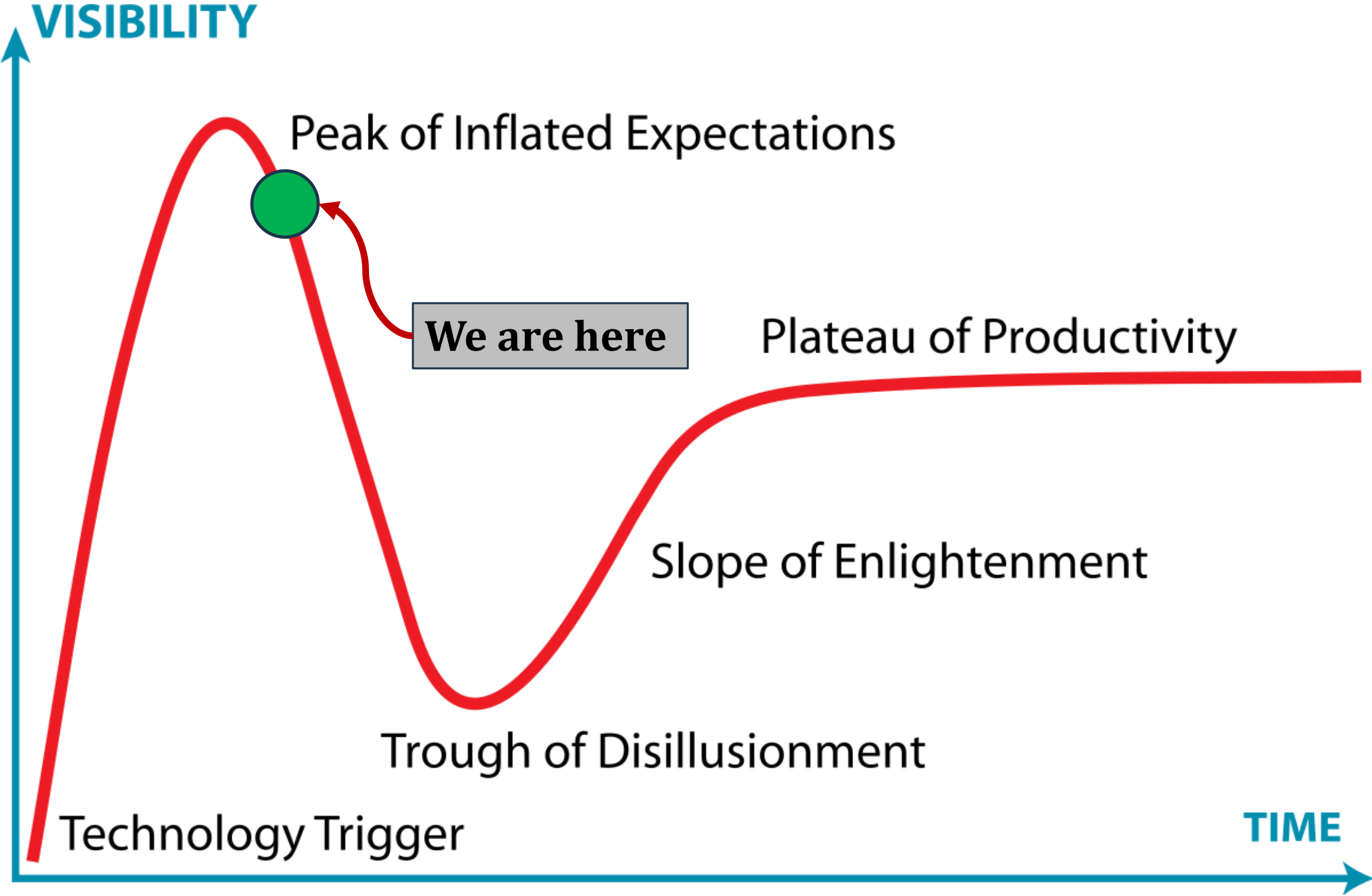


Let's Level Set

Gartner Hype Cycle of Emerging Technologies



Gartner Hype Cycle of Emerging Technologies



Can AI “Hijack” Education?

How AI Could Hijack Education

“AI”

What is AI?

Hijack

What are the implications of “hijacking” education?



What *is* artificial intelligence?

Types of artificial intelligence



Narrow AI (Weak AI)



General AI (Strong AI)



Super Intelligent AI

Narrow AI (Weak AI)

- Performs **narrow** tasks
- Operates in **limited** contexts
- When you think of AI **out in the world**, this is often what you're thinking about.



Apple Face ID



Open AI's ChatGPT

Narrow AI (Weak AI)

Narrow AI **currently exists**
and is being **used every day.**



Apple Face ID



Open AI's ChatGPT

General AI (Strong AI)



General AI (Strong AI)



General AI (Strong AI)

- **General AI can:**
 - Understand
 - Learn
 - Apply knowledge in different contexts

When you think of an “AI pal” who has human-like agency, you are probably thinking about **general AI**.



General AI (Strong AI)

Does not currently exist



Super Intelligent AI



Super Intelligent AI

- Goes **beyond** human intelligence.
- Can perform any task **better** than humans.
- Has cognitive abilities including:
 - Creativity
 - General wisdom
 - Problem-solving



Super Intelligent AI

Does not currently exist



Today's Talk: Narrow AI (e.g., generative AI)



Open AI's ChatGPT
(Text/chatbot)



Midjourney
(images)



Microsoft 365
Copilot

Generative AI is the new “tech trigger”

The New York Times sues OpenAI and Microsoft for using its stories to train chatbots



FILE - A sign for The New York Times hangs above the entrance to its building, seeking to end the practice of using published material to train chatbots. (AP)

FTC Launches Inquiry into Generative AI Investments and Partnerships

Agency Issues 6(b) Orders to Alphabet, Inc., Amazon.com, Inc., Anthropic PBC, Microsoft Corp., and OpenAI, Inc.

January 25, 2024 | [f](#) [t](#) [in](#)

Tags: [Competition](#) | [R&D](#) | [Technology](#) | [Artificial Intelligence](#) | [Office of Technology](#)

The Federal Trade Commission announced today that it issued orders to five companies requiring them to provide information regarding recent investments and partnerships involving generative AI companies and major cloud service providers.

The agency's 6(b) inquiry will scrutinize corporate partnerships and investments with AI providers to build a better internal understanding of these relationships and their impact on the competitive landscape. The compulsory orders were sent to Alphabet, Inc., Amazon.com, Inc., Anthropic PBC, Microsoft Corp., and OpenAI, Inc.

"History shows that new technologies can create new markets and healthy competition. As companies race to develop and monetize AI, we must guard against tactics that foreclose this opportunity," said FTC Chair Lina M. Khan. "Our study will shed light on whether investments and partnerships pursued by dominant companies risk distorting innovation and undermining fair

Related resources

[AI Investments 6\(b\) Order and Resolution](#)

[AI Investments 6\(b\) Cover Letter](#)

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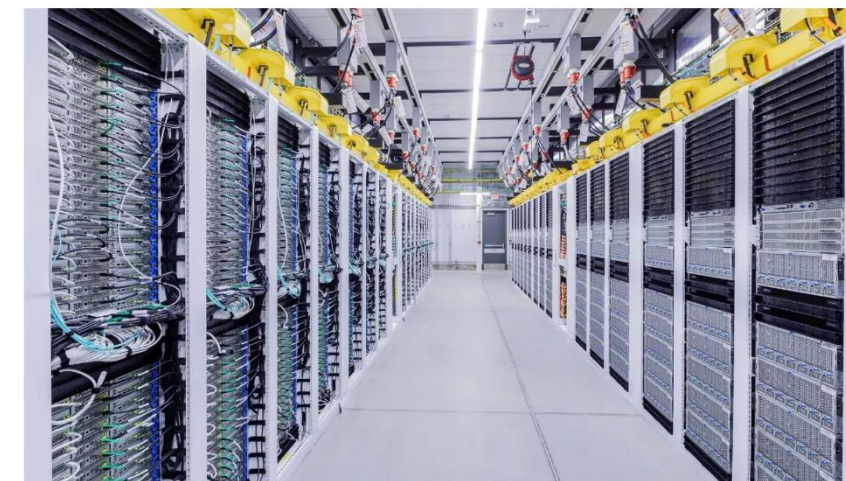
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OPINION

Opinion: Chat GPT and Me – Artificial Intelligence Can Change Education for Good

by Ella Navarro December 11, 2023

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Servers in a Microsoft Bing data center power AI systems. Courtesy of Microsoft

Robots are taking over the world. Not in the way that most think. Not in a science fiction,


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“AI”

What is AI?

Hijack

What are the implications of “hijacking” education?

What can AI Hijack?

Defining “Hijack”

hijack verb

hi·jack (ˈhī-jak )

hijacked; hijacking; hijacks

- **To steal or commandeer**
 - “Hijacking” a vehicle
- **To take control of (as if by hijacking)**
 - “hijacking” an online account
 - To change the topic or focus of something; “hijacking a conversation”

Defining “Hijack”

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Education

vs.

Discourse



Is AI hijacking our education system?



Is AI hijacking our discourse about education?

Let's take a step back

Historical view of “tech triggers”

Educational Technologies



Writing



Music



Books



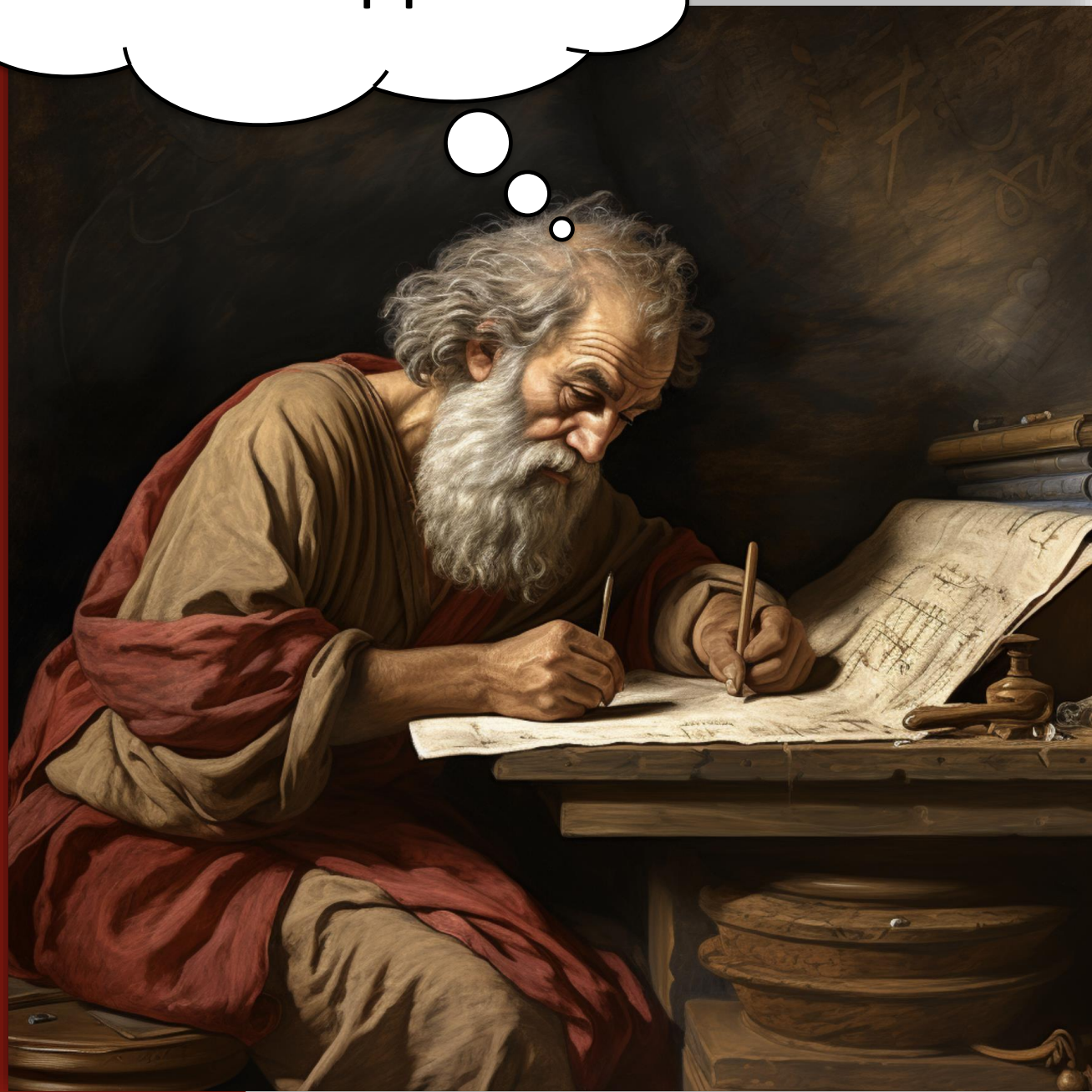
Television

Writing



Socrates: writing is terrible

I honestly don't
see the appeal



“...it will introduce **forgetfulness**”

“[those who write] will **not practice using their memory...**”

“[writing] will enable them to hear many things without being properly taught, and they will imagine that they have come to know much while **for the most part they will know nothing.**”

Books



Conrad Gessner: So many books!



Active during the 1500s

“Father of bibliography”

Wrote *Bibliotheca universalis*, a collection of roughly 3,000 authors/books

Conrad Gessner: Too many books!

The books, they overwhelm me.



We have reason to fear that the multitude of books which grows every day in a prodigious fashion will make the following centuries fall into a state as barbarous as that of the centuries that followed the fall of the Roman Empire. Unless we try to prevent this danger by separating those books which we must throw out or leave in oblivion from those which one should save and within the latter between what is useful and what is not.²

Music



The dreaded gramophone

I listen better
with my eyes



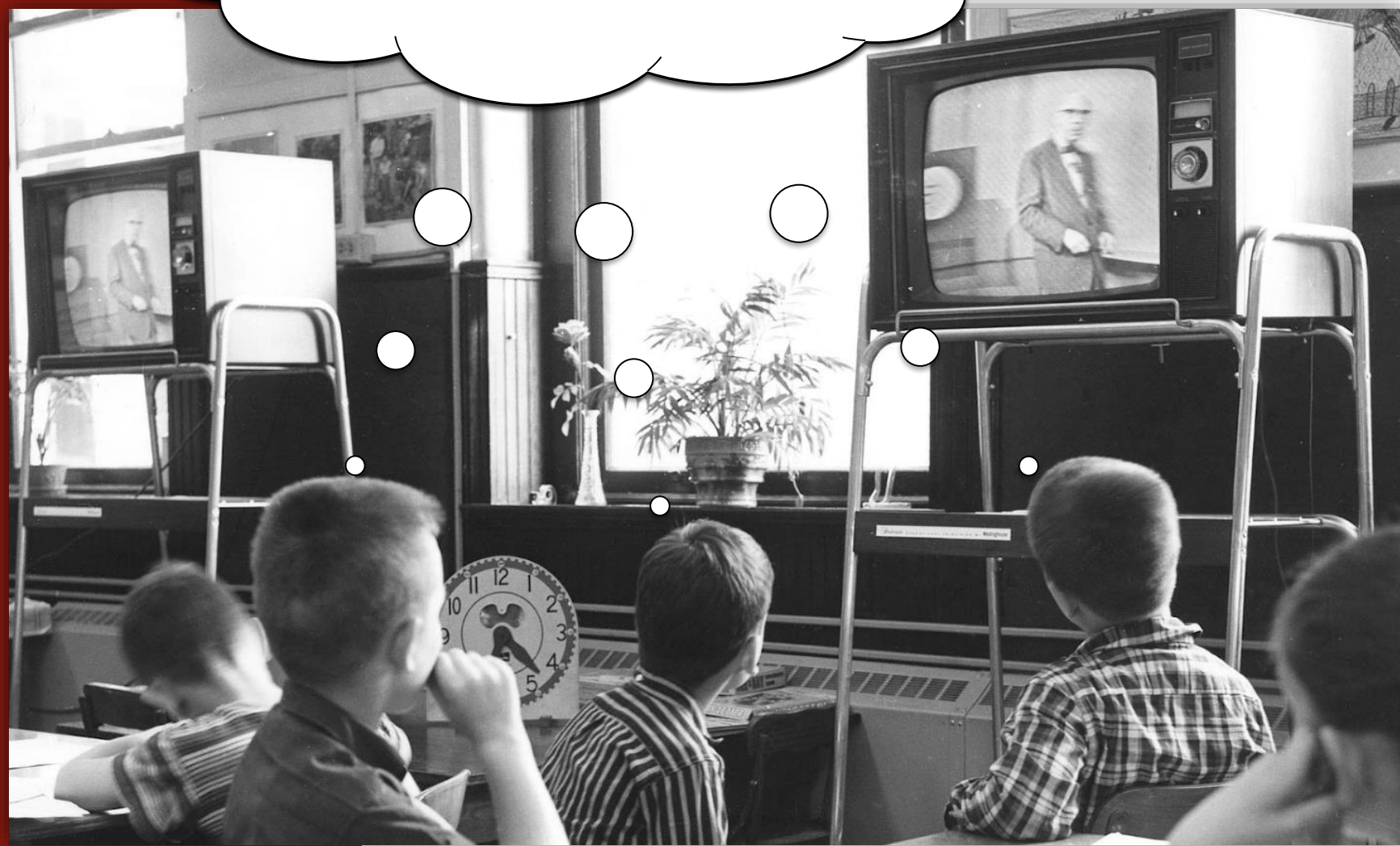
Children “developed the habit of **dividing attention** between the humdrum preparation of their school assignments and the **compelling excitement of the loudspeaker.**”

Television



Television: The next greatest teacher (1958)?

This sure beats reading books!



Must the TV Technicians Take Over the Colleges?

By ERNEST EARNEST
Temple University

There is a note of panic in much of the discussion about mounting college enrollments. One might think that the prospect of twice the present college population ten years hence might seem good news to educators who have long deplored the cultural limitations of the American people. Instead, the almost unrelieved gloom of the prophets can only be matched by the prophecies of disaster at the time of the first G. I. Bill following World War II. Then, as now, the educational journals and the public prints were filled with discussions of the shortage of instructors, of the lack of facilities, and the baleful effects of overcrowding.

In this atmosphere of alarm, all sorts of panaceas are being suggested by administrators and foundations. Americans tend to assume that any problem can be solved by a new pill, serum, or ingenious gadget. Thus, closed circuit television for the classroom has been seized upon as the most hopeful solution for the expected shortage of teachers. The Fund for the Advancement of Education has financed experiments with TV at several universities. At least 80 colleges are trying it out.

The danger of educational TV is twofold. On the one hand, it may lead education into unexpected and undesirable channels; on the other, this seemingly easy solution of the teacher shortage may prevent a genuine re-examination of our system of higher education.

Three Take-aways

- 1. New technologies evoke feelings of excitement, fear, and invite predictions.**
- 2. When technologies become ubiquitous, they become mundane.**
- 3. Yet, when they become mundane, by definition, they grow more useful.**



How can we parse new technology?

Heidegger's Ontology



Ready-to-hand vs. present-at-hand



Ready-to-hand

“I know how to use this and can use it without thinking.”



Present-at-hand

“I can't use this because it's broken, or I don't know what it is.”

Ready-to-hand: Tools as extensions of self



Present-at-hand: Tools as salient and noticeable



What is this thing???

Present-at-hand: Tools as salient and noticeable



Ready-to-hand

One I know! This is an apple butter paddle. We used one like this with a giant copper kettle to make apple butter out of applesauce over a fire outside. One person has to be constantly stirring the kettle with this to keep it from burning to the bottom as it cooks down.

Norman's Perceived Affordances

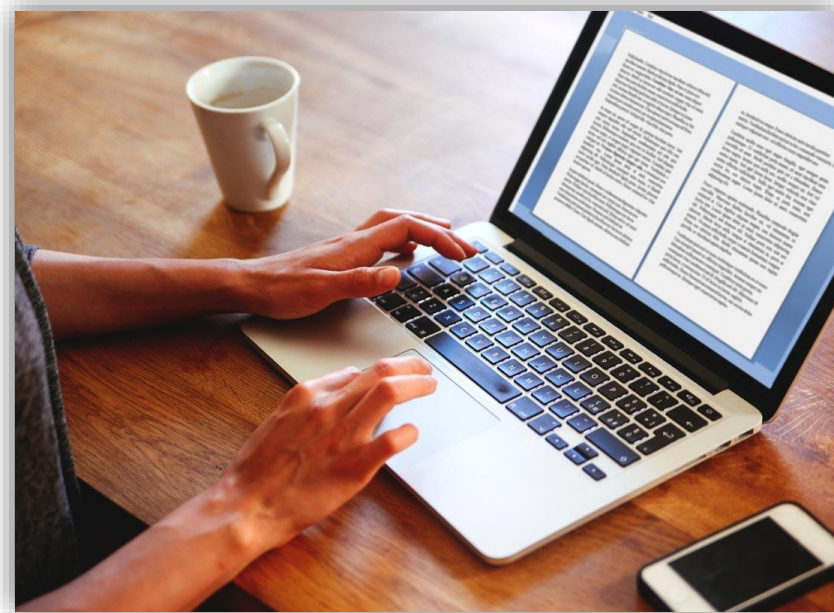


Norman's Perceived Affordances



Norman's Perceived Affordances

Digital technologies are similar, but have **complex perceived affordances** that are often *nested*



Let's return to older educational technologies



Writing



Music



Books



Television

We exaggerate their importance

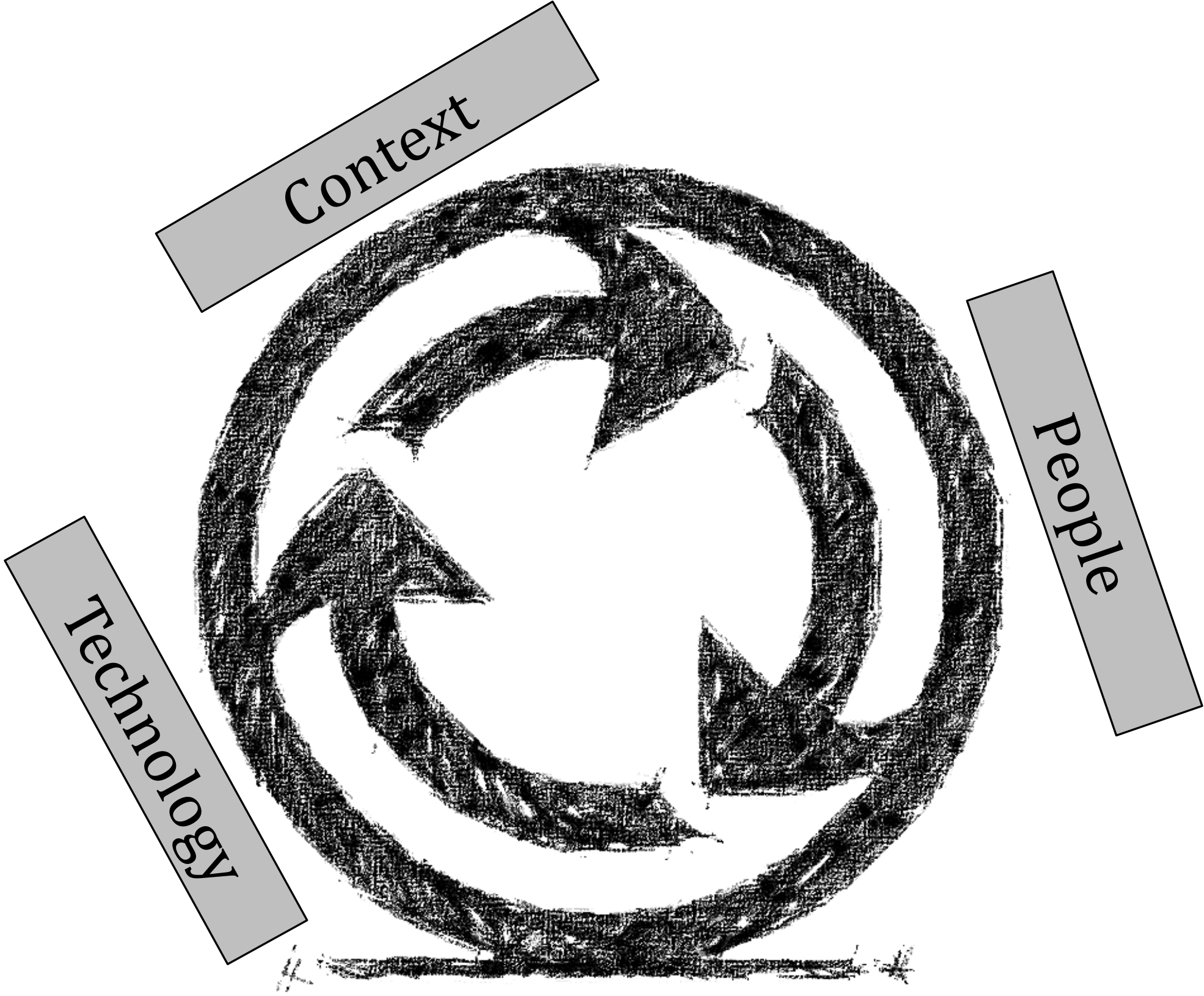
I guess I'm *not* clairvoyant.



On average, we are *not good* at predicting how good—or bad—specific technologies will be for learning.

This is because we often ignore the *sociotechnical system* where educational technologies operate.

The “Sociotechnical” System



Context

People

Technology

The “Sociotechnical” System

Technology

Context

People

The “Sociotechnical” System

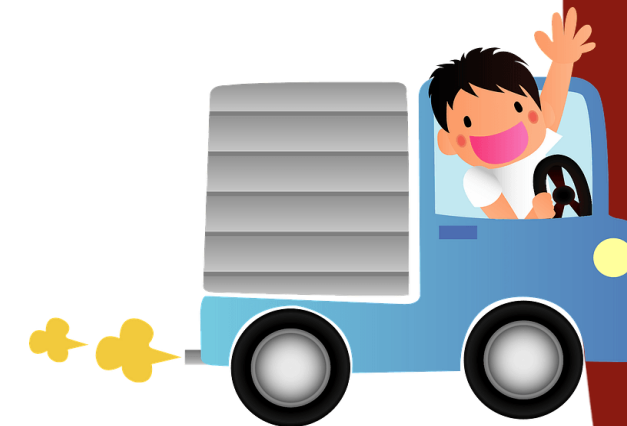
Technology



Context



People



The “Sociotechnical” System

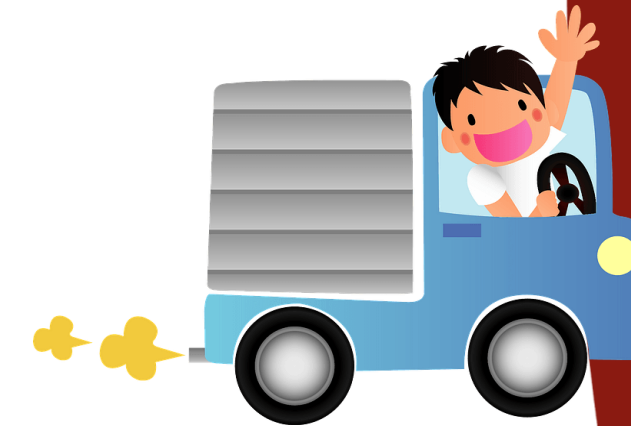
Technology



Context



People



COVID + Remote Learning in Los Angeles

Research Questions:

1. Is there a statistically significant relationship between reported participation in **live instruction** and reported **student engagement**?
2. What are **the barriers to distance learning** faced by low-income K–12 students?

Live Instruction Predicts Engagement in K–12 Remote Learning

Stephen J. Aguilar¹, Hernan Galperin¹, Clare Baek¹, and Eduardo Gonzalez¹

How does live instruction relate to student engagement in distance learning? Does the relationship differ across grade levels? This study addresses these questions by examining data from a random sample of families from a large urban school district in southern California. We find a strong correlation between live instruction and student engagement in online learning among elementary school students, with every additional hour of live instruction per week increasing the probability of reporting that students have completed all their schoolwork by 26%. The correlation is also significant though smaller in magnitude for middle and high school students.

Keywords: at-risk students; computers and learning; COVID-19; descriptive analysis; digital divide; distance learning; educational policy; educational technology; equity; live instruction; regression analyses; survey research; technology

Live instruction during the COVID-19 pandemic has required students, parents, and schools to work with educational technologies they may be unfamiliar with. Low-income families in particular have been shown to be more concerned with their children falling behind and have provided more instructional support to their children when compared with middle- and upper-income households (Horowitz & Igielnik, 2020). Work focused on online learning has shown that learning outcomes can be improved with synchronous activities that enhance students' perception of connectedness with teachers and peers (Shin, 2003). When resources for remote learning are inadequate; however, students tend to fare worse due to less feedback from teachers and loss of motivation from limited contact with peers (Galusha, 1997). Moreover, a meta-analysis by Alfieri et al. (2011) shows that unassisted "discovery learning" does not benefit students. Rather, enhanced or guided discovery learning, which includes teacher feedback, worked examples, and scaffolding were shown to be more effective, all of which require live instruction.

We investigated the barriers to distance learning faced by low-income K–12 students, and whether there is a relationship between reported participation in live instruction and reported student engagement. The data comes from a random survey of K–12 families from a large urban school district in southern California conducted shortly after the end of the 2019–2020

Educational Researcher, Vol. XX No. X, pp. 1–4
DOI: 10.3102/0013189X211056884
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When school comes home: How low-income families are adapting to distance learning

A report from the USC Rossier School of Education and the
USC Annenberg School for Communication and Journalism

October 2020

USCRossier
School of Education

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School for Communication
and Journalism

COVID + Remote Learning in Los Angeles

Live instruction predicted more assignment completion.

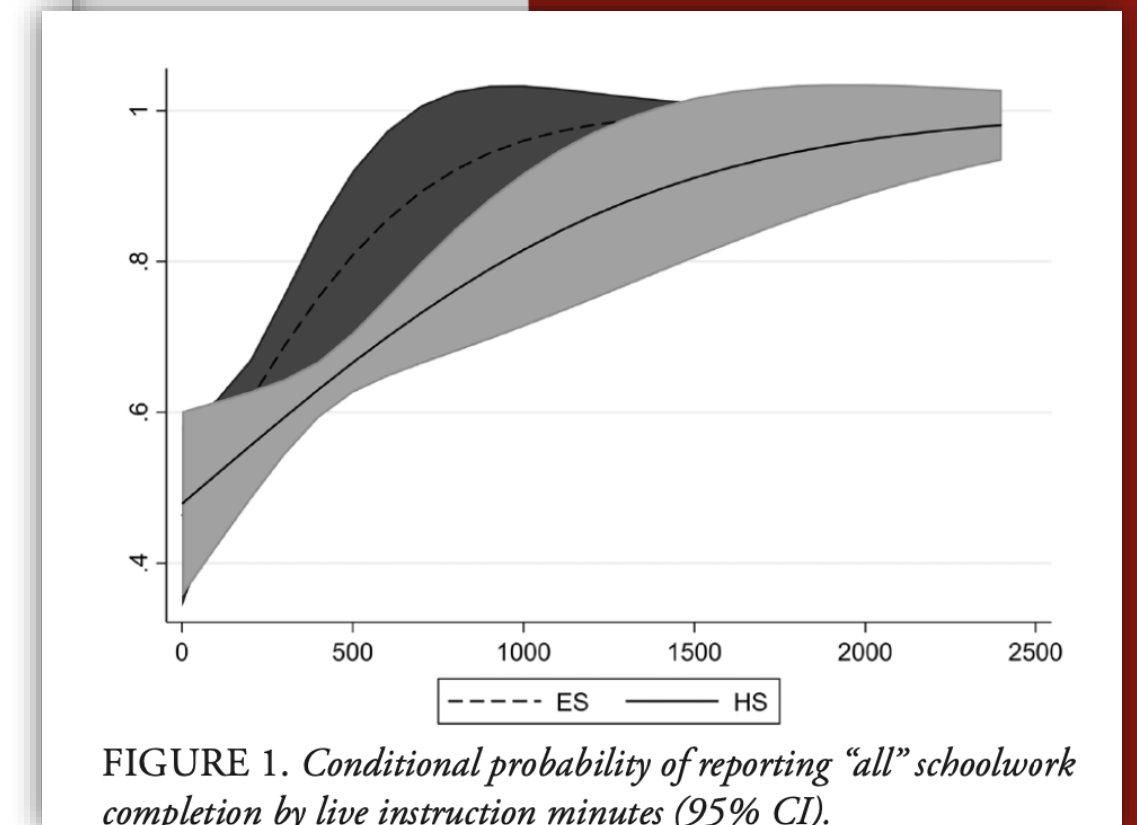
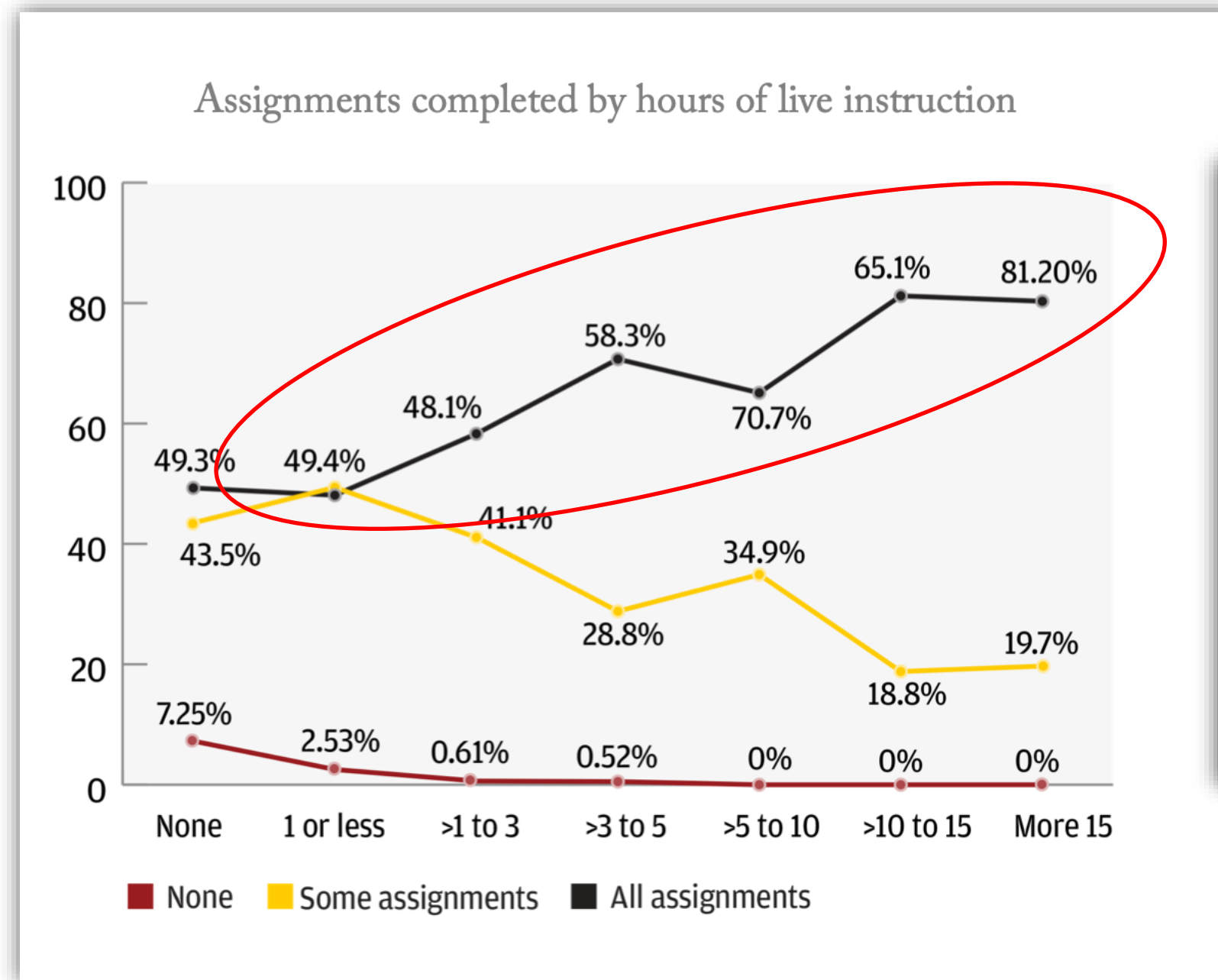


FIGURE 1. Conditional probability of reporting "all" schoolwork completion by live instruction minutes (95% CI).

Every **additional live-instruction hour** predicted a **20% increase** in the likelihood of **all assignments** completed

The “Sociotechnical” System

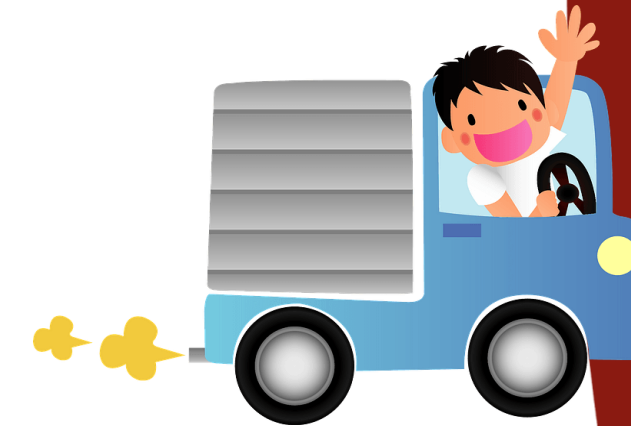
Technology



Context



People



Education

vs.

Discourse



Is AI hijacking our education system?



Is AI hijacking our discourse about education?



Is AI hijacking our
education system?



Is AI hijacking our education system?

GET KHANMIGO



Khan Labs

Khan Academy

KHANMIGO IN THE CLASSROOM

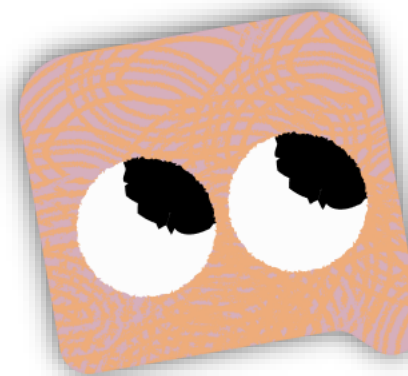


Khan Academy Districts 3:14

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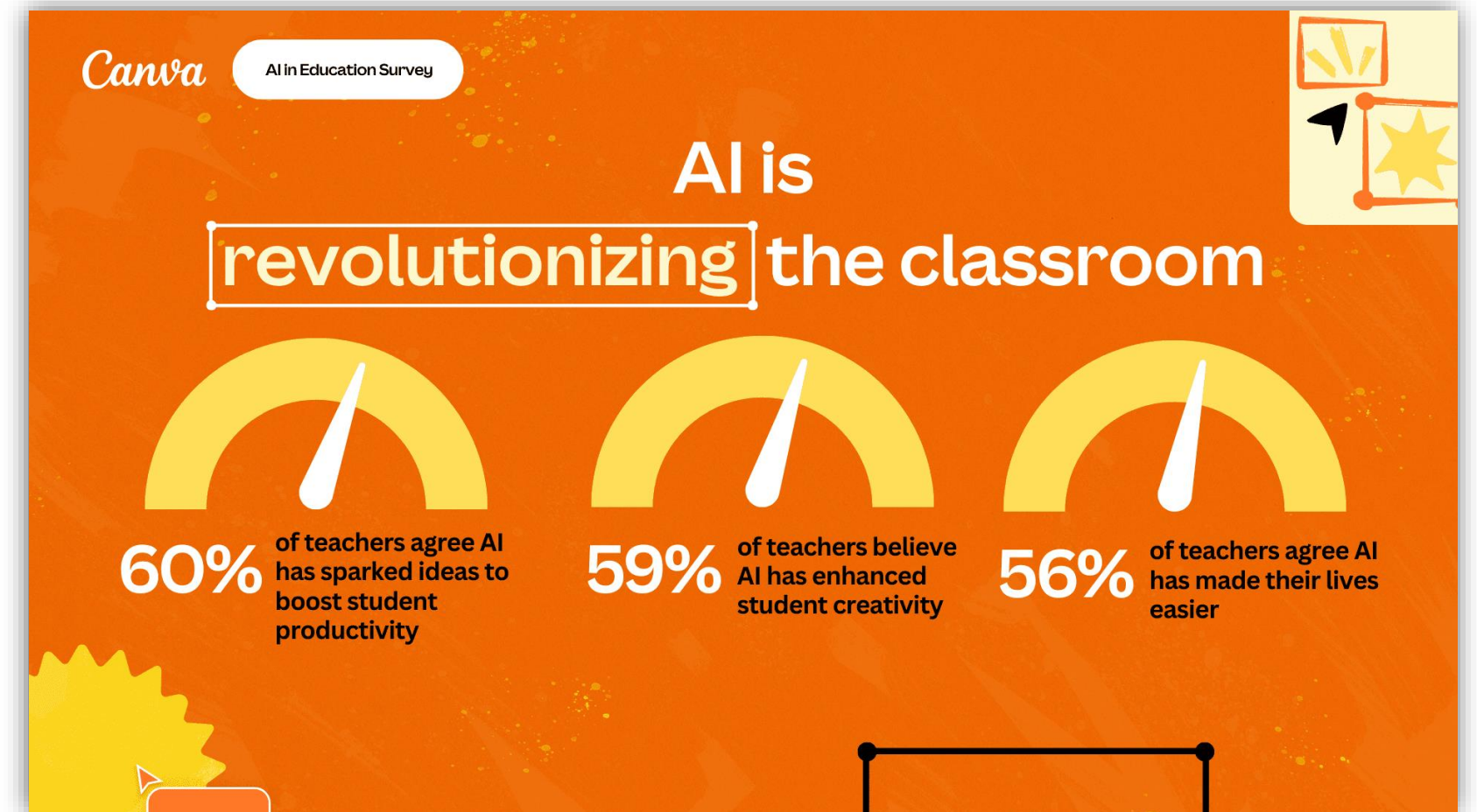
How can you help me learn?



I'm Khanmigo, your friendly AI Tutor! I'm here to guide you through your learning.



Is AI hijacking our education system?



No.



Is AI hijacking our
education system?

- **AI is simply a new (powerful) tool.**
 - AI tools are *being used*. This is not the same as AI “taking over” or threatening education.
 - We are still sorting out AI’s true *affordances*.
 - AI’s best use case is still *unclear*.



Is AI hijacking our
discourse about education?

OPINION

Opinion: I'm co-teaching my college class with ChatGPT. Will it upstage me?



A photo of text from the ChatGPT page of the OpenAI website. (Richard Drew / Associated Press)

BY ELIZABETH BLAKEY
AUG. 21, 2023 3:15 AM PT



Comedian Steve Martin once said that teaching is like show business. I try to keep this in mind when I'm giving college lectures.

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Is AI hijacking our discourse about education?

OPINION

Opinion
upstage

TEACHING & CLASSROOM CURRICULUM AND INSTRUCTION DETROIT PUBLIC SCHOOLS COMMUNITY DISTRICT

Student use of artificial intelligence software stirs discussion in Michigan school districts

By Ethan Bakuli, Chalkbeat | April 27, 2023, 3:48pm PDT

f X in REPUBLISH



More school districts are weighing the pros and cons of students using artificial intelligence software tools like ChatGPT. | (Jakub Porzycki / NurPhoto via Getty Images)

The Detroit Public Schools Community District is updating its technology use policies to address concerns about the impact of artificial intelligence tools on student learning.

An early draft of the revised language says that the use of artificial intelligence and natural language processing software tools “without the express permission/consent of a teacher is considered to undermine the learning and problem-solving skills that are essential to a student’s academic success and that the staff is tasked to develop in each student.”



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OPINION

Opinion
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TEACHING & CLASSROOM CURRICULUM AND INSTRUCTION DETROIT PUBLIC SCHOOLS COMMUNITY DISTRICT

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K-12 EDUCATION

North Carolina Guidelines 'Rethink Plagiarism' After ChatGPT

In a 34-page guide to generative AI in schools, the North Carolina Department of Public Instruction advised that using AI should not automatically be considered cheating, as students will need to learn how to use it.

January 17, 2024 • Brian Gordon, The Charlotte Observer



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New Guilford County School to Use Robots, Coding in Lessons



Is AI hijacking our discourse about education?

Banning ChatGPT won't stop cheating

If classes continue to fail to provide the value students hope to derive from college, it won't matter if AI is banned or not. Students will always find a way to cheat.

Aaron Price
Class of 2024

By Aaron Price
January 18, 2024 | 9:00pm PST



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Ah, the first day of class. You brush your hair, show up on time and pick your seat for the rest of the semester (or, at least, for the days you end up attending). The professor goes through the usual spiel of accessing the course website, the grading scheme and a little about them. As they share the syllabus and read the Duke Community Standard, you notice something new — the class

Trending

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OPINION | STUDENT VOICES COLUMNS

The best and worst dining options on West Campus (a ranking)

New Guilford County School to Use Robots, Coding in Lessons



Is AI hijacking our discourse about education?

Yes.

- We are near the top of the hype cycle
 - AI is *simply another tool*.
 - AI will eventually be *integrated* into our current educational system.
 - Once it is, *we won't notice it*.
 - As all other tools, things will get *better* for some and *worse* for others, while many will see *few changes*.

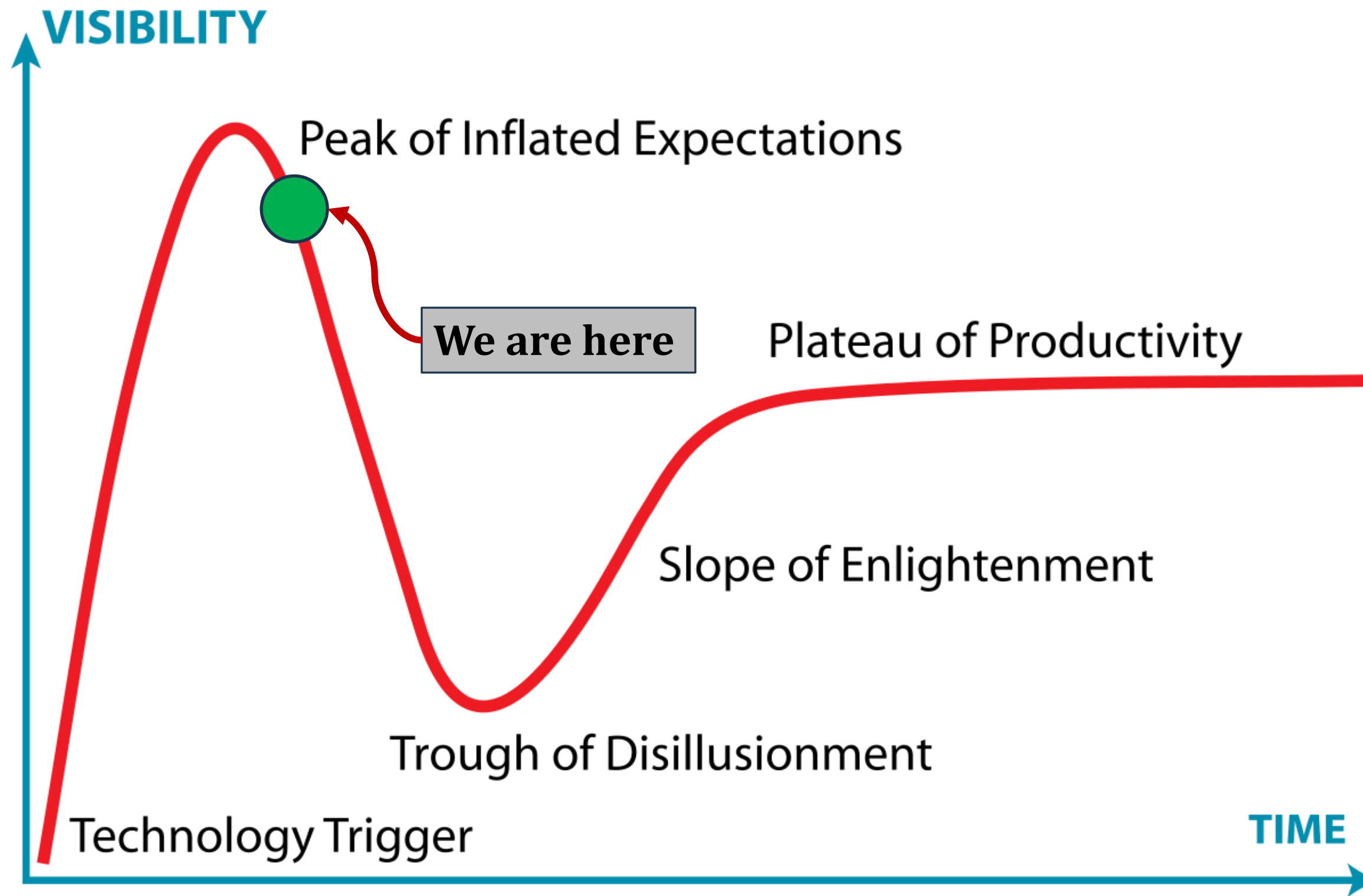


Is AI hijacking our
discourse about education?



Let's reframe—and ask questions

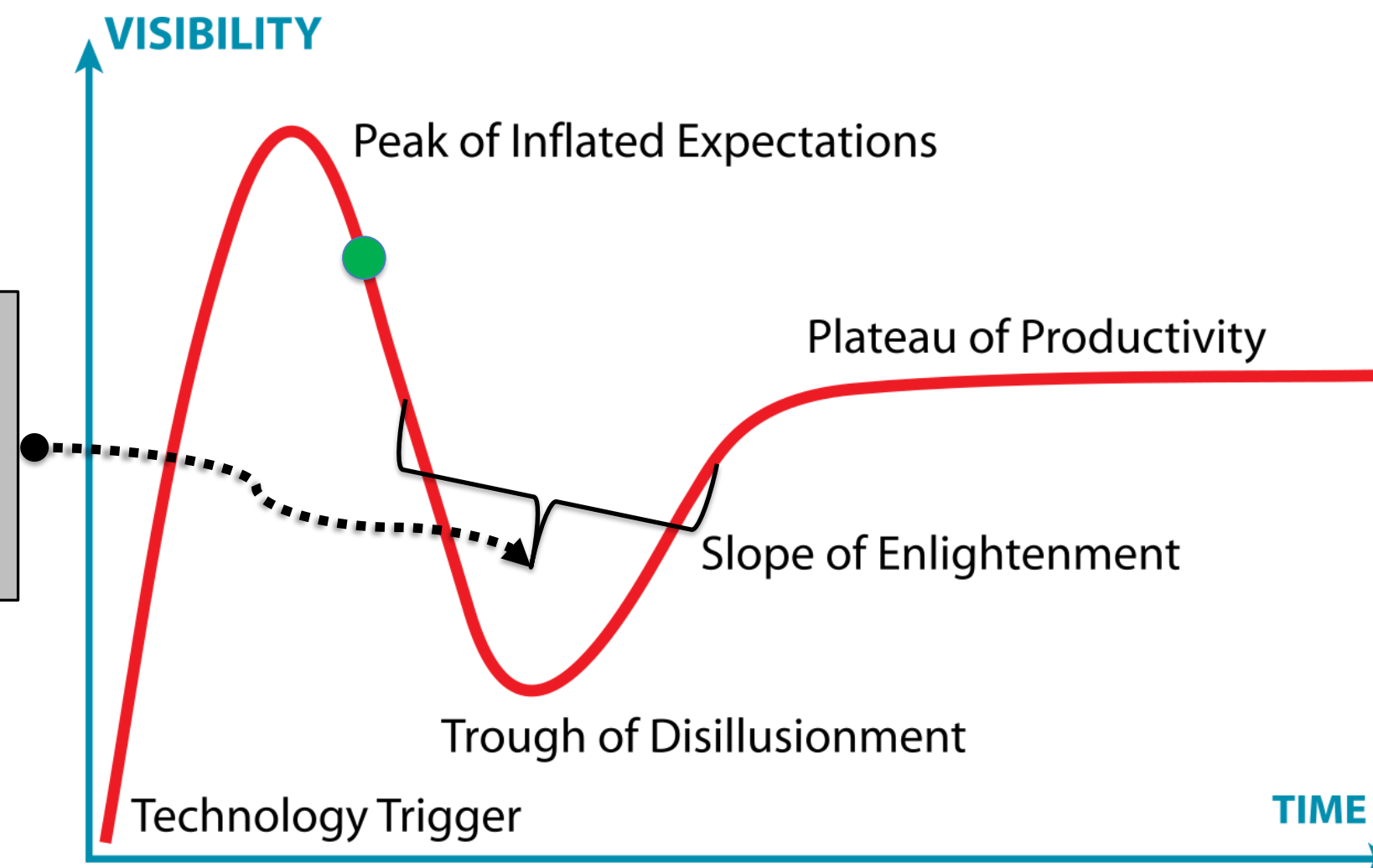
Recall our hype cycle...



Tempered Optimism

“I’m excited about the possibilities new technology offers, but I know that things can and will go wrong. Unexpected things will happen until *real use-cases* are established and *proven*.”

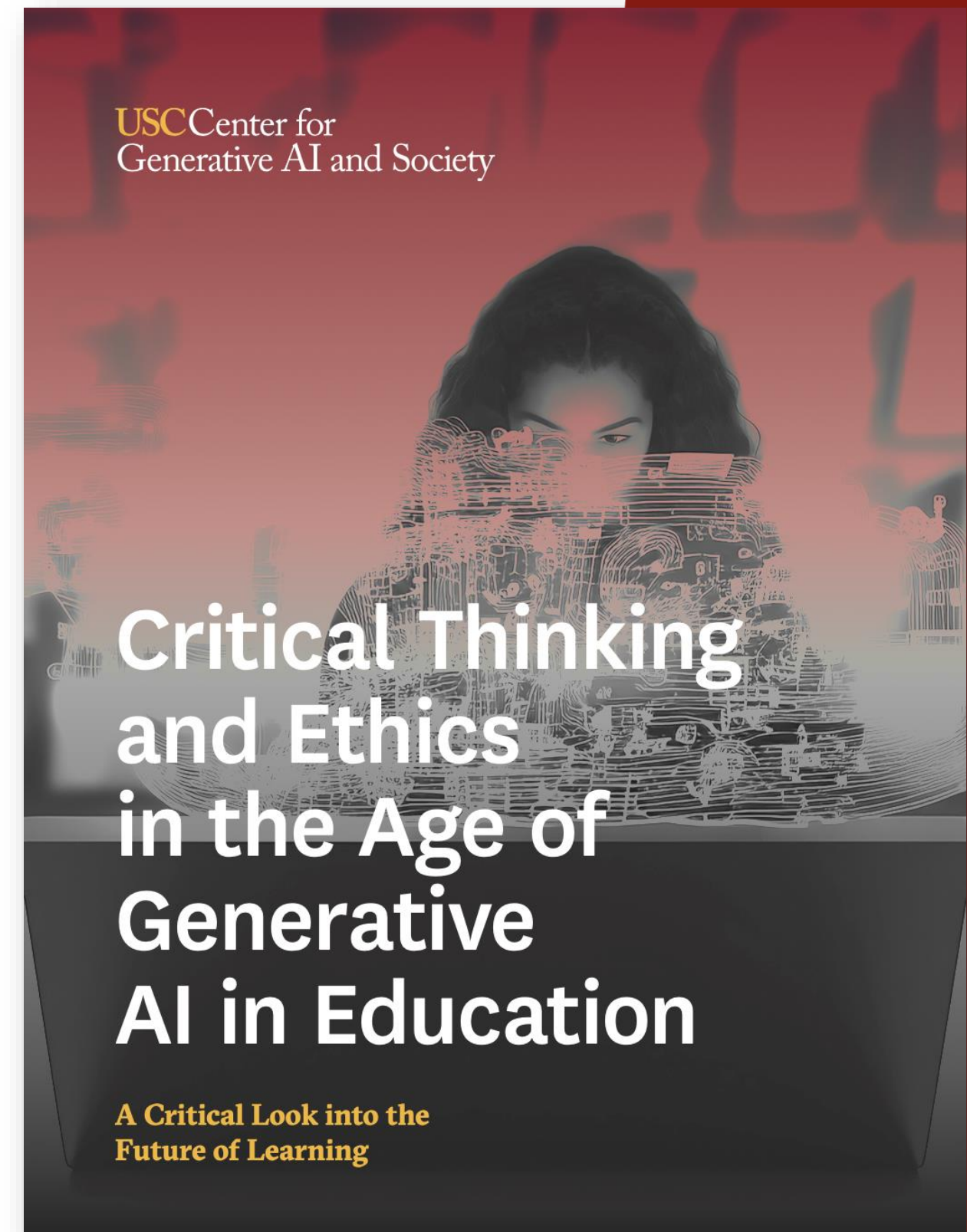
The tempered optimist seeks to close this gap quickly to **detect** and **maximize** the *actual* potential of new (edtech) tools.



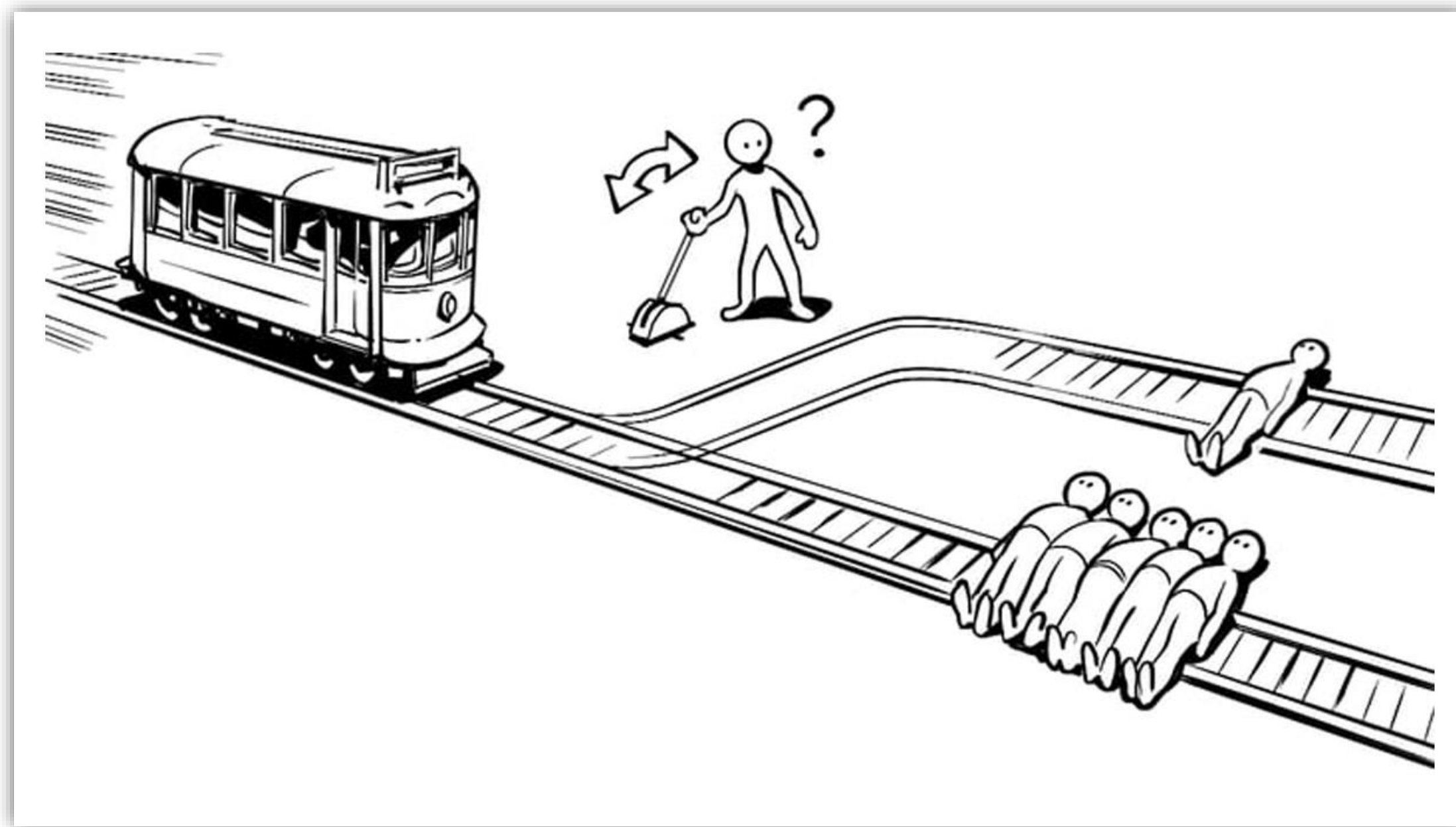
Why Ethics and Co-Design Matter

How we frame our *goals* for AI matters.

- *Ethics*: elevating our core assumptions.
- *Co-designing* new tools *with* not *for*.



The Trolley problem



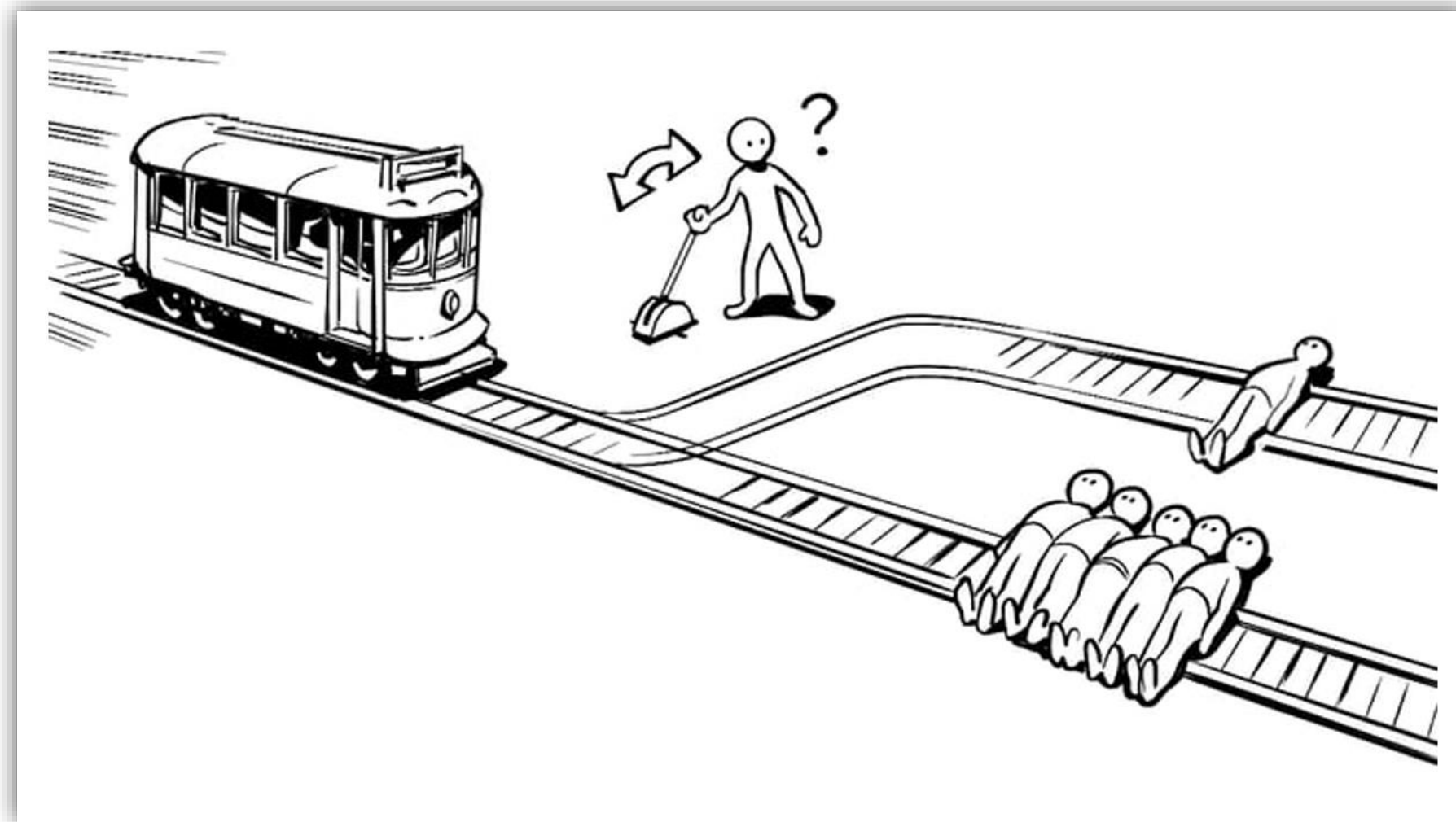
The Trolley problem

Deontology

Ethical/moral actions driven by **following rules/duties**

Consequentialism

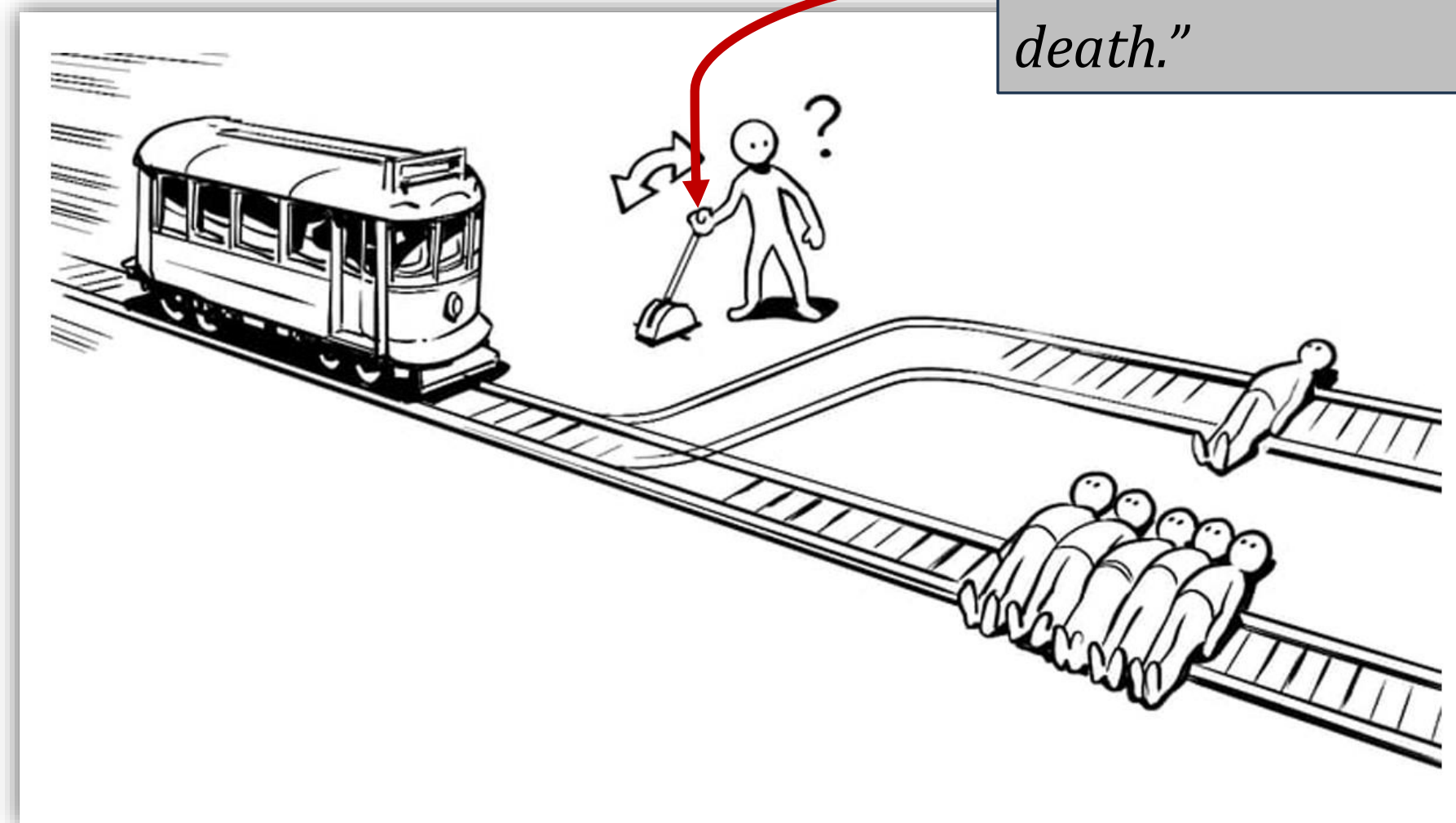
Ethical/moral actions driven by **consequences of actions**



The Trolley problem

Deontology

Ethical/moral actions driven
by **following rules/duties**



No action.
"I will not cause a death."

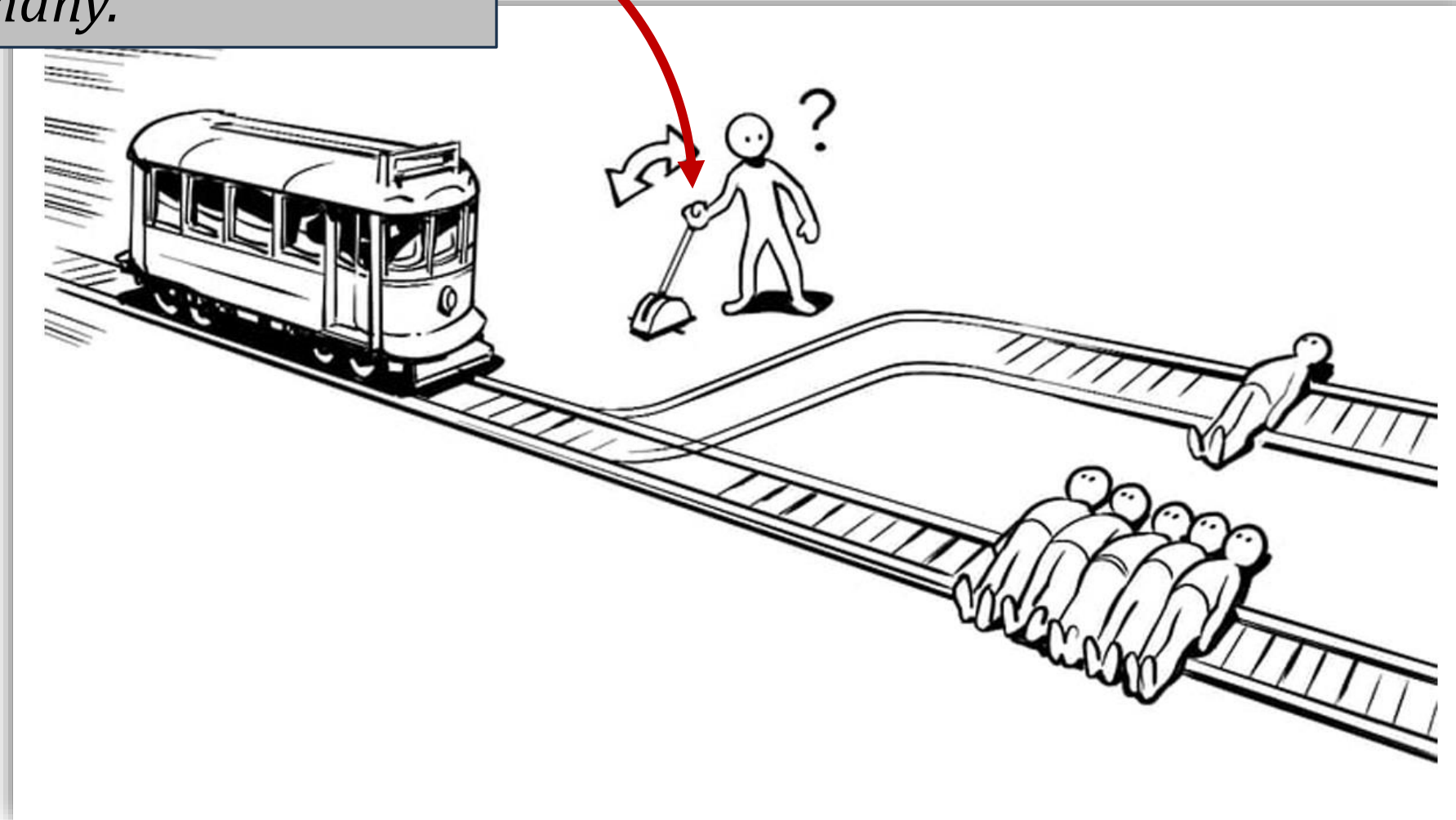
The Trolley problem

Consequentialism

Ethical/moral actions driven by **consequences of actions**

Pull lever.

"I will sacrifice one to save many."



Ethics + AI

Deontology

Ethical/moral actions driven by **following rules/duties**

Generative AI should be designed and deployed in ways that **respect human autonomy**. This can involve clear opt-in/opt-out features, **transparency** about how the AI is making decisions, and options for human review or override of AI decisions.

Consequentialism

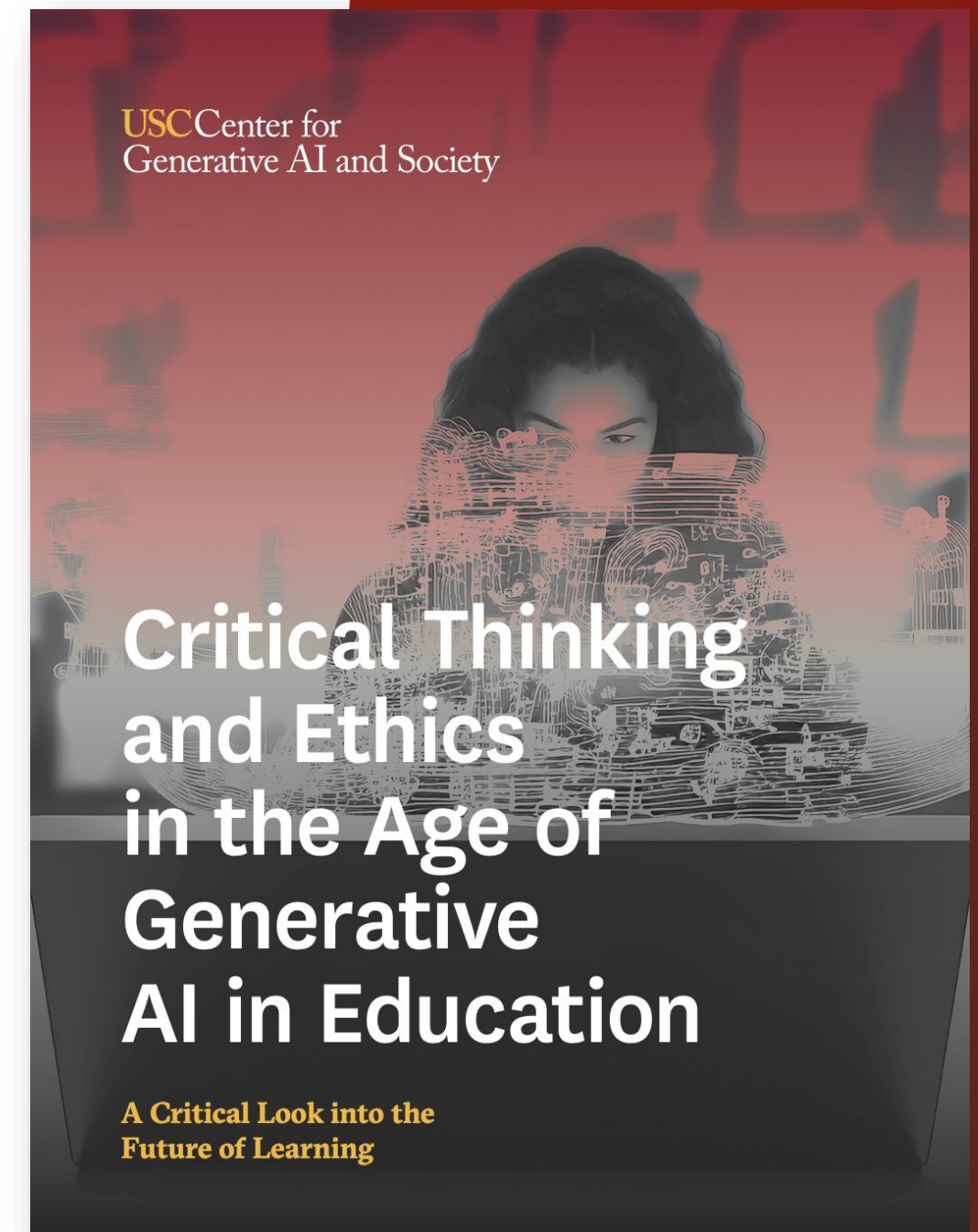
Ethical/moral actions driven by **consequences of actions**

Generative AI can increase productivity by **automating routine tasks**, answering questions, offering suggestions, and more.

This can lead to **improved efficiency** in various sectors such as business, healthcare, education, and others.

Ethics + AI

- Surveyed (n=248) K12 teachers
 - Ethics
 - Comfort with AI technologies
- Women exhibited a notably higher score in rating several deontological ethical propositions, such as ***Respect for Autonomy*** and ***Privacy as a Right***, relative to men.
- **Self-Efficacy and Anxiety** were statistically significant across both consequentialist and deontological perspectives, indicating a broader theme regarding the psychological relationship individuals have with technology.



AI is a (new) tool.

Let's use and build it
together.

THANK YOU FOR COMING!



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MASTER CLASS 2

*“Shouldn’t we call that ‘life’?”
Creativity in the Age of AI*

Josh Kun

USC Vice Provost for the Arts,
USC Annenberg Professor and Chair
in Cross-Cultural Communication

Tuesday, February 20, 2024 | 4:00 PM

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