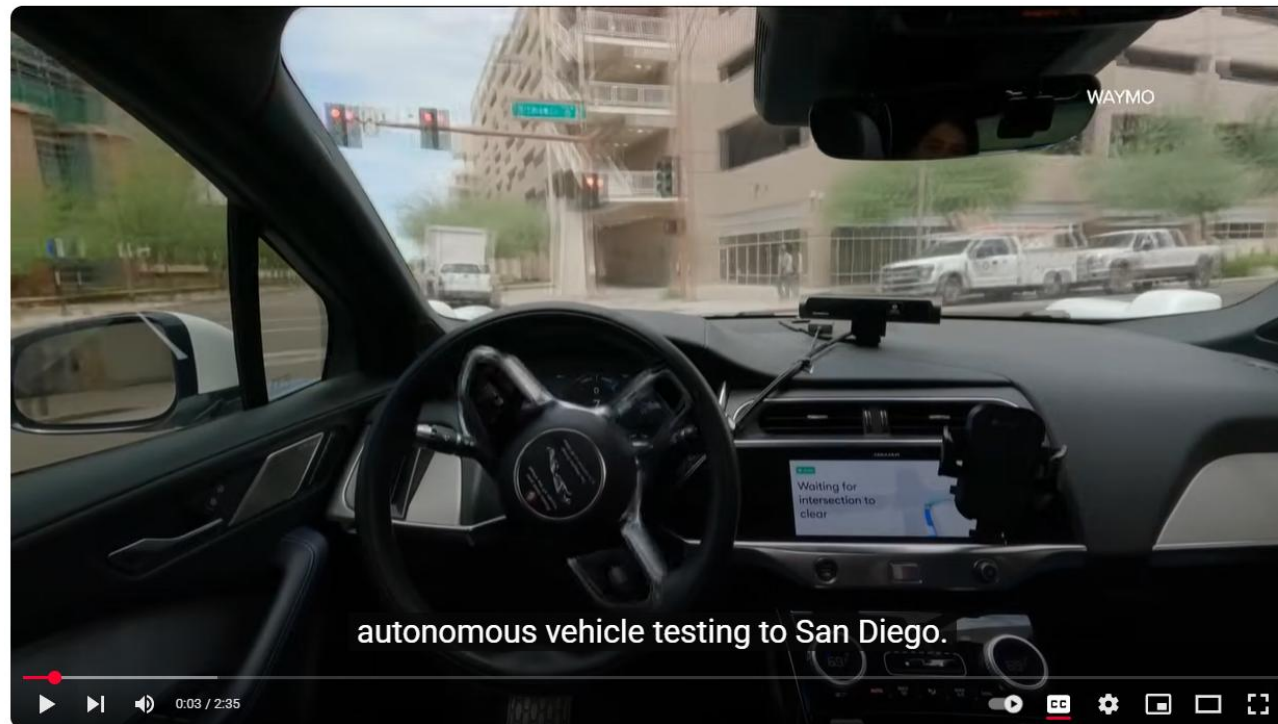


AI's Not Coming—It's Here: Time to Rethink Teacher Education

By Marina Milner-Bolotin with the help of ChatGPT
EDCP Retreat, May 2025

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autonomous vehicle testing to San Diego.

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We Encounter AI Daily

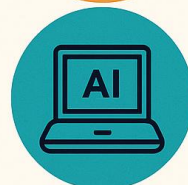


WHERE WE ENCOUNTER AI



HOME

- smart home devices
- streaming services
- virtual assistants



SCHOOL

- learning platforms
- tutoring tools
- adaptive learning



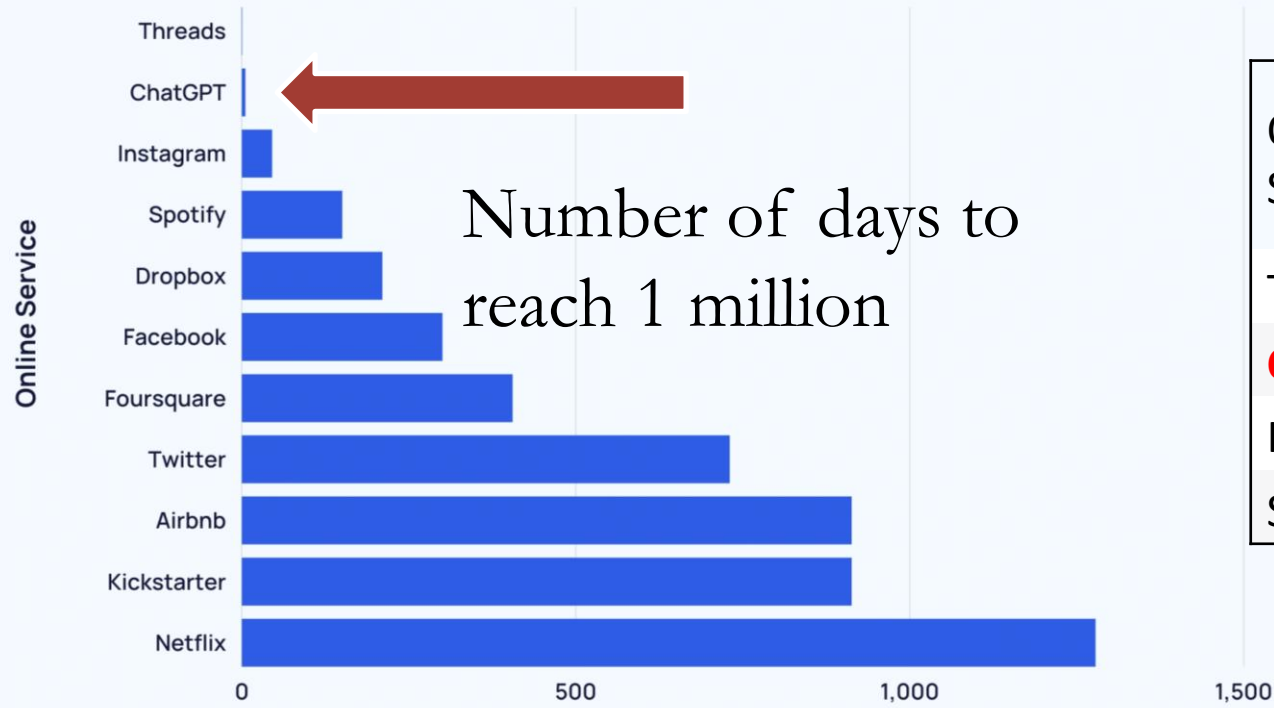
CAR

- ride-hailing apps
- navigation systems
- self-driving tech



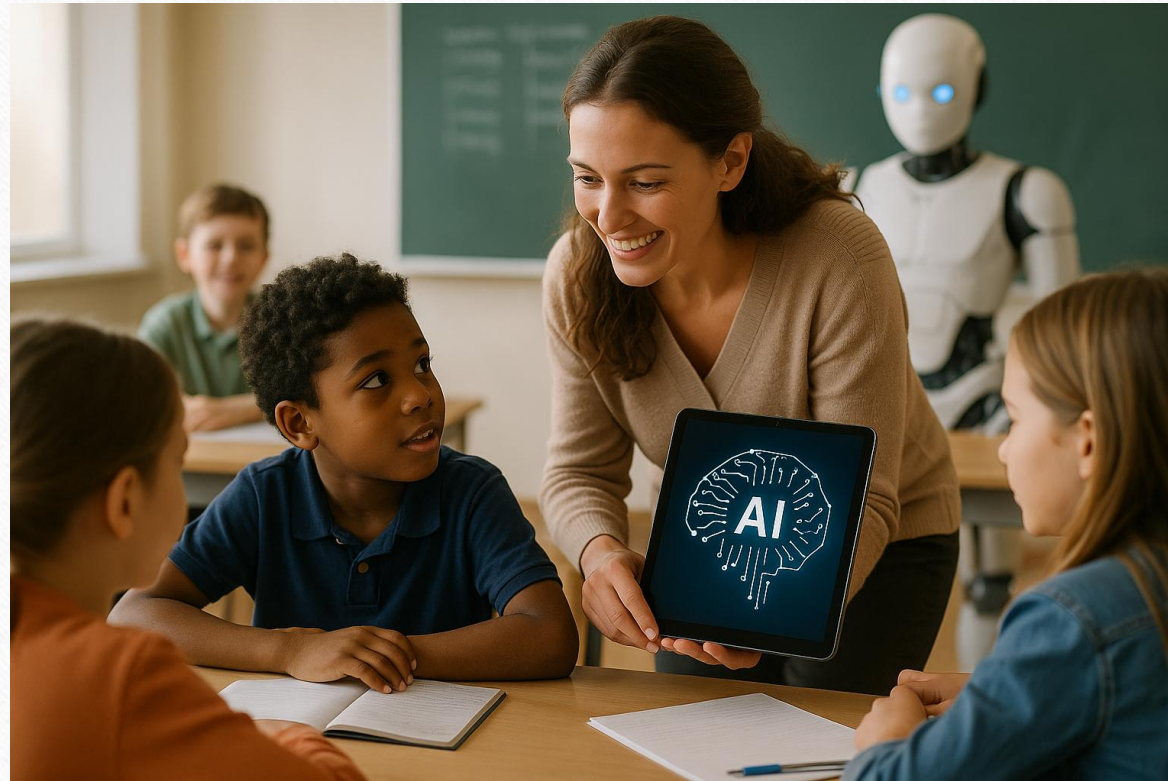
ChatGPT

Time to Reach 1,000,000 Users



Online Service	Launch Year	Time Taken to Reach 1 Million Users
Threads	2023	1 hour
ChatGPT	2022	5 days
Instagram***	2010	2.5 months
Spotify	2008	5 months

Part 1: What is AI and Why it Matters to You?



What is Artificial Intelligence (AI)?

AI: computer systems designed to **perform tasks that normally require human intelligence**—such as understanding language, recognizing patterns, solving problems, or making decisions.

From Turing to Modern AI



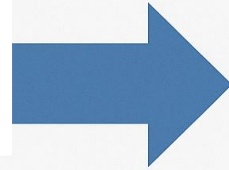
Alan Turing (1912-1954)



Turing Test



Universal
Machine



ChatGPT



Image
Generator



Benedict Cumberbatch

"Can machines think?"

Techniques to Achieve AI

Technique	Description	Applications
Machine Learning (ML)	Training models on data to learn and make decisions	Pattern recognition, predictions
Neural Networks	Algorithms inspired by the human brain	Image and speech recognition
Natural Language Processing (NLP)	Understanding and generating human language	Chatbots, translation
Computer Vision	Interpreting visual data from the world	Object detection, facial recognition
Expert Systems	Rule-based systems emulating human expertise	Medical diagnosis, finance

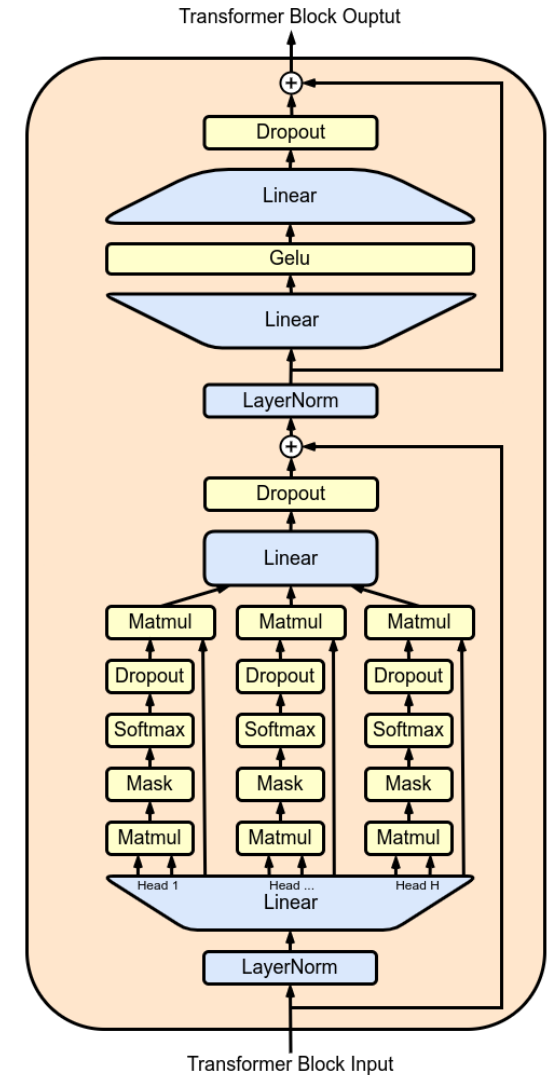
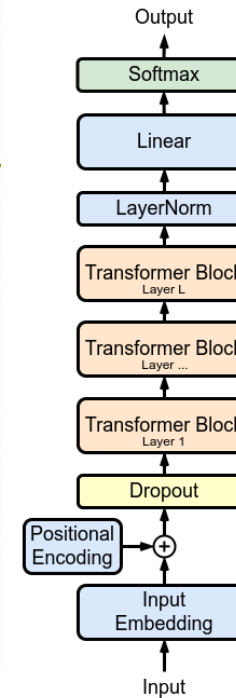
Three Types of AI

REACTIVE	PREDICTIVE	GENERATIVE
Responds to specific input	Analyzes data to predict future events or behaviours	Generates new content or outputs based on massive amounts of data
Doesn't learn from the past or future	Searches for patterns in the data	Learns from the past, generates creative output
Specific input always results in the same output		Specific input can result in new output
Examples	Examples	Examples
Spam filters; Netflix recommendation engine, traffic management	Spotify, Netflix, fraud detection, healthcare	Large Language Models, such as ChatGPT, Claude, etc.

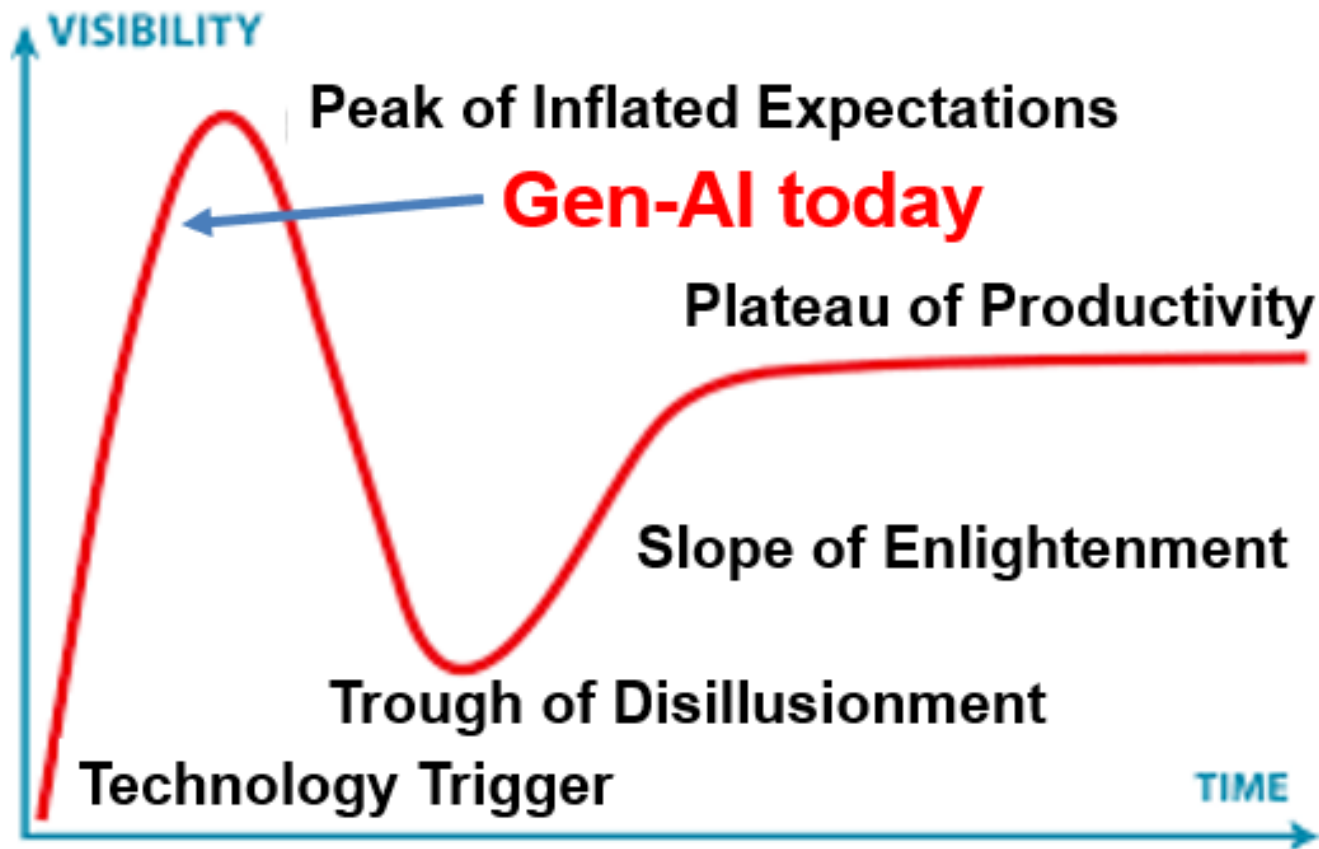
ChatGPT – Generative Pretrained Transformer

So, **ChatGPT** is essentially a chatbot based on the GPT model, designed **to generate human-like responses in conversation**. It was trained on vast amounts of text data to understand and produce language in a coherent, context-sensitive way.

<https://www.chatgpt.com/>



Gartner's Hype Cycle



[Fenn, Jackie; Raskino, Mark (2008). [*Mastering the Hype Cycle: How to Choose the Right Innovation at the Right Time*](#). Harvard Business Review Press. p. xiii. ISBN 978-1-4221-2110-8.]

Part 2: How is AI Relevant to Education?



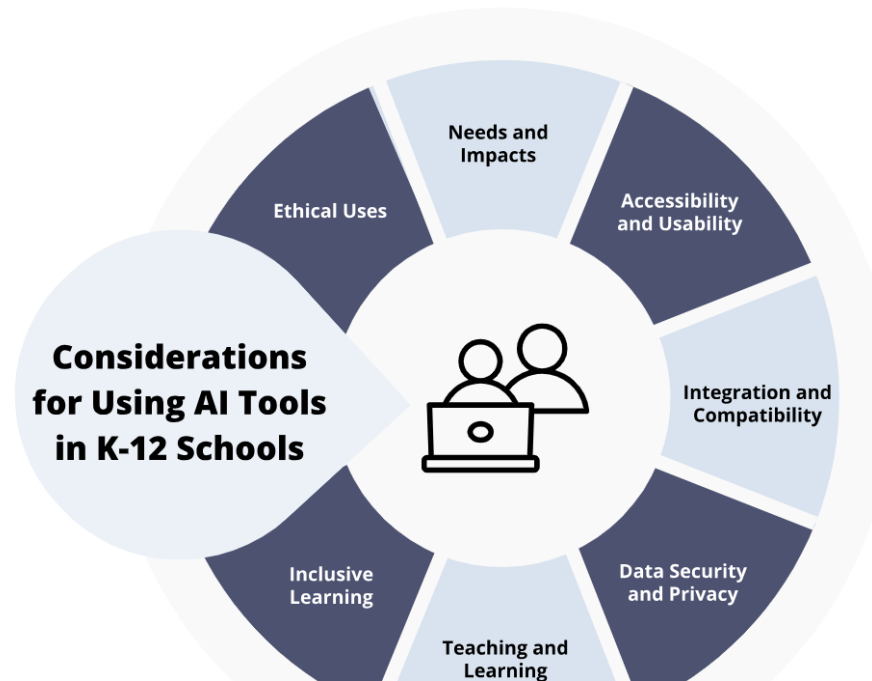
Search

Menu

AI, or Artificial Intelligence, encompasses the capacity of machines and computer systems to replicate human-like cognitive functions, including learning, problem-solving, decision-making, and utilizing algorithms and data.

Ethical, responsible, and safe use of AI in K-12 education requires a human-centered approach that prioritizes meaningful learning experiences. The integration of AI, when thoughtfully applied, has the potential to enrich our education system by streamlining administrative tasks, enhancing efficiency, and enabling a dedicated focus on student-centered activities. While AI can act as a supplementary tool and offer enrichment and depth to classroom practices, choices about the use of AI in the classroom are ultimately made by teachers based on the needs of the students.

Education, by its nature, is relational, especially when emphasizing the irreplaceable and integral role of human



Bloom's 2-Sigma Problem



Tutoring?

Benjamin Bloom, 1984, The 2 Sigma Problem: The Search for Methods of Group Instruction as Effective as One-to-One Tutoring, *Educational Researcher* in June–July 1984, Volume 13, Issue 6, pages 4–16.

Risks of Neglecting AI in Teacher Education & Pro-D



DIGITAL LITERACY GAP

Teachers without AI training may struggle to understand or use emerging tools, leading to widening gap between tech-savvy educators and those left behind.



STUDENT DISADVANTAGE

Teachers untrained in AI cannot effectively teach students how to responsibly use or understand AI—key skills for future job markets.



MISSED EFFICIENCY GAINS

AI can automate administrative tasks, personalize learning, and provide insights into student progress. Without training, teachers miss out on these productivity boosts.



ETHICAL BLIND SPOTS

Lack of awareness about AI biases and data ethics may lead to uncritical adoption of tools that reinforce inequity or violate student privacy.



REDUCED INNOVATION

Schools without AI-literate staff are less likely to adopt innovative teaching practices or participate in educational tech pilots and reforms.



PROFESSIONAL IRRELEVANCE

As AI reshapes all industries, including education, teachers without AI knowledge may risk falling behind professionally or facing obsolescence in future roles.

Part 3: Getting Started with AI in Your Courses

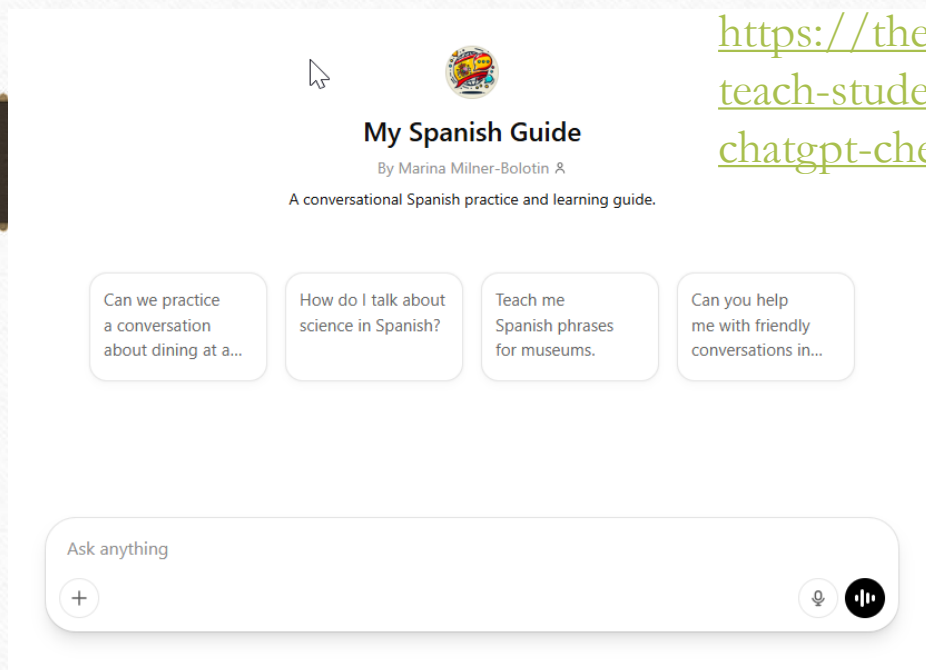
In education, AI can support personalized learning, automate administrative tasks, support educators in lesson planning, provide real-time feedback to both students and teachers, and much more...

AI in Teacher Education & Pro-D

- **Learning platforms:** Khan Academy, Duolingo, Quizlet— AI for personalization.
- **Tutoring tools:** ChatGPT, etc. help explain concepts, generate quizzes., practice language, generate teaching materials.
- **Adaptive learning systems:** DreamBox or IXL adjust difficulty based on student responses.

ChatGPT – From Language Practice to Essays, Presentations, Images, etc.

<https://www.chatgpt.com/>



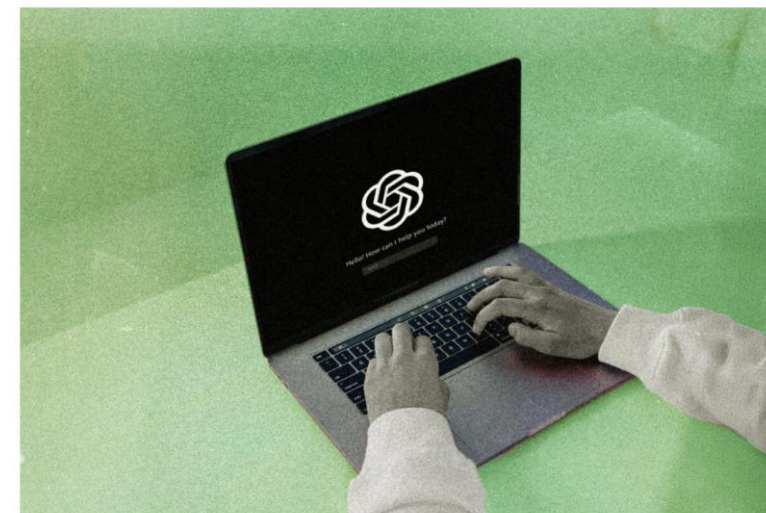
<https://thewalrus.ca/i-used-to-teach-students-now-i-catch-chatgpt-cheats/>

I Used to Teach Students. Now I Catch ChatGPT Cheats

I once believed university was a shared intellectual pursuit. That faith has been obliterated

BY TROY JOLLIMORE

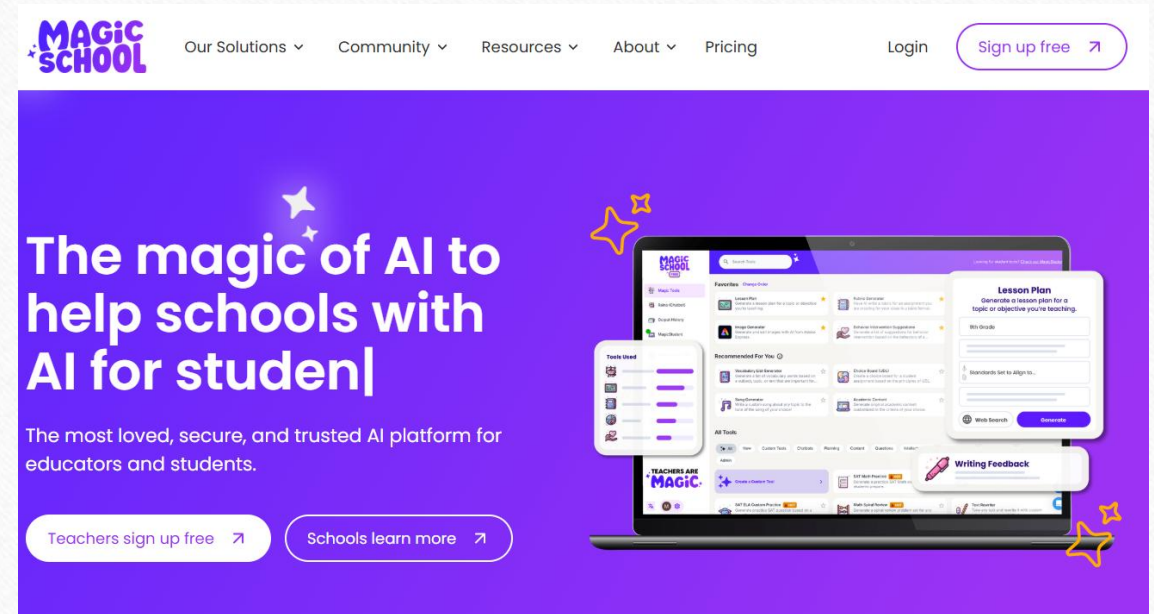
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- Finding potential student difficulties



<https://www.magicschool.ai/>

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Ulysses: A Study Guide

Ulysses Study Guide Quiz Answer the following questions in 2-3 sentences each...

AI for Research:

Notebook LN, SciteAI, ...



<https://scite.ai/>

scite_



Elicit

<https://notebooklm.google/>

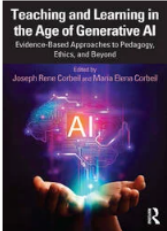
Part 4: Ethical & Pedagogical Considerations

1. Reconsidering curriculum and learning outcomes
2. Reconsidering assessment, cheating, and learning outcomes
3. Preventing academic misconduct: Being clear about what is acceptable & what isn't
4. Being creative with AI use, but not over reliant
5. Using AI to help generate new insights – research focus
6. Using AI to engage students - personalization

Part 5: Redefining Assessments in the Age of AI

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Teaching and Learning in the Age of Generative AI
Evidence-Based Approaches to Pedagogy, Ethics, and Beyond
Joseph Rouse Cotton and Maria Elena Cortes


Chapter

Redefining Assessments in the Age of AI

By *Debby R. E. Cotton, Lynne Wyness, Ben Jane, Pete A. Cotton*

Book [Teaching and Learning in the Age of Generative AI](#)

Edition	1st Edition
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Pages	26
eBook ISBN	9781032688602



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ABSTRACT

Generative AI (GenAI) offers a challenge to traditional modes of assessment, raising issues of academic integrity and reliability of grading, particularly in coursework essays. Much of the academic and media coverage of the GenAI revolution has been negative about its potential impacts on education, yet it does offer an opportunity to reassess and transform outmoded assessment practices. This chapter aims to provide a balanced view of the topic, discussing the challenges of GenAI in assessment, whilst offering practical strategies for educational enhancement, with a view to promoting assessments that are both reliable and authentic.

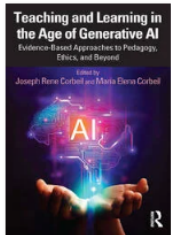
Cotton, D., Wyness, L., Jane, B., & Cotton, P. (2025). Redefining assessments in the age of ai., 283-308.

<https://doi.org/10.4324/9781032688602-18>

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Chapter

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Getting Started with AI: Resources

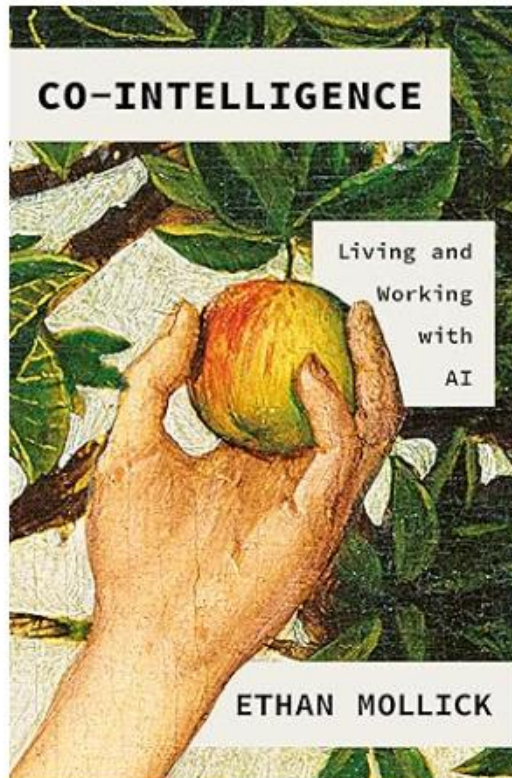


The journey of a thousand miles
begins with one step ...

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AN INSTANT NEW YORK TIMES BESTSELLER



From Wharton professor and author of the popular **One Useful Thing** Substack newsletter Ethan Mollick comes the definitive playbook for working, learning, and living in the new age of AI

Something new entered our world in November 2022 — the first general purpose AI that could pass for a human and do the kinds of creative, innovative work that only humans could do previously. Wharton professor Ethan Mollick immediately understood what ChatGPT meant: after millions of years on our own, humans had developed a kind of co-intelligence that could augment, or even replace, human thinking. Through his writing, speaking, and teaching, Mollick has become one of the most prominent and provocative explainers of AI, focusing on the practical aspects of how these new tools for thought can transform our world.

In *Co-Intelligence*, Mollick urges us to engage with AI as co-worker, co-teacher, and coach. He assesses its profound impact

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AI in Higher Education

International Journal of Changes in Education

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Generative Artificial Intelligence in Higher Education: Exploring Ways of Harnessing Pedagogical Practices with the Assistance of ChatGPT

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DOI: <https://doi.org/10.47852/bonviewIJCE42022489>

Keywords: Artificial Intelligence, higher education, ChatGPT, research assistant, affordances, pedagogical practices, chatbot

Abstract

There is a growing interest in using generative artificial intelligence (AI) for educational purposes within the higher education environments, while AI applications (such as ChatGPT) can transform traditional teaching and learning methods. ChatGPT is an advanced AI tool that generates new content and human-like responses. The purpose of this paper is to use ChatGPT as a research assistant in order to explore ways AI can be harnessed to enhance

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Generative Artificial Intelligence in Higher Education: Exploring Ways of Harnessing Pedagogical Practices with the Assistance of ChatGPT

Κλεοπάτρα Νικολοπούλου¹

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☒ Impact Of Ai On Assessment 1 Methods

Cited by 2 publications (2 citation statements)

References 66 publications (120 reference statements)

“...The need to uphold academic integrity is more than ever in the AI era (Martínez-Comesaña et al, 2023). Institutions of higher learning must enforce honor codes and put policies in place to stop students from exploiting artificial intelligence (AI) to cheat; furthermore, teachers may preserve the integrity of education by creating exams that prioritize original work and encouraging the moral application of AI (Nikolopoulou, 2024b) ...”

Section: Impact Of Ai On Assessment Methods mentioning confidence: 99%

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How Do You Use AI in Education?

