

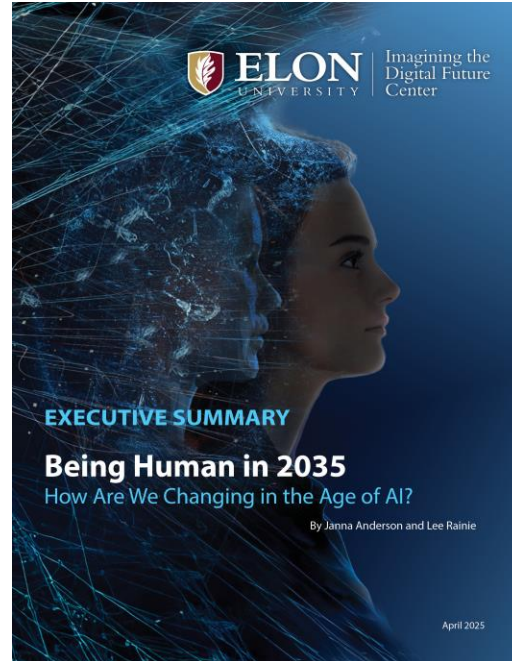
AI and higher education

A NEW AGE OF ENLIGHTENMENT?
A NEW THREAT TO HUMANITY?

Imagining
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Report from the AI frontline

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<https://imaginingthedigitalfuture.org/reports-and-publications/being-human-in-2035/>

Report from the AI frontline

NotebookLM EXPERIMENTAL

Settings



Notebooks

Create your first notebook

NotebookLM is an AI-powered research and writing assistant that works best with the sources you upload



Upload your documents and NotebookLM will answer detailed questions or surface key insights



Convert complex material into easy-to-understand formats like FAQs or Briefing Docs



Add key resources to a notebook and share with your org to create a group knowledge base

Report from the AI frontline

* Notebook guide

Help me create



FAQ



Study Guide



Table of Contents



Timeline



Briefing Doc

Audio Overview i



Deep dive conversation
Two hosts (English only)

Generate

Report from the AI frontline



<https://www.youtube.com/watch?v=XkAaFcLrP7k>

The state of AI

AI is everywhere



- Weather forecasting
- Streaming services
- Shopping sites/apps
- Social media
- Navigation apps/maps
- Voice assistant

Americans Use AI in Everyday Products Without Realizing It

Regardless of their own use, Americans perceive significant AI risks and responsibilities



BY ELLYN MAESE

<https://news.gallup.com/poll/654905/americans-everyday-products-without-realizing.aspx>

83% of higher education leaders say they use Generative AI tools

- Some use daily, others are just exploring
- Most common uses ...



Writing & Communications



Info Gathering & Summarization



Idea Generation/Brainstorming



Data analysis

The Big Bang moment for GenAI-LLMs



Sam Altman 
@sama · [Follow](#)



today we launched ChatGPT. try talking with it here:

chat.openai.com

2:38 PM · **Nov 30, 2022** 



[Read the full conversation on Twitter](#)

 30.7K

 Reply

 Copy link

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Relentless news, hype, worry

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NBC NEWS

Nvidia becomes the first company worth \$5 trillion, powered by the AI frenzy

SHARE & SAVE



MARKETS

Nvidia becomes the first company worth \$5 trillion, powered by the AI frenzy

Nvidia alone is now worth more than Apple and China.

TECH

OpenAI CEO Sam Altman says ChatGPT will soon be used by adult users



James Powell
USA TODAY

Oct. 15, 2025, 11:16 p.m. ET



By —
Kelvin Chan,
Associated
Press

By —
Taimoor
Sobhan,
Associated
Press

Leave your
feedback



Phony AI videos of Hurricane Melissa flood social media

World Oct 29, 2025 2:40 PM EDT

Commentary Technology Investigations

The New York Times

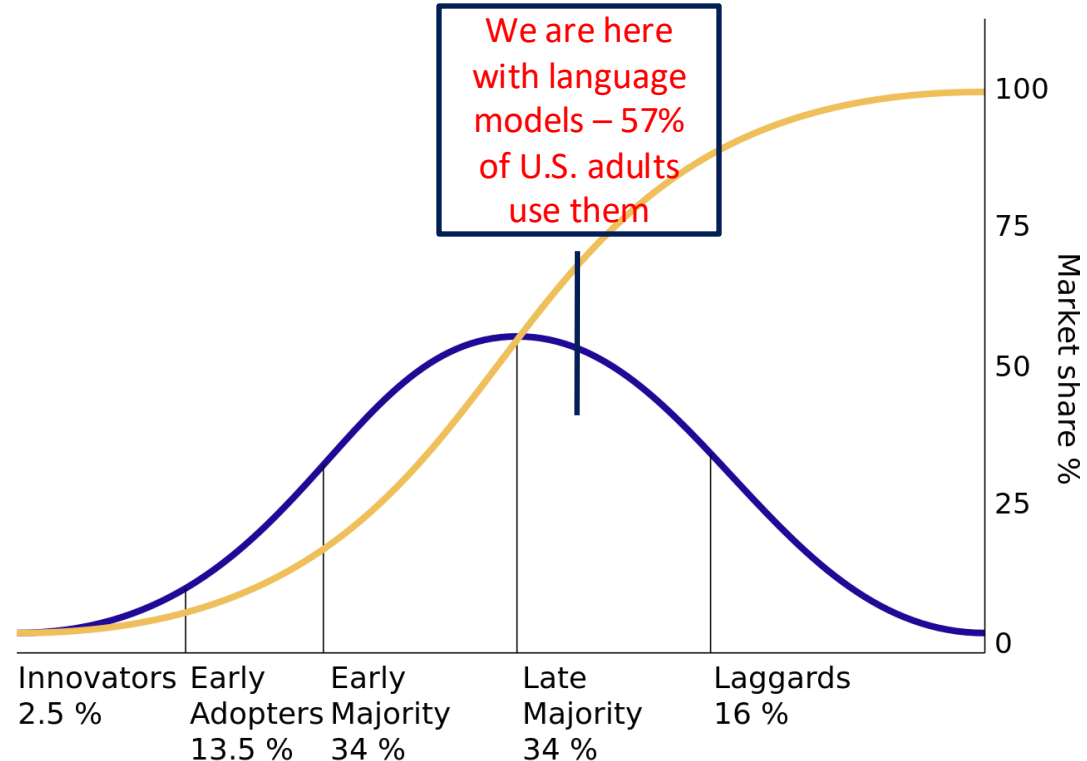
Account

Quantum Computer Big Technical Leap

advances in medicine and other fields, the algorithm runs 13,000 times as fast as one for a traditional supercomputer.

What's the "same" about GenAI-LLMs

- Adoption will follow a long-standing pattern (with some interesting wrinkles)
- Divides are inevitable and distressing
- Efficiency, productivity, safety, convenience are adoption propellants
- Tech affordances and social innovations flow back and forth



What's different about AI

- It is being built into tools humans already use and could be viewed as **wallpaper that is a taken-for-granted part of life** (like electricity)
- It is arising in a multi-revolution environment where the pace of change is unprecedented - NBIC convergence” nano, bio/genetic, info, cognitive (AKA “**polycrisis**”)
PLUS advances in ... human enhancements, new interfaces like goggles, glasses, brains, synthetic, data-enhanced environments (ER, VR), robotics ... **AND quantum**

What is AI really good for?

AI specialties tied to healthcare

- **Pattern recognition**
 - Image and object recognition
 - Speech and sound recognition
 - Anomaly detection
- **Data processing**
 - Epidemiology and genomics
 - Climate modeling
- **Repetitive reasoning tasks**
 - Back-office operations
 - Customer service and helpdesk support

AI specialties tied to healthcare

- **Prediction and personalization**
 - Recommendation systems
 - Personalized education and healthcare
 - Targeted marketing
- **Translation, summarization, and knowledge integration**
 - Machine translation
 - Text summarization and sentiment analysis

Checklist: What you have to decide about the teaching/learning model

- ✓ **Curriculum design and assignments**
- ✓ **Teaching adjustments**
- ✓ **Cheating and academic integrity – general ethics and literacy**
- ✓ **Assessment of competence and learning outcomes**
- ✓ **Scenario simulations**
- ✓ **Personalized learning**

Readiness checklist: What AI changes in dentistry

- ✓ **Enhanced diagnostic imaging**
- ✓ **Treatment planning and simulation**
- ✓ **Voice recognition and hands-free workflows**
- ✓ **Dental practice management efficiency**
- ✓ **Early disease detection**
- coming attractions ---
- ✓ **AI surgical robots**
- ✓ **3D simulations**
- ✓ **Agents for the 'patient journey'**

Where AI stands in higher education

Leading Through Disruption:

Higher Education Leaders Assess AIs' Impacts on Teaching and Learning

November-December, 2024



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Generative AI and higher education survey

- Survey: Nov. 4 – Dec. 7, 2024
- Presidents, Chancellors, Provosts, VPs for Academic Affairs, Deans
- Combination of AAC&U and Elon mailing lists
- 337 academic leaders responded to the survey

https://imaginingthedigitalfuture.org/collaborations/ai_higher_ed_survey_jan2025/



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Generative AI and higher education survey

The current state of AI on college campuses



- High student adoption, lower faculty use
- Cheating has increased and detection strategies are not deemed effective
- General feeling of unpreparedness
- Many challenges and some resistance to GenAI adoption on campus
- Many schools are creating policies and guidelines; some are increasing spending

Expectations for changes ahead

- Enhanced, customized learning
- Improved student research skills
- Better student writing
- Increased creativity

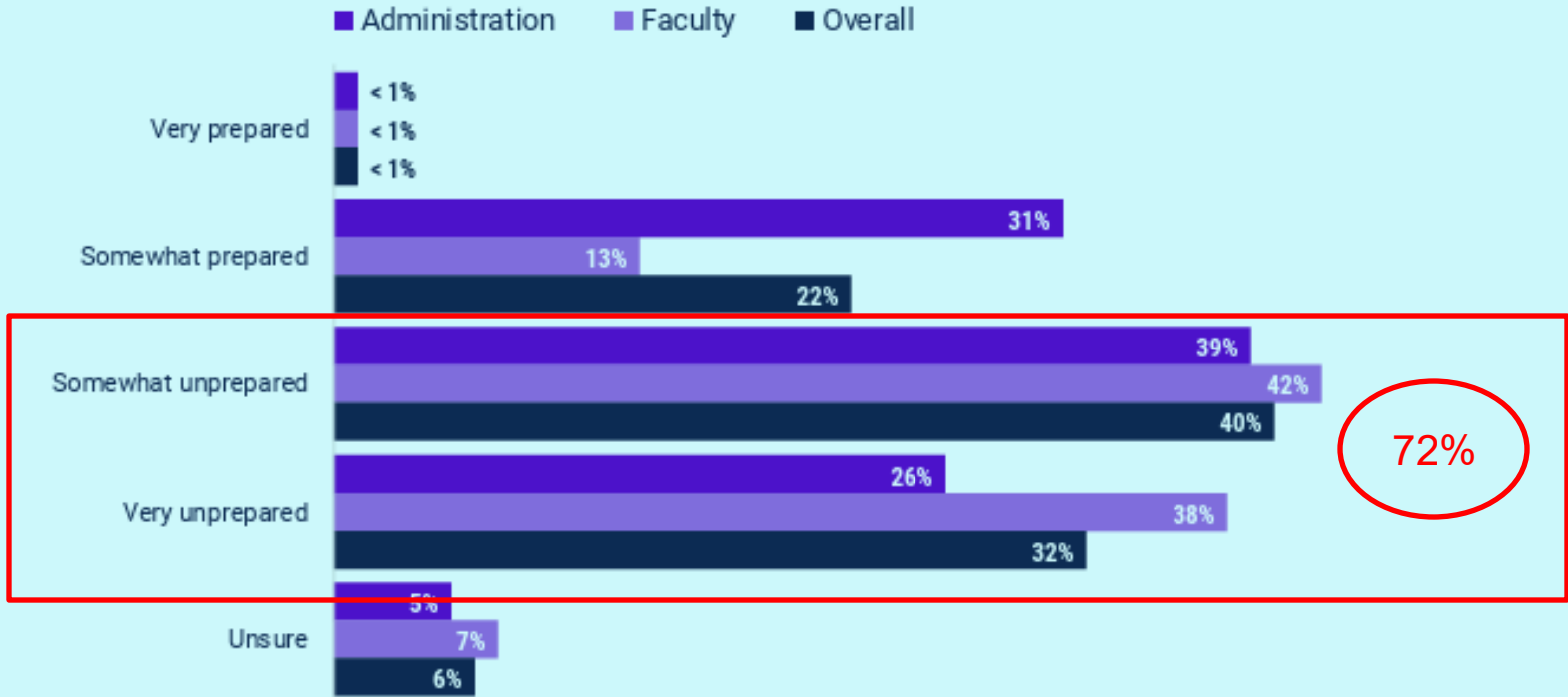
But...

- Erosion of academic integrity
- Student dependence on GenAI
- Greater digital inequalities
- Decreased attention spans



Chronicle of Higher Education survey Released two weeks ago

How well prepared do you think instructors on your campus are to use generative artificial-intelligence tools to enhance classroom materials?

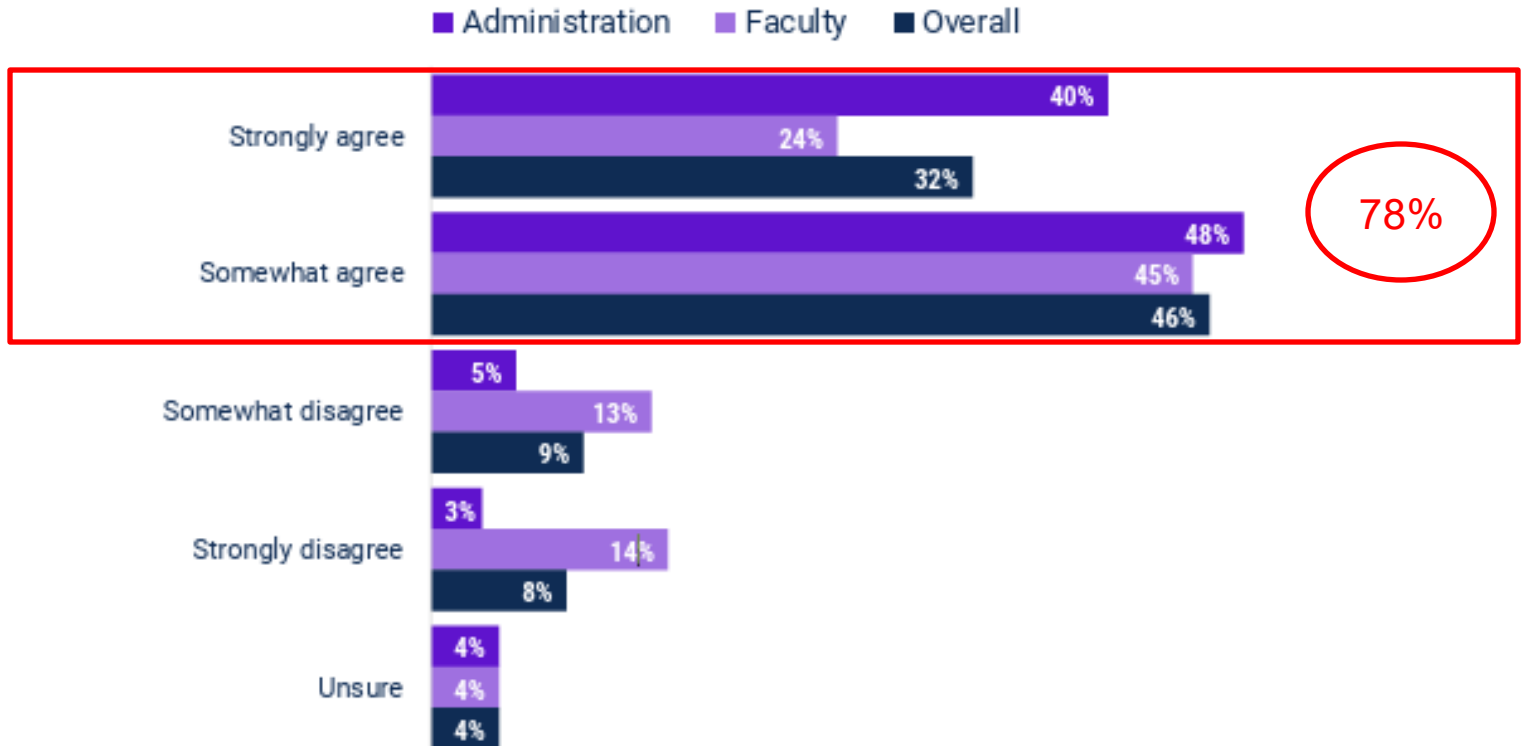


Source: Chronicle survey of 850 academic and administrative leaders and faculty members

Note: Figures might not total 100 percent due to rounding.

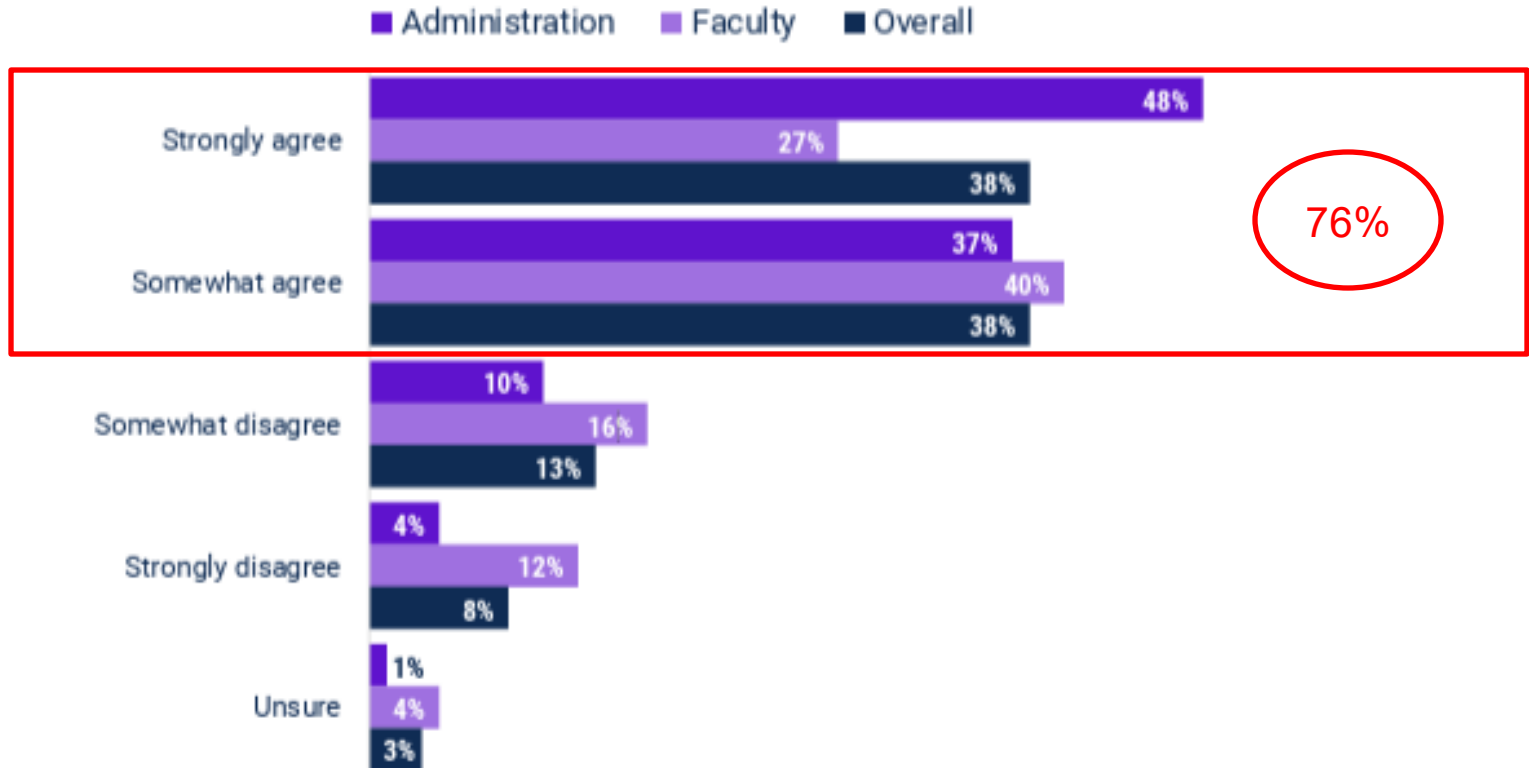
How much do you agree with the following statement?

“Generative artificial-intelligence tools can help enhance course materials to improve teaching and learning.”



How much do you agree with the following statement?

“Teaching students how to use generative artificial-intelligence tools is key to my institution's future.”

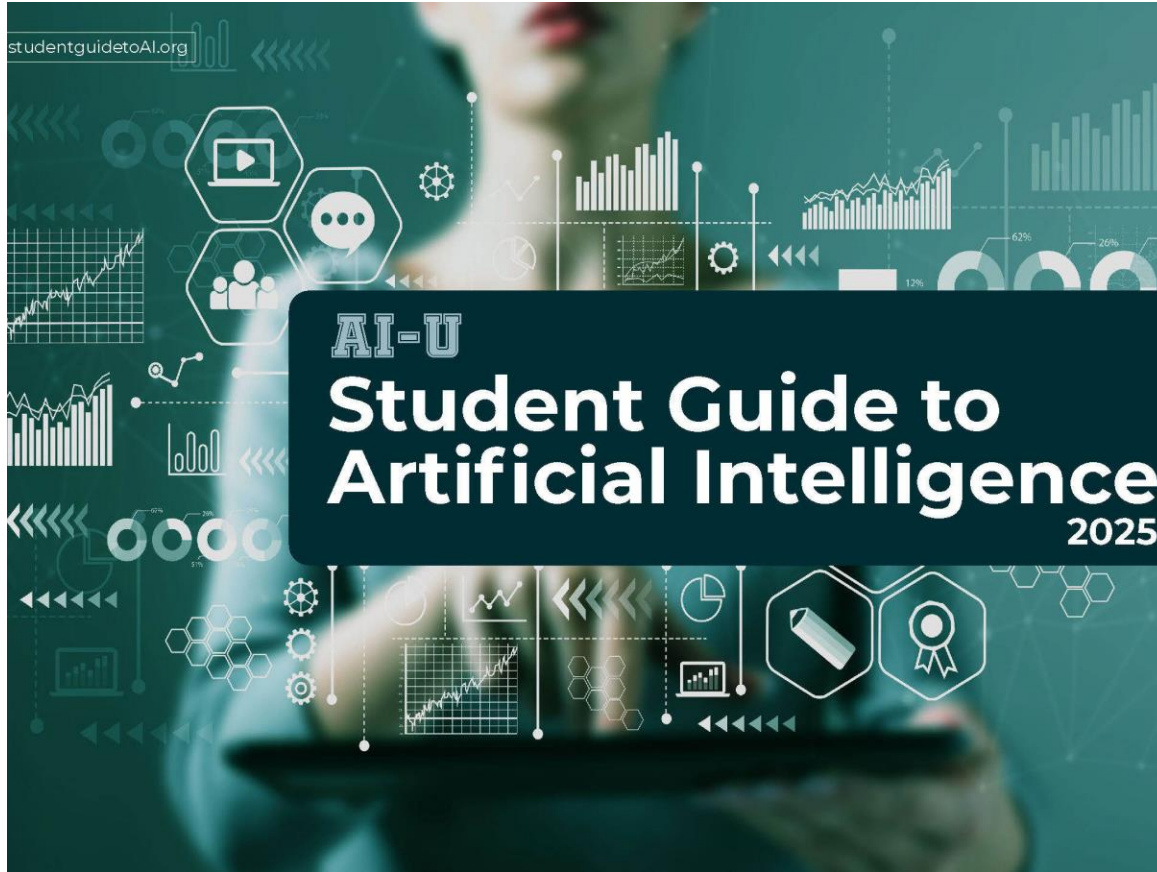


How AI can work in engaged learning

Center for Engaged Learning



Peter Felten, Director



<https://www.elon.edu/u/news/2025/05/06/new-student-guide-to-artificial-intelligence-provides-expanded-resources-for-navigating-college-in-the-ai-age/>

1. AI can transform how students (and we) think about academic work

“Trying to make your assignments more AI-proof is a waste of time. What you should do instead is to help get your students engaged in the work they are doing. To tell them why it will be valuable and why it's worth their time. To tell them that your goal in giving them feedback, and yes, grades when you give them, is to help them grow and reflect on how they might further develop themselves.”

Josh Brake, *The Absent-Minded Professor*, 2024

<https://joshbrake.substack.com/p/heres-how-im-engaging-ai-this-fall>

2. AI can help students (and instructors) practice difficult things – applying, communicating, creating, synthesizing

- Smart tutor – challenging, reminding, critiquing
- Role play with student
- Rehearse classroom encounters in a safe environment

3. AI can be a feedback coach to instructors and students

Ask AI for suggestions on how your written feedback could better convey:

- High academic standards and expectations;
- Belief in the student's capacity to meet those standards, even if their work does not do so right now;
- Specific guidance about how to improve;
- Availability of resources to support the student's improvement.

4. AI may help us change our conceptions of learning and well-being

- Learning need not be a solo, stressful effort
- Think about reframing: It's called "generative" for a reason, and that means it can co-create and co-evolve
- And rethink the nature of learning and well-being from
 - individual to shared
 - solo to connected
 - stressful to exciting
 - driven by grades to motivated by meaning and purpose

“Learning and talking together, we break the notion that our experience of gaining knowledge is private, individualistic, and competitive. By choosing and fostering dialogue, we engage mutually in a learning partnership.”

bell hooks *Teaching to Transgress*, 1994

What's ahead: 2,778 experts say AI will ...

2026: Win World Series of poker

2027: Convincingly fake a song by a popular artist

By **2031** write an original Top 40 song

2030: Fold laundry

2033: Retail salesperson job functions will be fully automated

2035: Independently research and write high-quality machine learning paper

2040: Physically install electric wiring in a new home

2045: Prove math theorems for top math journal

2050: Solve long-standing unsolved problem in math and win Millennium Prize

Major takeaway: For most tasks, expert timelines to success shortened

What's ahead: 2,778 experts say AI will ...

2047: High-level machine intelligence is better and cheaper to implement than all humans – earlier by 13 years than previous predictions

2116: Full automation of labor – earlier by 48 years than previous predictions

What's ahead ...

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At the existential level, emphasize essential human capacities and behaviors that help us help each other

August 6, 2014

PewResearchCenter

NUMBERS, FACTS AND TRENDS SHAPING THE WORLD

FOR RELEASE AUGUST 6, 2014

Digital Life in 2025

AI, Robotics, and the Future of Jobs

Experts envision automation and intelligent digital agents permeating vast areas of our work and personal lives by 2025, but they are divided on whether these advances will displace more jobs than they create.

<https://www.pewresearch.org/wp-content/uploads/sites/9/2014/08/Future-of-AI-Robotics-and-Jobs.pdf>

February 29, 2024



Theme 1: We will have to reimagine what it means to be human

Theme 2: Societies must restructure, reinvent or replace entrenched systems

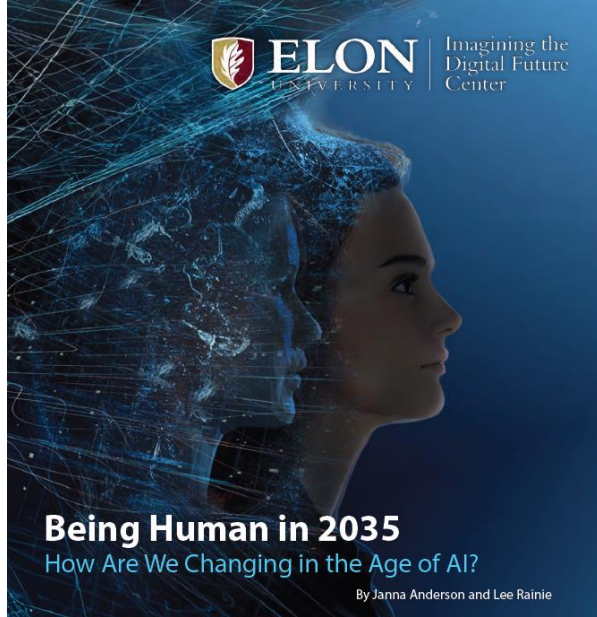
Theme 3: Humanity could be greatly enfeebled by AI

Theme 4: Don't fear the tech; people are the problem and the solution

Theme 5: Key benefits will arise

<https://imaginingthedigitalfuture.org/reports-and-publications/the-impact-of-artificial-intelligence-by-2040/the-17th-future-of-digital-life-experts-canvassing/>

April 2, 2025



<https://imaginingthedigitalfuture.org/reports-and-publications/being-human-in-2035/>

1-Curiosity and capacity to learn

2-Creativity

3-Decision-making and problem-solving abilities

4-Capacity to think deeply

5-Metacognition, think about your own thinking

6-Social and emotional intelligence

7-Empathy, application of moral judgment

8-Self-identity, meaning, and purpose in life

9-Trust in shared values and cultural norms

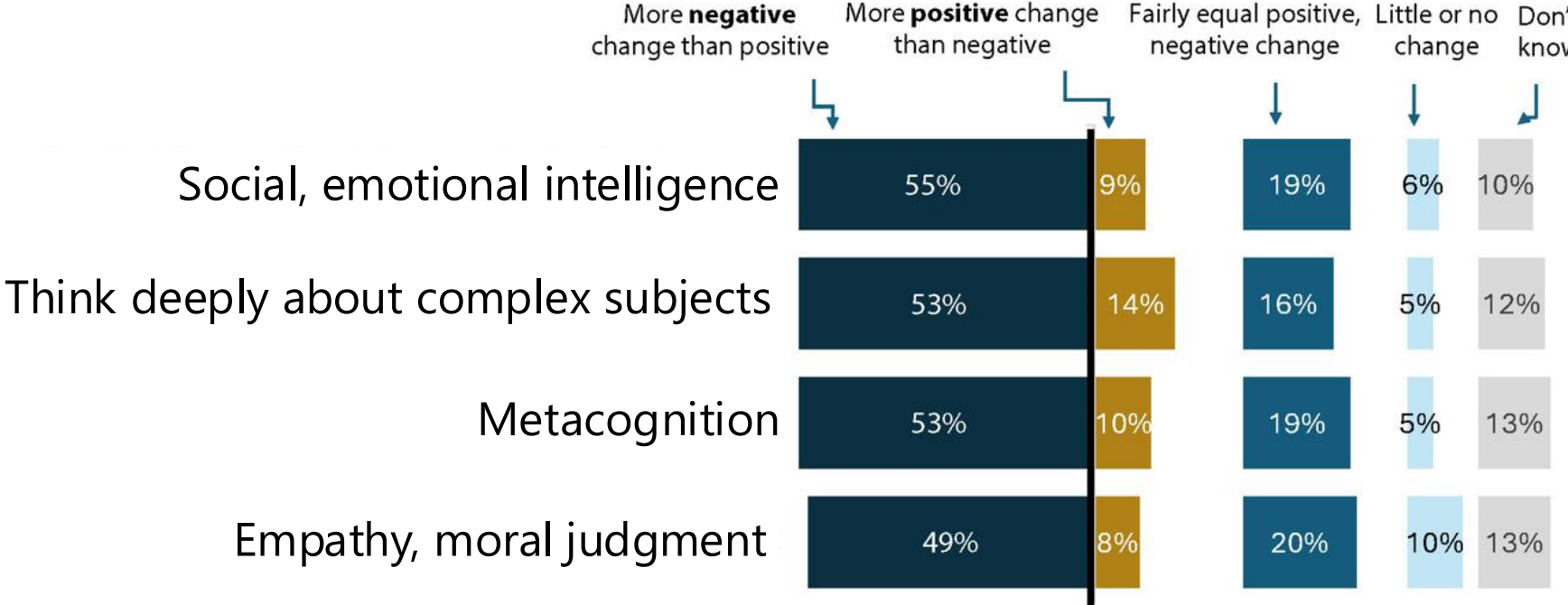
10-Individual agency

11-Mental well-being

12-Confidence in their own abilities

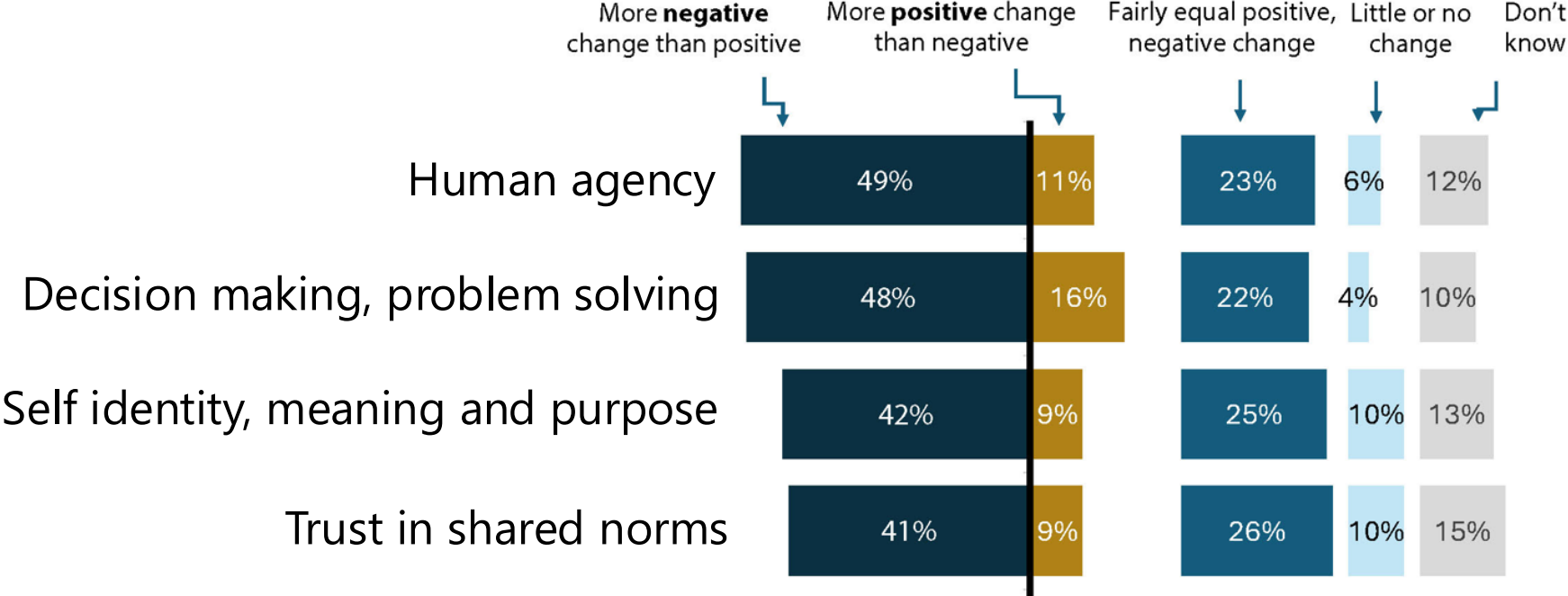
The public is much more negative than positive about AIs' impact on key human cognitive and social traits in the coming decade

% of U.S. adults who said the co-evolution of humans and AI is likely to affect these key aspects of humans' capacities and behaviors by 2035 in the following ways



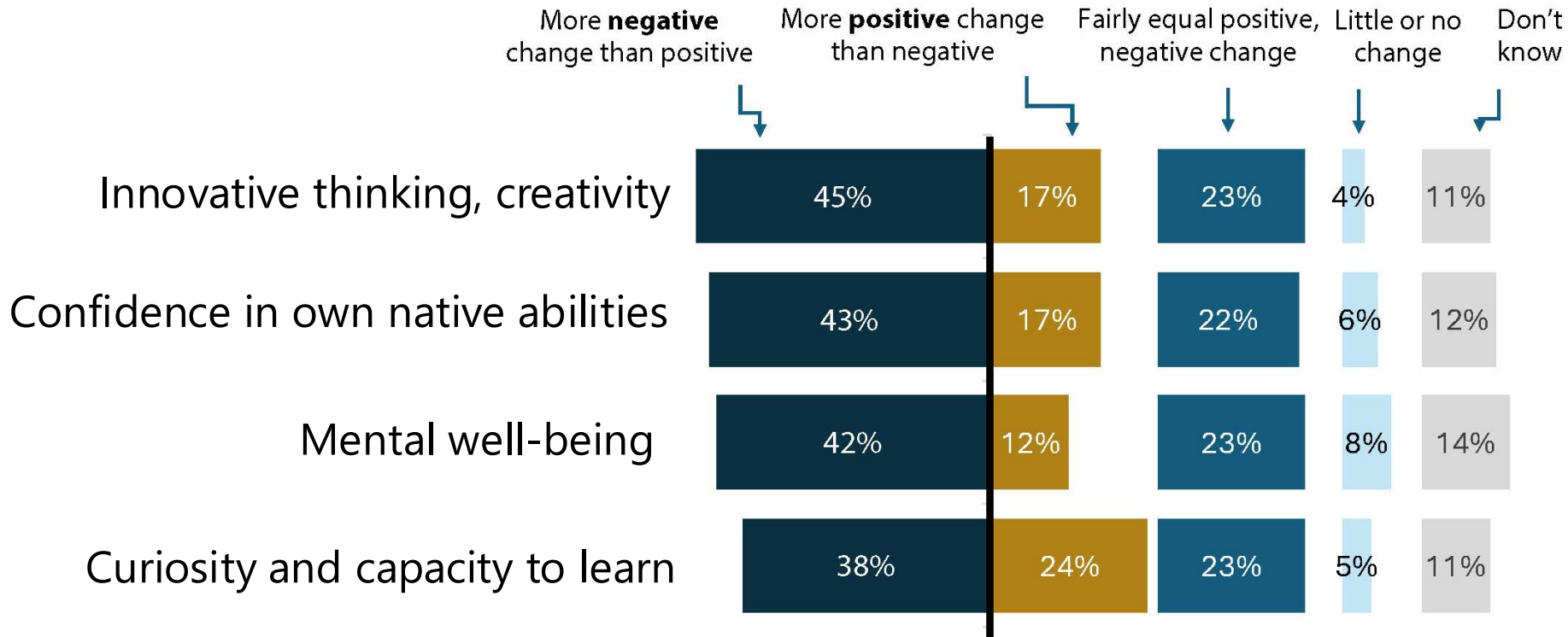
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 ELON UNIVERSITY

Dentistry and language models

arXiv > cs > arXiv:2509.02036

Search...

Help | Adv

Computer Science > Computation and Language

[Submitted on 2 Sep 2025]

DeepSeek performs better than other Large Language Models in Dental Cases

Hexian Zhang, Xinyu Yan, Yanqi Yang, Lijian Jin, Ping Yang, Junwen Wang

<https://arxiv.org/abs/2509.02036>

Dentistry and language models

This study is **one of the first head-to-head empirical evaluations** of general-purpose and open-source LLMs in a clinical dental context. Its significance lies in several areas:

- 1.Proof of Concept:** Demonstrates that LLMs can reason through complex, case-based medical data—not just exam-style questions.
- 2.Open-Source Validation:** Confirms that **open-source models (DeepSeek)** can outperform proprietary ones, offering cost-effective and transparent alternatives.
- 3.Educational Implications:** Suggests that LLMs could serve as **AI tutors or case simulators** for dental training.
- 4.Clinical Relevance:** Positions AI as a **decision-support system** capable of assisting clinicians in diagnosis, treatment planning, and longitudinal care.
- 5.Policy and Research Implications:** Encourages the creation of **domain-specific, explainable AI models** with verifiable accuracy standards.