

人工智慧改進並重新定義教育

Education Refined and Redefined by AI

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演講大綱

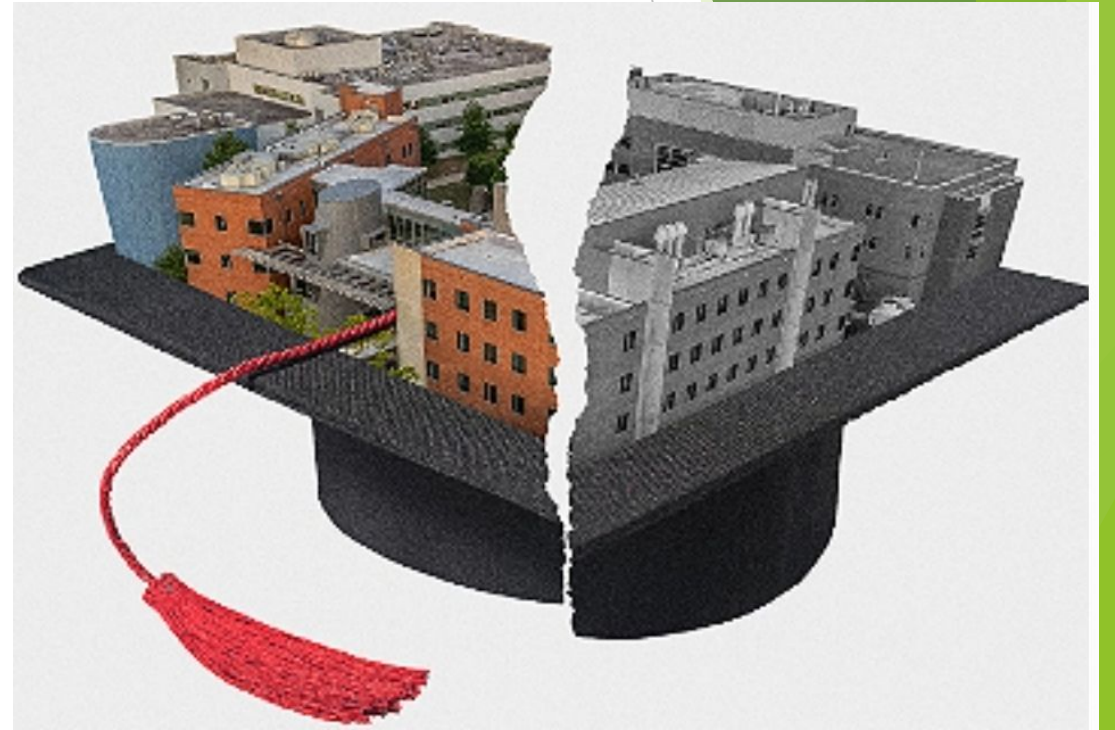
- ▶ 高等教育的趨勢
- ▶ 教育AI的趨勢
- ▶ AI在教育的应用
- ▶ AI帶來的問題與爭議
- ▶ 因應策略與未來展望

高等教育的趨勢

高等教育的趨勢

2025 Higher Education Trends

A look at the challenges and opportunities shaping America's higher education sector



07 APRIL 2025 • Deloitte Center for Government Insights

<https://www.deloitte.com/us/en/insights/industry/articles-on-higher-education/2025-us-higher-education-trends.html>

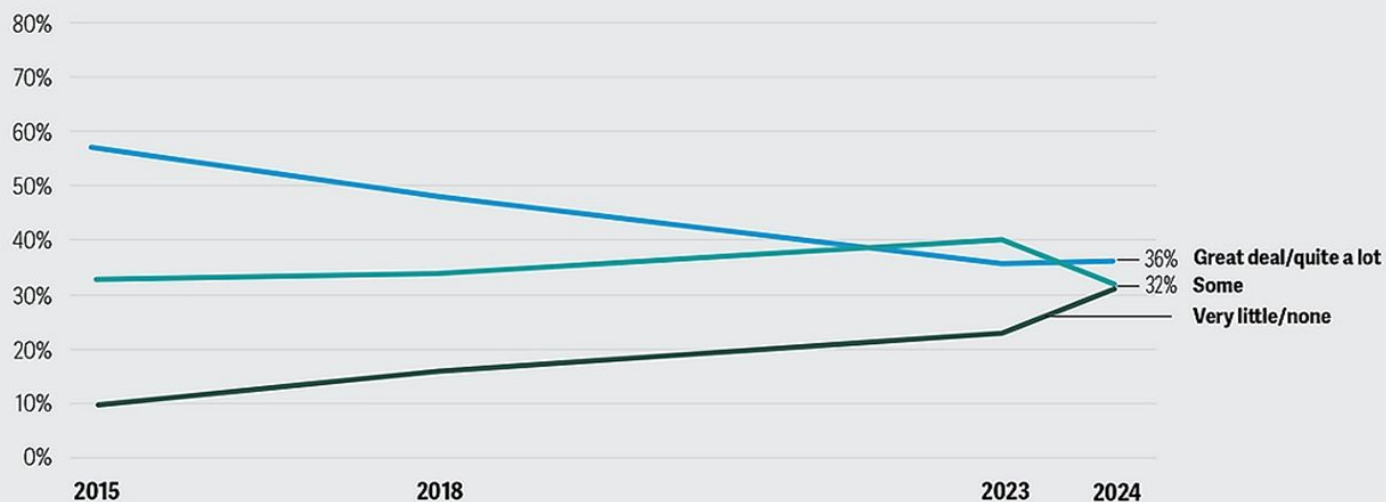
高等教育的趨勢

► 民眾對高等教育的信心

Figure 1

Public confidence in the value of US higher education has declined sharply over the past decade

Confidence in US higher education



Notes: "None" is a volunteered response. No opinion percentages are not shown.

Q: Please tell me how much confidence you have in higher education—a great deal, quite a lot, some, or very little?

Source: Jeffrey M. Jones, "U.S. confidence in higher education now closely divided," *Gallup News*, July 8, 2024.

高等教育趨勢

► 四年的高等教育是否值得？

Percentage saying the cost of getting a four-year college degree today is ...

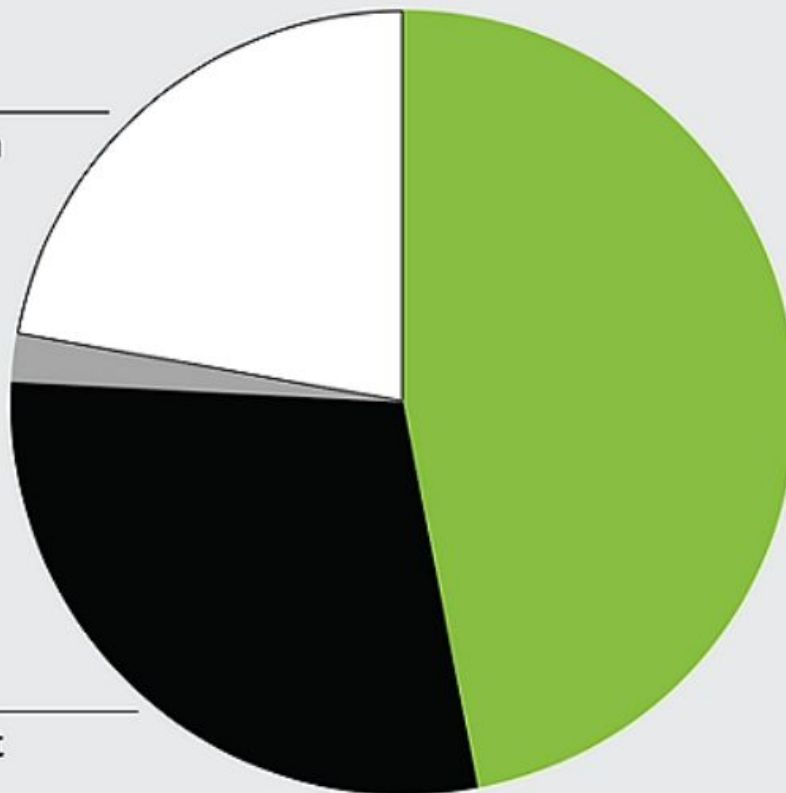
Only 22% of US adults say the cost of college is worth it even if someone has to take out loans.

22%

Worth it, even with loans

29%

Not worth it



47%
Worth it, but only without taking out loans

高等教育的趨勢

- ▶ “The new era of higher education is an era of employers and workforce. We simply **can't keep minting degrees that have no value.**” —Participant at the 2024 Forum on the New Era of Higher Education, Deloitte University



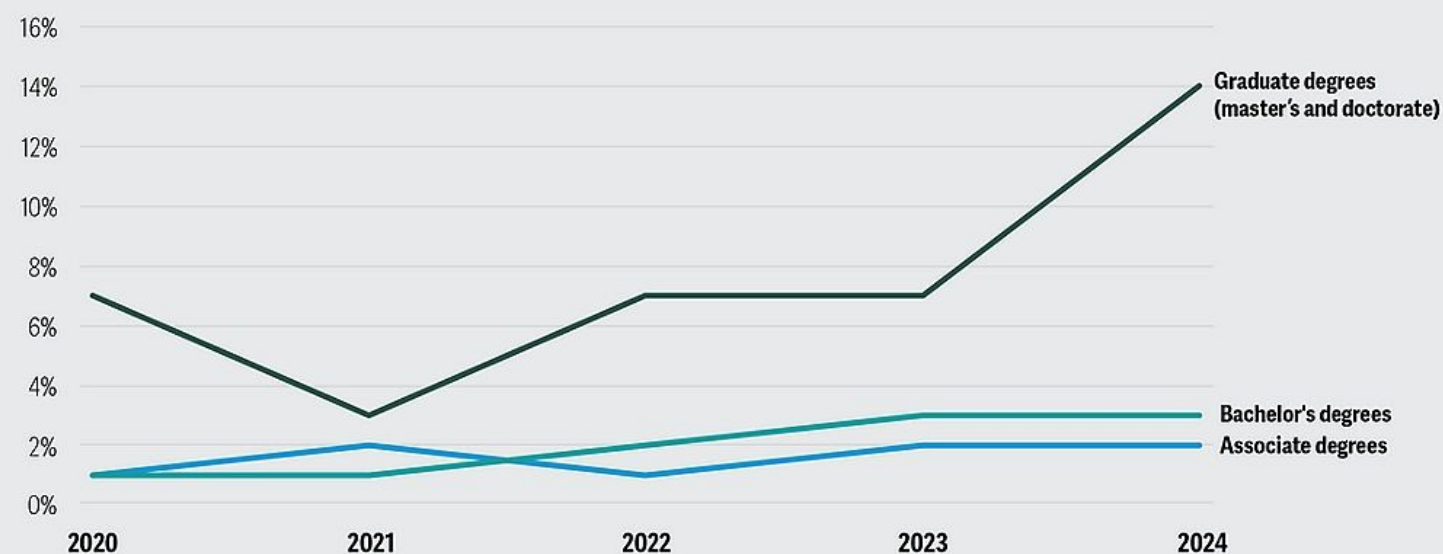
高等教育的趨勢

► 大學校院退場趨勢

Figure 2

Since 2020, more than 40 colleges have closed in the United States

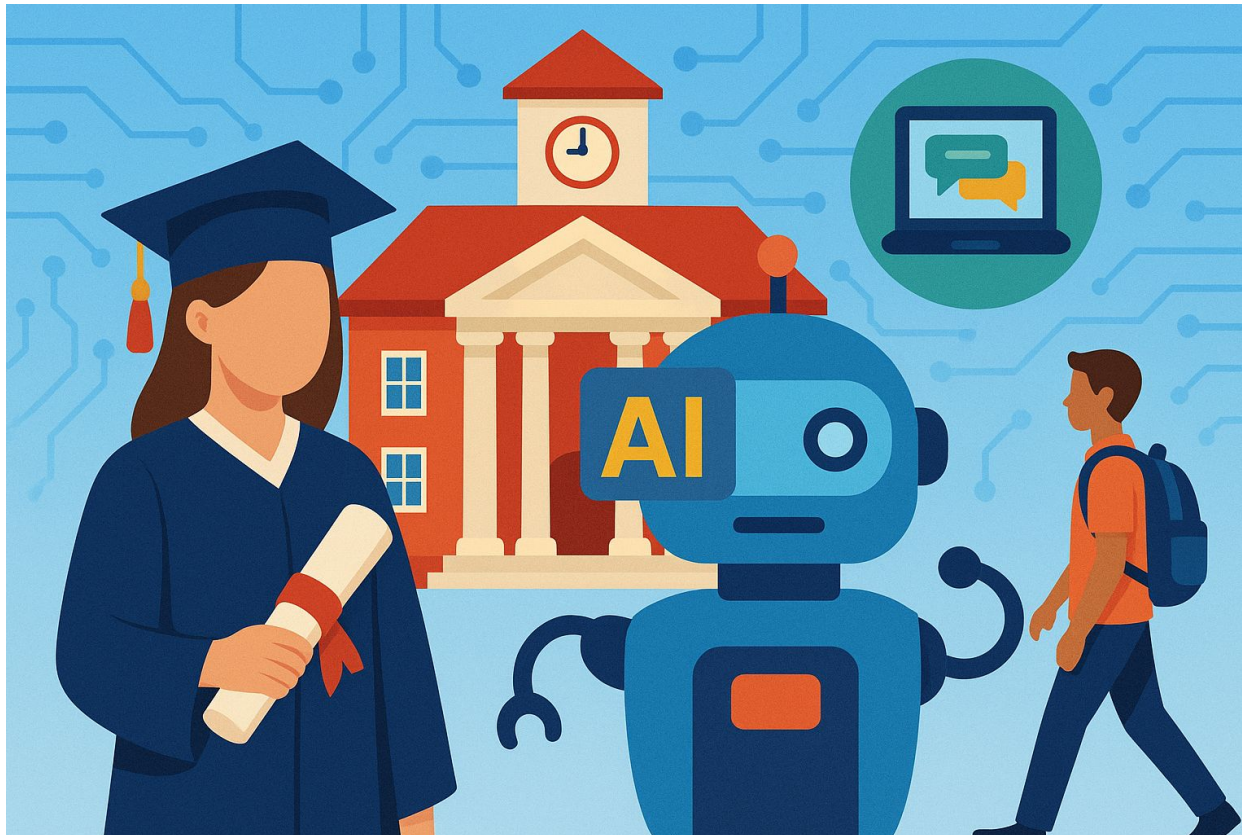
College closures by types of degree granting



Source: The Hechinger Report, "Counting college closures," December 2024.

高等教育的趨勢

- Will AI come to help?



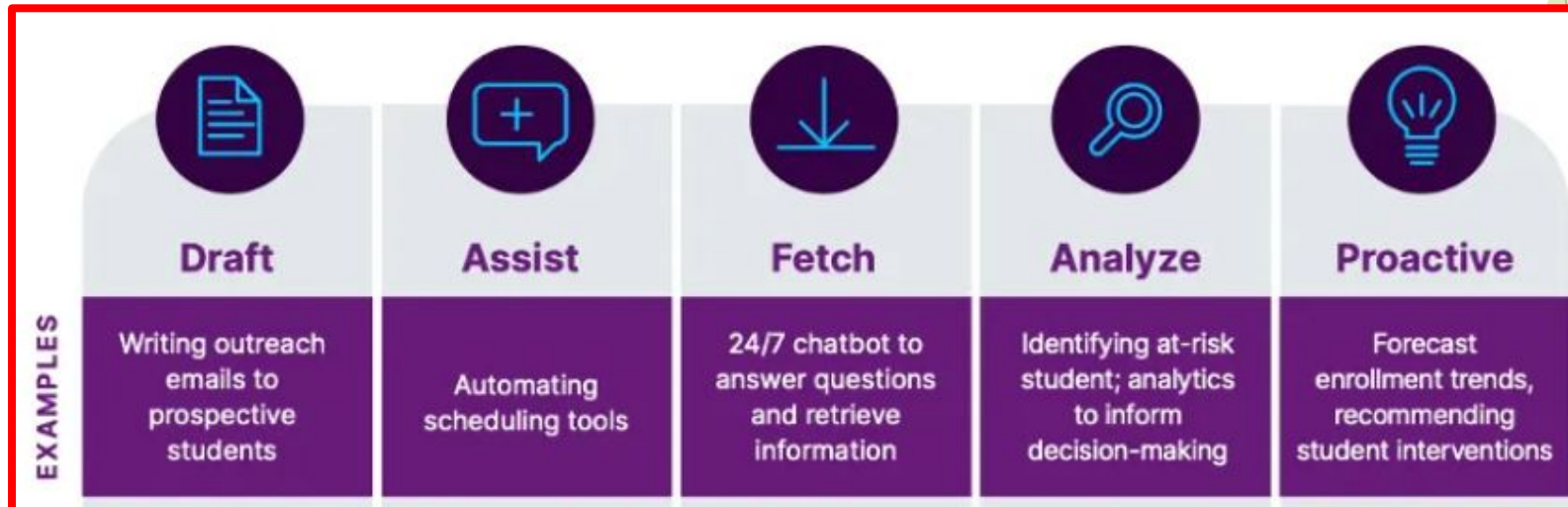
高等教育的趨勢



Empowering higher education with artificial intelligence

Published May 6, 2024

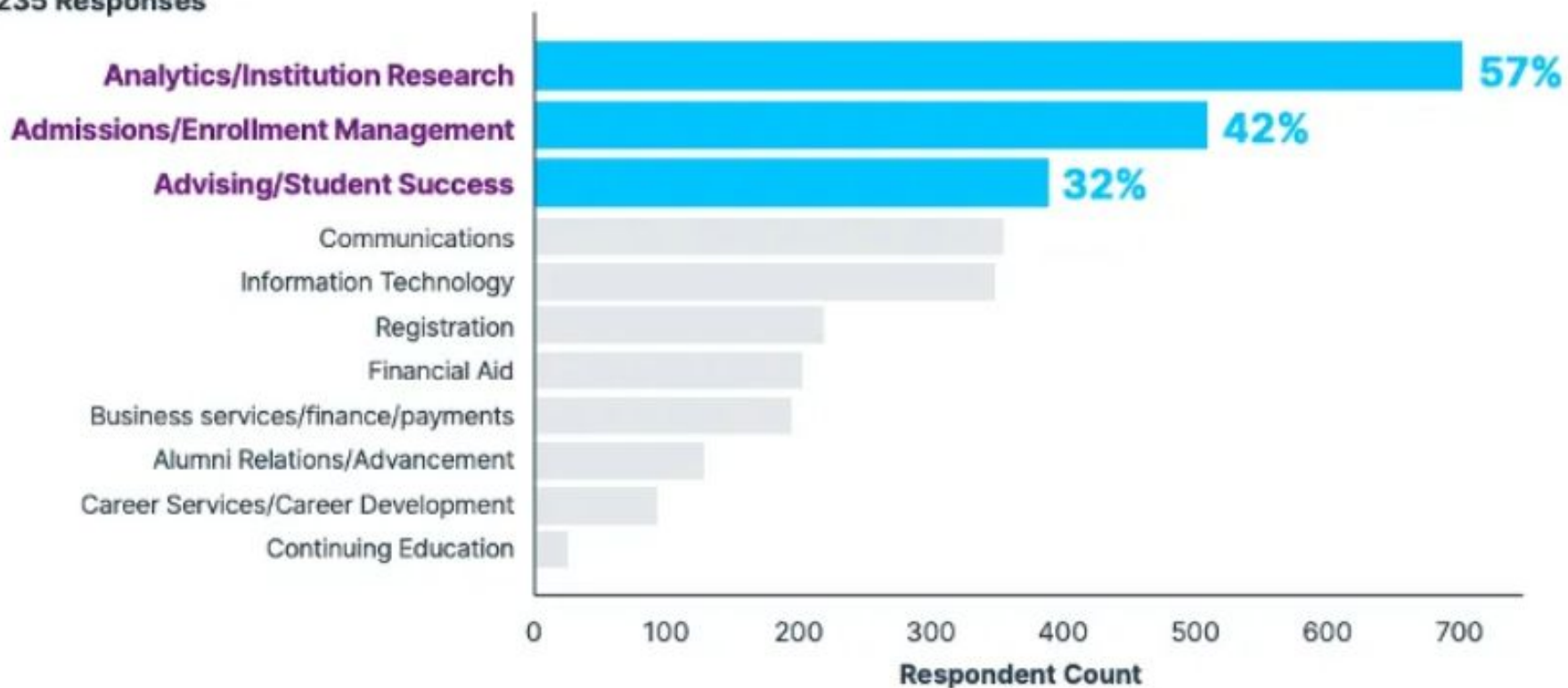
<https://www.highereddive.com/spons/empowering-higher-education-with-artificial-intelligence/714549/>



高等教育的趨勢

In what areas or business functions of your institution do you believe AI could be most beneficial?

1,235 Responses



教育AI的趨勢

教育AI的趨勢



Microsoft

2025

AI in Education

A Microsoft Special Report

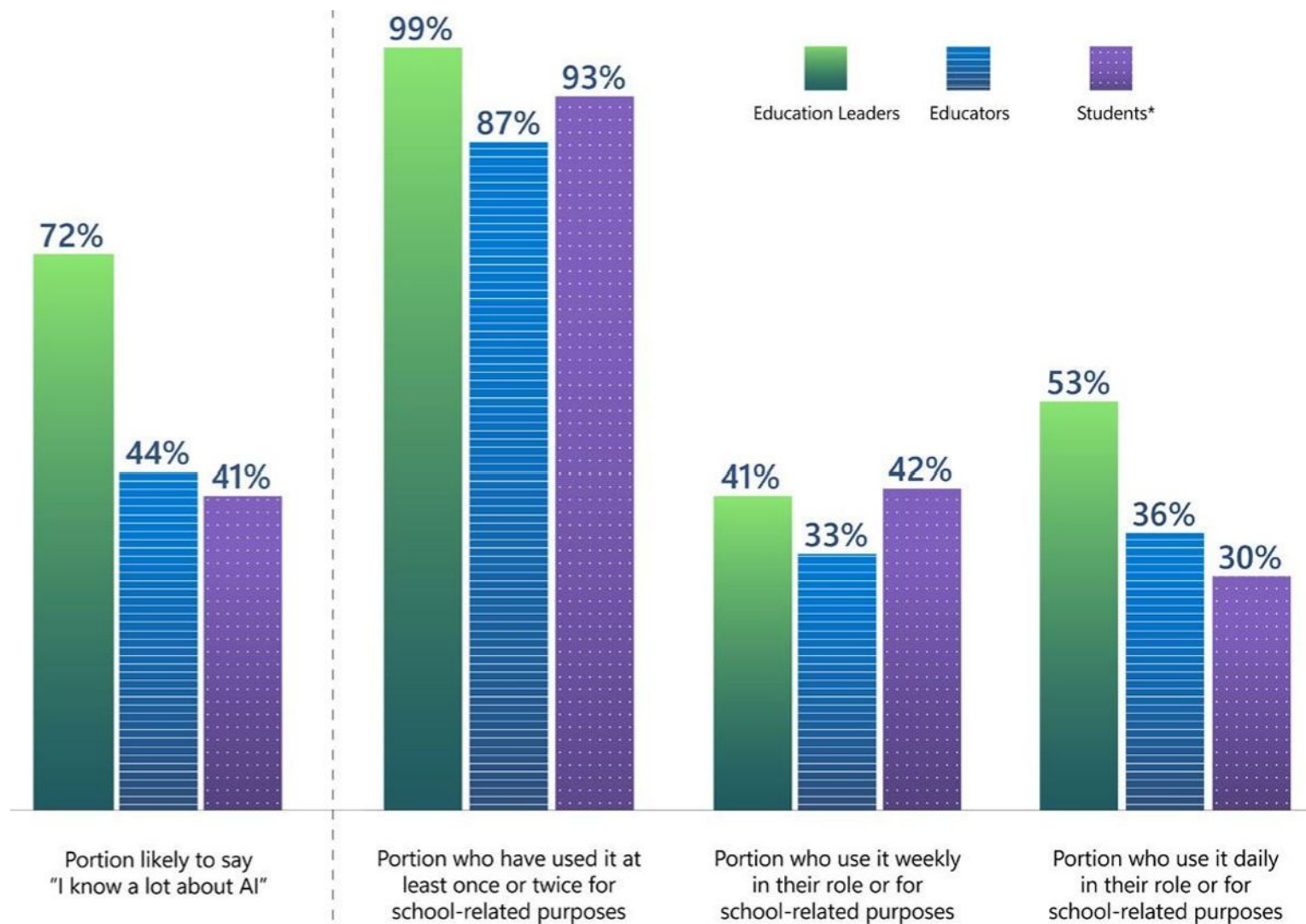
<https://cdn-dynmedia-1.microsoft.com/is/content/microsoftcorp/microsoft/bade/documents/products-and-services/en-us/education/2025-Microsoft-AI-in-Education-Report.pdf>

AI IN EDUCATION



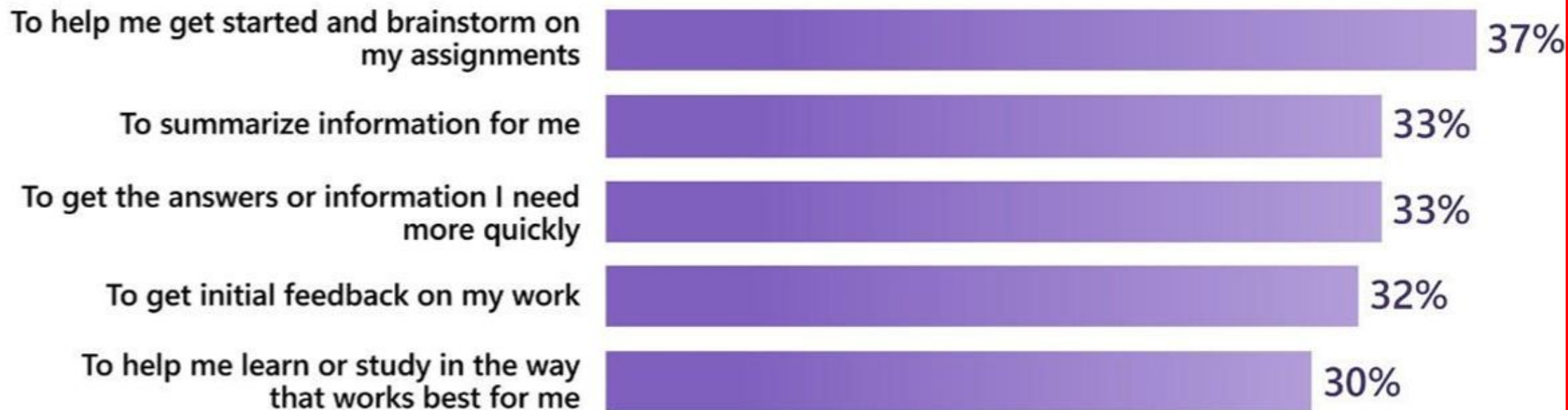
教育AI的趨勢

懂或用AI嗎？



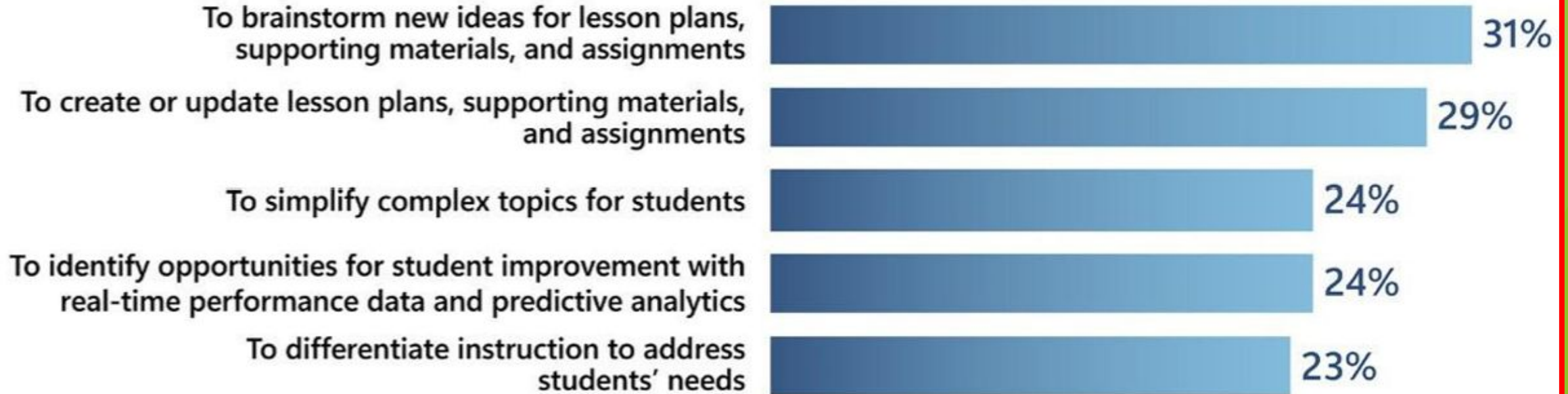
教育AI的趨勢

► Student use cases (前五名)



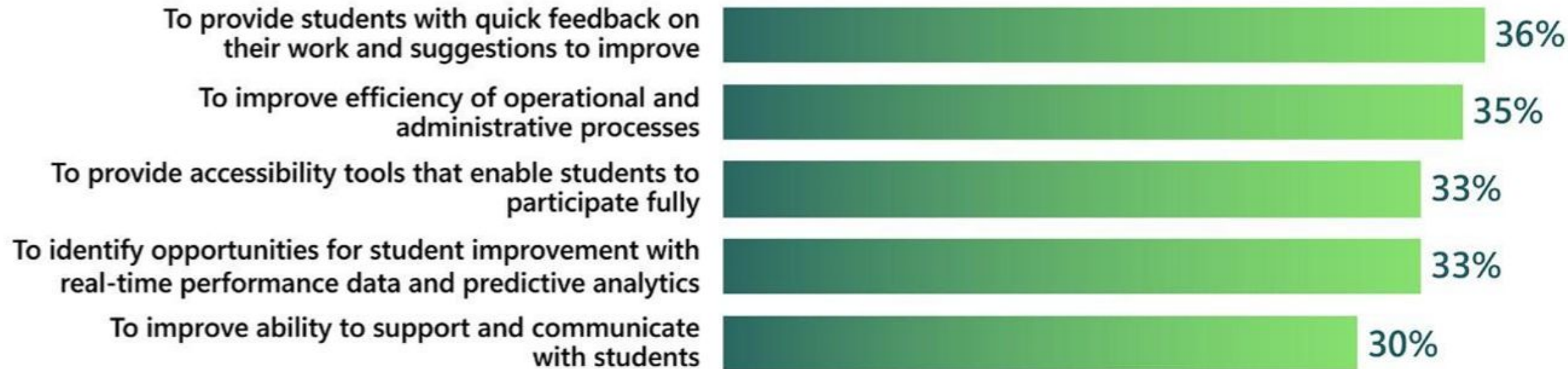
教育AI的趨勢

► Educator use cases (前五名)



教育AI的趨勢

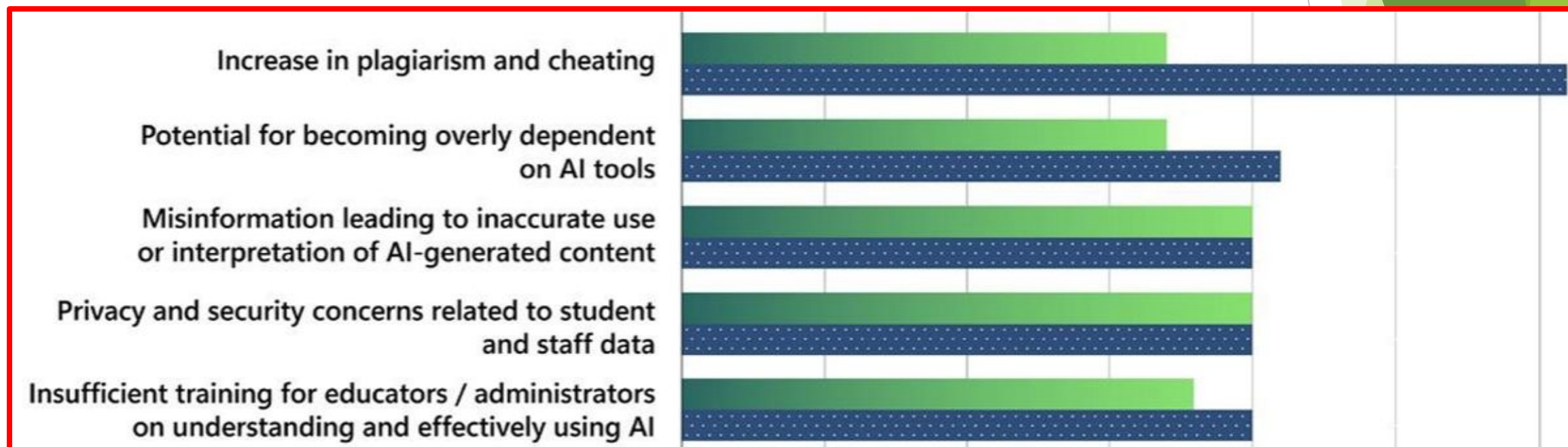
► Leader use cases (前五名)



教育AI的趨勢

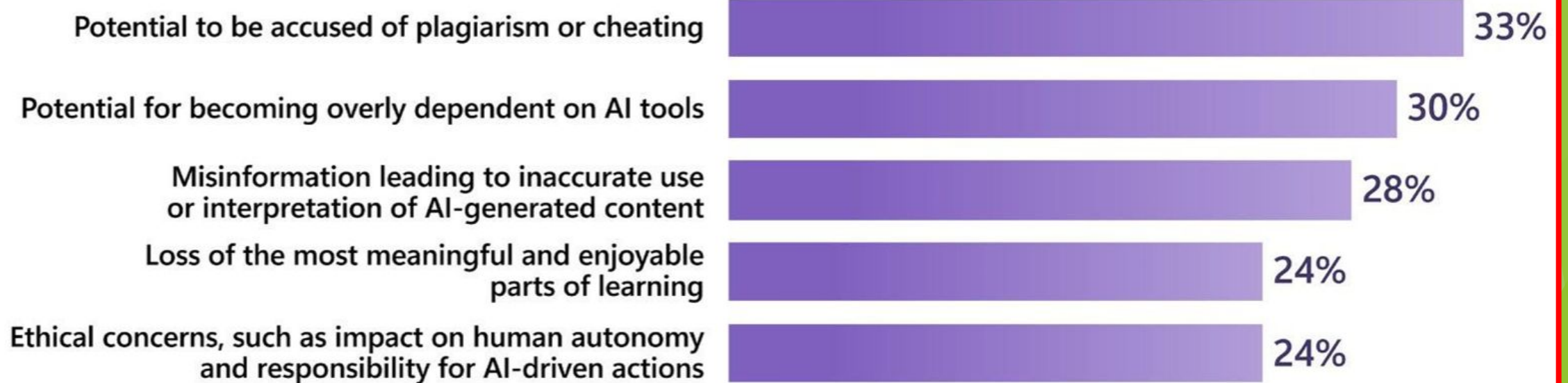
► Educator and Leader concerns (前五名)

Leaders Educators



教育AI的趨勢

► Student concerns (前五名)



教育AI的趨勢

AI in Higher Education: A Meta Summary of Recent Surveys of Students and Faculty

By [dmulford](#) March 6, 2025 [Uncategorized](#) [1 Comment](#)

<https://sites.campbell.edu/academictechnology/2025/03/06/ai-in-higher-education-a-summary-of-recent-surveys-of-students-and-faculty/>

教育AI的趨勢

► 對AI, 學生和老師的比較

Category	Student Findings	Faculty Findings
AI Usage	Higher rates of AI use, particularly for coursework and assessments	Lower rates of AI use, with many faculty using AI minimally
AI Competencies	Express a need for more training and support in developing AI literacy and skills	Express a need for more training and support in developing AI literacy and skills
Attitudes Toward AI	A mix of optimism and concern about AI in higher education	A mix of optimism and concern about AI in higher education, with some regional variations

教育AI的趨勢

► 哈佛大學的報導

The Harvard Crimson

Embrace AI or Go Analog? Harvard Faculty Adapt to a New Normal

Nearly three years after ChatGPT arrived on the scene, Harvard's instructors are adjusting to the technology that has reshaped their classrooms. This fall, the changes have been more visible than ever.

BY WILLIAM C. MAO, VERONICA H. PAULUS, AND VICTORIA D. RENGEL

September 19, 2025

教育AI的趨勢

▶ 哈佛大學的報導

- ▶ 結論：哈佛已經無法迴避 AI 帶來的衝擊，教師和學生都必須適應這個「新常態」。
- ▶ 禁止 AI 並非長遠之計，因為技術無法逆轉。
- ▶ 真正的挑戰在於如何培養學生具備判斷 AI 輸出、驗證資料真偽，以及保有創造性與批判思考的能力。
- ▶ AI 是強大的工具，但教育的目標不能僅是學會操作，而是確保學生能超越機器，維持人類智慧的深度與獨特價值。

AI在教育的应用

AI在教育的应用

► AI在校務行政的应用: 例如校務問答系統



AI在教育的应用

► 校園安全



智慧校園 2.0

針對校園安全導入AI分析技術，取代傳統既有純監控模式，以預先防範、事發狀況處理及後續追蹤三個面向規劃組織校園安全防護系統。

無人機巡視校園，
加上影像自動辨識



AI在教育的应用

► 机器人或机器狗帮助学生



AI在教育的应用

► 自動排課與流程自動化

系統名稱	AI 技術／特色	適用場景
TRACE-cs	結合 LLM 與邏輯規則、提供排課解釋	需透明邏輯的高教單位
Anthology Class Scheduling AI Assistant	雲端 LLM 預測班級需求	大學排班與師資規劃
Timely	優化演算法調整學生偏好	中／高中實體課程調度
NewOaks AI	商用 AI 排課、預測分析	培訓中心大型課程排程
Lunacal.ai	網頁排課、重複時段管理	家教 / 小班教學平台
Flowclass Course Scheduling	AI 課程排程優化	線上平台與輔導中心
Administrative AI Scheduler	AI solver 配講師、場地	企業與專業訓練機構
UiPath RPA 平台	RPA + AI 自動化流程工具	行政流程大量自動化需求

AI在教育的应用

- ▶ 因材施教 (Personalized Learning、Adaptive Learning)



教育部因材網



AI在教育的应用

- ▶ Alpha School (alpha.school)



A school where kids crush academics in 2 hours, build life skills through workshops, and thrive beyond the classroom.

AI在教育的应用

► Alpha School (alpha.school)



Love School

Alpha students love school—it's engaging, inspiring, and built for them.



Learn 2x in 2hrs

Alpha classes learn twice as fast as their peers and rank in the top 1% nationwide.

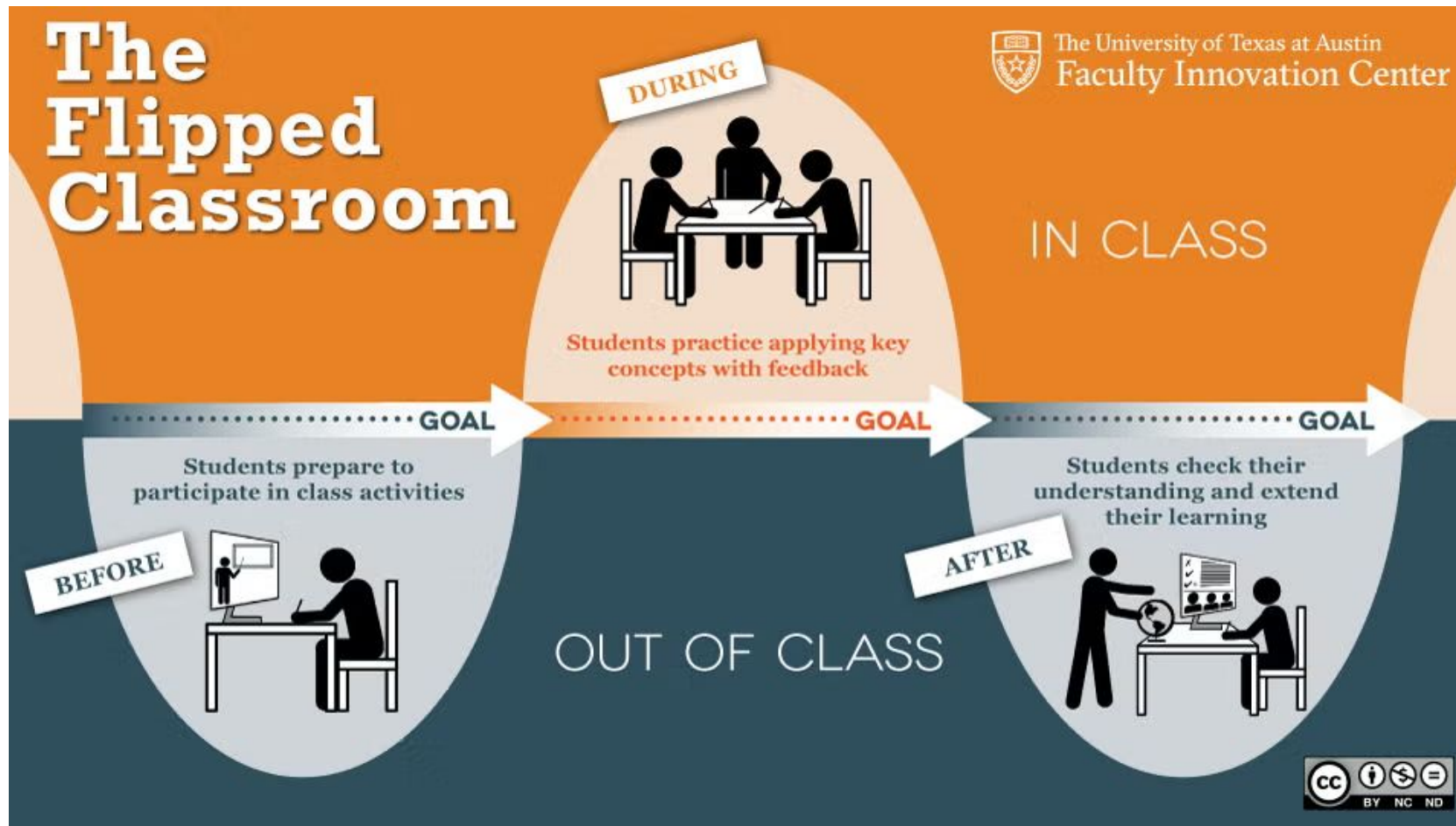


Learn Life Skills

Alpha students spend afternoons developing life skills and exploring their passions.

AI在教育的应用

- It's the time for **flipped classroom**.



AI在教育的应用

- ▶ It's the time for **flipped classroom**.
 - ▶ 課前預習, AI當老師 (personalized and adaptive learning)
 - ▶ 上課中討論, AI根據預習結果分組和出討論題目, 老師指導討論和思辨
 - ▶ 課後加強, 視討論結果, AI補強弱點

AI在教育的应用

► Many Adaptive Learning Platforms



WILEY



AI在教育的应用

► AI幫助學生的五大功能

Sep 14, 2023

8 Universities Leveraging AI to Drive Student Success

Articles • Digital Management And Leadership

<https://digitalmarketinginstitute.com/blog/8-universities-leveraging-ai-to-drive-student-success>

1. Assess and Predict Student Success
2. Drive Personalized Learning
3. Boost Student Engagement
4. Answer Student Inquiries
5. Improve Student Retention

AI在教育的应用

- ▶ 加州州立大學鼓勵學生使用AI

EDUCATION

Inside Cal State's big \$17 million bet on ChatGPT for all

Critics say the cash-strapped system misspent millions of dollars getting upgraded accounts for all students. CSU leaders insist they're needed to meet a changing economy.

By [Julia Barajas](#)

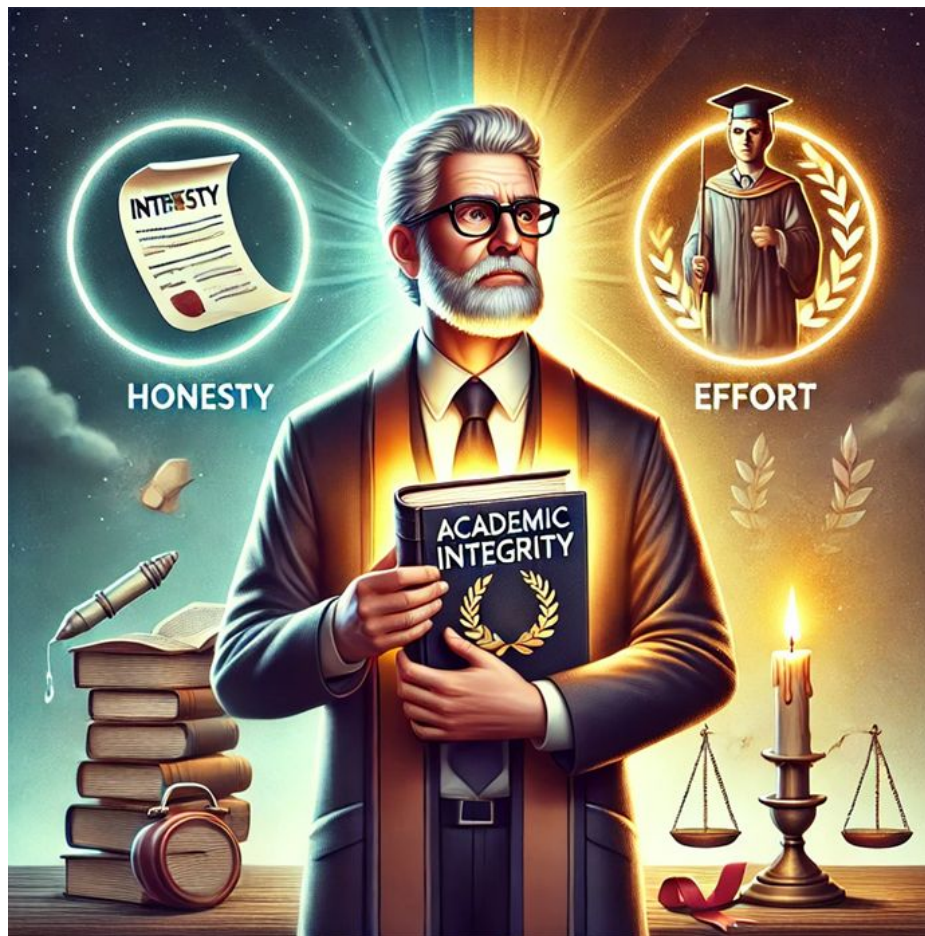
Published Aug 19, 2025 5:00 AM

<https://laist.com/news/education/chatgpt-california-state-university-csu-ai-deal>

AI帶來的問題與爭議

AI帶來的問題與爭議

► 學術誠信的挑戰



AI帶來的問題與爭議

► 學術誠信的挑戰

nature

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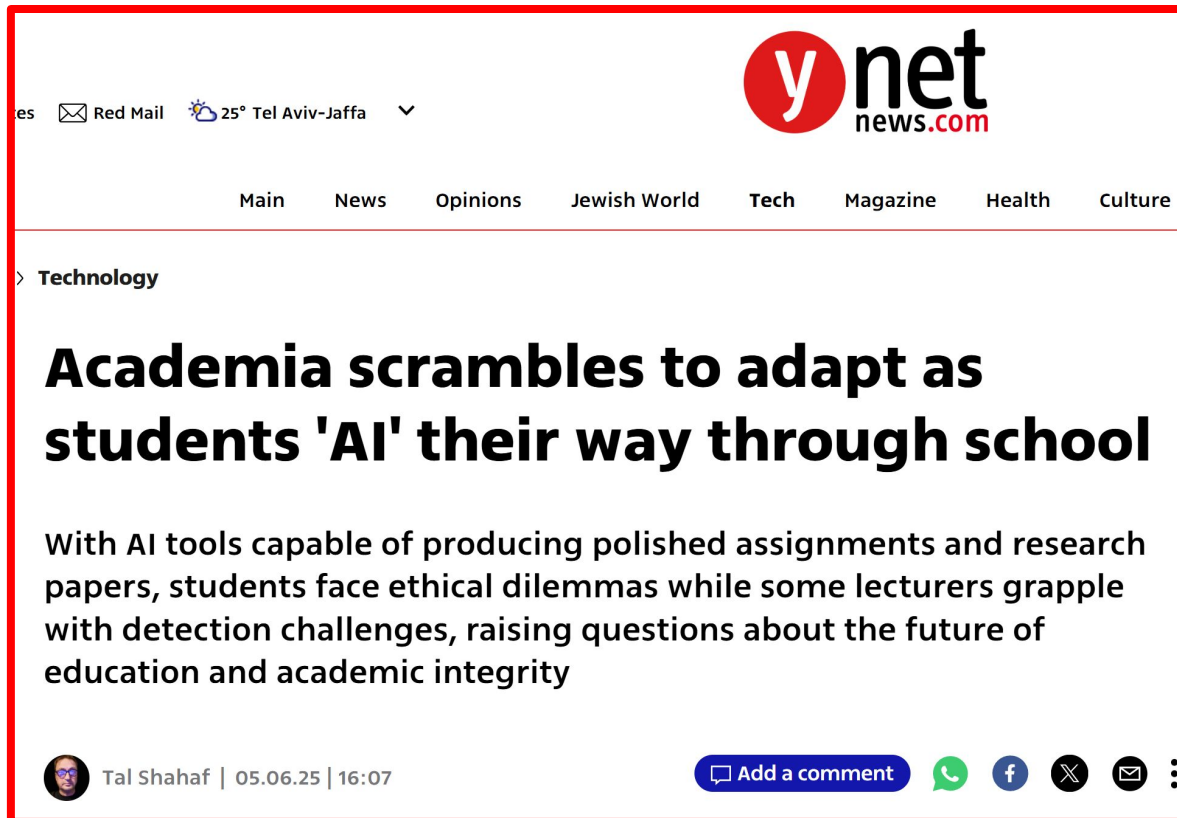
[nature](#) > [news](#) > article

NEWS | 07 July 2023 | Correction [11 July 2023](#)

Scientists used ChatGPT to generate an entire paper from scratch – but is it any good?

AI帶來的問題與爭議

► 學術誠信的挑戰



AI帶來的問題與爭議

- ▶ 學術誠信的挑戰
- ▶ Each University had better **establish ChatGPT use policy** to avoid the ambiguity.



國立臺灣大學
National Taiwan University

教學發展中心 x 數位學習中心
Center for Teaching and Learning Development
Digital Learning Center

Guidance for Use of Generative AI Tools for Teaching and Learning

AI帶來的問題與爭議

► 學術誠信的挑戰



The University of Texas at Austin
Enterprise Technology

[Home](#) > [Governance](#) > [Guidance for Using Artificial Intelligence](#)

Guidance for Using Artificial Intelligence

AI帶來的問題與爭議

► 學習淺化與思考能力退化？



Azadeh Aalai Ph.D.
The First Impression

ARTIFICIAL INTELLIGENCE

What Is Lost When Students Turn to AI

Personal Perspective: Students—and others—who rely on AI are selling themselves short.

Posted May 11, 2025 |  Reviewed by Devon Frye

AI帶來的問題與爭議

► 學習淺化與思考能力退化？

Letters

Students' use of AI spells death knell for critical thinking

Prof Andrew Moran and **Dr Ben Wilkinson** on the ramifications of the explosion in university essays being written with artificial intelligence

AI帶來的問題與爭議

► 教師角色轉型

► 從「知識傳遞者」轉為「學習設計者」與「評鑑者」

傳統角色	AI時代新角色	關鍵價值
知識傳授者	學習引導者 / 教學設計師	強化批判思維、分析能力與自主學習
學習監督者	數據分析者 / 差異化教學設計師	即時回饋、因材施教
行政作業人員	AI工具操作者 / 創新教案設計者	教案與教材可快速生成，專注學生協作與輔導
評量者	評量設計引導者 / 標準與倫理守門者	設計深度評量方法、維護學術誠信
教室管理者	情感支持者 / 社群建構者	提供關懷、激發合作與群體學習動力

AI帶來的問題與爭議



AI FATE倡議書連署

► 遵守AI的FATE原則

► F: Fairness (公平)

- AI的設計、訓練與部署應避免偏見與歧視，保障所有群體的基本權利，並促進社會正義。

► A: Accountability (究責)

- AI的開發與應用應具明確的責任歸屬機制，從技術開發者到使用者皆應對其影響與後果負責，確保有合理的監督與補救機制。

► T: Transparency (透明)

- AI系統的運作邏輯、資料來源與決策過程應盡可能揭示，使利害關係人能理解其運作原理，提升信任與接受度。

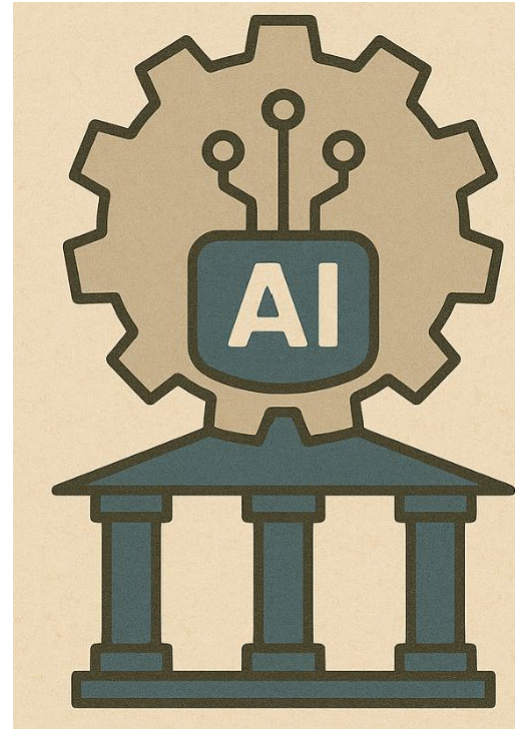
► E: Ethics (倫理)

- AI應遵循人類核心價值，包括尊重尊嚴、自由、隱私與人權，拒絕違反倫理的用途，例如監控濫用、深偽操控或自主殺傷武器等。

因應策略與未來展望

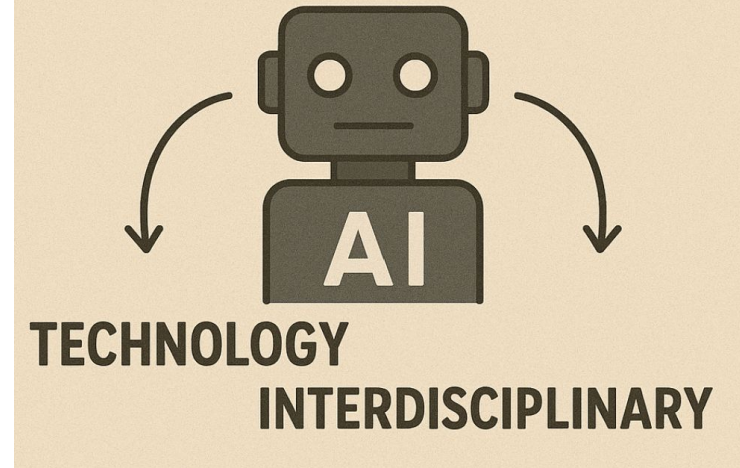
因應策略與未來展望

- ▶ 大學應建立AI應用原則和治理架構
 - ▶ 設計「AI在校務行政、教學、學習、研究的使用守則」
 - ▶ 建立跨系所共享平台與資源



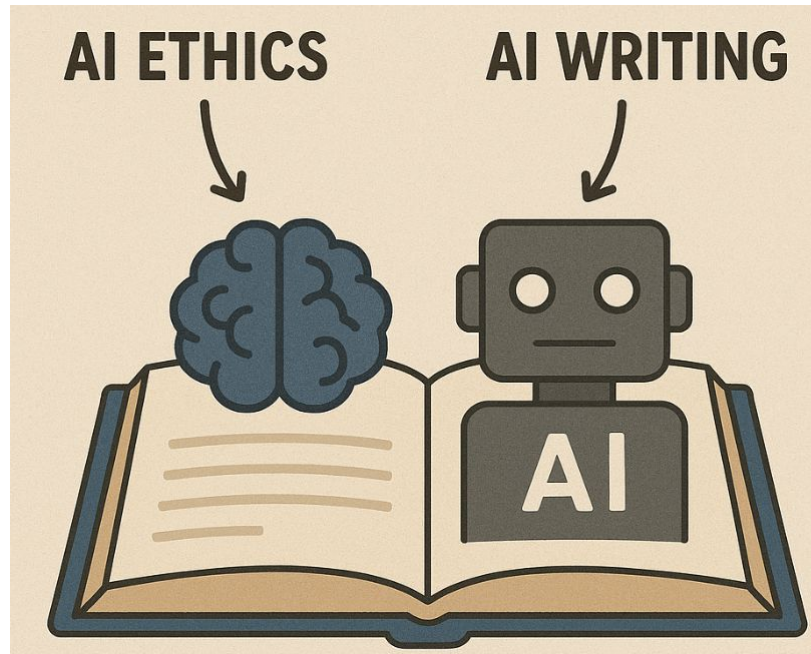
因應策略與未來展望

- ▶ 師生雙向的AI素養建構
 - ▶ 不只是操作工具，更需理解其邏輯與限制
 - ▶ 教AI不是技術課，而是跨域素養課
 - ▶ AI理解與判斷力 (AI Literacy & Critical Thinking)
 - ▶ 數據倫理與責任意識 (Data Ethics & Responsible AI)
 - ▶ 跨域溝通與創新整合力 (Interdisciplinary Communication & Integration)



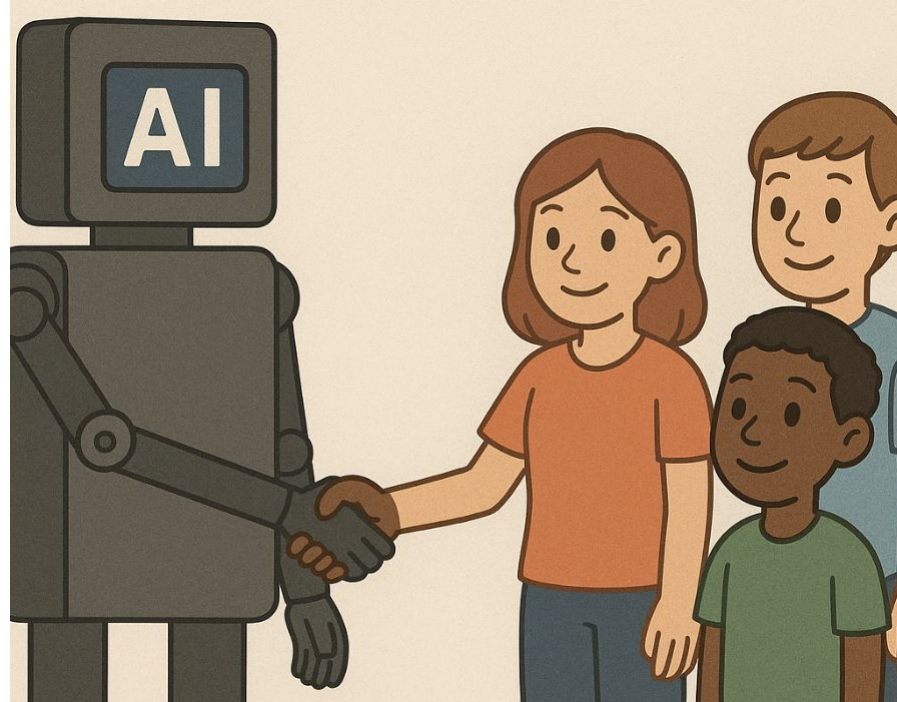
因應策略與未來展望

- ▶ 課程設計與學制創新
 - ▶ 建議將AI倫理納入通識課程
 - ▶ 發展AI應用模組課(人文+科技)



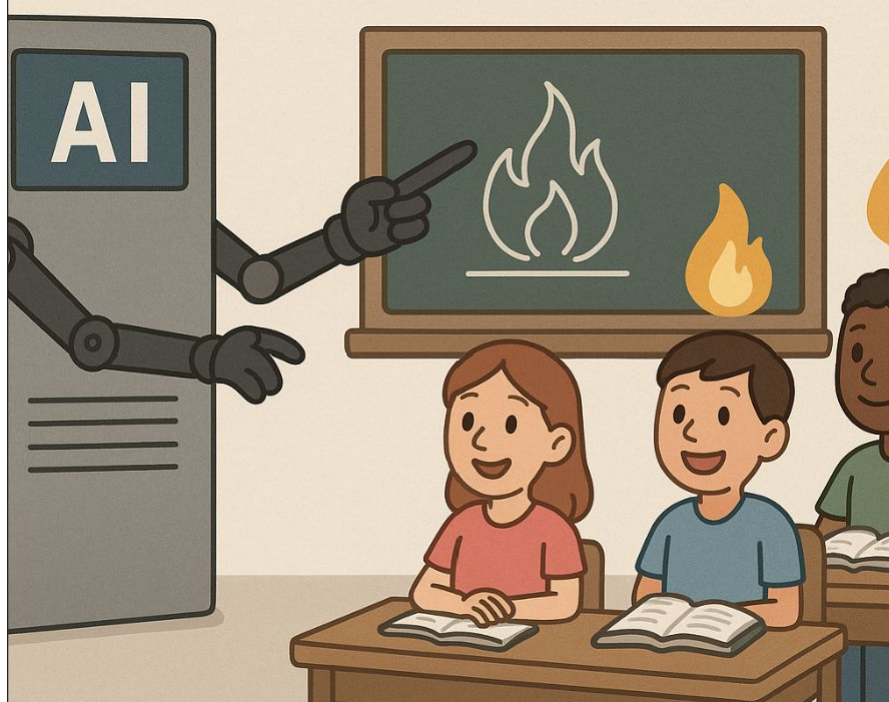
因應策略與未來展望

- ▶ AI與教育的未來：**協作，而非對抗**
 - ▶ AI不是取代，而是擴增人的能力
 - ▶ 教育要教會學生如何與AI共存



因應策略與未來展望

- ▶ 我們如何用AI，教出有靈魂的學生？
 - ▶ 教育的核心是人
 - ▶ AI是工具，但價值判斷與創造力仍屬於人類



因應策略與未來展望

A Changing Job Market

According to LinkedIn's "AI and the Global Economy: Unlocking Growth and Reshaping Work" report, the job market also reflects the need for AI skills.

因應策略與未來展望

- By 2030, 70% of the skills used most in jobs will change—with AI as the primary catalyst for the change.
- In 2024, hiring for AI technical talent grew 30% faster than overall talent.
- The percentage of jobs on LinkedIn listing an AI literacy skill increased more than six times in the past year.
- 66% of leaders say they wouldn't hire someone without AI literacy skills.
- In the past year, the number of AI literacy skills added by LinkedIn members increased by 177%.

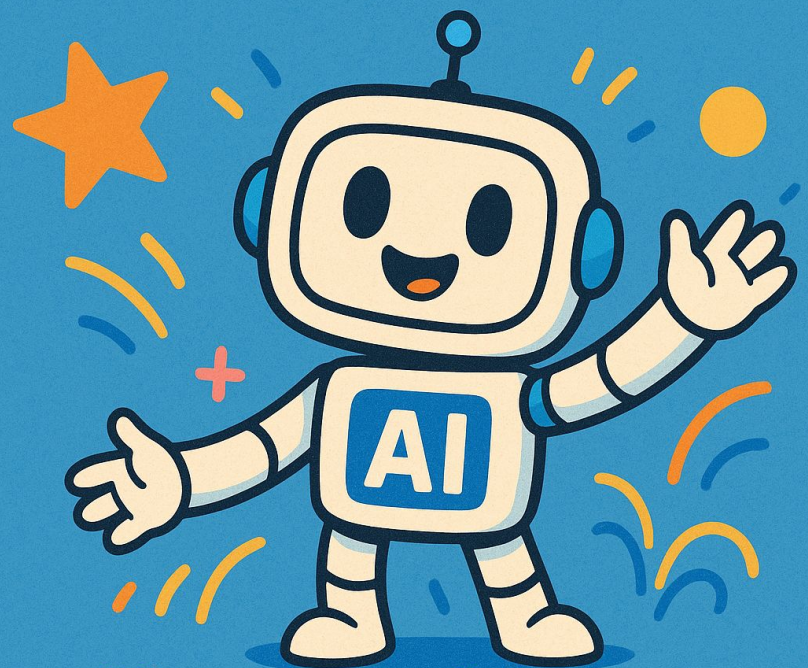
因應策略與未來展望



「人工智慧的未來取決於我們如何設計它。讓我們確保它反映我們最好的價值觀，並造福全人類。」李飛飛 史丹福大學



「全面化人工智慧可能意味著人類的終結……機器可以自行啟動，並且自動對自身進行重新設計，速率也會越來越快。受到漫長的生物進化歷程的限制，人類無法與之競爭，終將被取代。」Stephen Hawking



Happy Aling

