

## AI, LEARNING, AND GENDER EQUALITY

### KEY TAKEAWAYS

- **AI can close gender performance gaps by disrupting biased emotional cues in human instruction.**
- **Lightweight, scalable guidance on how to use AI productively can drive learning gains where access alone cannot — by encouraging constructive rather than delegative use.**
- **Learning gains are not universal. Even with guidance, AI can reinforce existing inequalities when already-advantaged learners are best positioned to use it productively. In an educational setting, high-performing women appeared to gain most, relative to men and lower-performing students.**
- **Workplace leaders are reporting stronger learning returns when AI deployments are designed to augment rather than replace human coaching and feedback.**
- **AI can crowd out conventional learning activities, raising open questions about whether the displaced activities matter for long-run skill development and the broader pipeline of expertise.**

Continuing our *AI & Future of Work Roundtable Series*, SODI and Monash University held the fifth roundtable on April 13, 2026. The interactive session brought together researchers, practitioners, technology and innovation leaders, and educators to examine new evidence on how AI is reshaping learning, and its implications for gender equality. Presentations from two leading researchers anchored a robust roundtable discussion on the risks and opportunities of AI for learning in both education and workplace settings.

RESEARCH SYNOPSIS & IMPLICATIONS FOR ORGANIZATIONAL LEADERS	
<p><b>High-performing women at a university benefitted most from guided access to Gen AI in learning a new language, while male and low-achieving students experienced lower or negative learning gains.</b></p>	<p><b>In a Chinese Go-training setting, an AI trainer outperformed human teachers on student performance, and the pre-existing gender gap benefiting boys closed after five months.</b></p>
<p>Leaders: Deploy AI with guidance on productive use &amp; carefully assess differential outcomes.</p>	<p>Leaders: Leverage AI to <i>disrupt</i> bias in human-delivered training.</p>

*"It's important to consider the value of intellectual friction. Our ideas get better when we can debate and when someone challenges us, so we should be mindful of how we maintain intellectual friction if these chatbots are designed to be sycophants that affirm our points of view."*

— **Angela Ju**, Senior Lead, Culture & Engagement, Upwork

*"When we look at manager effectiveness — having a difficult conversation, setting expectations, goals — we're actually seeing greater learning return when it's human and AI together. You have the human facilitator or trainer, then the practice and skills application with an AI-assisted tool like a conversation simulator. That provides a safe space ... they come back more effective at the conversation."*

— **Kristin Morris**, Lead, Learning & Development, American Red Cross

## HIGHLIGHTS FROM RESEARCH PRESENTED

**Does AI Help or Hurt Learning?** *Professor Catalina Franco, NHH Norwegian School of Economics (with Natalie Irmert, Lund University, and Siri Isaksson, Burgundy School of Business)*

A lab experiment randomized students learning Esperanto across three conditions: control (no AI), AI-assisted (premium ChatGPT with generic usage examples), and AI-guided (same access with examples of effective learning-oriented use — e.g., explaining thought process, asking for step-by-step guidance, engaging in follow-ups).

- **No overall effect on test performance.** Average scores were statistically indistinguishable across the three conditions.
- **AI users attempted fewer practice questions.** AI assisted and AI guided students completed 4 to 6 fewer practice questions in the fixed practice window, with a higher success rate. The decline in practice questions was concentrated among men, especially high-GPA men, while high-GPA women were much less affected.
- **High-GPA women were the clearest beneficiaries of AI access.** They were less likely to score low and more likely to reach top scores; male and low-GPA students saw weaker outcomes under AI access, with low-GPA students (particularly low-GPA men) significantly more likely to score at the bottom.
- **Copy-pasting was the key behavioral mechanism.** Heavy-copy pasting of practice questions was associated with the lowest scores, and high-GPA women copy-pasted the least — helping explain why they gained the most from the same AI access.

**Can AI Improve Gender Equality? Evidence from a Natural Experiment** *Assistant Professor Leo Bao, Monash University (with Difang Huang, AMSS, and Chen Lin, HKU)*

This study examined whether AI instruction can address persistent gender gaps in STEM-adjacent skill domains, using a natural experiment in which COVID-related teacher quarantines in China caused some students at a large Go training academy to be reassigned from human teachers to an AI trainer (using an AlphaGo-style algorithm).

- **AI outperformed human teachers.** For students with AI trainers, winning probability rose from ~50% to ~58% over five months; the control group stayed flat.
- **Move quality rose and errors fell.** The group with AI trainers improved on every objective sub-outcome (average move quality, total errors, critical errors, error magnitude).
- **The pre-existing gender gap closed.** Boys outperformed girls in the control group, but girls with AI trainers caught up almost entirely within five months.
- **AI's gender-neutral emotional cues (across facial, vocal, and verbal channels) substituted for the gender-biased emotional cues displayed by human teachers.** The authors caution that effectiveness depends on task structure, AI capacity, inputs to the AI and human-AI interactions.

## IMPLICATIONS & CONSIDERATIONS FOR ORGANIZATIONAL LEADERS

Discussion participants highlighted several organizational priorities:

- **Continuously assess differential outcomes in AI deployment for learning - average performance effects can mask who is helped and who is harmed:**
  - Identify which groups are currently lagging on the outcomes that matter and design AI rollouts with those groups specifically in mind.
  - Evaluate differential effects across gender, prior performance, language background, neurodiversity, and other dimensions of identity and access
- **Leverage AI to disrupt human bias.** AI can interrupt teacher or manager bias not only by replacing humans, but by acting as a mirror — surfacing patterns of differential treatment (e.g., gender-biased emotional cues) that humans cannot see in themselves.
- **Teach productive AI use; don't just grant access.** Alongside guardrails and system design, *guidance* on how to use AI productively can drive learning gains where access alone cannot.
  - Guidance on AI use (when to ask for explanations rather than answers, when to engage critically, when not to delegate) can shift learner behavior even with the AI tool unchanged
- **Configure AI deployments for teaching and learning with meaningful human involvement where it matters most,** preserving the critical thinking, effortful engagement, and relational feedback that learning depends on.
  - Some growth depends on direct feedback, disagreement, and mentorship - deploy AI to complement these moments, not replace them.
- **Monitor what AI *displaces* in the learning loop**
  - Fewer practice questions attempted, less struggle time, fewer independent attempts at a problem — these are signals that the learning process is being shortcut even when headline scores look unchanged.

## RELATED RESEARCH, REPORTS, & RESOURCES

[Bastani, et. al. \(2025\). Generative AI without guardrails can harm learning: Evidence from high school mathematics.](#)

[Capraro et al. \(2024\). The impact of generative artificial intelligence on socioeconomic inequalities and policy making.](#)

[Kestin et al. \(2025\). AI tutoring outperforms in-class active learning: An RCT introducing a novel research-based design in an authentic educational setting.](#)

[Dai et al. \(2025\). How students use AI feedback matters: Experimental evidence on physics achievement and autonomy.](#)

[Pardos & Bhandari \(2024\). ChatGPT-generated help produces learning gains equivalent to human tutor-authored help on mathematics skills.](#)

[Wecks et al. \(2024\). Generative AI usage and exam performance.](#)

[Wang, R. E., et al. \(2024\). Tutor CoPilot: A Human-AI Approach for Scaling Real-Time Expertise.](#)

[Lee, H.-P., et al. \(2025\). The Impact of Generative AI on Critical Thinking.](#)

[Brynjolfsson, E., Li, D., & Raymond, L. \(2023\). "Generative AI at Work."](#)

## QUESTIONS FOR FUTURE RESEARCH

Roundtable participants identified the following open questions:

- Under what conditions does AI supported learning close versus widen performance gaps across demographic groups?
- How should AI tutors and practice partners be designed (avatar, voice, modality, feedback granularity) to maximize inclusive learning?
- What are effective approaches to helping human trainers understand the bias they may be exhibiting to learners?
- How can AI be deployed to combat stereotype threat in learning?
- What does AI displace in the learning loop, and at what cost? What is being displaced, whether it matters for durable learning, and who is harmed most?

## ABOUT SODI

The Science of Diversity & Inclusion Initiative (SODI.org) brings together industry leaders and top behavioral scientists to form a “living laboratory.” This coalition of innovators designs, tests, and scales new solutions to advance diversity, inclusion, and belonging. If you are interested in learning about SODI’s future events, roundtables, and convenings, please register at <https://sodi.org/request/>

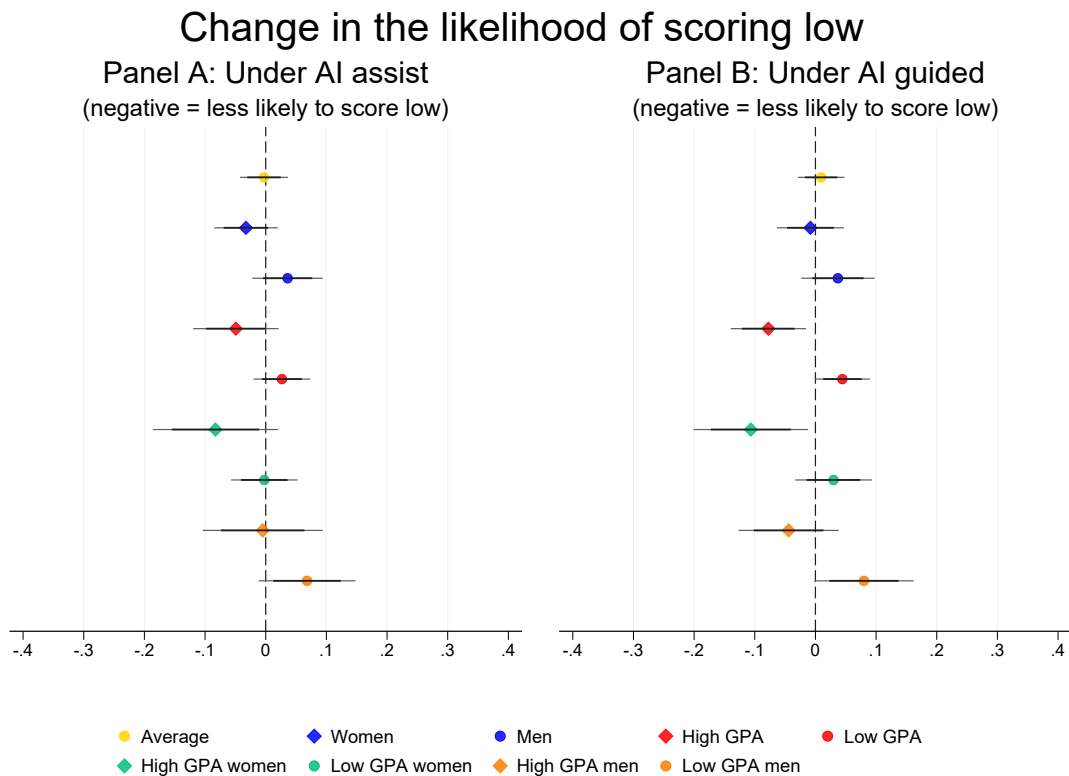
## ABOUT MONASH

Monash Business School is a global academy for leaders, innovators and change-makers. It is internationally recognized for excellence in research and education as ranked by some of the most prestigious and highly regarded international rankings of world universities.

**FEATURED RESEARCH—SELECTED FIGURES & TABLES<sup>1</sup>**

**FIGURE 1: High-GPA women are the clearest beneficiaries of AI access<sup>2</sup>**

Note: Treatment effects (percentage points) by subgroup on the probability of obtaining a low score ( $\leq 5$  out of 15). High-GPA women are significantly less likely to score low under both AI-assisted and AI-guided conditions, whereas Low-GPA students and, in particular, low-GPA men are the group most likely to experience an increase in very poor performance under both AI-assisted and AI-guided conditions.



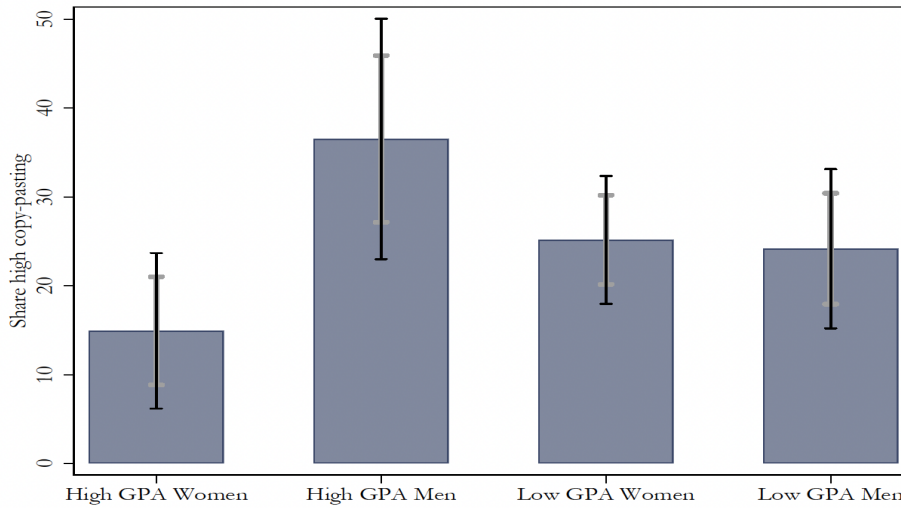
<sup>1</sup> Charts reproduced with permission from the author.

<sup>2</sup> Franco, Catalina, Irmert, Natalie, & Isaksson, Siri (2026). Does AI Help or Hurt Learning? *Working Paper Lund University* (2026: 2), 1-59.

**FEATURED RESEARCH—SELECTED FIGURES & TABLES**

**FIGURE 2: High-GPA women copy-paste less than other subgroups<sup>2</sup>**

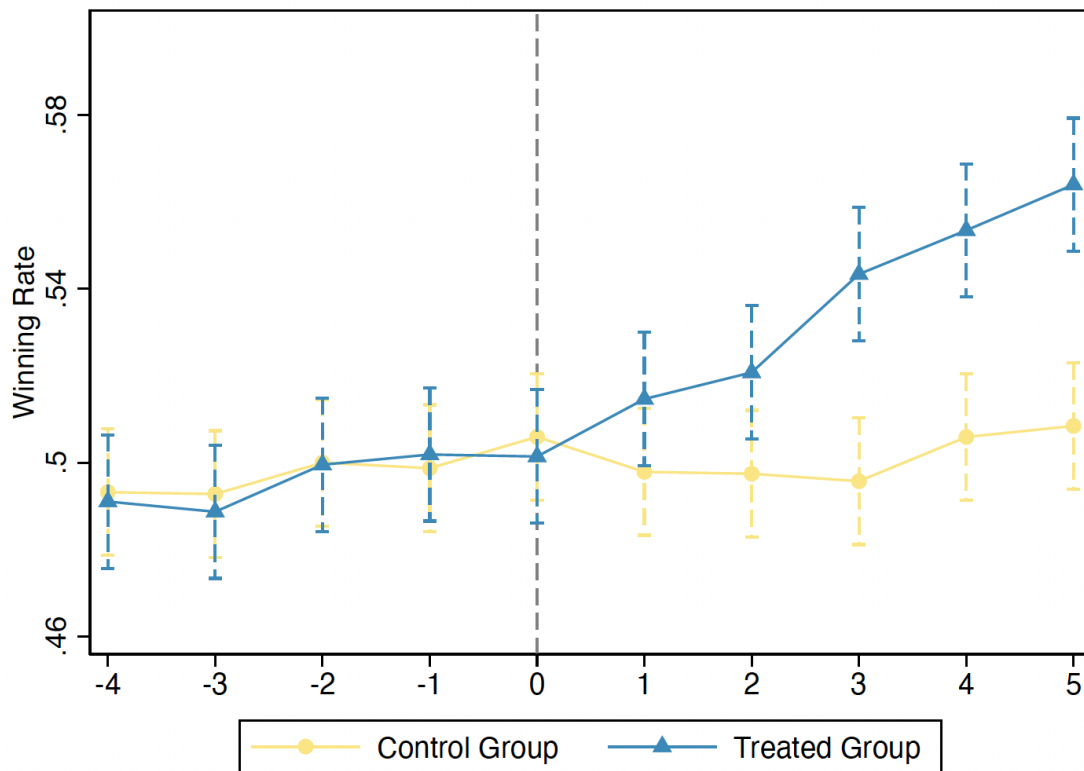
Note: Share of users exhibiting high copy-paste behaviour in prompts, by gender × GPA. High-GPA women sit well below high-GPA men — helping explain why they extract more learning from the same AI access.



**FEATURED RESEARCH—SELECTED FIGURES & TABLES**

**FIGURE 3: AI's effectiveness on winning probability<sup>3</sup>**

Note: The group whose human teachers were replaced by an AI trainer due to COVID quarantine saw winning probability rise from ~50% to ~58% over the five months following the intervention. The control group, still trained by humans, remained statistically flat at ~50%



<sup>3</sup> Huang, D., & Lin, C. (2022). Can Artificial Intelligence Improve Gender Equality? Evidence from a Natural Experiment. *Management Science, Forthcoming, HKU Jockey Club Enterprise Sustainability Global Research Institute-Archive.*

**FEATURED RESEARCH—SELECTED FIGURES & TABLES**

**FIGURE 4: AI closes the pre-existing gender gap in Go performance<sup>3</sup>**

Note: In the control group, boys consistently outperformed girls, with a roughly constant gap over the nine-month window. In the treated group, girls' winning rate rose faster than boys' after AI intervention — nearly closing the gap by month five.

