What is the Role of the Teacher in the Age of AI?

Keynote for 40th ASEAN Council of Teachers + Korea Convention

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EDUCATIONAL TECHNOLOGY DIVISION
MINISTRY OF EDUCATION, SINGAPORE

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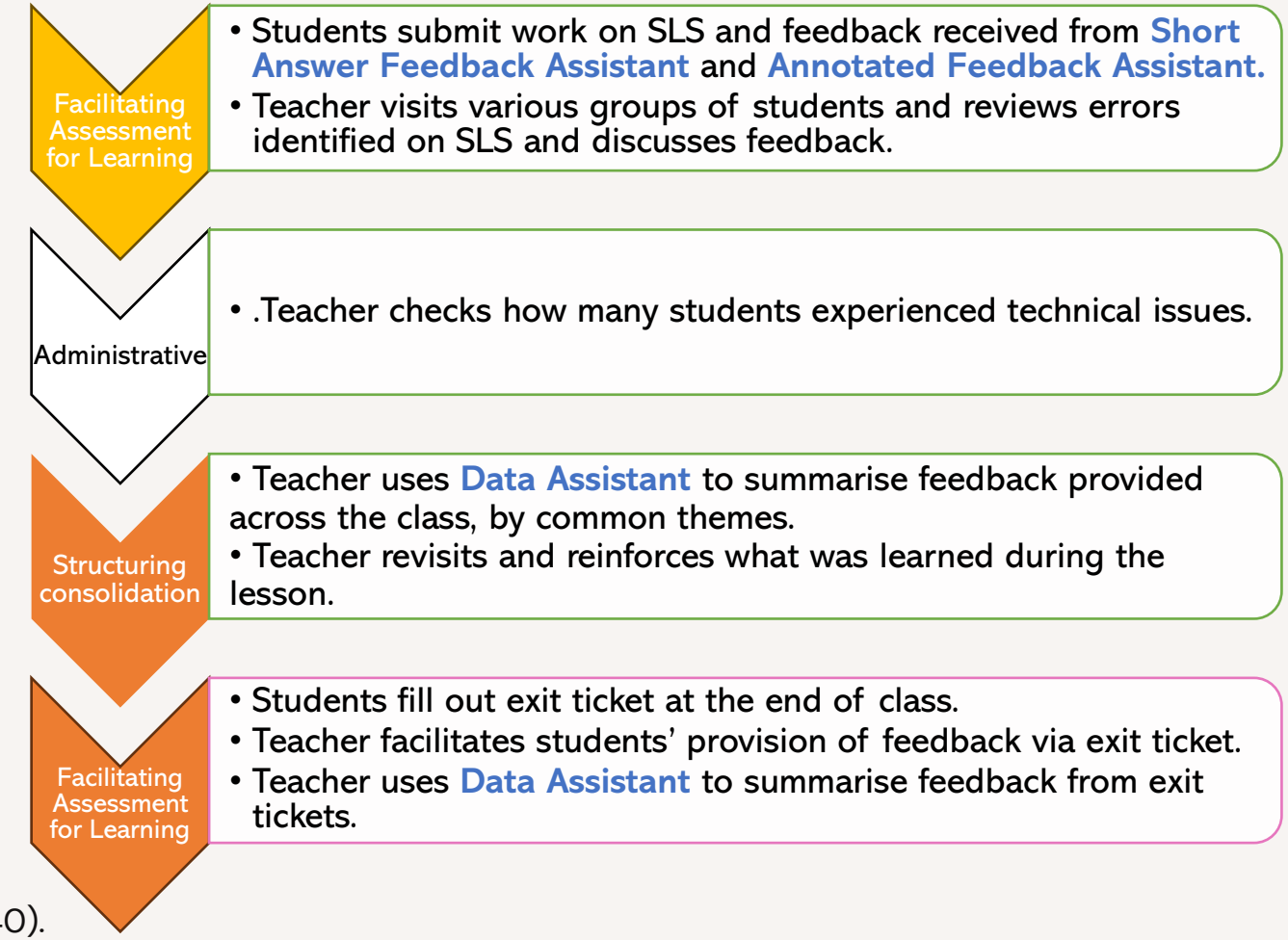
Are Teachers Still Important Today?

An MOE Research Study on Teacher AI use in English

Ho, C., Tan, Y.L., Lim, B.L. (2026). *Enhancing students' argumentation through AI-mediated scaffolding*. MOE, Singapore.

Study reveals that our teachers work with AI tools skilfully to amplify and transform teaching and learning

- Amplification (yellow)*. Teachers use AI to offload some tasks it does well, so that they can focus on tasks that AI cannot do.
- Transformation (orange)*. AI provides richer affordances that would not have been otherwise possible, which teachers use to transform student experiences and outcomes.



* This has also been called "complementation" and "augmentation" respectively (Milanez in OECD, 2026, p.140).

What are the conditions for skilful use of AI?

AI Tool Design

- Systems and products must be designed for learning and to allow human-AI collaboration.

Student AI Literacy

- Students must know when and how to use AI.

Teacher Expertise

- Teachers need to be guided and supported in their use of AI

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The Singapore Student Learning Space (SLS)

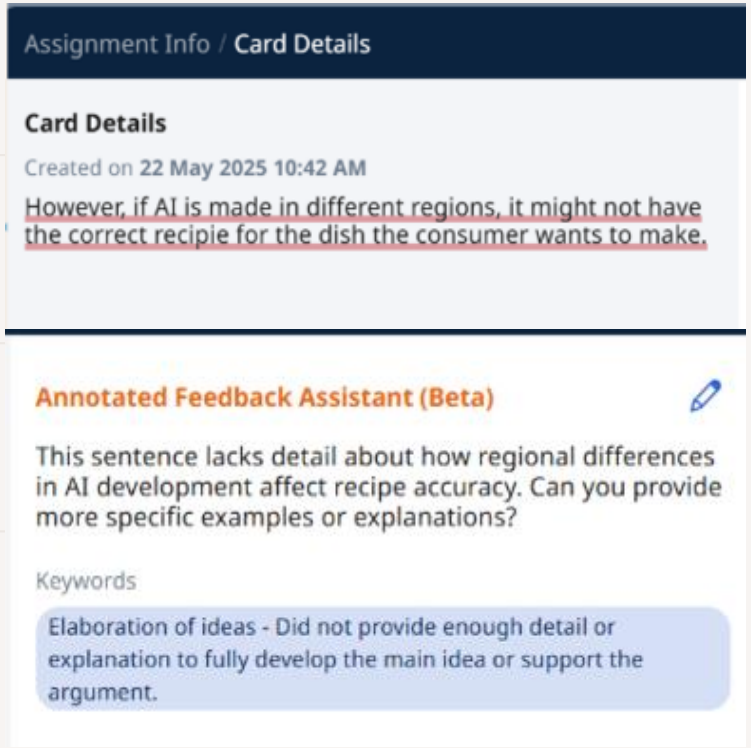
Rolled out to all K-12 teachers and students since 2018, its AI features are designed to keep teachers-in-the-loop and/or students in control.

1 Feedback Assistants

Teachers set the rubric and prompt the Assistants to customise the marks and feedback that they want to provide students, e.g. focus on argumentation or simplified for weaker students. Teachers can edit AI scores and feedback before or after releasing to students.

2 Data Assistant

Teachers set the prompt to interrogate learning data for the insights they want, e.g. discussion themes, common misconceptions, disengaged students, social networks, prosocial behaviours.



To find out more about SLS, check out https://www.learning.moe.edu.sg/

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Our ‘4 Learns’ in AI apply to both students and teachers

01

Learn about AI

Understand what AI is, how it works, and its societal implications

Students and teachers learn the affordances, limitations and risks of AI.

02

Learn to use AI

Develop ability to engage with AI tools effectively, ethically and responsibly

Students and teachers learn what and how tools are designed for different purposes.

03

Learn with AI

Collaborate with AI to enhance thinking, creativity and learning outcomes

Students and teachers learn when, what and how to offload to AI, to retain the necessary friction for learning.

04

Learn beyond AI

Develop meta-intelligences that underpin human wisdom, ethics and emotional understanding

Students and teachers learn about what AI should not do, and what humans should retain agency over.

How do We Develop and Support our Teachers?

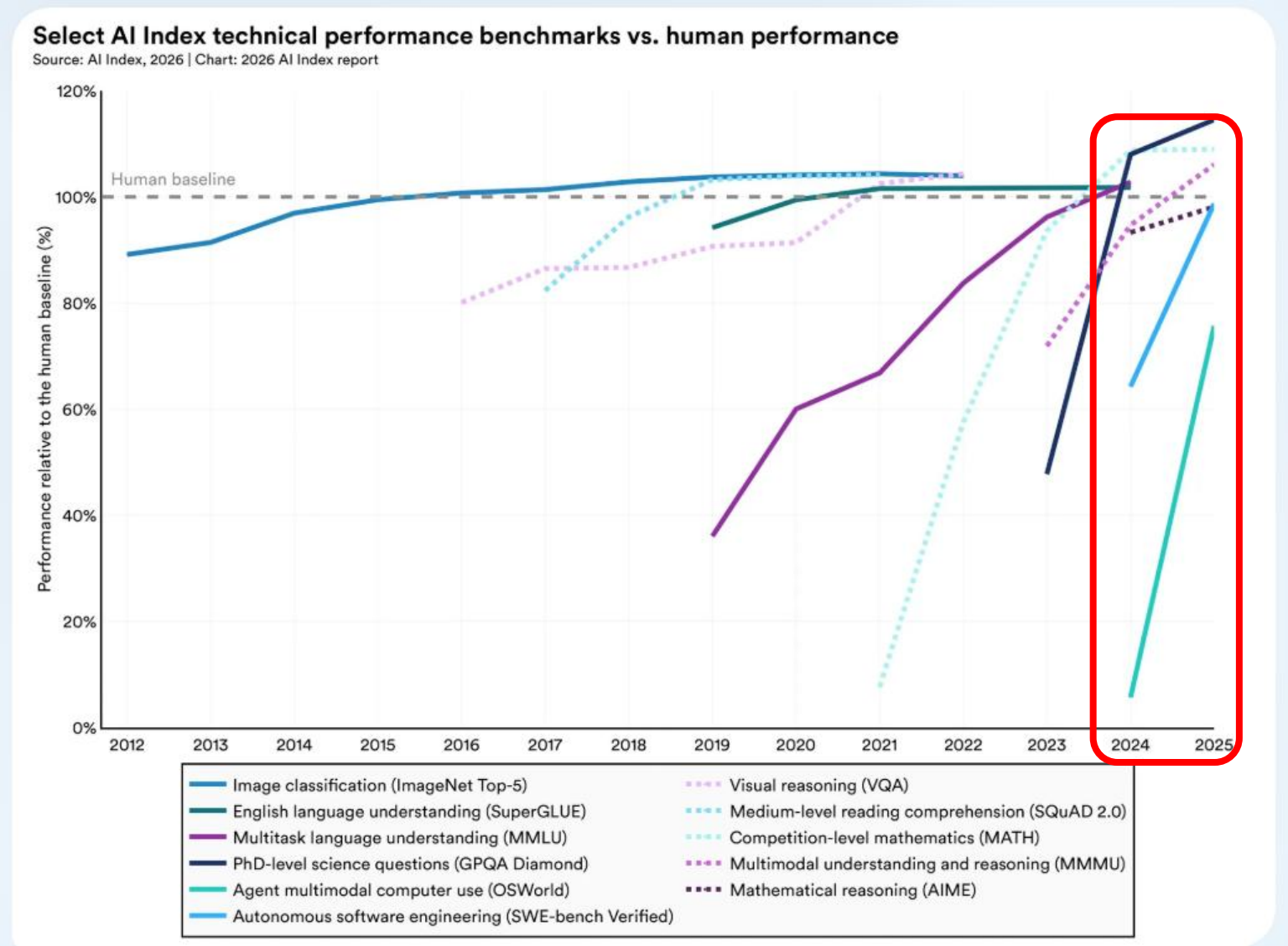
- **AI Modules.** Online AI modules on the 4 Learns.
- **AIEd Governance, Frameworks and Guides.** Regularly updated and addresses emergent pedagogy, ethics, technical and social-emotional risks and affordances, e.g. age-appropriate use.
- **Professional Learning Communities.** Singapore Learning Designers Circle (FB community).
- **Guardrails, Recipes and Resources.** SLS allows MOE to introduce guardrails through system prompts and monitoring, or through a curated list of external resources. Prompt recipes & resources modelling good AI use can be shared; teachers can edit them to meet their needs.
- **Rapid Research.** Teachers participate in or learn from MOE rapid research conducted in AIEd that provides local empirical evidence on what works and what does not.

To find out more about Rapid Research, check out https://www.moe.gov.sg/education-in-sg/educational-technology-journey/rapid-research

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Will Teachers continue to Matter Tomorrow?

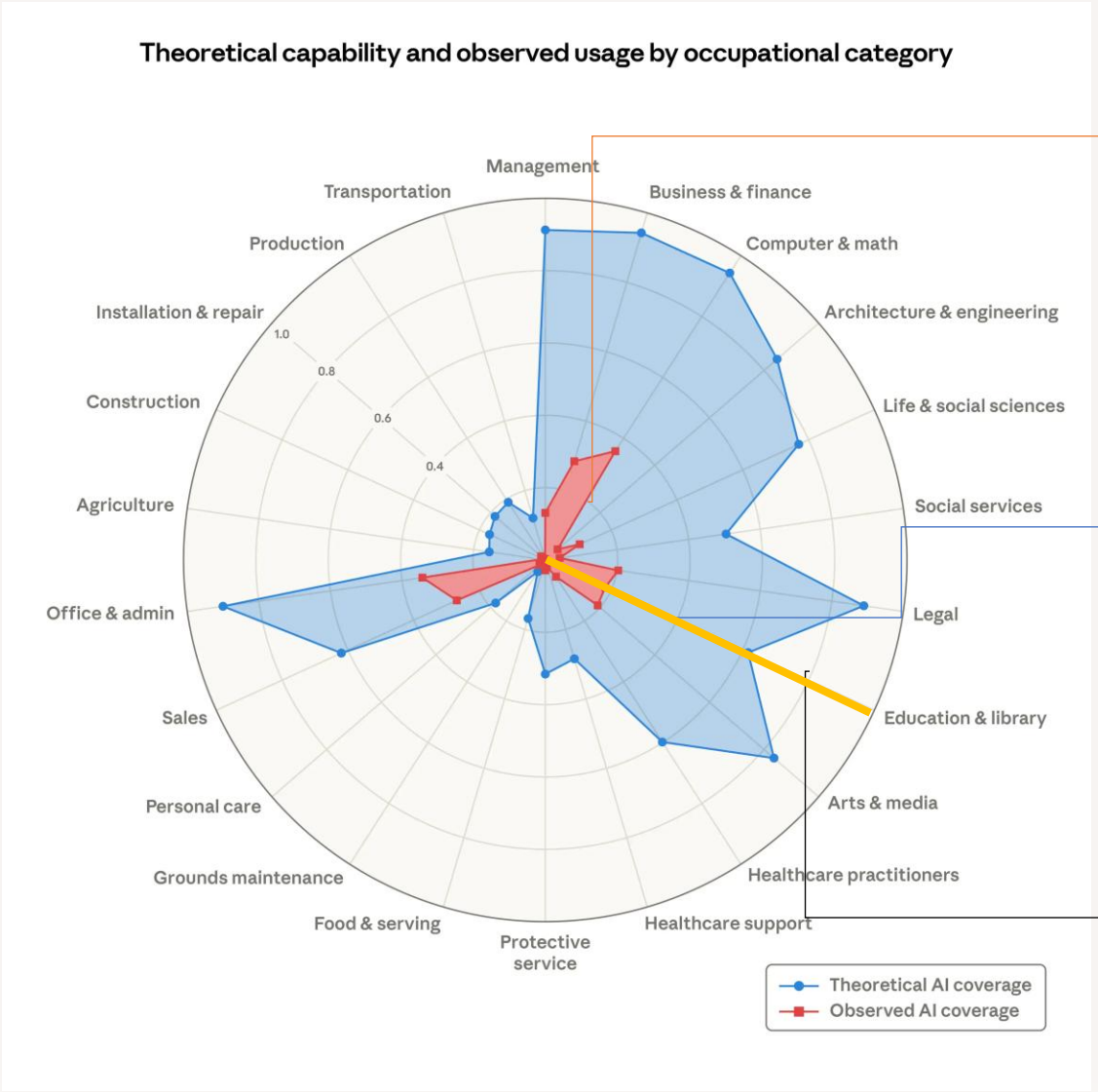


30 %

improvement in frontier model capabilities in 1 year in Human's Last Exam, exceeding human capabilities.

From Stanford HAI 2026 AI Index Report

AI is Increasingly Outperforming Humans across Every Domain



What AI can already do

What AI will be able to do

- This will increase over time as model capabilities improve, including judgment and long-term and multi-step planning

What AI cannot do

Anthropic (Mar 2026). "Labor market impacts of AI: A new measure and early evidence".

Teacher AI Use will Continue to Increase

The Future of AIEd – 1. Judicious Use

AI can offload human effort in tasks it does well and at certain times, but not in others it **cannot or should not do**, due to the **nature of human learning**.

1 Cognitive Scaffolding vs Offloading

AI use needs to preserve productive struggle necessary for learning, removing only extraneous cognitive load and fading away as students build independent mastery.

2 Affective/Relational Empathy vs Simulation

Because of its capabilities, AI does not experience human limitations and cannot truly empathise with the experiences human learners go through. Using AI for motivation or relationship building can thus lead to poorer outcomes, e.g. students trust human rather than AI feedback more impacting their motivation to act on such feedback. (Burns et al, 2026)

3 Modelling Ethical Judgment vs Imitation

While AI can make rational judgments, its inability to experience accountability in the same way as humans (i.e. moral cost) means that its ethical judgments only imitates human ones. When confronted with complex moral dilemmas, AI verbalizes complexity but when forced to choose/act, it follows an opaque internal preference hierarchy (Harsha, 2026).

The Future of AIEd – 2. Human-AI Teaming

Anthropic study only considers current teacher tasks in a zero-sum/replacement manner. AI has the potential to support transformative T&L outcomes when used **synergistically** by human teachers, **expanding** the tasks that teachers can do.

1 **Sensing – Using AI to track learning processes holistically and in real-time**

AI can capture and aggregate multimodal, holistic and ongoing evidence of learning to supplement teacher sense-making. E.g., trace data can provide clues as to students' metacognitive processes while gaze-tracking and other biofeedback can detect student motivational and affective states.

2 **Modelling – Understanding learner, curriculum, pedagogy and assessment**

AI can bring together diverse sources of information to better understand with what, when and how pedagogical interventions should be implemented for each student, to supplement the intuitions and experience of teachers. E.g. an intelligent tutoring system can suggest refinements to content and assessment based on population-level data on their effectiveness and psychometric properties.

3 **Acting – Enriching the range and personalisability of learning experiences**

AI can power new and highly differentiated learning experiences for each student at each moment to supplement broad direction setting by teachers. E.g. Vibe-coded multimodal simulations and interactives or tutoring chatbots can provide active learning and adaptive, contingent scaffolding

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Conclusion

Singapore Teachers are High but also Critical Users of AI

75 %

- Use AI in their work, compared to OECD average of 36% (TALIS 2024), most often for resource creation

76 %

- Received training or professional learning related to AI, compared to OECD average of 38%

88 %

- Of teachers are wary of AI errors, compared to OECD average of 66%

AI carries Risks, but there is a difference with Skilful Use

High level of AI use among Singapore students has NOT led to expected cognitive offloading and a drop in academic performance.

1 **High users of AI score lower in Science performance compared to non-users**

Across OECD countries, high users of AI score 20 pts lower, equivalent to 1 year of schooling.

2 **PISA 2025 shows that high AI use among Singapore students**

66% of Singapore students use AI weekly for learning, compared to 46% (OECD average).

3 **BUT they do not appear to be as negatively affected**

They only dropped 2 pts from 2022, less than the global decline of 3 pts, and the expected 23 pt decline given their high level of AI use.

4 **The reasons might be due to AI tool design, student literacy and teacher skill**

81% of Singapore students have received AI literacy training compared to 63% globally. Student AI literacy works together with SLS and our curation of AIEd tools, as well as teacher training and support.

Cognitive, affective, social and ethical risks of AI use will continue to increase as AI capabilities improve. We will need to continue to mitigate these risks actively by promoting skilful use.

Closing Thoughts

- We can teach BETTER with AI, but cannot teach ONLY with AI.
- In the short run, we need to understand how AI can benefit rather than harm learning and actively promote its skilful use.
- In the long run, as AI tools, student AI literacy and teacher expertise improve, we need to remember what is essentially human, shift our roles and develop the skills to teach it.
- In this way teaching and learning will remain AI-enabled BUT human-led.

If you would like to connect, please write to chia_hai_siang@moe.gov.sg

Thank you

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Annexes

References

1. Burns, W., Winthrop, R., Luther, M., Venetis, E., & Karim, R. (2026). *A New Direction for Students in an AI world: Prosper, Prepare, Protect*. Center for Universal Education at Brookings.
2. Harsha, D. (2026, May 27). *AI models appear to recognize moral complexity – then ignore it*. Ash Center for Democratic Governance and Innovation, Harvard Kennedy School.
3. Ho, C., Tan, Y.L., Lim, B.L. (2026). *Enhancing students' argumentation through AI-mediated scaffolding*. MOE, Singapore
4. Massenkoff, M., & McCrory, P. (2026, March 5). *Labor market impacts of AI: A new measure and early evidence*. Anthropic.
5. Organisation for Economic Co-operation and Development. (2026). *Co-constructing visions for the future of teaching*. OECD Publishing.
6. Sajadieh, S., Fattorini, L., Perrault, R., Gil, Y., Parli, V., Santarlasci, L., Pava, J., Maslej, N., Altman, R., Brynjolfsson, E., Brodley, C., Clark, J., Dignum, V., Kumar, V., Landay, J., Lyons, T., Manyika, J., Niebles, J. C., Shoham, Y., . . . Weld, D. (2026). *The AI index 2026 annual report*. Stanford Institute for Human-Centered Artificial Intelligence, Stanford University.