



Many governing bodies are advancing GenAI adoption without pre-deployment evidence on user-level outcomes.¹⁻⁴ Governance must shift to a model that empirically validates user health, cognitive, and performance effects prior to public-sector rollout, treating GenAI as an intervention subject to clinical-style trials.⁵⁻⁶ Core policy solutions require research-based deployment criteria that prioritize constituent safety over speed of infrastructure buildout.

Multiple adverse phenomena have been documented alongside GenAI deployments. These include clinical safety failures from hallucinated or biased medical guidance in care pathways; algorithmic amplification of content related to self-harm, disordered eating, and substance use; and similar amplification in domains that reinforce delusional beliefs.⁷⁻¹⁰ Taken together, these findings indicate a broader cognitive public-health risk rooted in insufficient safeguards on GenAI-user interactions. Adolescents are especially vulnerable given their developmental stage and high exposure,¹¹⁻¹² yet education systems are integrating these technologies into curricula without pre-testing for learning impacts.¹³⁻¹⁶

Preliminary research has begun to characterize GenAI's cognitive effects. Exploratory neuroimaging and education studies suggest that GenAI tools may reduce momentary cognitive load and increase germane processing for better short-term comprehension while potentially impairing longer-term episodic memory.¹⁷⁻²³ Academics also raise concerns about these technologies resulting in poorer information retention, elevated expertise reversal effects, and increased automation bias and skill degradation.²⁴⁻²⁹ Current research insufficiently addresses these concerns for adolescents, with studies largely fragmented and confined to adult-only samples.

National GenAI agendas cluster into four strategic categories: (I) using GenAI as a socioeconomic, scientific, geopolitical, and cybersecurity tool;³⁰⁻³⁴ (II) coordinating deployment, applications, training, and ownership;^{1-4,35} (III) expanding access for underserved populations;³⁶⁻³⁷ and (IV) mitigating long-horizon risks.³⁸⁻⁴¹ While each of these priorities is legitimate, resulting policy frameworks largely omit requirements for evaluating user-level outcomes prior to infrastructure buildout. Public narratives reinforce this posture. Media coverage emphasizes projected economic growth, productivity gains, and educational access,⁴²⁻⁴⁷ while critiques often focus on risks from unchecked development or malicious actors.⁴⁸⁻⁵⁰ These forward-looking storylines draw disproportionate attention, crowding out scrutiny of more immediate, measurable risks emerging from GenAI adoption.

While public institutions cannot dictate private sector product design, legislatures and agencies can require pre-deployment validation via statute, procurement standards, or administrative rule.^{2,51} Governance bodies focused on responsible rollout should reexamine the interests motivating current GenAI plans, identifying the systemic assumptions behind infrastructural incentives and how these biases may be shaping success criteria within their jurisdictions. Clarifying these assumptions is critical to distinguishing governance intent from evaluation standards. Failing to do so risks embedding deployment justifications into success metrics, overfitting to institutional priors that may not align with constituent needs.⁵²⁻⁵³

A research-first approach is essential for drafting responsible GenAI policy. Governance should be grounded in rollout decisions contingent on pre-tested user impacts. While this slower, clinical-style approach to adoption is unfashionable, its lower risk tolerance is more likely to yield safer long-term trajectories. AI Initiatives is advancing this model in Maine,⁵⁴⁻⁵⁵ but the ideas presented here are intended to inform GenAI governance frameworks across jurisdictions, establishing stronger safety thresholds for public-sector deployments.



References

1. United States. *William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021*, Pub. L. 116–283, div. E (“National Artificial Intelligence Initiative Act of 2020”), Jan. 1, 2021, 134 Stat. 4523 (codified at 15 U.S.C. §§ 9401–9462).
2. Executive Office of the President, Office of Management and Budget. *Accelerating Federal Use of AI through Innovation, Governance, and Public Trust (M-25-21)*. Memorandum for the Heads of Executive Departments and Agencies, April 3, 2025.
3. White House. *America’s AI Action Plan*. July 10, 2025
4. European Commission. *Apply AI Strategy*. Communication from the Commission, COM(2025) 723 final, 8 October 2025.
5. *World Health Organization*. Ethics and Governance of Artificial Intelligence for Health: Guidance on Large Multimodal Models. 2025.
6. UK Government, “AI Safety Summit 2023: Chair’s Statement,” Nov. 2, 2023
7. McBain, R. K., et al. “Evaluation of Alignment Between Large Language Models and Suicide-Prevention Guidance.” *Psychiatric Services*, 2025.
8. Østergaard, S. D. “Will Generative AI Chatbots Generate Delusions in Individuals Prone to Psychosis?” *Acta Psychiatrica Scandinavica* (Aug. 5, 2025).
9. Preda, A. “AI-Induced Psychosis: A New Frontier in Psychiatry.” *Psychiatric News* (Oct. 2025).
10. Au Yeung, J., et al. “The Psychogenic Machine: Simulating AI Psychosis, Delusion Reinforcement and Harm Enablement in LLMs.” Preprint (Sept. 2025)
11. United States, Office of the Surgeon General. *Social Media and Youth Mental Health: The U.S. Surgeon General’s Advisory*. 2023.
12. Pew Research Center. “About a Quarter of U.S. Teens Have Used ChatGPT for Schoolwork—Double the Share in 2023.” January 15, 2025.
13. U.S. Department of Education, Office of Educational Technology. *Empowering Education Leaders: A Toolkit for Safe, Ethical, and Equitable AI Integration*. Washington, DC, Oct. 2024
14. OECD. *Education Policy Outlook 2024*. Paris: OECD, 2024.
15. Miao, Fengchun, and Wayne Holmes. *Guidance for Generative AI in Education and Research*. Paris: UNESCO, 2023
16. U.S. Department of Education, Office of Educational Technology. *Artificial Intelligence and the Future of Teaching and Learning: Insights and Recommendations*. Washington, DC, May 2023.
17. Russell, Matthew, Aman Shah, Giles Blaney, Judith Amores, Mary Czerwinski, and Robert J. K. Jacob. “Neural and Cognitive Impacts of AI: The Influence of Task Subjectivity on Human–LLM Collaboration.” *arXiv* (June 4, 2025)
18. Kreijkens, Pia, Viktor Kewenig, Martina Kuvalja, Mina Lee, Sylvia Vitello, Jake M. Hofman, Abigail Sellen, et al. “Effects of LLM Use and Note-Taking on Reading Comprehension and Memory: A Randomised Experiment in Secondary Schools.” SSRN Scholarly Paper, January 13, 2025.
19. Kosmyna, Nataliya, Eugene Hauptmann, Ye Tong Yuan, Jessica Situ, Xian-Hao Liao, Ashly Vivian Beresnitzky, Iris Braunstein, and Pattie Maes. “Your Brain on ChatGPT: Accumulation of Cognitive Debt When Using an AI Assistant for Essay Writing Task.” *arXiv* (June 10, 2025).
20. Wang, Shuo, et al. “EEG Assessment of Artificial Intelligence-Generated Content (AIGC) Tools in Design Education.” *Scientific Reports* (2025).
21. Bastani, Hamsa, Osbert Bastani, Ahmet Sungu, Hanrui Ge, Özlem Kabakçı, and Ruben Mariman. “Generative AI without Guardrails Can Harm Learning: Evidence from High School Mathematics.” *Proceedings of the National Academy of Sciences* (June 25, 2025).
22. Lehmann, Matthias, Philipp B. Cornelius, and Fabian J. Sting. “AI Meets the Classroom: When Does ChatGPT Harm Learning?” *arXiv preprint* (August 29, 2024).



23. Wecks, Janik Ole, Johannes Voshaar, Benedikt Jost Plate, and Jochen Zimmermann. “Generative AI Usage and Exam Performance.” arXiv preprint (April 30, 2024).
24. Sparrow, Betsy, Jenny Liu, and Daniel M. Wegner. “Google Effects on Memory: Cognitive Consequences of Having Information at Our Fingertips.” *Science* 333, no. 6043 (2011): 776–78.
25. Risko, Evan F., and Sam J. Gilbert. “Cognitive Offloading.” *Trends in Cognitive Sciences* 20, no. 9 (2016): 676–88.
26. Kate Goddard et al., “Automation Bias: A Systematic Review of Frequency, Effect Mediators, and Mitigators,” *BMC Medical Informatics and Decision Making* 12 (2012): 29.
27. Slava Kalyuga, “Expertise Reversal Effect and Its Instructional Implications,” *Instructional Science* 38 (2010): 209–15.
28. Qazi, I. A., et al. “Automation Bias in Large Language Model–Assisted Clinical Decision-Making.” *medRxiv* preprint, 2025.
29. Budzyń, Krzysztof, et al. “Endoscopist Deskilling Risk after Exposure to Artificial Intelligence in Colonoscopy.” *The Lancet Gastroenterology & Hepatology*, 2025.
30. Sytsma, Trevor. *Managing AI’s Economic Future: Strategic Automation, Growth, and Inequality*. Santa Monica, CA: RAND Corporation, 2025.
31. Pavel, Bradley, et al. *Artificial General Intelligence and the Rise and Fall of Nations*. Santa Monica, CA: RAND Corporation, 2025.
32. Johnson, Ben, et al. *Securing AI Model Weights*. Santa Monica, CA: RAND Corporation, 2024.
33. Brown, Abigail, et al. *Artificial Intelligence and Critical Infrastructure*. Santa Monica, CA: RAND Corporation, 2024.
34. Jackson, Brian A., et al. *Operational Risks of AI in Large-Scale Biological Attacks: Final Results*. Santa Monica, CA: RAND Corporation, 2024.
35. National Science Foundation. “National Artificial Intelligence Research Resource (NAIRR) Pilot.” Accessed Oct. 15, 2025.
36. UNESCO. *AI and Education: Protecting the Rights of Learners*. Paris: UNESCO, 2025.
37. Linsenmayer, Emma. “Leveraging Artificial Intelligence to Support Students with Special Education Needs.” *OECD Artificial Intelligence Papers*, no. 46. Paris: OECD Publishing, 2025.
38. Bostrom, Nick. *Superintelligence: Paths, Dangers, Strategies*. Oxford: Oxford University Press, 2014.
39. Bostrom, Nick. “Strategic Implications of Openness in AI Development.” *Global Policy* 8, no. 2 (2017): 135–48.
40. Barnett, Paul. “Misalignment and Catastrophe: Without Fundamental Advances, Misalignment Could Lead to Catastrophe.” Machine Intelligence Research Institute, 2024.
41. Barnett, Paul. “AI Governance to Avoid Extinction: The Strategic Landscape and Policy Options.” Machine Intelligence Research Institute, 2025.
42. *The Economist*. “What if AI Made the World’s Economic Growth Explode?” July 24, 2025.
43. Irwin, Neil. “Trump’s Economic Adviser: AI Productivity Surge Is Real, Won’t Cause Inflation.” *Axios*, October 15, 2025.
44. *Financial Times*. “AI Investment Boom Shielding US from Sharp Slowdown, Says IMF.” October 14, 2025.
45. “Spending on AI Is at Epic Levels. Will It Ever Pay Off?” *Wall Street Journal*, September 25, 2025.
46. Goldman Sachs Research. “Generative AI Could Raise Global GDP by 7 Percent.” April 5, 2023.
47. Georgieva, Kristalina. “AI Will Transform the Global Economy. Let’s Make Sure It Benefits Humanity.” *IMF Blog*, January 14, 2024.
48. Center for AI Safety. “AI Extinction Statement Press Release.” May 30, 2023.
49. Future of Life Institute. “Pause Giant AI Experiments: An Open Letter.” March 22, 2023.



50. "Anthropic Thwarts Hacker Attempts to Misuse Claude AI for Cybercrime." *Reuters*, August 27, 2025.
51. Colorado General Assembly. *Concerning Consumer Protections in Interactions with Artificial Intelligence Systems (SB 24-205)*. 2024.
52. Selbst, Andrew D., danah boyd, Sorelle A. Friedler, Suresh Venkatasubramanian, and Janet Vertesi. "Fairness and Abstraction in Sociotechnical Systems." In *Proceedings of the 2019 Conference on Fairness, Accountability, and Transparency (FAT '19)**, 59–68. New York: Association for Computing Machinery, 2019.
53. OECD. *Governing with Artificial Intelligence: Are Governments Ready?* OECD Artificial Intelligence Papers, no. 20. Paris: OECD Publishing, 2024.
54. Maine, Office of the Governor. "An Order Establishing the Maine Artificial Intelligence Task Force (EO 2 FY 24/25)." Executive Order, December 20, 2024.
55. Maine Office of Information Technology. *Generative Artificial Intelligence (GenAI) Policy*. Augusta, ME: Department of Administrative and Financial Services, Office of Information Technology, issued July 19, 2024; revised September 30, 2025.