



**EDSAFE AI**  
ALLIANCE

**Study  
Group**

# OPPORTUNITY AT SCALE

THE CASE FOR PUBLIC  
INFRASTRUCTURE FOR  
AI IN EDUCATION

APRIL 2025



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## A Letter from the EDSAFE AI Alliance Team

Artificial intelligence (AI) is an arrival technology. Arrival technologies rapidly reshape how we teach and learn and live, creating extraordinary opportunities and demanding that we confront critical questions about adoption, safety, and effectiveness. Our choices today will profoundly impact the future of education and our nation's economic prosperity, national security, and society.

Recognizing these pressing opportunities and challenges, the EDSAFE AI Alliance (EDSAFE) was established in 2020, before the widespread availability of frontier AI models, to guide the responsible integration of AI into the education use case. InnovateEDU is a nonprofit, nonpartisan organization proud to lead the EDSAFE AI Alliance. EDSAFE unites educators, policymakers, researchers, industry and technology developers, and community organizations globally, creating a collaborative ecosystem focused on research, policy, and practice. Our coalition ensures stakeholder alignment, facilitates knowledge-sharing, and streamlines policy development to maximize coherence, safeguard privacy, build AI literacy, and take advantage of AI's incredible potential.

The SAFE Benchmarks Framework is central to EDSAFE's approach, synthesizing insights from over 24 international AI safety, trust, and market frameworks. This framework provides a clear roadmap, ensuring AI adoption in education remains:

- **Safe:** Prioritizing data protection, privacy, and cybersecurity.
- **Accountable:** Establishing transparent standards and stakeholder responsibilities.
- **Fair and Transparent:** Ensuring equitable access, mitigating algorithmic bias, and supporting ethical AI development and deployment.
- **Efficacious:** Guaranteeing measurable improvements in educational outcomes and robust educator support.

EDSAFE's goal is straightforward yet ambitious: to ensure AI innovations enhance learning outcomes, support educators, and build trust and literacy among families and communities. Proactive investments in public infrastructures for AI in education—including robust research and development, transparent testing and evaluation, and scalable and shareable data and computing resources—are essential to secure America's leadership in AI.

Inertia and fragmentation currently pose serious threats to our future prosperity, economic security, and national strength. Only an ambitious response can overcome these limitations, prevent regulatory uncertainty and misalignment, and secure America's technological sovereignty and global leadership.

Our choices now will set the trajectory for generations, defining whether America continues to lead in global innovation or risks falling irreversibly behind. We invite you to join us at this decisive moment and commit to strategic actions that secure economic prosperity, national security, and human flourishing for all learners.

In partnership,  
**EDSAFE AI Alliance Team**



## Executive Summary

Our nation stands at a crossroads—will we build the highways of tomorrow by investing in artificial intelligence (AI) for education, or watch as other nations speed ahead into the future? Imagine an America where every student is equipped to flourish in a world of rapid AI advances, empowered by technology that amplifies their potential and enables them to compete in a future AI-powered economy. Today, we stand at the threshold of making this vision a reality. Our choices will determine whether our students, communities, and workforce flourish in the global economy or fall behind.

America's education system stands at a critical juncture, hindered by significant gaps in public infrastructure. These gaps present barriers to innovation that put our shared future at risk. To maintain our economic vitality and national security, we must act boldly to strengthen the foundations of our learning system for the AI era by investing in public infrastructure.

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AI's nature transcends state lines, making a federal framework critical for interstate commerce and essential for maintaining national competitiveness. In education, a patchwork of student privacy and data laws stifles startups and limits the ability to harness technology to support educators, students, and families. Industry alone cannot carry this burden.

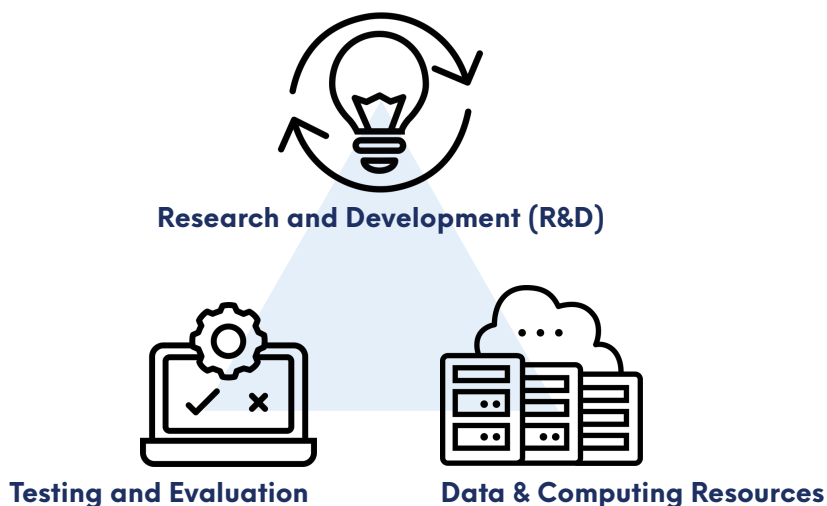
Meanwhile, China is aggressively positioning itself as America's chief competitor, investing decisively and strategically in AI—from AI literacy for every student starting at age six to frontier model investments, and a national agenda focused on scalable public infrastructure to support the age of AI (Zeng, 2024). The stakes could not be higher: either the United States boldly leads, securing prosperity, human flourishing, and technological sovereignty for future generations, or we lose a race as important to American innovation as the historical race for space. Every hesitation, every pause, every delay hands others a strategic advantage, undermining America's influence over the technologies that will define our futures. Leadership in AI in education is more than just an economic contest; it's our generation's defining struggle over values and vision.

We can seize this opportunity through proactive, collaborative, and deliberate national action, leveraging the proven EDSAFE AI SAFE framework focused on safety, accountability, fairness, transparency, and efficacy. This framework ensures AI enriches our classrooms, empowers educators, and prepares students for a rapidly evolving workforce. It provides clear guardrails to address ethical concerns, safeguard privacy, ensure algorithmic reliability, and ensure that AI always enhances, rather than replaces, the indispensable human element in education.

Now is the moment to invest boldly in public infrastructure for AI in education. We must commit to three foundational pillars in this strategy: robust Research and Development (R&D) in educational AI, modern and sector-specific Testing and Evaluation infrastructures, and scalable Data and Computing resources. These investments will empower educators, learners, and communities, strengthen workforce readiness, provide a vital resource for industry, and secure America's continued global leadership. The development of advanced AI technologies and tools is driven by industry, but users' successful adoption of them is shaped by their perceived reliability, safety, and trustworthiness. When AI solutions are rushed to market without sufficient evaluation and safeguards, consumers and institutional customers lose confidence, slowing adoption and limiting productivity gains. Ultimately, adoption in education moves at the speed of trust.

This ambitious vision surpasses the resources of any single company, requiring instead collective effort and strategic partnerships across industry, government, academia, and civil society. The scale and scope of the required investments exceed what any individual business can provide; success demands a concerted, collaborative approach uniting the public and private sectors to realize this vision. This white paper delves into three streams of public infrastructure investment, each of which underpins America's path to AI-powered education.

### Public Infrastructure for AI in Education



Robust investment in **Research and Development (R&D)** will enable groundbreaking advancements that directly benefit classrooms and communities across America. By prioritizing innovative technologies like personalized learning systems, tailored assessments, AI-driven tutoring, and supportive tools for educators, we can address all learners' individual needs and elevate teaching effectiveness. Funding initiatives that promote AI literacy and STEM education will further ensure students and educators are equipped to navigate and leverage these emerging technologies successfully. Cross-sector collaboration involving academia, industry, and government can accelerate practical applications, rapidly transforming cutting-edge research into real-world solutions. Ongoing foundational research and development play a critical role in navigating these challenges, establishing ethical frameworks, advancing responsible data management, and ensuring the beneficial and equitable access and integration of AI in educational settings.

Innovative and sector-specific **Testing and Evaluation** infrastructures ensure that AI technologies are safe, fair, and effective. Safety is not the counterpolarity to innovation – it is a building block of trust that drives adoption. Establishing rigorous, open testing environments and clearly defined evaluation protocols helps mitigate risks related to algorithmic reliability, privacy, and unintended consequences. Transparency in evaluation builds trust among educators, families, and policymakers, empowering them to adopt and utilize AI tools confidently.

**"Safety is not the counterpolarity to innovation – it is a building block of trust that drives technology adoption."**

**Erin Mote**

Consistent and thorough assessment of AI solutions ensures that technological integration enhances learning experiences and supports educators without compromising ethical standards or student safety.

Access to **Data and Computing** resources is foundational to evidence-based educational innovation. National investments can have the potential to ensure secure, privacy-preserving datasets and robust computing capabilities are available to all communities, particularly those historically underserved. By expanding interoperability and fortifying cybersecurity, we can build a trusted public infrastructure that facilitates collaboration among industry, researchers, educators, and developers, ultimately sharing the burden of the tremendous cost of development and implementation support.

Strategic national leadership in AI education also demands proactive congressional guidance and action to prevent fragmented regulatory approaches that burden innovators, drive up industry costs, and diminish America's competitive advantage. A framework for public infrastructure ensures coherent standards, enabling seamless interstate commerce and avoiding regulatory confusion that disproportionately impacts startups and small businesses. A coordinated federal approach to AI infrastructure provides clarity and fosters productivity, directly enabling American businesses, especially startups, to innovate rapidly, safely, and cost-effectively.

We aim to provide necessary information for lawmakers, government agencies, industry, and stakeholders to make informed decisions regarding how best to harness AI for human flourishing, particularly in education, where the benefits can profoundly impact individual lives, communities, and national prosperity. Strategic public infrastructure investments guided by the SAFE framework will support educators, enhance learning outcomes, and prepare a skilled workforce ready to thrive in a rapidly evolving technological landscape. We stand at the dawn of an AI-powered era, and collective resolve and action now will determine whether America continues to lead the world in innovation, uphold democratic values, and ensure prosperity and opportunity for all.

Global competitors—including China, Singapore, South Korea, and the United Kingdom—are rapidly scaling investments in public infrastructure for AI in education, moving swiftly to seize the moment. The choice before America is clear: proactively invest in AI infrastructure to secure educational excellence and global competitiveness, or risk ceding leadership to countries making decisive, strategic, and coordinated educational commitments right now. Every delay risks widening the gap, placing American students and workers at a competitive disadvantage.

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# Public Infrastructure for AI in Education

## Investing to Lead

America faces a critical choice: actively build the public infrastructure necessary for leadership in AI in education, or risk falling behind global competitors who will shape the future without us. Historically, strategic national investments in highways, electricity, and digital infrastructure have propelled economic growth and innovation; similarly, robust investment in public infrastructure for AI in education is essential to ensure our system's educational excellence and long-term national prosperity. Nations like China, Singapore, and South Korea are already proactively implementing nationwide AI curricula and literacy programs, R&D, and other infrastructures, underscoring the urgent need for immediate U.S. action to avoid falling behind in this critical global race.

Public infrastructure for AI encompasses more than physical assets—it also includes vital social capital and digital resources like cyberinfrastructure, secure data platforms, advanced computing systems, and training components such as AI literacy, workforce reskilling, and upskilling. These comprehensive public investments foster an environment where private-sector innovations can flourish, directly addressing critical educational needs and enhancing student achievement. This synergy enables private-sector innovation to thrive, meets the critical needs of students, families, and schools by providing safe, reliable, and effective AI solutions that support academic success, informed decision-making, and educational excellence.

## Public Infrastructures Unlock Innovation

Strategic public investments are essential drivers of transformative innovation. In finance, federal payment systems enabled technologies like Apple Pay and Zelle; in transportation, satellite networks have advanced public safety and autonomous vehicles; and in energy, foundational standards undergird energy innovation in consumer appliances. Likewise, targeted investments in education-specific AI—including Research and Development, Testing and Evaluation, and Data and Computing Resources, can significantly enhance national competitiveness, economic prosperity for under-resourced communities, workforce readiness, and societal well-being. By establishing partnerships between public institutions, industry, academia, and nonprofits—guided by fairness, transparency, and accountability principles—America can ensure safe, effective AI infrastructure.

While robust public infrastructure can catalyze innovation, its true impact becomes clear when we look at how it shapes classrooms and learners' experiences. The next section delves into practical realities of AI in education, illustrating both the promise and the challenges ahead.

## The AI and Education Use Case

America has the potential to create robust public infrastructures for AI in education, unlocking personalized learning paths, enhancing teaching effectiveness, and securing global leadership.

From rural heartland schools to urban classrooms, AI promises breakthroughs that tailor education to individual needs and strengths. Realizing this potential requires intentional investment guided by the safety, fairness, accountability, and efficacy principles outlined in the SAFE framework, ensuring every community has the opportunity to thrive in an AI-powered future.

## Illustrative Short-Term Use Cases Demonstrating the EDSAFE AI Framework

The rapid adoption of AI in education brings transformative potential alongside profound responsibilities. Swift adoption of adaptive learning platforms, personalized student experiences, and automation of educator tasks can elevate education's impact. Yet this potential demands proactive safeguards—clear, strategic guidelines to ensure ethical usage, transparency, and fairness. Three use cases illustrate current directions and emerging trends, highlighting how AI is already reshaping education in tangible, meaningful ways.



### Use Case 1: Preparing for the World of Work

Emma will be the first person in her family to attend college, but she needs help paying for it. She gets to see her school counselor twice yearly since her school only has one counselor for the senior class. Emma uses AI-driven career guidance tailored to her strengths and post-secondary and workforce aspirations. The AI aligns her learning with real-world skills and the evolving job market, offering a menu of internships and projects all within 20 miles of her high school. Emma actively shapes her career trajectory, acquiring essential industry-relevant skills and confidence, ensuring readiness for successful entry into the future workforce.

## EDSAFE AI Framework

The EDSAFE AI Alliance uses the SAFE Benchmarks Framework to guide AI's effective, responsible integration in education. Together, these benchmarks ensure AI supports teaching excellence, student success, and informed decision-making in education. This framework, built on global AI trust frameworks and standards, focuses on four critical areas:

**S**

### SAFETY

Security, Privacy, Do Not Harm

**A**

### ACCOUNTABILITY

Defining Stakeholder Responsibilities

**F**

### FAIRNESS

Equity, Ethics, and Mitigating Bias

**E**

### EFFICACY

Improved Learning Outcomes

- **Safety:** Prioritizes protecting student data, privacy, and cybersecurity, allowing innovators to develop secure educational technologies.
- **Accountability:** Establishes transparent, collaboratively developed standards, integrating existing regulations to maintain responsible AI use.
- **Fair and Transparent:** Emphasizes high-quality data and clear processes to avoid biases and ensure transparent educational technologies.
- **Efficacy:** Thorough evaluations are implemented to confirm AI's effectiveness, providing educators and students with clear insights and measurable outcomes.

By streamlining educator workloads, synthesizing learner data, and offering tailored instructional support, AI can act as a vital co-pilot to teachers, reinforcing—not replacing—their indispensable role.





### Use Case 2: AI-Informed School and Parent Choice

When moving to a new community after a job relocation, Carlos and Ava use an AI-driven platform to select a new school for Mia. It provides tailored recommendations based on academics, extracurriculars, after-care, community reputation, parental views, and proximity. With transparency and robust data privacy, this tool helps them confidently understand their options and choose a school aligned with Mia's passion for science, ensuring holistic growth and academic success in a supportive environment.

## Amplify Opportunities and Mitigate Risks

### Potential Opportunities of AI in Education

Improved Efficiency and Quality  
for Educators and Administrators

Individualized Learning and  
Improved Results

Enhanced Engagement and  
Accessibility

Advanced Measurement and  
Assessment System Innovation

### Potential Risks of AI in Education

Data Privacy and Security  
Concerns

Algorithmic Reliability and  
Hallucinations

Impact on the Role of Teachers  
and Schools

Unintended Consequences and  
Challenges

Integrating AI in classrooms must be managed carefully, with robust public infrastructure and clear guidelines to safeguard safe deployment, ethical development and use practices, and informed decision-making. Strategic investment in AI in education is not merely about technological advancement, but about cultivating a more effective and human-centered learning environment. AI can personalize instruction, streamline administrative tasks, and provide data-driven insights to inform teaching strategies by focusing on tools that augment educator capabilities. This directly contributes to enhanced student outcomes through adaptive learning paths and targeted support, ensuring each learner reaches their full potential. Crucially, responsible AI implementation must prioritize preserving the emotional and human aspects of education, fostering genuine connection and mentorship. This includes leveraging AI to develop critical thinking and creative problem-solving skills, allowing students to navigate complex challenges with confidence and empathy, ensuring that technology serves to enrich, not replace, the essential human element in education.



### Use Case 3: AI-Enhanced Educator Support

Mr. Harris uses AI tools to support students with disabilities, gaining insights into academic and emotional needs. Leveraging Universal Design for Learning (UDL), the platform helps him craft personalized interventions, adapting to language needs, and interests. AI-supported professional development strengthens his practice, creating an effective learning environment that addresses digital divides and supports student success.

## Long-Term Implications

The three use cases above reflect early steps toward integrating AI into education, but AI's full potential extends much further. In the long term, AI could fundamentally reshape learning, moving away from uniform, traditional instruction to experiences deeply tailored to each learner's unique strengths and needs. Educators will increasingly serve as mentors and coaches, supporting students in mastering higher-order skills—including critical thinking, creativity, collaboration, moral reasoning, agency, and lifelong learning—critical for success in an AI-driven economy. As AI's educational role expands, proactively addressing reliability and ethical concerns becomes vital, ensuring technology complements rather than replaces human relationships, and sustaining education as a fundamentally human-centered endeavor benefiting all learners. Embracing these strategies positions America to lead globally in educational innovation, human flourishing, and technological advancement. AI's applications in education are rapidly emerging from personalized learning paths to educator support.

However, harnessing this potential responsibly requires deliberate planning and policy. The following section outlines concrete recommendations for building public infrastructures for AI in education.

**In the long term, AI could fundamentally reshape how learning occurs—moving away from uniform, traditional instruction to experiences that are deeply tailored to each learner's unique strengths and needs. Educators will increasingly serve as mentors and coaches, supporting students in mastering higher-order skills—including critical thinking, creativity, collaboration, moral reasoning, agency, and lifelong learning—critical for success in an AI-driven economy.**

## Recommendations

### Research and Development (R&D)



How can the United States secure its position as the unrivaled world leader in critical and emerging technologies, such as AI, maintain our historical advantage in Research and Development (R&D), and have the most innovative and talented workforce in the world? How can we revitalize and rebuild the education R&D enterprise—pursuing evidence, accelerating innovation and rapid cycle development, and empowering researchers, states, districts, and communities to achieve groundbreaking discoveries? How can we ensure that scientific progress and technological innovation fuel economic prosperity and growth, address persistent achievement gaps, and improve the lives of all Americans?

We need to accelerate research and development, dismantle regulatory barriers while having robust guardrails for data and privacy, partner with and incentivize robust private sector investment, and ensure coherence with policy so our innovations can excel in global markets. Adversaries and allies alike are pushing hard to overtake the United States in our efforts to establish R&D supremacy and have a better-trained and better-educated workforce. We must align our education, research, and development enterprise to support our communities in meeting this moment. No industry, state, district, or research institution can do this alone. We must engage in proactive discourse and dialogue—find places of uncommon alliance and agreement, and leverage our collective strengths and networks to answer the question—what next?

Federal investment in foundational research has historically catalyzed America's global leadership in AI, forming the backbone of significant technological breakthroughs. While today's advancements in educational AI are largely industry-driven, these innovations rest on critical groundwork laid through sustained government-funded R&D initiatives. The evolution of AI—from basic expert systems to sophisticated models capable of unsupervised learning—underscores the imperative of continued government-supported R&D, particularly within the education sector.

**How can the United States secure its position as the unrivaled world leader in critical and emerging technologies—such as AI—maintaining our historical advantage in R&D and having the most innovative and talented workforce in the world?**

**How can we revitalize and rebuild the education R&D enterprise—pursuing evidence, accelerating innovation and rapid cycle development, and empowering researchers, states, districts, and communities to achieve groundbreaking discoveries?**

Continued strategic funding is indispensable, particularly as AI transitions rapidly toward advanced, general intelligence systems with profound educational implications.

Past investments enabled essential advancements such as AI-driven automated scoring, substantially improving educational efficiency and effectiveness. Today, as AI's complexity and capabilities deepen—exhibiting emotional intelligence, sensory perception, and advanced reasoning—persistent limitations such as biases and inaccuracies underscore the urgent need for rigorous research. To remain competitive, particularly in the rapidly evolving field of educational AI, federal funding must continue to support comprehensive, rigorous research initiatives. Such investments would deepen understanding of AI's impact on learning outcomes, enhance methods to detect and mitigate bias, strengthen algorithmic reliability, and identify effective pedagogical strategies for integrating AI into classrooms.

Government-supported foundational R&D remains uniquely positioned to provide national-scale data resources and develop rigorous frameworks that ensure AI tools adhere to reliability, safety, transparency, and accountability principles. To responsibly leverage AI's transformative potential and sustain America's global leadership, it is imperative to reaffirm our commitment to robust foundational R&D in education.

## Research and Development (R&D) Recommendations

Boost cross-sector AI investment by prioritizing basic foundational research and SAFE framework-aligned R&D, including Congressional action on the Future of AI Innovation Act and the NSF AI Education Act.

- Supercharge AI breakthroughs through increased Congressional appropriations for SBIR grants at the National Science Foundation and the US Department of Education, including small business innovation and technology transfer incentives for education use cases (via SBIR/STTR) that fast-track pilot-to-scale efforts.
- Congress should authorize and appropriate a National Center for Advanced Development in Education (NCADE).
- Federal agencies and industry should sponsor competitive R&D grants and prizes for responsible AI models, spurring principled innovation.
- The National Science Foundation should support a national network of AI testbeds in districts and states, allowing for rapid cycle and user-centered research and development for education tools.

Congress should authorize increasing Title 2 and Title 4 funds to promote and fund AI literacy programs in education, ensuring learners, educators, and communities grasp AI's risks and opportunities.

Congress should amend the Digital Equity Act and expand its allowable uses for digital literacy training to include AI literacy training.

Agencies should act to enable an AI-ready education and research workforce to increase effective American AI adoption, including through public-private apprenticeships, modular certification, and standardized skill frameworks.



- The National Science Foundation should continue to broaden STEM/AI pathways by supporting curricula development, national challenges, and robust educator training and resources.
- The Department of Labor should conduct research and engage with industry to identify specific AI-related occupations suitable for apprenticeship models (e.g., AI/ML Technician, Data Annotation Specialist, Robotics Technician with AI Focus, AI Ethics Officer Assistant).
- The US Department of Labor, US Department of Education, and National Science Foundation should encourage and support the development of specialized CTE programs focused on specific AI domains, such as data science, machine learning, robotics, or AI ethics.
- The National Science Foundation should leverage AI training and resources to provide education and research workforce pathways to AI upskilling, including establishing AI Resource and Translation Centers modeled on Agricultural Extension Services. NSF should partner with and fund the development of technical training, resources, and programs to increase practical, hands-on expertise with AI technologies. AI Resource and Translation Centers should foster regional initiatives to develop the capacity of educators and researchers with demonstrated operational experience in designing, deploying, and scaling AI systems in high-impact use cases.
- The National Science Foundation should utilize scholarships and fellowships to attract and retain American talent in AI.

Agencies should foster global AI coherence by collaborating with allies and partners on shared R&D priorities, including support for the International Network of AI Safety Institutes and the aligned research agenda.

The Administration should align its National AI Action Plan with complementary technology and defense strategies, embedding education objectives in long-term planning for workforce development and national security.

By strengthening R&D, we fortify the foundations that enable breakthrough AI-powered solutions. However, to ensure these tools are trusted and effective, we must also establish Testing and Evaluation.

## Testing and Evaluation



Adopting AI in education fundamentally relies on AI technologies' trustworthiness, reliability, and safety—qualities only assured through rigorous testing, transparent standards, and credible evaluation processes. Without structured, credible pre-deployment reviews, AI technologies risk appearing unreliable, discouraging adoption by educators, families, and institutional consumers seeking trustworthy products. Therefore, establishing clear, standardized testing protocols and evaluation frameworks at the national level is essential. Only a coordinated government-led effort can convene various stakeholders—industry leaders, academic researchers, educators, and policymakers—to identify, measure, and mitigate realistic AI risks. Leaving model testing to industry or AI labs increases the overall development costs of these models and slows advancement. By investing in comprehensive evaluation infrastructures and robust guidelines, the U.S. can swiftly accelerate adoption, enhance consumer confidence, and ensure that emerging AI technologies reliably and securely support educational excellence.

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## Testing and Evaluation Recommendations

The Department of Commerce and the National Science Foundation should advance robust AI evaluation by establishing standardized model testing and algorithmic reliability protocols.

The Department of Commerce should refine model oversight and governance by supporting NIST guidance, optimizing appropriate human oversight, and evolving accountability frameworks for education.

- Continue to support the International Network of AI Safety Institutes' joint testing exercises.
- Develop and promote an education-specific NIST risk management framework and zero-trust draft to create coherence for industry and other stakeholders.

The Department of Commerce and the National Science Foundation should upgrade current open-source testing environments and auditing capacity so US companies can meet global standards, including the European Union AI ACT.

The Department of Education should support states and districts by promoting education-sector-specific procurement guidance, model RFP language, and procurement support for schools and school systems from trusted third-party organizations that highlight tools that reduce administrative burdens, leverage evidence of effectiveness, and ensure consistent safety and reliability.

The Department of Commerce, National Science Foundation, and Department of Defense should collaborate on developing AI-enabling infrastructure, including AI testing, evaluation, and performance monitoring.

Agencies should better track and evaluate the performance of procured AI, including by documenting the provenance of the data used to fine-tune or operate the AI; ensuring ongoing testing and validation of AI model performance and associated risk management; and implementing, where practicable, terms that prioritize continuous improvement, performance monitoring, and evaluation of the effectiveness of procured AI.

Agencies should update procurement practices to foster competition and sustain a robust federal AI procurement marketplace by preferencing interoperable AI products and services.

Strong testing and clear standards help validate AI's reliability and safety. However, without robust Data and Computing Resources, even the most rigorously tested innovations may never reach their potential. We turn now to how scalable data infrastructure and computing power can drive transformative educational outcomes.

## Data and Computing Resources



Securing America's leadership in artificial intelligence demands strategic investments in national data and computing infrastructures designed explicitly for educational advancement. Today, fragmented data systems and limited access to computing resources impede innovation, increase development costs, and slow adoption. By developing public datasets optimized for AI—such as anonymized student assessment tasks, quality lesson plan banks, and benchmark datasets—the federal government can lower barriers for innovators, allowing even small startups to develop and test high-quality educational tools rapidly. Likewise, expanding access to advanced computational resources through initiatives like the National AI Research Resource (NAIRR) can drastically reduce entry costs for educational institutions and businesses. These investments will accelerate innovation, boost productivity, and firmly establish America's competitive edge globally.

**Today, fragmented data systems and limited access to computing resources impede innovation, increase development costs, and slow adoption. By developing public datasets optimized for AI—such as anonymized student assessment tasks, quality lesson plan banks, and benchmark datasets—the federal government can lower barriers for innovators, allowing even small startups to rapidly develop and test high-quality educational tools.**

### Data and Computing Resources Recommendations

Congress should fully fund and scale the National AI Research Resource, focusing on education and workforce, providing cloud credits, open-source tools, and robust security.

Agencies should expand privacy-enhanced data access by encouraging robust data governance for education and workforce AI, including updates to relevant laws and regulations.

Agencies should fortify federal cybersecurity resources and support, including technical response capacity, to protect K–12 and higher-education systems against emerging and growing AI enhanced cyber threats.



Agencies should advance data interoperability standards and structures for education, enabling seamless, secure, and controlled data exchange between educational tools, including student information systems and learning management systems, that enable data-driven insights.

The National Science Foundation should prepare a biennial AI indicators report for and transmit it to the President, the Office of Science and Technology Policy, and the President's science advisors, and Congress, to identify and track existing and emerging needs related to AI talent and expertise. This report should consider long-term trends over time and within the global context and provide in-depth information about the scope, quality, and vitality of the AI talent enterprise and workforce.

Agencies should maximize the value of data for AI, including treating relevant data and improvements to that data (such as cleaning and labelling) as a critical asset for AI maturity. Contract terms should protect such data from unauthorized disclosure or use.

Agencies should accelerate and scale responsible AI adoption by resourcing areas such as data governance, information technology (IT), infrastructure, quality data assets, integration and interoperability, accessibility, privacy, confidentiality, and security.

With data and computing resources, we equip educators, learners, and solution providers to leverage AI responsibly.

## Conclusion

Developing robust public infrastructures for AI in education can significantly empower learners and educators. AI can directly improve educational outcomes and foster human flourishing by enhancing learner agency, personalizing learning experiences, supporting educators, and embedding privacy protections.

Strategically integrating AI will also boost workforce readiness and economic growth, aligning education with essential future skills to sustain national competitiveness in a technology-driven world.

Realizing these benefits requires targeted investment in R&D, rigorous testing and evaluation capabilities, and secure, robust data and compute infrastructure. Cross-sector partnerships among policymakers, industry researchers, educators, and non-profits are essential to accelerating innovation and establishing transparent, accountable frameworks. Through these efforts, the nation can build a safe and secure educational AI ecosystem, securing prosperity and global leadership.

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### About EDSAFE AI Alliance

The EDSAFE AI Alliance, founded in 2020, is a global initiative led by InnovateEDU and powered by a coalition of organizations representing stakeholders, including industry, across the education sector to provide global leadership for developing a safer, more secure, and more trusted AI education ecosystem through a focus on research, policy, and practice. The Alliance aims to build and develop an ecosystem that reflects and shares the best practices for AI use in education.

### About the Study Group

The Study Group exists to advance the best of artificial intelligence, assessment, and data practice, technology, and policy; uncover future design needs and opportunities for educational systems; and generate recommendations to better meet the needs of students, families, and educators.

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