The Alliance for Learning Innovation's 2025 Policy Recommendations for the Administration

Read recommendations for Congress and State and Local Leaders

Introduction

In the United States, investments in education research and development (R&D) are needed to prepare young people for the jobs of the future and maintain an innovation edge globally. If students are not equipped with the knowledge and skills necessary to thrive in a changing workforce where new technologies are emerging, the U.S. risks being surpassed by competing nations. Without high quality education, and the R&D that underlies improvements in teaching and learning, the U.S. will lose its footing as a global leader.

Alarmingly, American students are lagging in STEM subjects. The most recent NAEP results reveal declining math scores, with fourth-graders down 3 points from 2019 to 2024 and eighth-graders down 8 points in that same time period. The 2023 TIMSS assessment revealed that U.S. fourth- and eighth-graders lagged behind their peers from eleven countries in science achievement. While China did not participate in TIMSS, its students ranked first in science on the most recent PISA assessment, substantially outperforming U.S. students, who placed 18th.

Similarly, American students' literacy proficiency is on the decline. The 2024 NAEP scores for fourth-graders and eighth-graders each dropped an average of 5 points from 2019. Concerningly, the 2024 results reveal that approximately one-third of eighth-grade students are at the "below basic" level in reading, which is the largest proportion in the history of the assessment.

Over the next decade, the tech workforce will grow twice as fast as the overall U.S. workforce, and American students need to be ready to excel in these roles. Yet, based on current degree completion rates, 58 percent of new semiconductor jobs are at risk of going unfilled; and 2.1 million manufacturing positions are projected to lack qualified talent by 2030. Employers are

increasingly seeking to fill roles that require AI-related skills, but American students' skills in computer literacy and computational thinking are declining.

The challenges faced in American education are steep but not insurmountable. By prioritizing research and development, the U.S. will surface and implement evidence-based approaches to raising student achievement, particularly in STEM. Better outcomes in teaching and learning will reverse current trends and help the U.S. retain its standing as an innovation leader on the world stage.

What is education R&D?

ALI defines R&D as applied research in real-world education environments focused on developing, testing, and evaluating innovative solutions — tools, products, features, or systems — to our nation's most pressing education problems.

The Alliance for Learning Innovation (ALI) is a bipartisan coalition calling for leaders at the federal, state, and local levels to invest in education R&D. Through advocacy and field-building, ALI supports evidence-based innovation that centers students and practitioners, advances achievement for all learners, strengthens talent pathways, and expands the workforce needed in a globally competitive world.

Since the ALI coalition launched in 2023, it has contributed to key advancements in education R&D, including:

- The introduction of bipartisan legislation in the U.S. Senate and House of Representatives to authorize a National Center for Advanced Development in Education (NCADE) and modernize Statewide Longitudinal Data Systems (SLDS);
- The creation of the Institute of Education Sciences's (IES) DARPA-inspired Accelerate, Transform, and Scale Initiative;
- The establishment of the Discovery Research PreK-12 Program Resource Center on Transformative Education Research and Translation at the National Science Foundation (NSF);
- The continuation of IES's School Pulse Panel beyond the pandemic to collect timely data on high-priority topics in K-12 education;
- The release of select NAEP data in 2023 for education research;
- The establishment of SEERNet, an IES-supported network of digital learning platforms to facilitate efficient education research;
- A $1M Digital Learning XPRIZE challenge, sponsored by IES, to develop new infrastructure for conducting experiments in a variety of learning contexts; and

- Critical funding for education R&D across the federal government, with IES, the Education Innovation and Research (EIR) grant program, and NSF STEM Education Directorate seeing increases.

ALI is proud of the momentum building not only in Washington, D.C. but across the country to strengthen the education R&D ecosystem. In a 2024 op-ed, Dr. Penny Schwinn and Dr. Carey Wright wrote, "As former state education commissioners in Tennessee and Mississippi, we know that education research, when consulted and applied in classrooms, can yield huge academic gains for students." They went on to assert that "education R&D should be the foundation for every decision that affects student learning."

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>
> *– Dr. Penny Schwinn and Dr. Carey Wright*

Knowing challenges persist in U.S. education, ALI has developed a set of policy recommendations for Congress, the Trump administration, and state and local education leaders. These recommendations come as we are seeing unprecedented changes in the federal education R&D enterprise, including significant shifts in contracts and grants within IES at the beginning of February 2025. This paper lays out recommendations for the administration.

ALI's 2025 policy recommendations call on policymakers at all levels of government to act urgently to improve student outcomes to help the U.S. retain its standing as a global innovation leader.

While these recommendations are discussed in-depth below, policymakers must prioritize:

- Effectively leveraging education R&D to support ***career-connected learning and career pathways***, especially in STEM fields.
- Investing in education R&D at the intersection of ***artificial intelligence*** (AI) and education to promote the safe and effective use of AI in teaching and learning.

Given that education R&D is foundational to developing new approaches to learning – like career-connected and AI-enhanced learning – and building a nimble, responsive education system, policymakers must also strengthen and modernize ***education R&D infrastructure***. Infrastructure

investments will make research and development better, faster, and more economical – and ultimately produce new insights on what works, for whom, and under what conditions.

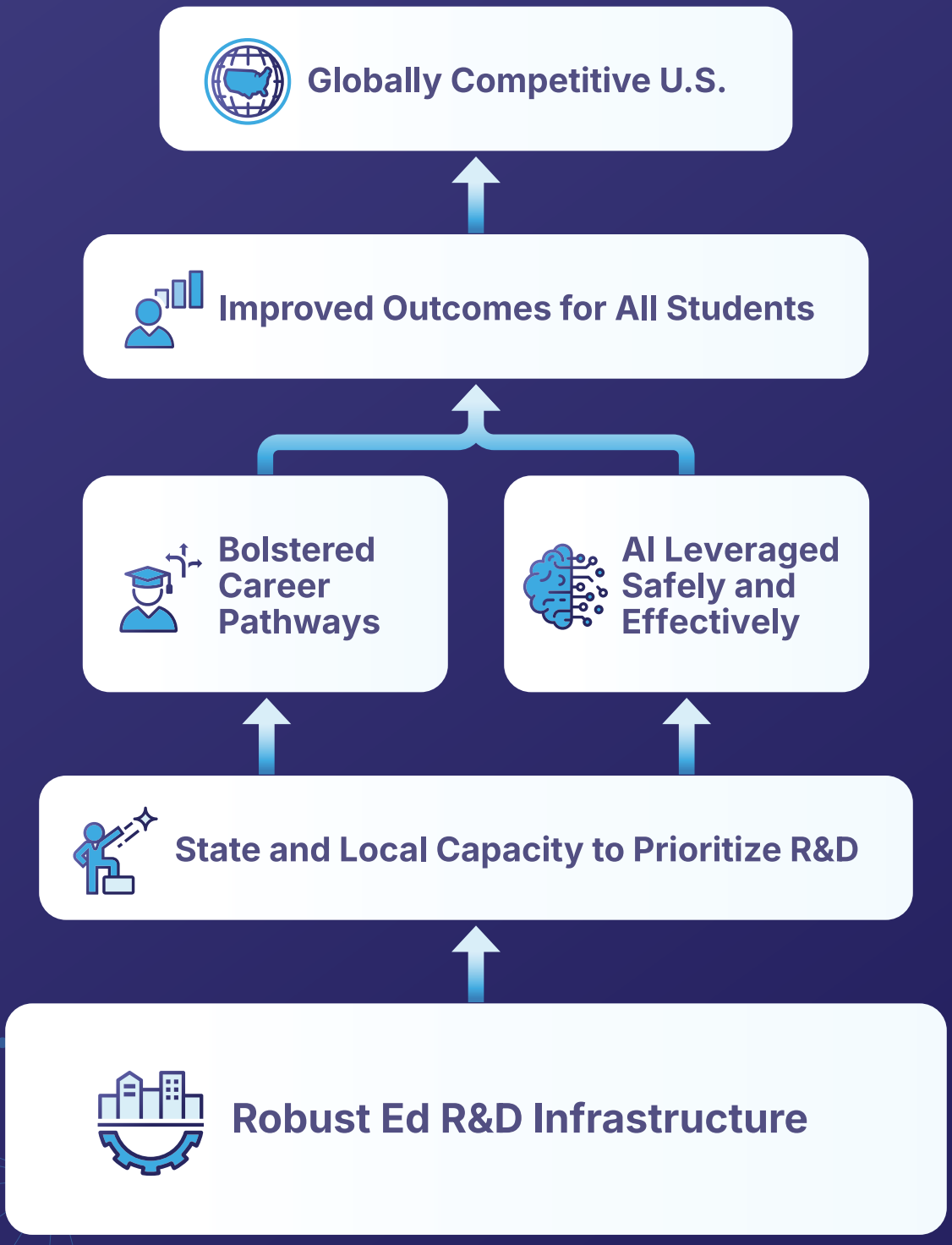
Strengthening R&D infrastructure entails:

- Building R&D capacity through the development of education R&D talent, partnerships, networks, and community engagement;
- Maintaining and strengthening existing R&D infrastructure;
- Transparently sharing with the public information about the return on investment (ROI) of taxpayer-funded education R&D projects; and
- Encouraging collaboration across government agencies to deploy taxpayer dollars efficiently and effectively.

To truly achieve transformational outcomes for students, policymakers must equip ***state and local education leaders*** to apply the results of R&D in classrooms.

What is R&D infrastructure?

ALI defines "R&D infrastructure" broadly, comprising both tangible and intangible components. The former includes, among other things, modern, interoperable, privacy-protecting, user-centered data systems; collaborative partnerships among practitioners, researchers, and developers; and dedicated resources such as recurring line items in budgets and dedicated professionals. Intangible components include human capacity in the form of knowledge, skills, and mindsets; committed leadership; and aligned policies and incentives.


Globally Competitive U.S.
Improved Outcomes for All Students
Bolstered Career Pathways
AI Leveraged Safely and Effectively
State and Local Capacity to Prioritize R&D
Robust Ed R&D Infrastructure

Recommendations for the Administration

To maintain America's innovation edge in a globally competitive world, the Trump administration must prioritize investments in career-connected learning, STEM education, and AI, along with the education R&D infrastructure that undergirds each of these focus areas.

Bolster Career Pathways to Prepare the Future Workforce

The Trump administration has an opportunity to prepare the next generation for the jobs of tomorrow by building connections between K-12 education and the workforce. By strengthening career-connected learning and career pathways, the White House and federal agencies, like NSF and IES, can help students develop the knowledge and skills needed to thrive in a dynamic and changing workforce.

ALI recommends that the Trump administration:

1. ***Connect K-12 education and workforce development efforts across the federal government.*** NSF does this effectively with its Experiential Learning for Novel and Emerging Technologies program, which builds career pathways in emerging technology fields and tracks for secondary and post-secondary school students, as well as adult learners. NSF's Advanced Technological Education program offers another example of K-12 and workforce connectivity, as it supports partnerships with secondary schools for budding science and engineering technicians. Similarly, since CTE has long utilized and supported career pathways, more could be done to ensure that CTE career pathways are being developed in relevant industries like semiconductor manufacturing and are connected to post-secondary pathway options. The administration should create opportunities to increase the number of qualified instructors and allow flexibility for students to pursue career pathway opportunities outside traditional education structures. Without well-developed pathways that begin in K-12, the talent needed to continue to build on workforce development investments made by the federal government will be missing.

2. ***Leverage competitive grant priorities to promote evidence-based literacy and math, as well as AI literacy.*** Include a priority for programs or tools grounded in evidence-based foundational math and/or reading skills (e.g., science of reading), or that increase AI literacy for students and/or educators, in the Secretary's discretionary grant priorities. These priorities can be leveraged across all relevant grant programs, like EIR and the Small Business Innovation Research program.

Strengthen Education R&D Infrastructure

The Trump administration should strengthen education R&D infrastructure to accelerate career-connected learning, STEM fluency, and AI-enhanced learning. It can do this by growing the pipeline of talented individuals comprising the education R&D community.

ALI recommends that the administration:

3. ***Support a rotator program at IES.*** To build internal capacity to implement education R&D priorities, IES should create a "rotator program" with the authority from the Intergovernmental Personnel Act to engage advanced scientific and technical expertise. USED's research arm could benefit from a program similar to NSF's, which is instrumental in ensuring the agency's program reflects creative ideas from the field and the most advanced computational methods.

4. ***Develop programs to foster scholarship and expertise.*** IES and NSF should support connections and opportunities among faculty, researchers, and graduate students at Historically Black Colleges and Universities (HBCUs), Minority Serving Institutions (MSIs), and Tribal Colleges and Universities (TCUs) to expand their potential for engagement and leadership in education R&D. Specifically, they should:
    - Make planning grants available for HBCU/MSI/TCU researchers to work with R1 researchers;
    - Allow grant funds to support postdoctoral fellows at HBCUs, MSIs, and TCUs; and
    - Forge public-private partnerships as pathways from HBCU/MSI/TCU programs to internships in high-wage jobs related to the R&D ecosystem, such as data science, AI, computing, and bio-engineering, building upon recent partnerships such as Google and UNCF's investment in HBCU innovation infrastructure.

The Trump administration should also prioritize infrastructure that enables more transparency around education R&D funding. This will not only benefit taxpayers, but also ensure that ineffective education R&D investments are reformed or eliminated. Investments with a high ROI should be supported to scale up and reach more students.

5. ***Establish a Parent Resource Center on the IES website to provide information about education R&D findings that parents can use to ensure that their children receive a high-quality education.*** The findings of federally funded R&D should be available and useful to parents. While IES already makes evidence-based practices available via the What Works Clearinghouse, parents may find it too academic to be helpful. A Parent Resource Center, overseen by nonpartisan academics and researchers, could translate the findings of education research into language that parents can use to benefit their children. Empowering parents with knowledge of evidence-based best practices would inform their school choices and create demand for high quality education across the country.

6. ***Review and update the What Works Clearinghouse and its practice guides to improve their practical value for teachers and school leaders.*** The IES director should initiate a review of the What Works Clearinghouse and corresponding practices guides so they can offer actionable guidance to education stakeholders. The review should invite and incorporate input from teachers and school leaders to ensure that updates make the resources more accessible and user-friendly. Additionally, IES should consider providing a searchable, digital hub for evidence, studies, and rapid-cycle evaluations at all four Every Student Succeeds Act (ESSA) Tiers of Evidence, including the

adoption of a federal Universal Evidence Report form for consistent, computer-readable evidence sharing.

7. ***The White House Office of Science and Technology Policy's Committee on STEM Education should share information and lessons learned by federal agencies to increase the ROI of education R&D initiatives focused on STEM.*** Additionally, the White House and the Office of Management and Budget should ensure coordination and management of federal education R&D activities, including activities that exist outside ED or NSF, such as the Department of Defense's Science, Technology, Engineering, and Mathematics program (DoD STEM). This program develops STEM talent for the nation's defense workforce to prepare the next generation for the evolving threats that the nation may face.

Equip State and Local Education Leaders to Prioritize R&D

Federal agencies can take steps to help the leaders of State Education Agencies (SEAs) and Local Education Agencies (LEAs) make R&D a priority and seize opportunities in career-connected learning, STEM, and AI.

ALI recommends that the Trump administration:

8. ***Ensure that research is led and driven locally and by those who are closest to the challenges, namely educators, parents, students, and local and state leaders.*** IES and NSF grants that fund education R&D should prioritize proposals that have a plan for engaging SEAs and LEAs, parents, and other community stakeholders throughout the R&D process. IES and NSF should collaborate with organizations that have expertise in developing inclusive R&D models to scale opportunities to co-design and co-develop research agendas and research questions with SEA and LEA leaders, families, educators, and even students to ensure research and evidence is relevant and timely. Additionally, USED should increase coordination between Statewide Family Engagement Centers as they conduct needs sensing and identify local priorities to increase efficiency.

9. ***Design Requests for Applications (RFAs) that encourage new applicants, especially those serving rural communities.*** RFAs, like budgets, can express values. IES, NSF, and other federal agencies funding education R&D projects should audit existing and new RFAs to review and, where necessary, redesign goals, timelines, requirements, and priorities to be more inclusive of SEAs, LEAs, and community based organizations in rural areas and/or that lack experience applying for competitive federal funding.

10. ***Prioritize knowledge mobilization to help state and local leaders leverage education R&D.*** To better connect R&D to practice and policy so state and local school systems can take advantage of research findings and evidence-based innovations, IES, USED, and NSF should:

- Identify and share examples of effective knowledge mobilization with funding applicants;
- Ensure applicants for R&D funding adequately address in their proposals and their budgets how they will ensure the outputs of their work will make their way to the field to inform changes in practice or policy;
- Require R&D funding recipients to produce user-friendly and more actionable summaries of their work (e.g., Universal Evidence Report);
- Modernize and simplify the inputs into the What Works Clearinghouse and the Education Resources Information Center so that more knowledge can more easily be shared;
- Increase cohesion across the full breadth of R&D and technical assistance infrastructure at ED, as well as relevant R&D centers in other agencies; and
- Share both significant and non-significant findings from federal research grants more broadly to improve research design and further inquiry.

11. ***Require that R&D project budgets prioritize more funding for SEA or LEA partnerships.*** Ensuring a robust allocation better reflects the value SEAs and LEAs bring to research partnerships. It acknowledges the actual costs incurred by SEA and LEA partners engaging in R&D and builds critical internal SEA/LEA capacity.

Conclusion

Investments in education R&D to accelerate career-connected learning, STEM literacy, and AI-enhanced learning will help students thrive in school and prepare for the jobs of the future. Every level of government, from Congress and the Trump administration to local school districts, has a role to play in maintaining America's innovation edge.

No matter the challenges or opportunities the U.S. faces in education, efforts to uncover what works, for whom, and in what conditions, will always be an effective strategy for surfacing evidence-based solutions.

Increasingly, policy leaders are seeing the value of R&D in education. By making education R&D a priority, they have made strides to develop new R&D infrastructure and grow the R&D talent pipeline.

Yet, from modernized SLDSs to an ARPA for education, more robust infrastructure and increased coherence across the broader R&D ecosystem are needed to support an education R&D engine that leads to improved outcomes for students across the country. Much more can be done to equip state and local leaders to build R&D capacity – and ensure that more research findings and evaluations translate into better outcomes for kids. This is how American students will develop the skills and knowledge required to flourish in an ever-changing, globally competitive world.

Together, leaders in Congress, the Trump administration, SEAs, and LEAs can strengthen the nation's education R&D ecosystem and support the evidence-based tools and approaches that all students deserve.

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