The Alliance for Learning Innovation's 2025 Policy Recommendations for State and Local Leaders

Read recommendations for Congress and the Administration

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 education leaders at the state and local levels.

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.

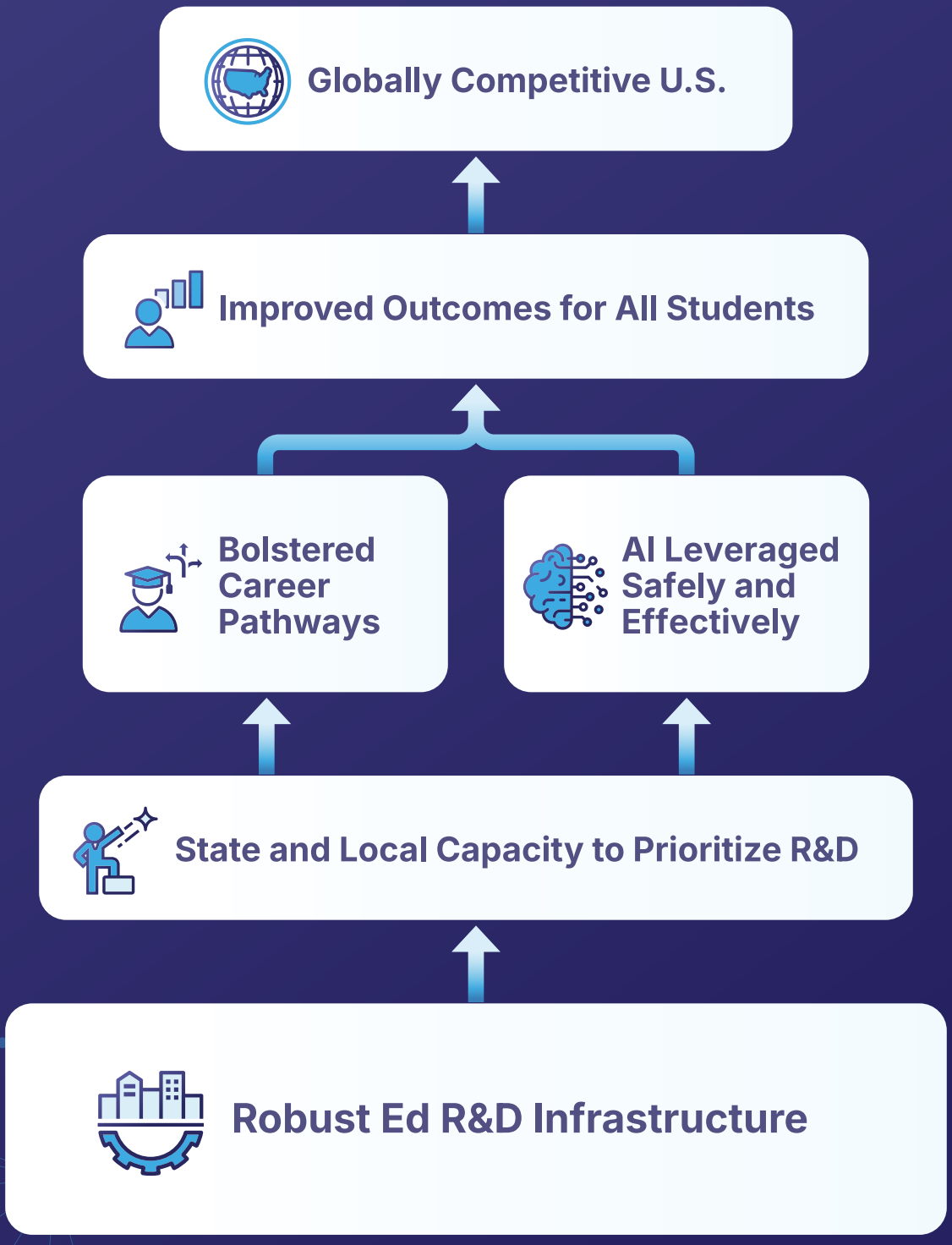
Strengthening R&D infrastructure entails:

- 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 State and Local Education Leaders

Education leaders at the state and local levels, including superintendents and boards, can play a pivotal role in driving innovative and evidenced-based practices in schools. They have an opportunity to prioritize education R&D and prepare their students for success in a globally competitive world. ALI recommends the following ways state and local education leaders can leverage R&D to improve outcomes for all students in their community:

1. ***Articulate a state- or district-level vision, set of goals, and research agenda that prioritizes innovation and continuous improvement.*** State and district leaders should develop and publicize a strategic plan that puts forward a shared vision and goals for education system transformation. The plan should be informed by authentic engagement with practitioners, caregivers, students, and leaders from industry and the workforce. Additionally, they should define a research agenda that aligns with strategic priorities and serves as a north star for R&D efforts. States and districts can maximize the impact of their efforts by leveraging existing R&D resources for guidance, support, and collaboration. For instance, the Regional Education Labs (RELs) work closely with State Education Agencies (SEAs) and Local Education Agencies (LEAs) to identify pressing challenges and research priorities.

2. ***Establish priorities and dedicated funding streams to strengthen career-connected and work-based learning.*** State and local leaders should implement strategies that best meet community and student needs, and ensure dedicated resources to support these priorities. In Virginia, a $100 million investment in "lab schools" is working to meet the state's workforce needs in professions like computer science and technology. Meanwhile, Alabama developed the Talent Triad, a public-private partnership, to provide easily accessible online information about jobs and credentials. To ensure that every child graduates with a diploma and at least one credential, Indiana established the first Career Scholarship Account program in the country, providing $5,000 per year for tenth- through twelfth-grade students to engage in work-based learning programs.

3. ***Leverage evidence-based AI tools to enhance human-centered instruction.*** AI holds immense promise for students, from speech and language screeners to chatbot tutors that offer personalized, interactive support. It helps teachers streamline time-intensive tasks, like developing lesson plans, quizzes, and discussion prompts. Rapid advances in AI have led to a proliferation of new AI-powered innovations, not all of which are grounded in research. State and local leaders should ensure all AI-enabled tools in their school system have an evidence base demonstrating that they move the needle to improve student outcomes. Additionally, SEAs and LEAs should collect and make public data on all AI-enabled tools being used in their system and the impact they are having on student achievement.

4. ***Invest in collaborative education R&D efforts centered at the state and local levels.*** Collaborative education R&D – including but not limited to models such as research-practice partnerships, youth participatory action research, community-based action research, inclusive innovation, and networked improvement communities – can help bridge the gap between R&D and practice. SEAs, large LEAs, and consortia of smaller or rural LEAs can benefit from authentic partnerships that are designed with local context in mind and local stakeholders involved; continuously improve; and sustain R&D capacity over time and through leadership transitions. States can also lean on the current, federally-supported R&D and technical assistance infrastructure, such as RELs and CCs, which provides locally responsive and tailored supports and opportunities for peer learning.

5. ***Develop and sustain internal state and local R&D capacity, particularly through targeted funding and flexibilities.*** Education leaders can retain and develop R&D talent by making research and development a greater priority within state and local budgets. SEAs should provide districts with the flexibility needed to make R&D-related hiring and procurement decisions, matched with an expectation that they increase their R&D funding using creative funding approaches like public-private partnerships. Smaller school districts should consider sharing R&D capacity among regional groups (e.g., Western Pennsylvania Learning 2025 Alliance). At a minimum, superintendents should ensure their school systems have a senior official charged with leading its continuous learning efforts and engagement with external R&D partners. Ideally, they will establish a dedicated office to oversee and drive education R&D. Overall, it is critical to create the conditions necessary for R&D leaders to succeed, such as a clear mandate, sufficient positional authority, adequate resources, and the flexibility needed to try new approaches.

6. ***Modernize state longitudinal data systems and strengthen related policies and capacity.*** State leaders should prioritize modernizing not only the technical side of data systems but also all education stakeholders' understanding of and mindset toward data and data use. They should encourage a shift from these systems being used as compliance and reporting vehicles to ones that enable data-informed decision making (e.g., new or enhanced data systems such as in Texas or Iowa). SEAs should take advantage of funds available through USED's Statewide Longitudinal Data Systems (SLDS) and the Department of Labor's Workforce Data Quality Initiative (WDQI) Grant Programs to modernize their data systems. Key updates include integrating data from early learning through K-12 and the workforce, as well as across related sectors like health and social services; centering the privacy of individuals' data; and making the SLDS accessible and actionable so that a wide variety of stakeholders (e.g., students, families, school system leaders, workforce boards) can use it to make informed decisions.

7. ***Blend and braid funding sources to make critical R&D investments.*** State and local leaders should tap into federal, philanthropic, and other funding streams to support the R&D behind salient topics like career-connected learning, career pathways, and the safe and effective use of AI in classrooms. By making these investments in the near term, education leaders at the state and local levels will lay the groundwork that prepares students for the jobs of the future. USED's R&D and technical assistance centers can help states and districts leverage federal, state, and local funding by providing content expertise, offering scalable and flexible resources, and identifying redundant spending.

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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Acknowledgments

Thank you to the many writers, collaborators, and editors who contributed to this paper.

For more information and resources, visit alicoalition.org and Seizing the Opportunity for State Education R&D: Findings and Recommendations for Action.