Seizing the Opportunity for State Education R&D
Findings and Recommendations for Action

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Introduction

Public education in the United States is at a crossroads: to ensure future generations' success in a globally competitive economy, it must move beyond a one-size-fits-all model towards a new paradigm that prioritizes innovation that holds promise to meet the needs, interests, and aspirations of each and every learner. Unlike sectors such as medicine, technology, and defense—which have transformed through systematic research and development (R&D)—education still lacks sufficient infrastructure to identify, develop and spread what works to maximize the success of young people while also nimbly exploring untested approaches. Just as in other sectors outside education, state-level R&D infrastructure can be a backbone to invent, test, and validate these emerging educational approaches.

Fortunately, states are positioned to drive change that is transformational instead of incremental while empowering local communities to design learning environments that improve experiences and outcomes for young people. While there are pockets of innovation across the country, strengthening the education R&D infrastructure can provide systemic solutions to the biggest challenges states are tackling, including workforce and economic development, learner and educator disengagement and absenteeism, funding scarcity, and lagging reading and math proficiency.

The opportunity is clear: states must prioritize education R&D infrastructure as a central part of their strategic plans and transformation efforts. The Alliance for Learning Innovation (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. R&D is often applied through evidence-based

improvements at the school and district levels. More broadly, **this brief is an invitation for state education agency leaders, state policymakers, and state-level influencers to consider how R&D across systems—from the state level to the community level—can be a powerful force for modernizing education.**
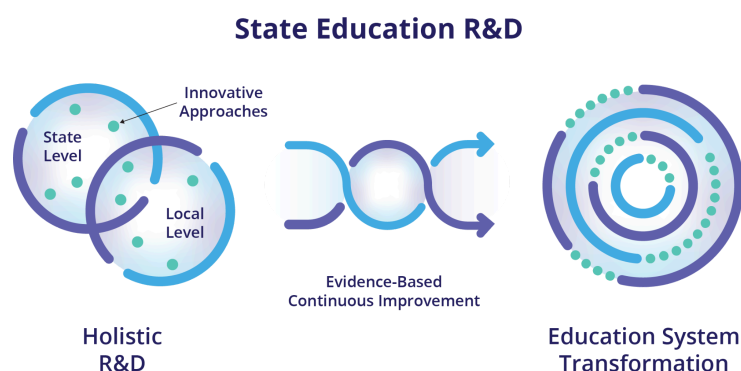
Methodology

Building on recommendations developed by ALI's State and Local Education R&D Infrastructure Task Force, this brief is grounded in interviews across the education sector and real-world examples of innovation emerging as a result of education R&D happening in states. After a literature review, scan of state statutes and state education agency (SEA) websites, and development of a learning agenda, three dozen interviewees and 20 survey respondents shared their place-based insights on

The State and Local Education R&D Infrastructure Task Force defines **"R&D infrastructure"** as comprising both tangible and intangible components. Tangible components include modern data systems, research partnerships, and dedicated funding and staff. Intangible elements include expertise, leadership commitment, and supportive policies and incentives.

Interviewees differed on their definition of "**innovation**," ranging from implementing existing evidence-based practices more effectively to supporting entirely new ideas and educational approaches. For this brief, innovation encompasses new or improved approaches to teaching and learning that address pressing educational challenges through solutions developed and tested in learning environments and across education systems.

challenges and opportunities for education R&D. The respondents represent a range of education stakeholders from 15 states and include diverse political realities, policy landscapes, and social contexts.[1] Interviewees represented local and state leaders in K-12 education, foundations, national advocacy organizations, and higher education institutions. The brief also reflects Education Reimagined's and Transcend's first-hand experiences supporting schools, districts, state leaders, and advocacy coalitions in advancing learner-centered education.

The interviews examined how to build more effective education R&D systems at the state and local levels. Leaders shared their visions for responsive R&D infrastructures, identified key obstacles, and proposed innovative solutions to transform how education systems develop and implement evidence-based practices across diverse contexts.

State Education R&D

Innovative Approaches

State Level

Local Level

Evidence-Based Continuous Improvement

Holistic R&D

Education System Transformation

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[1] States represented include AK, AZ, CA, CO, HI, KY, MA, MT, NC, ND, PA, RI, TN, UT, and VA.

Key Themes

Analysis of interviews and survey responses revealed key themes around opportunities for and barriers to education R&D across systems. While many components of infrastructure and bright spots exist, the conventional system is not designed to systematically embed R&D and scale innovations. The findings informed state guiding principles and recommendations.

1) When states establish a strategic vision and goals to reimagine education, a clear roadmap for innovation emerges.

Examples emerged of states co-creating a clear strategic vision and goals in partnership with community stakeholders, laying a foundation for education R&D. In contrast, some interviewees described state policy landscapes that provide flexibility for innovation without a coherent articulation of a shared future-facing vision for education and clear signals about how innovation can specifically support an improved future of learning. This leaves communities unclear about what to prioritize among competing mandates and initiatives, leading to divided attention and resources, staff fatigue and overwhelm, and fragmented implementation efforts. An analysis of SEA websites showed that, in most cases, state education agencies do not connect their strategies for research, development, and innovation. Statutory analysis did not uncover any states with a statutory definition of education R&D.

The **Utah State Board of Education**'s (USBE) strategic plan integrates personalized teaching and learning as a primary goal, setting the stage for a system-level roadmap for supporting school communities' design of personalized, competency-based learning (PCBL). Legislators established a statutory grant program to support LEAs in planning, implementation, and expansion phases. Statute requires that the grant "will address a need, determined by data, in the LEA or community" and have "a strong evaluation plan that will clearly measure the success of the LEA's program against the stated goals and objectives." As part of this holistic effort, state-level resources were developed that could be adapted to reflect communities' needs, including a PCBL framework and a portrait of a graduate and first-year teacher. Prioritizing a learner-centered approach illuminated restrictive levers of the current system that needed to be addressed, creating a feedback loop to inform system-wide efforts.

"What vision do we have for the future of our students, and based on that vision, how do we have to restructure our system?" – State Superintendent Sydnee Dickson, Utah

See Recommendation #1

2) Sufficient resource allocation is essential to enable education R&D.

States can play a critical role in ensuring dedicated resources exist for education R&D, including funding, human capacity, and technical support. However, this priority is not typically reflected in most state budgets or organizational charts. In a fall 2022 review of dedicated research capacity within state departments of education, Results for America concluded that fewer than half of SEAs had at least one staff person whose time was *primarily dedicated* to the work of supporting the agency's ability to engage in research activities.[2] Without dedicated and sustained resources to support education R&D, states risk losing out on innovative solutions to their most pressing problems.

Interviewees emphasized that the urgency of daily operations crowds out the capacity to develop novel solutions to states' and districts' most pressing problems. Researchers within the K-12 and higher education sectors also shared the challenge of episodic funding of research projects, limiting the potential for longer-term, sustainable, action-based research projects. When research is constrained by short-term grant periods, it is difficult for researchers to develop place-based partnerships and demonstrate impact over time. Finally, many states are working with outdated and fragmented data systems that make it difficult to understand the long-term trajectories of learners and the return on investment of programs that serve them.

The North Carolina Department of Public Instruction (NC DPI) expanded the **Office of Innovation** to be its education R&D arm. Integrating the Office of Charter Schools, Office of Innovative Practices and Programs, Office of Research and Evaluation, Office of Learning & Research, and the state's Virtual Public School, it represents a cohesive effort to bring together innovation and aligned research. According to the NC DPI website, "In partnership with schools, districts, and other educational institutions, the Office of Innovation seeks to create intentional intersections among diverse stakeholders to develop creative solutions to educational challenges." Deputy State Superintendent Andrew Smith, who oversees the Office, describes the state's convener role leading inclusive design across the agency as running a "parallel train track:"

"We're on one train track setting up the new structures while other leaders run the current structures, because you can't just abandon what you're doing. But we have the ability to…create something that is user-designed with other leaders in the agency. And then at some point when the time is correct, we bring you onto that track, so you have the new system and process set up, but we carry the lift along the way."

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[2] Results for America 2022 50-state scan of research capacity in education departments.

NC DPI's process of developing an ESSER Return on Investment calculator is an example of how the Office of Innovation embeds its work throughout the department. To understand the efficacy of investments made with federal ESSER dollars, the Office partnered with NC DPI's Financial and Business Services and Federal Programs Divisions and convened a group of community stakeholders, economists, district leaders, and researchers to create an ESSER spending dashboard and a quantifiable formula for return on investment. The point, Smith says, was to "provide innovation in the way we make good financial decisions through visualization." With input data on interventions purchased and student outcomes data, the dashboard calculates the magnitude of learning recovery through return on investment.

"The Innovation unit is in others' space to help with forward-thinking elements… It starts with a license from the top leader to intentionally develop relationships that are outside of our realm and ask a lot of questions… And we just do this kind of iterative back and forth… It's a consultancy model in that way. And then, as we start to work with deployment…we're going to give you everything you need to be able to lead this yourself… At that point you get to lift it and own it, and that's possible because you've been involved so much in the design." – Andrew Smith

Each summer the department hosts a conference with educators and leaders across K-12 education, higher education, business, and government. *"It's an ecosystem of all things education in one space, which is where the magic lives. We're always trying to collide people who are very different from each other around common challenges,"* said Smith.

Within the Office of Innovation sits the **Office of Learning and Research (OLR)**, whose mission is to serve schools by "providing the research and support needed to make evidence-based decisions to accelerate learning for all students." The office has two full-time staff dedicated to qualitative and quantitative data analysis and research. They lean on a statewide longitudinal data system (SLDS) that has been in place for decades.

OLR developed a streamlined process for formal research requests submitted to the agency, with a committee chaired by the agency's Director of Research and Evaluation and Director of Data Integration and Security. In a monthly 90-minute meeting, more than two dozen division directors discuss research requests and vote on those that should be approved. The director most impacted becomes the sponsor to shepherd the request through the process. Smith says, *"Researchers have to report back to us, and not with their 50-page journal article. The expectation is that there's a two-page brief that's understandable and actionable."* Researchers now often approach department staff ahead of making requests to tailor their approach to the department's priorities.

See Recommendations #2, #6, and #7.

3) Mindset and culture shifts are required for sustainable innovation efforts.

In education, one reason evidence of what is working fails to scale and innovation fails to take hold is a lack of robust learning-oriented systems, structures, and mindsets.[3] Since their inception, state education agencies have primarily been compliance organizations responsible for administering state and federal education laws, dispersing resources, and providing guidance to public schools. Agencies historically have not been empowered or resourced to help schools and districts think creatively about solving their urgent problems. School districts, too, often have their own policies and practices that inhibit sustained innovation in individual schools, and local leaders and boards play an equa-lly important role in removing constraints.

State leaders can foster a culture of trust and empowerment that embraces calculated risks in education innovation. Several interviewees shared the sentiment that "Systems change is behavior change," and that starts at the top with a mindset that, as one interviewee noted, "Failing forward isn't an insurmountable barrier. It's getting the system ready to meet the needs of kids." Yet the current system's focus on compliance discourages experimentation. Creating a climate open to R&D will require a fundamental shift in how educational change is viewed and supported.

4) Education leaders require time, authority, and support to innovate.

The current system, focused on standardization and compliance, requires hoop-jumping of any school or system interested in R&D-driven innovation. Charter schools, statutory innovation pilot programs, and innovation zones have been used as mechanisms to provide school or district autonomy. Yet the innovations that have emerged with these expanded flexibilities still face the constraints and perceived risks of innovation within the current paradigm. Without guidelines for what autonomies and exemptions from state and local policy and rules are available to those testing innovations—or when these flexibilities are perceived as too burdensome to acquire while also delivering on conventional outcomes—uptake of opportunities to reimagine education remains low. The inertia to keep doing what's always been done can be strong and requires permission *and* incentives to invent and demonstrate something different.

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[3] Gordon, Dan, Elise Henson, Lynn Olson, Scott Palmer, and LaVerne Srinivasan. *Transforming the Education Sector into a Learning System: Perspectives from the Field and Recommendations for Action*. Carnegie Corporation of New York and EducationCounsel LLC. April, 2020.

5) Research, design, development, and evaluation processes should align with community context and needs.

Interviewees shared that R&D, as it occurs now, is often disconnected from community needs, assets, and challenges and that evidence generated by research is rarely provided in timely, digestible, or actionable ways. Research inquiry and evidence are often designed for researchers to understand the impact of programs and not for practitioners to answer questions about their own practices and broader challenges that need to be solved. Research, design, development, and evaluation processes aligned with the current system's value propositions keep the system grounded in that orientation and constrain the research inquiries and insights themselves.

Communities—and especially young people—desire learning approaches that are more engaging, relevant, personalized, and community-embedded. Arriving at these better-designed learning environments requires iterative community-based school design processes. For more schools and states to design and implement learner-centered approaches and systems, approaches to R&D and formal evaluation, including indicators of success, must look different too.

To meet Virginia's workforce needs in professions like teaching, computer science, and technology, Gov. Glenn Youngkin and state policymakers prioritized expanding public options by passing legislation in 2022 appropriating $100 million for the **Virginia College Partnership Laboratory Fund**.

"Lab Schools" have a dual mission: to provide high-quality education to students while acting as a living laboratory for developing and testing innovative teaching methods. Operating like charter schools, they offer students tuition-free specialized instruction for high-demand careers. They bridge educational theory and practice, enabling collaboration among educators, researchers, students, and local employers in real-world settings.

Old Dominion University, a public research university in Norfolk, was selected to manage partnerships among the lab schools and serve as an intermediary with mechanisms for R&D and teacher preparation. This year, ODU established the **Center for Innovation and Educational Opportunity** (CIEO), whose mission is to "promote the robust culture of innovation that characterizes education in Virginia, coordinate research between lab schools across the Commonwealth of Virginia, share best practices across the network, identify strategies to develop and scale innovative educational programs and initiatives in the Commonwealth, and serve as a hub for ODU's Lab School Network." Under the leadership of Dr. Karen Sanzo, the Lab School Network consists of nine schools: four ODU-specific partnerships and five additional partner

schools connected with other colleges and universities. Knowing that lab schools prioritize educator preparation, one goal of the Center is to make teachers well versed in continuous improvement. The Center houses a research and evaluation team with a director at each school and various staff leading curriculum writing and professional learning.

Of the $100 million, $5 million was appropriated for planning grants to support the design of lab schools and to assist in drafting and submitting a lab school application to the board. In the planning process, the Center regularly convenes the Network to determine essential metrics aligned with reporting outcomes and review logic models.

"We're forging new adventures with the Department of Education. They get that it's critical but messy work. Legislator support is a signal that gives confidence to divisions (districts)," said Dr. Sanzo. *"Funding is the catalyst for all of the work. Lab schools had been on the books for a dozen years, so the incentive mattered."*

The planning grant application wasn't long or overly burdensome. *"It was 'What's your vision? What do you think might happen? What will you do with the timeline?'"* said Dr. Sanzo. As the lab schools initiative launched, the **Virginia Department of Education** convened planning grant recipients to get to know one another and engage in design thinking sessions, and they have continued to provide support throughout the process. Dr. Sanzo emphasizes that key to the partnership's success so far has been dedicated staff at each level—at the state department, the university, and the school division levels—to shepherd the work and provide technical support. The state has also allowed for timeline flexibility and even success measure revisions, understanding that processes will evolve.

"It takes time to get to this work, just to start and launch… The state understood that we needed an on-ramp of at least a year, in some cases up to two years, to think, plan, and go on site visits. When you have so many partners coming to the table, you have acts of negotiation… If you want to see what works and what doesn't through a continuous improvement model, three years isn't enough time." – Dr. Karen Sanzo

Next year, ODU's CIEO plans to organize advocacy days at the Capitol and create policy briefs for legislators to digest the innovations underway in the hope that they will continue to be champions and provide more waivers to support reimagining education systems, especially around licensure, dual enrollment, seat time, and experiential learning opportunities.

Correlates to recommendation #2, #3, #7, and #8.

6) Strong relationships drive the successful development and implementation of research and solutions.

In an evolving context where young people often don't feel connected to, valued by, or engaged at school, and leaders and educators are experiencing burnout, the source of trust and engagement for many is depth and quality of connection and relationships.[4] Stakeholders emphasized the need for time and space to build authentic, ongoing, structured relationships across their contexts—what one interviewee referred to as "place-based relational innovation." State education agencies can engage in co-creation with communities to generate a shared sense of both accountability and sustainability in change efforts. Policies, programs, and initiatives put in place without strong cross-sector relationships miss an opportunity to broaden impact.

Multiple states have taken unique approaches to organize and convene education innovators.

Examples of SEA-led networks:

- The Kentucky Department of Education's Division of Innovation established an **Innovative Learning Network** with a core group of early innovation adopters and advocates that became the foundation for the United We Learn Initiative, which empowered local communities to shape the future of education in the state.

- Utah's State Board of Education (USBE) initiative, **Utah Leading through Effective, Actionable, and Dynamic (ULEAD) Education** conducts research and highlights proven practices in Utah schools for replication statewide. ULEAD partners with practitioners, researchers, and education organizations to develop and curate resources, foster collaboration, and drive systemic change for improved student outcomes. The ULEAD Clearinghouse is a growing repository of innovative and effective practice resources and tools to support educators.

Examples of partner-led networks:

- Virginia's Commonwealth Learning Partnership, a "network of education nonprofit organizations and schools of education across Virginia that share a collective goal to modernize the Commonwealth's K-12 education system" convenes the **Virginia Leads Innovation Network**. This network includes cohorts of school division teams in a

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[4] According to the 2024 "Voices of Gen Z" Survey conducted by Gallup and the Walton Family Foundation, less than half of students say their schoolwork positively challenges them (49%) or aligns with what they do best (46%); 70% say their best teachers care about them as individuals. According to the 2024 Voices from the Classroom Survey conducted by Educators for Excellence, teachers are less likely to say they plan to stay in the classroom for their entire career than they were in 2022: 77% say this today, down nine points from 2022. Just 16% of teachers say they would recommend the profession to others.

year-long continuum of learning, spearheading and guiding innovation efforts to implement the portrait of a graduate across the state.

- The Arizona Institute of Education and the Economy is convening a broad coalition of stakeholders to impact education system transformation by utilizing a "three-train" strategy: developing state-level vision and systems, supporting local implementation and innovation, and aligning policy to enable change. AIEE's focus on building cross-sector and cross-partisan partnerships that can outlast political cycles makes it unique.

Correlates to recommendations #3 and #7.

Guiding Principles and Recommended Actions for States

In the course of interviews, several themes emerged for how to actionably improve education R&D and innovation at the state level. These centered around two mechanisms: the **conditions** to incentivize and foster innovation and the **infrastructure** to support, evaluate, embed, and sustain it. Below are specific recommendations and aligned key actions for each.

Conditions

1) Establish a state vision and goals that prioritize innovation and continuous improvement.

Articulating a vision for education creates a shared purpose and direction for systems transformation. While serving as an important signal of a state's support of student-centered learning and its commitment to local empowerment, a clear vision that prioritizes innovation and continuous improvement is also essential to align programs, resources, roles, and initiatives that form the foundation of supporting infrastructure needed for education R&D. Separately, a public research agenda defined by the state, with critical questions that will be explored aligned to a state's strategic plan priorities, is a north star to guide R&D. When stakeholders across the education system, including learners and families, are engaged and have a voice in informing state-level strategic priorities and vision setting for innovation, sustainability is even more possible.

Key Actions

a) Develop and publicize a strategic plan that articulates a shared vision for education system transformation by engaging with a range of stakeholders, including practitioners, caregivers, K-12 and postsecondary learners, and leaders from industry and the workforce.

b) Develop a public research agenda that aligns with core strategic priorities and centers education R&D as an important mechanism for achieving state goals.

> The **Massachusetts Department of Elementary and Secondary Education** (DESE) publishes an annual Research Agenda that identifies high-priority research questions aligned with the state's Educational Vision, which the Research Agenda explicitly states is "in the hopes of generating relevant research projects that can help inform decisions and improve services."
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> DESE's Resource Allocation Strategy and Planning (RASP) unit's **"How Do We Know?" Initiative** provides resources "to help Massachusetts districts locate existing research and to support their ability to measure implementation and impact as part of their improvement strategy," on topics such as "How do I build and share evidence?" and "How will I know how strong the evidence is for my intervention?" The site provides free access to research summaries, evidence clearinghouses, and policy briefs to help schools and districts use and build evidence to improve student outcomes and experiences.

2) Establish a dedicated office to oversee and drive state education R&D.

State education agencies can prioritize the dedicated space and capacity needed to improve and reimagine education while also fulfilling their legal and historical functions of ensuring schools and districts comply with state and federal law. Like any priority, this requires a person whose primary responsibility is leading and shepherding this work—someone who is relational and practitioner-forward, who drives inquiry based on questions that can solve pressing challenges, and who sees it as their role to translate research and evidence into action. Importantly, staff capacity for R&D should be *in addition to* staff who oversee other data-oriented activities, such as data system development, data management, or assessment and accountability systems. Wherever research capacity is located, those responsible for leading the SEA's learning should have a cross-agency view of the agency's priorities and work, opportunities to engage directly with

the agency's executive leadership, and some degree of decision-making authority over the strategies the agency uses to develop and implement its research agenda.[5]

Key Actions

a) Create a dedicated office that partners across the SEA and sectors to tackle state challenges. This office, housed within the SEA or a partner organization such as a university or non-profit, would lead infrastructure development and R&D efforts, capture insights from innovative programs, and align research priorities with system needs.

b) Devote FTEs for a director-level role and at least two research staff.

c) Establish an advisory council with stakeholders across the state to 1) inform research and development priorities from a broader systems perspective, and 2) improve feedback loops.

d) Establish a process to handle incoming research requests. This process should elevate research aligned with the state learning agenda and community-level needs and require that applicants address how their work will make its way to the field through user-friendly, actionable summaries that can inform changes in practice or policy.

3) Empower local leaders to test evidence-based solutions and develop innovative models that improve learner experiences and inform systems transformation.

State leaders can consider ways to lift burdens and smooth the path to innovation and the conditions and resources needed at the district and school levels. This could include granting a greater degree of freedom from compliance levers and limiting constraints of the current education paradigm. Integrating R&D into innovation opportunities frees leaders to fully bring their visions to fruition and create demonstrations of what is possible, which can then be evaluated to inform systems transformation.

These efforts should also account for the ways that local policy and practice, in addition to state regulations, can inhibit innovation. By creating (or incentivizing the use of) policies that provide flexibility from both state and local rules to individual schools or groups of schools in districts, states can ensure schools have meaningful opportunities to innovate.

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[5] Results for America working document, "Defining Research Capacity."

Key Actions

a) Expand, codify, and leverage system-wide policy flexibilities that invite and enable collaboration and innovation to move beyond current system paradigm limitations while also signaling a state's commitment to a culture of trust and risk-taking.

   i) Create statutory definitions of "innovation" and "education R&D."
   ii) Leverage state-level charter school authorizers as partners in seeding innovative learning environments that can also be laboratories for inclusive R&D.[6]
   iii) Encourage districts to remove burdensome local regulations from schools and utilize statutory and regulatory flexibilities that are district-driven.
   iv) Apply for federal flexibilities that open the door to more innovative forms of student assessment such as Competitive Grants for State Assessments (CGSA) and Innovative Assessment Demonstration Authority (IADA).

b) Establish or expand statutory innovation programs, pilots, zones, or state-wide districts that integrate R&D that aligns with and informs the state's research agenda.

   i) Charge the Office of Innovation or an approved partner, such as a university or community partner, with administering and overseeing the program. External partners can generate solutions that stretch beyond system constraints and utilize capacity that an SEA may not have for R&D. Programmatic considerations include:
   - Program appropriations should include a planning and development phase to provide participating learning communities with an on-ramp for their efforts and incentivize participation.
   - Leverage leaders who have already demonstrated successful innovation efforts.
   - Prioritize proposals that include partnerships beyond the K-12 sector (e.g., with businesses or community organizations).
   - Utilize participants' expertise and context to tackle challenges aligned with state strategic priorities that can inform system transformation.
   - Integrate research, evaluation, and reporting to inform continuous improvements and capacity building.
   - Provide both research capacity and technical support to enable meaningful research that connects to development efforts.

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[6] Smith, Kimberly, and Viki M. Young. *A New Narrative: How Unlocking the Power of R&D Through Inclusive Innovation Can Transform Education.* Digital Promise. January, 2024.

- Provide extensive flexibility from system constraints that hinder innovation efforts, including:
  - Clearly articulating the flexibilities and authorities provided to participating schools and districts testing an innovation, including budget flexibility.
  - Streamlining the waiver and/or exemption process so authority to test innovations is baked into participation, and consider offering blanket waivers where possible to enable adjustments during continuous improvement efforts.
  - Easing assessment and accountability requirements to provide more space and bandwidth for R&D; balance comparable data with contextual data.
  - Include statutory feedback loop requirements to elevate findings of the program and inform systems change.
  ii) Establish a statutory state-wide innovation network (see [recommendation #7](#)).

4) Identify and build the needed capacity that impacts mindset and behavior change.

More attention must be paid to the human factors of systems change at every level—the knowledge, skills, and mindsets required for educators to lead, conduct, engage in, or even make better use of R&D. This is especially true when a prevailing belief exists that R&D is relevant only to corporate or university settings. State leaders can use their platforms to promote the state's commitment to R&D-driven innovation; they can go a step further by signaling the types of mindset and behavioral changes that may be needed across all roles—from federal program managers to classroom specialists—to transform student learning experiences. While changes in relationships, power dynamics, and mental models are harder to measure and fund than structural reforms, they are essential for sustainable transformation.[7]

Key Actions

a) Use the "bully pulpit" to reinforce support for R&D, willingness to accept and tolerate risk, and commitment to iteration, continuous improvement, and learning systems.

b) Prioritize co-creation with communities to embed a shared sense of risk and accountability and deepen engagement, buy-in, and capacity building.

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[7] Kramer, Mark R., John Kania, and Peter Senge. ["The Water of Systems Change."](#) FSG, May 2018.

c) Build broad, cross-sectional support for R&D infrastructure and inclusive R&D via strategies such as elevating champions and amplifying bright spots. Communicate clear definitions for innovation and education R&D and point to state-specific or national examples.

d) Develop a clear articulation of the "implementation chain" related to a top priority.[8]

    i) Describe how learner experiences will change.

    ii) Describe the behavior changes that need to happen at every level of the system to realize these different experiences.

    iii) Commit to and plan for measurement and data collection to track changes in behavior and implementation (see recommendation #5).

e) Coordinate and align the efforts of philanthropic and other partners to the state's learning agenda and the goal of creating demonstration sites that can inform larger-scale efforts to support innovation.

Infrastructure

5) Modernize state longitudinal data systems (SLDS).

Robust and reliable data are the backbone of strong R&D. Key data across systems and sectors that serve learners from preschool through high school and into college and the workforce must be linked to better understand their trajectories and foster systems-level alignment and support for learners as they progress. States can modernize the technical side of data systems and their uses of those systems. They can also bolster stakeholders' understanding of and mindset toward data and data-driven decision-making. In a new R&D paradigm, these systems shift from being used as compliance and reporting vehicles to ones that enable data-informed decision-making.

Key Actions

a) Modernize cross-sector data systems so they are longitudinal and interoperable, and strengthen related policies and capacity.

b) Blend and braid federal and state funding sources to resource the modernization of data systems. Project Unicorn has offered guidance on how to do this.[9]

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[8] Kunjan Narechania provided the conceptual framework for the implementation chain and levers that support adult behavior change.
[9] *SLDS: Federal Funding Braiding to Support Data-Driven Instruction Work.* Project Unicorn. January, 2024.

c) Develop additional indicators to be reflected and valued within data systems that capture a more holistic picture of a learner's journey and strengthen schools' abilities to document and share evidence of their impact. For institutions of higher education, align these measures to the ACE/Carnegie Foundation [classification system for economic and social mobility](#).

With the passage of HB-1364 in the 2024 legislative session, **Colorado** joined eight other states that have codified best practices for cross-agency data governance, with a governing board that includes leaders from contributing state agencies and members of the public.[10] The bill appropriated $5 million to develop an SLDS and details its requirements, including the ability to supply information to education and workforce practitioners alongside policymakers and researchers. Finally, it requires that the Colorado SLDS Governing Board submit an annual report on postsecondary and workforce outcomes to the governor and general assembly, emphasizing the importance of student pathways and workforce development strategies driven by robust and comprehensive data. Access to meaningful longitudinal data for all data users, from students to lawmakers, will help support decision-making at all levels.

6) Leverage tools, artificial intelligence, and technology platforms to support and enable education R&D efforts.

Research and data must be made more accessible and actionable to be utilized for either continuous improvement or rapid innovations. States and stakeholders engaged in R&D can prioritize the development of policies and the associated tools to increase accessibility and understanding of both, creating fundamental supporting infrastructure for effective R&D efforts.

Key Actions

a) Partner with technology providers to build use cases to inform product development aligned with inclusive education R&D needs and frameworks.

b) Develop policies and strategies to responsibly integrate and adopt technology platforms, including the use of artificial intelligence, that could contribute to improved application of R&D and the continuous improvement of implementation and systems.

c) Provide secure, accessible, and inclusive tools, dashboards, and services that support research and data access and analysis designed for system-wide stakeholders, including

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[10] According to the Data Quality Campaign, states that have enacted legislation to codify cross-agency data governance include AL, CA, KY, MD, MT, ND, RI, and WA.

academic researchers and community organizations leveraging research and data across different contexts.

In the 2022–2023 school year, **South Carolina's Office of Personalized Learning** launched a partnership with the **Riley Institute at Furman University** and **KnowledgeWorks** for a three-year mixed-method study on a district's implementation of personalized, competency-based learning. The study included a deep dive into the district's four schools. This included surveying, classroom observations, principal interviews, student and educator focus groups, and student-level academic and behavioral outcomes analyses.

The partnership prioritizes rapid, actionable data collection to drive improvement at both district and cohort levels. By democratizing research and ensuring data equity, partners receive timely insights through implementation dashboards - including survey results within one month—to inform decision-making and measure progress. Researchers also facilitate conversations with district stakeholders about the deep dive reports as part of a triangulated data sensemaking process.

(cont.) *"We want to encourage data ownership for impacted communities and stakeholders, so that the data trove we are steadily building will be sustainably relevant, timely, and actionable."* – Excerpt from a South Carolina PCBL Data Partnership deck

7) Build human capacity through partnerships, networks, and community engagement.

To be effective, R&D must directly engage the educators, students, families, and communities it aims to serve. As state leaders develop their priorities based on statewide challenges, they can engage with local leaders to build capacity and relationships among people doing the work. State leaders can convene diverse stakeholders—from students and parents to employers and educators—to develop a shared understanding of the distinction between current and aspirational policy structures. Involving outside partners and champions for innovation especially matters for sustainability, given the challenge that stakeholders face from workforce volatility and leadership transitions at the state and local levels.

Key Actions

a) Organize and support a state-wide innovation network or community of practice for those testing innovation focused on learning and capacity building around R&D. Approaches to networks could include:

      i)   An SEA-supported statutory network linked to the state's innovation program

     ii)   A network established by an intermediary with the capacity to build bridges and broker relationships between researchers, educators, workforce, higher education, policymakers, and communities to tackle broader education systemic challenges

b) Support the "match-making" between SEAs, LEAs, and community-based organizations (CBOs) that might otherwise struggle to engage in new R&D work on their own, with intermediary organizations and networks (e.g., Digital Promise, the Imagine Network, or Leanlab Education) with which they can partner.

Leveraging North Carolina's robust university system, the state's Department of Public Instruction launched the **North Carolina Practitioners Network** in partnership with the University of North Carolina School of Education, among other institutions such as the NC Collaboratory, Harvard University, and Georgetown University. The network supports 14 school districts in the state as they advance their capacity for in-house action research and evaluation. Participating school districts identify a unique need in their district and are then matched with university researchers who are both experts in that specific field and geographically close to the district.

Operating on the collaborative principles of research-practice partnerships (RPPs), participating districts partnered with university faculty through five workshops and ongoing coaching sessions in the 2023–2024 school year. Throughout the year, the Network offered:
- Professional development on identifying and analyzing problems of practice
- Guidance in creating implementation and evaluation plans
- Interactive sessions and online modules that provided research methodologies and data management techniques in K-12 settings

These collaborations yielded targeted intervention and evaluation plans designed to address critical issues like chronic absenteeism and math teacher retention. Districts submitted proposals to continue work in the 2024–2026 academic years, with a view toward ongoing learning and innovation in the education sector. Thirteen research projects were funded with a blend of $500,000 committed by NC DPI and $500,000 by the NC Collaboratory.

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8) Provide technical support for R&D activities and continuous improvement.

Even those who are predisposed to change need support to see it through. Real, sustained change requires dedicated resources to access research partners, professional learning, and capacity that schools and districts don't have in-house for design and implementation. Technical support

providers can also bring expertise around best practices and lessons learned from initiatives happening across the country. A benefit of providing customized, community-based technical support and infrastructure for innovation is that there is no perceived top-down mandate nor communities left to fend for themselves in a bottoms-up approach, either.

Key Actions

a) Create a line item for and negotiate partnerships with external providers and partners that can provide technical support to schools and districts to build capacity for R&D and sustainable innovation.

b) Strengthen relationships with Regional Educational Laboratories and Comprehensive Centers and understand how each can be leveraged to support evidence collection, feedback loops to system leaders, and training and technical assistance.

Comprehensive Centers are a national network of federally funded support for state and local educational agencies, schools, and communities, providing no-cost technical support for local efforts to improve educational opportunities and outcomes. The **Region 1 Comprehensive Center (R1CC)** and the **Maine Department of Education (MDOE)** partnered to provide evidence-based strategies to support pilot programs launched under the state's Rethinking Responsive Education Ventures (RREV) grant program, which provided funding and autonomy to school districts wanting to create innovative programs to meet student needs. Building on research showing that coaches can help teams increase their impact on student outcomes, R1CC developed an evidence-based coaching framework to help RREV coaches across 42 funded projects understand the needs of the programs they were supporting, identify solutions to challenges, and promote sustainability beyond the funding period of 2020–2024. As the framework was implemented in the field, the R1CC team recognized the importance of continuous improvement and adaptation, refining it into a tool that could be more broadly applied.

The Comprehensive Center Network collects examples of "impact stories" where states and CCs have leveraged research to support evidence-based practices and offer capacity-building services.

c) Create simple tools, guides, and templates that allow practitioners to incorporate learning and improvement science into their practice. Resources could include:
- Model RFPs for technical support to schools and districts

- Guides to increase awareness of the flexibilities and incentives available to districts and schools that can be leveraged for innovation (Examples: Colorado, Indiana, South Carolina, and Utah)
- Curricular and open educational resources for schools that are adoptable and adaptable so school communities don't have to reinvent the wheel in pursuing learner-centered innovation, such as Transcend's Innovative Models Exchange

Summary of Recommendations

The recommendations are a holistic approach to systems that support education R&D, anchored in a state vision and goals that prioritize innovation. Working together, they will generate system-wide, evidence-based continuous improvement and transformation.
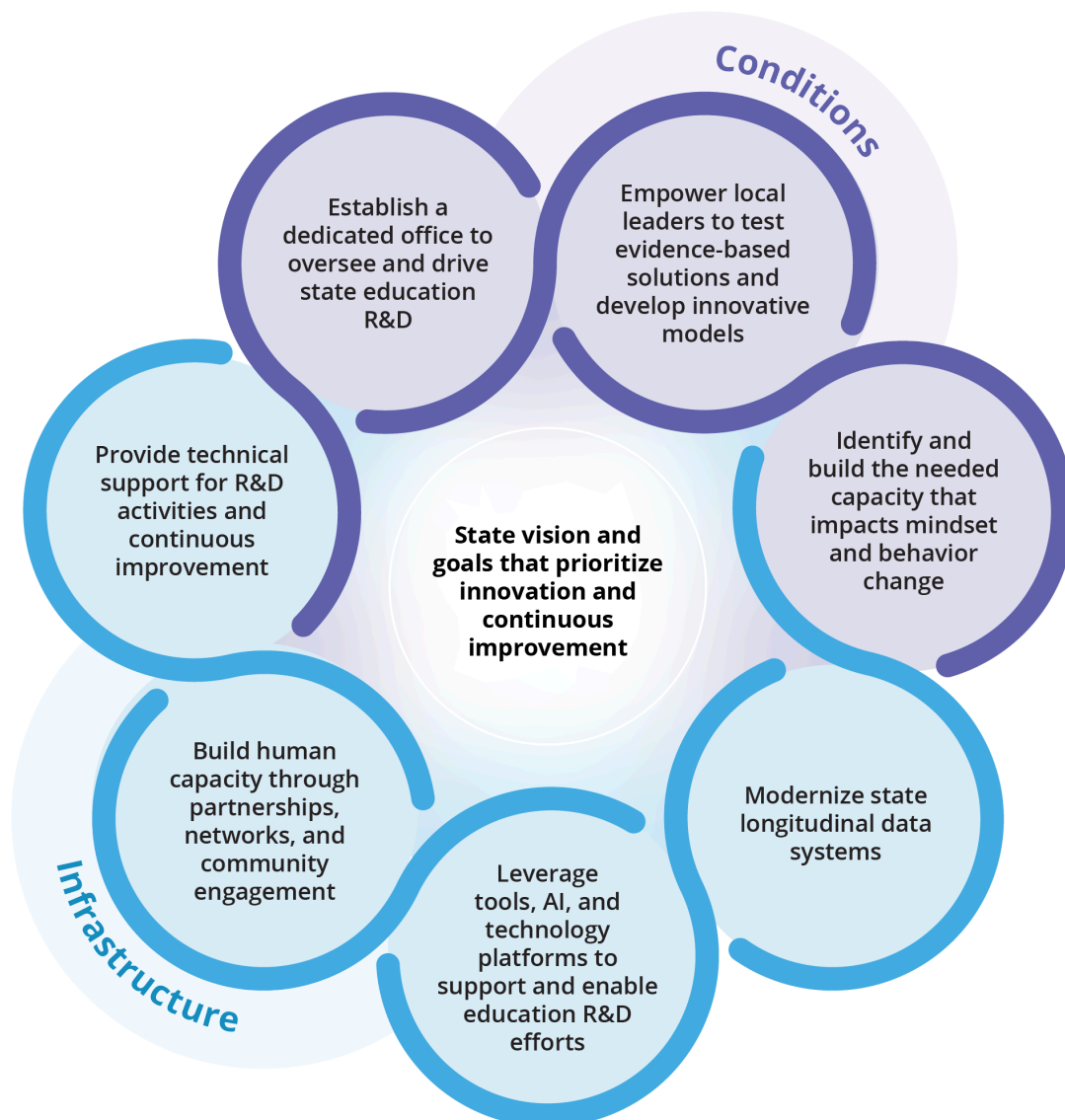
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