



September 1, 2023

Andrea Miralia, Designated Federal Officer (DFO) for NBES, (PCP 4126-1),
U.S Department of Education, IES
550 12th St SW Washington, DC 20024

Dear Ms. Miralia,

The [Alliance for Learning Innovation \(ALI\)](#) brings together education nonprofits, philanthropy, and the private sector, to advocate for building a better research and development (R&D) infrastructure in education. Considering that R&D is a relatively untapped engine of innovation in the education sector, ALI advocates for increased capacity of education R&D and supports the research and development of evidence-based innovation that centers students and practitioners, advances equity, improves talent pathways, and expands the workforce needed in a globally competitive world.

ALI sees great promise in a robust, inclusive, and updated education R&D ecosystem, with the Institute of Education Sciences (IES) playing a key role. The COVID-19 pandemic revealed that schools in the U.S. were not prepared to quickly adopt and scale new, evidence-based educational approaches and technology. Strengthening education R&D will enable U.S. schools to be more nimble and make necessary adjustments when future challenges arise. More effective and efficient R&D will combat American students' troubling declines in math and reading, as revealed in the most recent NAEP scores. Stunning advancements in generative AI, most recently demonstrated by ChatGPT, show the potential of what R&D could do to improve teaching, learning, and equity. A healthy education R&D ecosystem will cultivate future generations of talent in the STEM field and lead to innovations that strengthen national security and our global competitiveness. Finally, strong education R&D infrastructure has the opportunity to address the needs of diverse learners, especially students from historically marginalized backgrounds and those in rural communities.

As the National Board for Education Sciences (NBES) seeks input on a potential reauthorization of the Education Sciences Reform Act (ESRA) and other education research efforts, ALI encourages the NBES to consider the following high-level goals and priorities:

- **Support informed-risk, high-reward research and development, especially with respect to development.** IES should have a National Center for Advanced Development in Education (NCADE), a DARPA-like division that would catalyze breakthroughs in teaching and learning; and by creating a data science unit to fully leverage the agency's wealth of data to gain a richer set of insights, localized to communities and subgroups and maximizing impact by understanding what works for whom, when. Breakthrough innovations come from sustained investments in R&D. Pandemic

learning recovery, historic inequities, and global competition highlight the need for new mechanisms for funding the transition of federally funded basic research to tools, approaches, models, and interventions that will have a game changing impact on educational outcomes in the U.S. NCADE will serve as a bridge across the innovation “Valley of Death” that prevents federal investments in R&D from benefitting society, supporting national and economic security, and, when appropriate, becoming commercialized. The development and translation of transformative teaching and learning technologies and methodologies in education has lagged the development and translation of technologies used to improve the prevention, diagnosis, mitigation, treatment, and cure of health conditions, the development of new energy technologies, and advances that have supported US leadership in defense technologies. NCADE would identify and promote revolutionary advances in fundamental and applied sciences and translate scientific discoveries and cutting-edge inventions into technological innovations and pedagogical practices. By creating NCADE, Congress can seed the development and use of artificial intelligence to support teaching, personalize learning, support ELL, and analyze speech and reading. Additional support for STEM education R&D is needed to ensure a skilled workforce to remain competitive in the global economy, foster innovation, and provide a foundation for shared prosperity

- **Enhance federal, state, and local education R&D infrastructure.** Congress should direct and support IES to be more intentional about applying fundamental research to the development of new approaches or technologies that improve teaching and learning. To tap into the potential of data systems, there should also be an effort to grow and modernize the Statewide Longitudinal Data Systems (SLDS) program and scale up the [School Pulse Panel](#) hosted by IES’s National Center for Education Statistics early in the COVID-19 pandemic. Improvements to existing data systems should include an investment in privacy-protecting innovations that enable student data to be useful and protected. IES should foster a “Doing What Works” network of states to come together around high-priority issues and share evidence around high-quality solutions and how they work for whom, when.
- **Support the development of diverse education R&D talent.** IES should build upon its training programs for broadening R&D participation and dedicate specific research grant programs for Historically Black Colleges and Universities (HBCUs), Minority-Serving Institutions (MSIs), and Tribally Controlled Colleges and Universities (TCCUs). Not only would these training grants build the skills of those who are underrepresented in the education research community, but they would also tap into what can be learned from research practice at HBCUs, MSIs and TCUs to inform practices that are more holistic, diverse, and community-centered. IES should offer “data science fluency training grants” to academic researchers, especially at HBCUs, MSIs, and TCUs, as well as establish a “rotator program” that would bring in talent with advanced expertise to complement the skills of their current staff.
- **Drive collaboration between IES, NSF, and other federal agencies.** The CHIPS and Science Act established the National Science Foundation’s (NSF) Centers for Transformative Education Research and Translation and encouraged partnership between NSF and the U.S. Department of Education (ED) to support these new centers. AI Institutes offer another example of effective NSF-ED collaboration. There is potential for new partnerships between IES and the new Technology, Innovation, and Partnerships (TIP) Directorate at NSF. Congress could encourage TIP and IES to support R&D programs that enhance research on teaching and learning in emerging technologies that can create efficiencies and improve outcomes.
- **Promote data privacy.** ESRA reauthorization should remain separate from attempts to improve the Family Education Rights and Privacy Act (FERPA). However, Congress should update ESRA to

strengthen the U.S. Department of Education’s Privacy Technical Assistance Center (PTAC). Any legislative improvements should ensure PTAC maintains the autonomy and flexibility needed to be responsive to the field and produce resources that support best practice approaches to protecting privacy. At the same time, PTAC should continue to enable data use to identify what works for whom, when, and across multiple dimensions of student development and over time. Having secure data about longitudinal and multidimensional progress creates new, valuable insights to help practitioners and communities.

- **Grow the Statewide Longitudinal Data Systems (SLDS) program.** The SLDS program helps states build longitudinal data systems to track student progress through K-12 and into the workforce. Since the start of the program in 2005, several states have built robust systems that connect student data across systems and programs. These systems have facilitated groundbreaking research, and provided educators and policymakers with insights into long-term education outcomes. They have also enabled a greater focus on equity in policy-making by facilitating more careful analyses of what policies and interventions drive subgroup and individual student performance. But additional funding is needed to modernize system architecture and infrastructure; link pre-K-workforce data systems across states and across other social service programs and criminal justice systems; protect student privacy; and help generate accurate data to help policymakers understand and address achievement, equity, and opportunity gaps to inform R&D and investment opportunities. We also believe a modern data system needs to include data from both “in” and “out” of education systems. Too often, SLDS systems can become data warehouses. Increasing investments in SLDS, highlighting successful examples that other States can adopt, and encouraging the integration of SLDS with other federal data efforts like the [Workforce Data Quality Initiative](#) and the National Secure Data Service ([NSDS](#)) demonstration project should also be considered. Improved systems will increase the capacity for and speed of research so that school districts and postsecondary institutions know more quickly what is working for whom and when, what needs to be improved, and what strategies lead to positive impacts on employment and economic mobility.
- **Codify the [School Pulse Panel](#).** Accurate, timely data and the capacity to draw insights from diverse sets of data are crucial for understanding student needs and challenges experienced during the COVID-19 crisis and beyond. Interrupted learning due to COVID was not evenly distributed across the education system, nor are other systemic challenges millions of students face such as connectivity, transportation, and, of course, public health as the population continues to adjust to COVID-19. All of these factors must be understood for effective response and recovery. At the beginning of the pandemic, the School Pulse Panel hosted by IES’s National Center for Education Statistics (NCES) helped address some of these problems by tracking enrollment, school closures, and learning loss. But Congress should scale up the program and make it permanent.
- **Incentivize IES to build a “Doing What Works” state network.** Under current law, IES can support a network of states to work together to build capacity around research-based practices. Since this has not yet happened, Congress should direct IES to establish “Doing What Works” state networks. The first network might be focused on high-dosage (otherwise known as high-impact) tutoring, helping states identify, and share evidence and information on high-quality programs and practices. Subsequent networks would focus on high-priority issues raised by the states and use longitudinal data to find patterns across them. These high priority areas could include issues of excellence, equity, and the needs of students, teachers, and school leaders.

Modernize the dissemination of research and evidence. Getting research findings into the hands of educational leaders and practitioners is a persistent challenge. If R&D is to truly drive better outcomes in

teaching and learning, more must be done to understand and improve knowledge mobilization. The National Academies of Sciences, Engineering, and Medicine's (NAEM) report, [*The Future of Education Research at IES: Advancing an Equity-Oriented Science*](#), notes "Research on knowledge mobilization suggests that only 17 percent of school and district leaders report accessing research from the WWC "often" (13%) or "all the time" (4%)." The NAEM report makes several recommendations to IES on this issue of knowledge mobilization and dissemination. We encourage Congress to use the ESRA reauthorization as an opportunity to highlight the importance of knowledge mobilization and dissemination to bridge the gap between research and its real-world applications. This could include further investments in programs such as IES's existing RELs and the Research, Development, and Dissemination (RD&D) programs. ED and IES should annually report findings and lessons learned from its education R&D activities and make this information available to other agencies, Congress, and the public. The Department of Education should leverage IES' data collection capabilities and authorities to monitor access to STEM and computer science learning opportunities for students in the U.S.

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. This includes a larger emphasis on prioritizing deep stakeholder engagement at the forefront to determine the most relevant and impactful research questions and implementing inclusive R&D methods and practices that move beyond engagement to co-research, design and leadership in partnership with practitioners, students and families throughout the research process. IES should collaborate with organizations who have expertise in developing inclusive R&D models to scale effective opportunities to co-design and co-develop research agendas and research questions with students, families, educators, and school leaders to ensure research and evidence is relevant and timely.

Congress has made important investments in encouraging coordination and collaboration between federal agencies conducting education research, including via the American Rescue Plan and the FY 2023 Omnibus. Both pieces of legislation noted and encouraged continued IES and NSF collaboration on NSF National Artificial Intelligence Research Institutes. Additionally, the CHIPS and Science Act authorized (and the FY 2023 Omnibus calls out) Centers for Transformative Education Research and Translation, which would require collaboration between NSF and ED. Providing resources to both agencies can incentivize collaboration and help with translation of research efforts.

Congress and NBES should consider if a similar structured approach between IES and National Institute for Child Health and Human Development (NICHD) would add to the application of NICHD research on topics like child development and behavior, neurodevelopment, and the social determinants of health, among other topics. Additionally, Congress should facilitate cross-agency education research coordination by addressing the staffing and funding challenges at IES. With additional staff capacity, IES could devote specific personnel to liaise with agencies like NSF and NICHD.

As federal investments in regional innovation continue, particularly via the NSF's Directorate for Technology, Innovation and Partnerships and efforts at the Department of Commerce, Congress and NBES should consider the role of education research and development in identifying promising practices around the inclusion of K-12 education in these efforts.

To better communicate and share the findings of educational research in ways that support

implementation and continuous improvement, NBES should:

- Require IES to make the key findings from evaluations of the projects and programs it supports publicly available and easy for educators, school leaders, and families to access. In its current form, the [What Works Clearinghouse](#) (WWC) is not sufficiently getting research findings into the hands of practitioners. As noted in the National Academies of Sciences, Engineering, and Medicine’s report, [The Future of Education Research at IES: Advancing an Equity-Oriented Science](#), “Research on knowledge mobilization suggests that only 17 percent of school and district leaders report accessing research from the WWC “often” (13%) or “all the time” (4%) (Penuel et al., 2017).” Knowledge mobilization must be more fully incorporated into IES’ research and development efforts.
- Encourage IES to engage educators, school leaders, and families early in research and development so that they are not just the recipients of disseminated findings, but also engaged in and shaping the R&D process itself. This could take the form of challenges that require at least one educator per team; a fellowship program that brings educators and school leaders to IES and ensures their voices are influencing implementation decisions; or other creative ways to engage the people who will ultimately implement what comes out of the R&D process.
- Congress should consider whether flexibilities to the IES approach to long-term research should be loosened.³
- IES should expand the choice of research designs that proposals may utilize.

To bolster partnerships that ultimately improve teaching and learning, NBES should:

- **Encourage IES to build upon the training programs it has for broadening participation** and create specific research grant programs for Historically Black Colleges and Universities (HBCUs), Minority-Serving Institutions (MSIs), and Tribally Controlled Colleges and Universities (TCCUs). While the IES Pathways program has had success in diversifying education research training programs, more needs to be done at the predoctoral and postdoctoral level. IES should look at opportunities to collaborate with ED’s [Ronald E. McNair Postbaccalaureate Achievement Program](#) and Title III and Title V Institutional Service [programs](#). Additionally, IES should explore replicating NSF programs like the [Centers of Research Excellence in Science and Technology](#) (CREST), [HBCU Research Infrastructure for Science and Engineering](#) (HBCU-RISE), and [Tribal Colleges and Universities Program](#) (TCUP), which aim to enhance the research capabilities of institutions that serve underrepresented populations. This is an opportunity to build much-needed infrastructure for HBCUs, MSIs, and TCCUs – and an opportunity to learn from their research practices and methodologies, which are more community-centered and contextualized.
- **Promote digital learning platforms and data as research infrastructure.** Digital learning platforms offer researchers an opportunity not only to test research hypotheses rapidly and at scale, but to deploy what works based on those insights. Congress should direct IES to build upon its digital learning platform research network grants, which allow research teams to work together to leverage digital learning platforms and rapidly interrogate new research inquiries at scale.

IES has an important role to play when it comes to research and development of educational tools that are powered by artificial intelligence (AI) to support personalized learning. Given the rapid pace of change, IES needs more opportunities to fund the development and evaluation of transformational teaching and learning tools that are designed and developed to address key challenges that educators and school leaders face, grounded in evidence about how students – and teachers – learn and are

motivated. Technology in this context can be an enabler of better practices that are more affordable, reliable, and data-rich.

Finally, Congress and NBES should continue to support the [AI Institutes](#) and encourage IES to continue engaging with the NSF to use them for timely and applicable R&D. Earlier this year, NSF and IES established the [AI Institute for Exceptional Children](#), which capitalizes on the latest AI research to serve children with speech and language pathology needs. Communities would benefit from additional AI Institutes that meet the moment and deliver solutions for today's teaching and learning challenges. Privacy and bias considerations need to be inherent in the research questions being tackled by these and other federally funded AI research efforts.

¹ The National Science Foundation has compiled definitions of research and development.

<https://nces.nsf.gov/pubs/nces22209>

² <https://ies.ed.gov/ncer/whatsnew/techworkinggroup/pdf/DiversityTWG.pdf> Pg. 10

³ <https://www.govinfo.gov/content/pkg/COMPS-747/pdf/COMPS-747.pdf> Pg. 20