Alliance For Learning Innovation

Submitted Electronically to *ESRA2023@help.senate.gov*

April 19, 2023

The Honorable Bernie Sanders
Chair
Senate Health, Education, Labor, and Pensions Committee

The Honorable Bill Cassidy
Ranking Member
Senate Health, Education, Labor, and Pensions Committee

Dear Chair Sanders and Ranking Member Cassidy,

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 Senate Health, Education, Labor, and Pensions (HELP) Committee seeks input on a potential reauthorization of the Education Sciences Reform Act (ESRA), ALI encourages the Committee 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.

In addition to the above priorities, we are providing some specific ideas and recommendations to address questions #1-11 posed in the HELP Committee's Request for Information.

Question #1: What specific changes could Congress make to improve the efficiency and effectiveness of Federal education research and statistics programs carried out by the Institute of Education Sciences (IES)-including the four National Education Centers, the National R&D Centers, the Statewide Longitudinal Data Systems program, and the Regional Educational Laboratories to ensure IES provides research and evidence back to schools and institutions of higher education in a timelier manner to help improve teaching and learning, and postsecondary access and success?

Increase support for the development component of education research and development (R&D). IES should leverage the systematic use of the knowledge or understanding gained from its support of fundamental research via its existing National Education Centers, and apply that to producing new products or processes or to improving existing products or processes.[1] To aid in the application of fundamental knowledge Congress should support the creation of a new National Center for Advanced Development in Education (NCADE). NCADE is integral to the ability of federal education research and development to identify and promote revolutionary advances in fundamental and applied sciences. Congress should ensure that NCADE prioritize projects that consider outcomes in the context of economic, racial, and social factors. Congress should consider the impact of the National R&D

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[1] The National Science Foundation has compiled definitions of research and development. https://ncses.nsf.gov/pubs/ncses22209

Centers and whether they have achieved the goals stated in ESRA to "address areas of national need." While IES has had the flexibility to address topics of research not mentioned in Section 133, further consideration should be given to whether the topics listed are too limiting or whether additional topical flexibility is needed.

Build state and local R&D capacity. Congress should authorize and fund a matching competitive grant program for states to build capacity for and engage in education R&D. These funds would allow state or local education agencies (SEAs or LEAs), or consortiums of SEAs and LEAs, to develop individualized strategies to advance state and local education R&D. Eligible entities, in consultation with community-based organizations and families, would propose capacities they need to improve education in their state or district, which might include leveraging large-scale data or developing new approaches or supports for instruction. The program would facilitate the development or implementation of infrastructure to support diverse approaches specifically tailored to state and local contexts, including building research-practice partnerships, recruiting research and data talent into their agencies, and investing in their own R&D priorities to develop or implement more evidence-based solutions. This ground-up approach to innovation will allow for a wealth of pilot programming to see what works for whom and when, and scale it up in new contexts while also developing the capacity of state and local leaders to meet their own education R&D needs rather than being wholly reliant on the federal government.

Additionally, Congress should consider how Regional Educational Laboratories (RELs) can work with SEAs to develop and augment the internal capacity of SEAs and districts to support and apply R&D. While technical assistance is crucial in implementation, RELs could help support the internal capacity of State and local education leaders and policymakers to conduct, implement, and disseminate education research.

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 (NASEM) 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 NASEM 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.

Question #2: What specific changes could Congress make to improve the efficiency and effectiveness of the Federal technical assistance centers, including the Comprehensive Centers, operated by the U.S. Department of Education (ED) to improve their utility to State and local education leaders and policymakers?

Some states have indicated that Regional Education Labs (RELs) and Comprehensive Centers are helpful in providing technical assistance to State and local education leaders and policymakers. Congress should consider if measures of dissemination and application should be created that capture direct impact on practice and policy within SEAs and LEAs.

Question #3: How could Congress strengthen the functionality, relevance, and role of the National Board for Education Sciences in leading IES research activities as well as education research performed across the Federal government?

ALI advocates to modernize and increase the investment in federal education R&D, and to ensure community engagement and equity are at the center of this work. As such, the National Board for Education Sciences should reflect this modernization.

Members of the board should have:
- Experience with rapid-scale, high-reward transformational research in addition to expertise in basic science,
- Interdisciplinary and transdisciplinary expertise and represent a wide range of institutions including HBCUs, MSIs and Tribal Colleges and Universities,
- Experience distinguishing impacts of interventions and approaches by the different contexts of students and communities, and
- Experience with data science, AI and other emerging technologies.

Consistent with recommendations from The Education Trust, ALI encourages Congress to reserve at least three board seats for professional educators and parents to ensure that more community voices inform the direction of IES.

The board should recognize when flexibility from peer review requirements is merited. Both IES and NBES should be required to regularly report to Congress on the engagements IES has with agencies like NSF and National Institute of Child Health and Human Development (NICHD) and identify ways collaboration can be increased.

Question #4: What policies or practices implemented by other Federal research agencies could inform improvements to IES' core functions, including policies and practices related to strengthening the researcher pipeline and differentiating the types of institutions that receive IES grants?

IES could be strengthened by taking lessons from Advanced Research Project Agency (ARPA) models and the NSF's rotator program.

ALI recommends that, through the ESRA reauthorization, Congress authorize a National Center for Advanced Development in Education (NCADE). This would be a new, fifth Center housed within IES, modeled after the successful Defense Advanced Research Projects Agency (DARPA) and other ARPA models (e.g., ARPA-E for energy, ARPA-H for health). It would fund informed-risk, high-reward projects developed by universities, nonprofits, industry, or other innovative organizations. ARPA-E has been instrumental in working to ensure that the United States maintains a technological lead in developing and deploying advanced energy technologies. ARPA-H's mission includes working to support the highest quality of life and health for U.S. citizens; and an aggressive agenda for innovation to address global health threats that place U.S. citizens at risk. The challenges facing education are as pressing as those facing energy and health, and commensurate attention to advancing education breakthroughs is also needed.

There are a few elements of ARPA models that ALI believes could shape this new Center at IES. Like other ARPA models, NCADE could:

- Fund **informed-risk, high-reward research projects** that have the potential to make transformative breakthroughs in reading science, STEM mastery, and basic numeracy, among other educational challenges. Like other ARPA models, NCADE would support proposals with scientific and technical merit and could use the Heilmeier Catechism, rather than its standard peer review process, to make funding decisions.
- Emphasize **interdisciplinary collaboration**, convening experts from a diversity of sectors to collaboratively solve complex problems.
- Attract **talented program managers** using hiring mechanisms like the Intergovernmental Personnel Act (IPA) and other rotator opportunities, and provide them with autonomy to actively design and manage their portfolios, unlike grant program officers. As noted by IES Director Mark Schneider, "The DARPA model invests program managers with far more authority to pursue research avenues and product design than the traditional model IES has followed over its 20-year lifespan."
- Use **flexible funding mechanisms**, such as short-term contracts, to enable rapid progress and adapt to changing research needs. Unlike grants, contracts can ask for specific deliverables, which facilitates performance and portfolio alignment. Flexible funding arrangements would allow NCADE-supported researchers to iterate on their ideas, make needed adjustments, and rapidly work toward the development of promising approaches and technologies. Agile funding mechanisms that focus on outcomes and impact would promote the efficient use of resources and drive innovation.

- Work toward a **long-term vision**, with funding and support across multiple years. This would enable researchers to pursue ambitious projects that may require a longer time horizon to achieve breakthroughs.
- Embrace an **openness to failure and learning**, recognizing that not all research projects will succeed. This would allow NCADE-supported researchers to take risks and learn from hypothesis testing, fostering a culture of experimentation and continuous learning.

There is also a lot to be learned from the NSF's rotator program, which is instrumental in ensuring the agency's programs reflect creative ideas from the field and the most advanced computational methods. An updated ESRA should support a rotator program at IES. Such a program would leverage authority from the Intergovernmental Personnel Act to engage advanced scientific and technical expertise, and build internal capacity for the implementation of education R&D priorities.

IES should build upon the training programs it has for broadening participation and create specific research grant programs for HBCUs, TCUs, and MSIs. 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. In December 2020, IES released a report "Increasing Diversity and Representation of IES-funded Education Researchers." Among the findings included in the report[2]:

- "IES also has 2013 to 2020 data on the types of institutions that apply for funding. From 2013 to 2020, approximately 4 percent of applications to NCER and less than 1 percent of applications to NCSER were from MSIs."
- "For NCSER, no minority-serving institutions have received funding between 2013-2020."

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.

Question #5: How could Congress ensure better coordination among all Federal agencies conducting education research outside of IES?

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

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[2] https://ies.ed.gov/ncer/whatsnew/techworkinggroup/pdf/DiversityTWG.pdf Pg. 10

NSF and ED. Providing resources to both agencies can incentivize collaboration and help with translation of research efforts.

Congress 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 should consider the role of education research and development in identifying promising practices around the inclusion of K-12 education in these efforts.

Question #6: How could IES better support field-initiated research that promotes continuous improvement and timelier and more actionable research?

Congress could help IES better support timely, actionable, field-initiated research by:
- **Fostering an inclusive education research and development ecosystem** – one where diverse teams of practitioners, school leaders, other educators, researchers, and developers all have an equal voice in the research process. This approach centers co-design, learning science, and historically marginalized communities. Requiring field-initiated research that aligns to this ecosystem will help address some of the challenges the current approach to education research can have in supporting continuous improvement and actionable research.
- **Reserving at least three seats on the National Board for Education Sciences for professional educators and parents.** At present, these groups can serve on the board, but there is no requirement that they be represented on it. By requiring educator, school leader, and parent representation on the board, Congress can ensure community voices are helping shape the direction of IES.
- **Authorizing a National Center for Advanced Development in Education (NCADE).** This would be a new, fifth Center housed within IES, modeled after the successful Defense Advanced Research Projects Agency (DARPA) and other ARPA models. It would fund informed-risk, high-reward projects developed by universities, nonprofits, industry, or other innovative organizations. NCADE would use flexible funding mechanisms to enable rapid progress and adapt to changing research needs. This would allow researchers to iterate on their ideas, make needed adjustments, and rapidly work toward the development of promising approaches and technologies. Program managers, in consultation with the field, would select proposals with scientific and technical merit and could use the Heilmeier Catechism, rather than its standard peer review process, to make funding decisions.
- **Encouraging IES to continue collaborating closely with educators**, such as in its partnership with the Council of the Great City Schools, a coalition of 78 of the country's largest public school systems.

- **Growing and modernizing the Statewide Longitudinal Data Systems (SLDS) program.** SLDS 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. Additional support from Congress 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; improve coherence; protect student privacy; and help generate accurate data to help policymakers understand and address achievement, equity, and opportunity gaps. Improved systems will increase the capacity for and speed of research so that school districts and postsecondary institutions know more quickly what is working, 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. At the beginning of the pandemic, the School Pulse Panel hosted by IES's National Center for Education Statistics helped address some of these problems by tracking enrollment, school closures, and learning loss.
- **Give more attention to educator workforce R&D.** IES should devote more resources and opportunities to support research and development of effective teacher and school leader training programs and increasing research on education workforce conditions and development.

Question #7: How could IES support innovative research methods, including more implementation research, to identify how and why interventions are effective or not across varying contexts? How could IES more nimbly allow contracts and programs to change course when strategies and interventions are not working? How could the Federal government better communicate and disseminate the findings of education research to build the capacity of teachers, school leaders, institutions of higher education, and education systems to identify and implement evidence-based practices in ways that support continuous improvement?

To support innovative research methods and enable IES to more nimbly allow contracts and programs to change course, Congress should authorize a National Center for Advanced Development in Education (NCADE). This would be a new, fifth Center housed within IES, modeled after the successful Defense Advanced Research Projects Agency (DARPA) and other ARPA models (e.g., ARPA-E for energy, ARPA-H for health). It would fund informed-risk, high-reward projects developed by universities, nonprofits, industry, or other innovative organizations. Congress should provide NCADE with the ability to make awards via grants and cash prizes, enter into contracts and cooperative agreements, and provide technical assistance.

There are a few elements of ARPA models that ALI believes could shape this new Center at IES. Like other ARPA models, NCADE could:
- Fund **informed-risk, high-reward research projects** that have the potential to make transformative breakthroughs. Like other ARPA models, NCADE would support

proposals with scientific and technical merit and could use the [Heilmeier Catechism](#), rather than its standard peer review process, to make funding decisions.

- Emphasize **interdisciplinary collaboration**, convening experts from a diversity of sectors to collaboratively solve complex problems.
- Attract **talented program managers** using hiring mechanisms like Intergovernmental Personnel Act (IPA) candidates and other rotator opportunities, and provide them with autonomy to actively design and manage their portfolios, unlike grant program officers. As [noted](#) by IES Director Mark Schneider, "The DARPA model invests program managers with far more authority to pursue research avenues and product design than the traditional model IES has followed over its 20-year lifespan."
- Use **flexible funding mechanisms**, such as short-term contracts, to enable rapid progress and adapt to changing research needs. Unlike grants, contracts can ask for specific deliverables, which facilitates performance and portfolio alignment. Flexible funding arrangements would allow NCADE-supported researchers to iterate on their ideas, make needed adjustments, and rapidly work toward the development of promising approaches and technologies. Agile funding mechanisms that focus on outcomes and impact would promote the efficient use of resources and drive innovation.
- Work toward a **long-term vision**, with funding and support across multiple years. This would enable researchers to pursue ambitious projects that may require a longer time horizon to achieve breakthroughs.
- Embrace an **openness to failure and learning**, recognizing that not all research projects will succeed. This would allow NCADE-supported researchers to take risks and learn from hypothesis testing, fostering a culture of experimentation and continuous learning.

To better communicate and share the findings of educational research in ways that support implementation and continuous improvement, Congress 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.

Question #8: How could IES bolster partnerships with the full range of partners- including but not limited to educators, school systems, institutions of higher education, including minority-serving institutions, public and private entities, localities and States, researchers, and the Federal government-to more effectively utilize, scale, and commercialize education research to improve teaching and learning?

To bolster partnerships that ultimately improve teaching and learning, Congress 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.
- **Support "data science fluency" training grants**. Congress should authorize a "data science fluency" training program to teach academic researchers to be "bilingual" across data science and domain challenges in education. Many of these grants could be directed to HBCUs, MSIs, and TCCUs to build up a cadre of skilled education researchers who are currently underrepresented in today's education research community.
- **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.

Question #9: How could education research better inform and evaluate the relationship between artificial intelligence (AI), instruction, and student learning? What should IES' role be in both developing AI products and evaluating their effectiveness?

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

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.

One key opportunity to support transformational research and development at IES is to **establish a National Center for Advanced Development in Education (NCADE).** Modeled after DARPA, NCADE would support large-scale, innovative projects that require a more nimble and responsive program management approach than currently in place. Specifically, NCADE would fund projects developed by universities, nonprofits, industry, and innovative organizations, selected based on their potential to create dramatic breakthroughs in learning and teaching, especially for the most underserved populations. Like DARPA, NCADE would be oriented toward ambitious ideas across the academic, public, and private sectors. It would build on bipartisan interest in expanding education R&D, and put outcomes for students at the center of its work. The Center would focus on breakthrough technologies, new pedagogical approaches, innovative learning models, and more efficient, reliable, and valid forms of assessments. This federal investment would spark innovation at state and local levels, and help build local infrastructure to sustain the work. By creating NCADE, Congress can seed the development and use of artificial intelligence to support teaching, personalize learning, support ELL students, and analyze speech and reading.

In addition to authorizing NCADE, Congress should direct IES to build out large-scale datasets, with privacy protections, that allow new AI tools to hone models that respect student and teacher contexts while allowing algorithms to be interrogated for bias.

Finally, Congress 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.

Question #10: How could the Federal government and IES provide more flexibility to the field of education research to pursue innovative solutions to the challenges we face in education?

The field of education R&D holds a great deal of potential. Research in education, learning science, human development, and cognitive science has developed significantly in recent decades. But the lack of a sophisticated, systematic, and well-funded approach to the "development" side of education R&D means that most of the opportunities uncovered in the research have not yet been seized.

To unlock the potential of fundamental research and ensure it gets applied to real improvements in teaching and learning, Congress should **authorize a National Center for Advanced Development in Education (NCADE)**. Modeled after DARPA, NCADE would support large-scale, innovative projects that require a more nimble and responsive program management approach than currently in place. NCADE will serve as a bridge across the innovation "Valley of Death" that prevents federal investments in research and development from benefitting society, supporting national and economic security, and, when appropriate, becoming commercialized. This includes a more flexible process for NCADE program managers to evaluate the technical and scientific merit of proposals, rather than using IES' standard peer review process. Specifically, NCADE would fund projects developed by universities, nonprofits, industry, and innovative organizations, selected based on their potential to create dramatic breakthroughs in learning and teaching, especially for the most underserved populations. Like DARPA, NCADE would be oriented toward ambitious ideas across the academic, public, and private sectors. It would build on bipartisan interest in expanding education R&D, and put outcomes for students at the center of its work. The Center would focus on breakthrough technologies, new pedagogical approaches, innovative learning models, and more efficient, reliable, and valid forms of assessments. 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. This federal investment would spark innovation at state and local levels, and help build local infrastructure to sustain the work. Congress and the field will need to understand that informed-risk/high-reward approaches will come with failures. Continued investments and more structured collaborations between IES research, NCADE, and programs like the Education, Innovation, and Research (EIR) program and Centers for Transformative Education Research and Translation can create the conditions to support innovations that will directly support students, educators, and families.

Support a rotator program at ED. 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. The National Science Foundation's rotator program is instrumental in ensuring the agency's program reflects creative ideas from the field and the most advanced computational methods. Both IES and ED more broadly could greatly benefit from a similar program.

Question #11: How could research projects at IES and grantees better engage students, parents, and educators in the research process, including through recruitment and informed consent?

It should be recognized that education research has long prioritized and safeguarded student privacy. This ranges from the regular use of Institutional Review Board (IRB) procedures, data management plans, and access controls, among other efforts. Congress should strengthen the Student Privacy Policy Office's Privacy Technical Assistance Center (PTAC) to ensure research efforts are balanced with consent and protection.

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We look forward to working with the Committee further on this important reauthorization. If you have questions, please contact Otto Katt (otto@lewis-burke.com), Sara Schapiro (sschapiro@fas.org), or Tasha Hensley (tasha@the-learning-agency.com).

Sincerely,
The Alliance for Learning Innovation