knowledge alliance

November 13, 2023

Dr. Erin Higgins
National Center for Education Research (NCER)
Institute of Education Sciences (IES), U.S. Department of Education (ED)
400 Maryland Avenue, SW
Washington, DC 20202
Docket ID ED-2023-IES-0011

Dear Dr. Higgins,

I am writing on behalf of Knowledge Alliance (KA) in response to the Institute of Education Sciences' (IES) request for information (RFI) soliciting comments from the field to guide its efforts to fund quick-turnaround high-reward, scalable solutions intended to improve education outcomes for all students through the creation of a new program, Seedlings to Scale (S2S). Founded in 1971, Knowledge Alliance is a non-profit, non-partisan organization comprised of leading education organizations committed to the greater use of high-quality and relevant data, research, evaluation, and innovation in education policy and practice at all levels. Collectively, KA and its members promote the use of rigorous research to figure out what works to improve student outcomes and then share those findings with policymakers, practitioners, and the general public.

KA commends IES for allowing the community to provide input on investments that accelerate transformative education research to improve education outcomes for all learners and eliminate persistent achievement and attainment gaps. KA is supportive of bold, innovative ideas that make advances in solving seemingly intractable problems in the education field. KA members have vast experience collaborating with stakeholders like state educational agencies (SEAs), large urban districts, small rural districts, teachers, parents, and community groups to understand their biggest challenges and to build high-quality evidence about what works, for whom, and under what circumstances to solve those challenges. KA members provide support to help stakeholders use that evidence base to improve educational outcomes for all students, close achievement gaps, and improve the quality of instruction. As IES develops the S2S program, KA recommends that IES consider the following recommendations for ensuring that investments are targeted at the development of high-quality, scalable research that centers investments on the needs and outcomes of all learners.

Comments on What Successful Performers Would Do:

Leverage Existing IES Investments: KA endorses the proposal to leverage and build upon current IES investments, including the LEARN Research Network, the Small Business Innovation Research (SBIR)

program, the SEER Research Network, and other initiatives. Over the past 20 years, IES has invested in research that explored and answered foundational questions about learning and education, resulting in knowledge like that presented in the 25 IES Practice Guides that provide educators with the best research evidence available and offer specific recommendations to address education challenges. Continued investment in foundational research remains crucial, yet our pursuit will benefit from expanding the spectrum of existing education research investments to include a program that works at an accelerated speed. Making S2S investments based on a theory of action and drawing on what we already know is a way in which to ensure that limited S2S resources are invested in solutions that are likely to solve challenges and scale rapidly.

Foster Collaboration: KA endorses the proposal that S2S investments foster collaboration between product developers, researchers, and educators who are highly skilled in their respective disciplines and across disciplines. Through partnerships, that at a minimum should include researchers, evaluators, and a consortium of SEAs or local educational agencies (LEAs), IES will have the ability to spur education innovations that have increased probability of scaling, that meet the needs of the field, and that have rigorous evidence of impact. KA encourages IES to leverage the longstanding relationships that Regional Educational Laboratories (RELs) and Comprehensive Centers (CCs) have with stakeholders at the state, local, and regional levels in order to assess how an innovation would be incorporated into the operating environment of the school and district.

Center Equity in the Design and Implementation of this Program: We recommend prioritizing structural innovation for inequitably resourced schools. The learning needs of students, particularly students with disabilities, English Language Learners (ELLs), and those most impacted by learning loss, must be front and center. While IES notes that successful performers would "*maintain an unwavering focus on improving learning outcomes"* KA feels that this performance measure should be further refined with a specific focus on equity.

Ensure Projects Are Directly Connected to the Needs of Students: Applicants should be required to demonstrate that their proposed project is informed by learners' needs. One way IES could increase grantees' probability of both meeting the needs of students and scaling and transitioning their innovations would be an embedded Entrepreneur Model (EP) that requires both stakeholder need-sensing and a demonstration of how the envisioned end product will integrate into existing systems. Also, consider explicitly incorporating requirements for meaningful partnerships with students, families, and practitioners. This addition would emphasize the importance of collaborative input from key stakeholders in the development and implementation of projects, ensuring a more comprehensive understanding of and responsiveness to the needs of the educational community.

Define Impact and Scaling: KA endorses the proposal that S2S investments define from the beginning a credible path to significant impact and commercial success (including free and open-source pathways).

While impact and scaling are related concepts, they are not the same. S2S investments should have clearly defined, separated, measures of performance as well as measures of impact and scaling to ensure that investments are effective and sustainable. Specifically, commercial success should not be the only outcome measure.

Topic 1: Proposed S2S Focus Areas

Topic Areas: KA supports the four focus areas described in the RFI, but encourages IES to include additional topics related to ELLs, multilingual learners, in- and out-of-school time, teacher retention, assessment, career and technical education and the use of AI. The focus on AI should include the use of AI in the classroom and on education systems more broadly, and specifically how AI can improve outcomes for diverse learners.

Cross-Cutting Topics: KA strongly endorses the additional topics of interest described in the RFI, especially data modernization, interoperability, human-centered design, open, fair, and transparent research, and data privacy and security. At present, these areas are not adequately funded. For example, SBIR Phase 1 projects are not funded at a sufficient level to provide the degree of research and development needed. Additionally, higher levels of funding through the IES Transformative Research in the Education Sciences grants require evidence of effectiveness, which may not yet exist. Further, cost-sharing requirements on early development grants are often a barrier to the creation of new solutions.

Topic 2: Proposed S2S Program Design

Ensure Timeline is Realistic and Inclusive: While KA supports IES's goal to create a program that can be quick-turnaround, we would like to ensure that the timelines are realistic so as to ensure grantees can produce the kind of truly innovative tools this program seeks to fund. In Phase 1, IES asks that applicants demonstrate that their solution meets four different milestones, all of which include collaboration across multiple sectors and require established partnerships to be successful. Due to the need to foster these partnerships, and reflecting the capacity of ED, we recommend expanding the timeline for Phase I. Additionally, as we consider a program to create truly innovative new ideas and tools, we must recognize the importance of bringing historically marginalized voices to the table, and expanding the Phase I timeline will allow new or nontraditional partners to participate in this program.

Partnerships at the Get-Go: An ideal partnership team would include researchers and evaluators, SEAs or LEAs and private companies. In order to maximize the likelihood of success for these teams, all partners must be involved from the beginning of Phase I, and this involvement should continue throughout. Involvement from all parties throughout the entirety of all phases would also allow for

course correction and iterative changes during the development and implementation of the product and not just as part of an evaluation at the end of the project.

Stakeholder Engagement: We know that, when designing this program and considering community engagement, building and fostering relationships founded on trust is what will allow for successful and sustained engagement from communities. The current R&D research infrastructure is ripe with deep relationships between communities and trusted researchers and technical assistance providers. We believe that one of the ways to ensure community engagement is to lean on and leverage these relationships while bringing in new voices and new partners. Additionally, we believe a key for community engagement is listening to the needs of States, districts, and schools and creating tools based on those needs rather than just developing products for the sake of development. In order to achieve sustained community engagement and the potential for large-scale impact, we must root the proposed tools and products in the pressing needs of students, teachers, and other stakeholders.

Program Supports: KA commends IES's emphasis on the need for resources and supports for teams that would participate in this new model and we suggested inclusion of the following resources.
- *Dedicated security teams:* We recommend standing up a specific program team that is dedicated to the design, implementation, and management of data privacy and security throughout the initiative. These teams should help gather the requirements for data privacy and security and then vet vendors accordingly.
- *Continuous Improvement:* It is important to proactively monitor innovation systems for data privacy and security, engaging with necessary stakeholders and building tools to detect issues before they occur. This includes risk assessments of data systems to monitor firewalls and incorporating encryption technology.
- *IP Protection*: It is important that teams have IP protection, which will impact the transparency of their innovation designs and data.

Core Activities & Benchmarks: With S2S's focus on developing quick-turnaround, high-reward, and scalable solutions, it is important to weave together these principles with ensuring that the development, implementation, and evaluation of these new products is still safe, fair and equitable. For this reason, KA proposes that IES consider the benchmarks below for each phase of the project.

- Phase I: A successful project in Phase I has Key Performance Indicators (KPIs), a Theory of Change, and evidence from more than one successful study.
- Phase II: This phase includes a market study, a good implementation study and studies of impact conducted at large sites to show potential for scale.
- Phase III: Success in this phase is based on scaling. A successful project will be testing at scale and evaluated based on its ability to close achievement gaps for a diverse range of learners in diverse

settings. Additionally, it would be critical to evaluate the project to ensure that it does not lose its efficacy in closing these achievement gaps for students as it is brought to scale.

Costs & Contributions: One thing to consider when assessing costs is that recruitment costs include providing incentives as well as time for teams to recruit participants. Also, researchers are developing more novel strategies to recruit which a more expensive. These new strategies are necessary because traditional recruitment methods are no longer yielding study participants. Additionally, periodically, there are unique study designs, the costs of which should be considered. Based on the draft scopes of work included in the RFI and the above considerations, KA estimates the cost for a Phase 1 project of between $2-3 million; for a Phase 2 of between $5-6 million, and for a Phase 3 project of between $8-10 million.

Experience of Technical Working Group: Technical working groups should include researchers with content knowledge and technical expertise, experts in scaling of education technology, educators and administrators with expertise in using transformative technologies or interventions, and experts in AI/ML or other technologies that are revolutionizing education, as well as researchers who understand the learning issues being addressed.

Conclusion

KA would again like to thank IES for the opportunity to provide feedback on the proposed program design for Seedlings to Scale. As we continue to face prominent challenges within our education systems and grapple with ever-evolving technology that has deep implications on our students, we support IES's efforts to create a program that would provide a new framework for meeting the needs of students, teachers, and schools. The comments provided above are informed by KA's extensive experience in the field, and we believe that they illustrate ways in which IES can ensure that this program creates transformative, high-impact tools and products that will lead to equitable solutions for all.

Please reach out to Rachel Dinkes at rdinkes@knowledgeall.net with any questions.

Sincerely,

Rachel Dinkes

Rachel Dinkes

KA Member Examples

Please see below for examples of KA member organization's past ARPA-style efforts:

- National Council on Aging - Developed a tool that supports the education about resources available to older Americans NCOA AEM_AWS_CaseStudy.pdf (aemcorp.com)
- Generate - Generate is a software application that improves data quality and automates reporting for state education agencies (SEAs) through standardization. Generate can improve SEA data use and reporting to better support administrative and policy work for improved educational outcomes for students with disabilities and their families. CEDS and Generate, A State Example
- SRI has advanced dozens of DARPA-funded research ideas to market, creating new industries, billions of dollars in market value, and lasting benefit to society including GPS tracking and precision navigation and the intelligent assistant platform Siri, now included on the Apple iPhone.
- SRI currently leads IES's Leveraging Evidence to Accelerate Recovery Nationwide Network (LEARN Network) focused on adapting and scaling up existing, evidence-based products with the potential to accelerate learning for students in kindergarten through grade 12, whose learning was affected by the COVID-19 pandemic. As part of the LEARN Network, SRI is developing a LEARN to Scale Toolkit to support researchers and developers in creating, testing, and scaling evidence-based educational products that can achieve widespread, equitable, and sustainable use and impact. The toolkit will have guides and templates for implementing SRI's Invent-Apply-Transition (IAT) scaling model, profiles of existing projects that have successfully scaled and offer useful lessons for other project leaders, and multimedia content including video and audio interviews with experts and entrepreneurs. The toolkit is a working resource that will be regularly updated as the LEARN Network continues to learn and grow. SRI's Ventures group is also providing consulting to help the LEARN Network's product teams develop scaling plans.
- Mathematica has partnered with the Bill & Melinda Gates Foundation and more than two dozen education solution developers to conduct research to inform development of new education solutions in middle school math and high school writing. In this work, Mathematica developed overarching theories of action to coordinate learning and solution development across multiple teams, each comprised of a solution developer and a researcher partnering with one or more districts. With these theories of action as overarching frameworks to ground learning efforts, Mathematica guided solution developers in creating a measurement and evaluation plan focused on producing actionable, rigorous evidence; supported them to complete evaluations; and guided them to specify solution improvements they would pursue based on findings.
- Mathematica developed an innovative web-based platform, the Evidence to Insights Coach (E2I Coach), to put the tools of rigorous evaluation in the hands of education solution developers and their partners in state and local education agencies. Initiated with support from the U.S.

Department of Education, this effort included the full suite of product design and user testing activities: needs sensing and the development of user profiles, creation of initial and refined prototypes, and user testing of a prototype with dozens of district and developer partners. The E2I Coach is a user-friendly platform that guides a solution developer or district through designing and completing a rigorous comparison group evaluation. This includes describing the solution to be tested and the evaluation context; specifying research questions and thresholds defining meaningful impacts; data collection and cleaning; and analysis and reporting in metrics that support concrete decision-making on future use of the solution. After releasing the initial version of the Coach in 2017, Mathematica further refined it with support from the Chan-Zuckerberg Initiative to make it usable in applications beyond education.