

Docket ID ED–2023–IES–0182

November 13, 2003

Institute of Education Sciences  
National Center for Education Research  
U.S Department of Education  
400 Maryland Avenue SW, Washington, DC 20202–7240

Dear Director Schneider,

These comments are submitted by the [Alliance for Learning Innovation \(ALI\)](#), a coalition that brings together education nonprofits, philanthropy, and the private sector, to advocate for building a better research and development (R&D) infrastructure in education. 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 commends the Institute of Education Sciences (IES) for its vigorous efforts to support the nation’s education system via R&D that aims to improve education outcomes for all learners and eliminate persistent achievement and attainment gaps. We are particularly encouraged by IES’s efforts to advance quick-turnaround, high-reward, scalable solutions intended to improve education outcomes for all students. As a leading voice for additional attention and resources for development and innovation in Research and Development, ALI welcomes the opportunity to comment on the “From Seedlings to Scale” (S2S) program. It embraces the opportunity to continue to build toward a National Center for Advanced Development in Education (NCADE) at IES, which could leverage breakthrough innovations to address some of our nation’s steepest challenges in education.

ALI’s efforts to help refine the S2S topic areas and program design are reflected in the response to the questions below:

**(1) Are the focus areas and cross cutting topics described well suited to advanced development R&D?**

ALI supports the four focus areas identified for the S2S program. Grounding education R&D as a means of supporting the development of skills that are “critical for international competitiveness in the jobs of the future” will create an opportunity for more students to be prepared for opportunities available to them and can support better connection between the labor market and education systems. While education is more than developing and enhancing the labor force, fostering relevancy between educational experiences and future career preparation will benefit learners across life spans.

S2S efforts should seek to advance the development of new approaches to teaching and learning. A focus area that emphasizes the needs of neurodiverse learners will also help ensure that S2S is addressing the needs of all types of learners. IES should ensure that efforts in this space leverage knowledge not only from its National Center for Special Education Research (NCSER) and the Department of Education but also work in this space supported by the National Institutes of Health

(NIH). We also recommend that IES consider how learner variability and skill acquisition amongst all types of learners and students should be considered when measuring improvements in learning, continuous improvement, and evaluation.

Additionally, the other two initial focus areas initially identified for S2S, artificial intelligence and “strategies to support behavior and emotion regulation,” are important topics to address. President Biden’s [Executive Order](#) on AI notes the Administration’s commitment to “Shape AI’s potential to transform education by creating resources to support educators deploying AI-enabled educational tools, such as personalized tutoring in schools.” AI algorithms can be prone to racial and gender bias problems. To the extent that AI is used to aid instruction and student learning, IES should ensure that its use does not introduce bias that harms the educational experiences of students of color, students from low-income backgrounds or students who have been marginalized. The U.S. Surgeon General, in the context of social media and youth mental health, has [noted](#) the need to, “urgently take action to create safe and healthy digital environments that minimize harm and safeguard children’s and adolescents’ mental health and well-being during critical stages of development.”

IES should consider the four cross-cutting areas listed as “additional topics of interest” as “sub” focus areas. For example, a proposal that leverages AI to augment teaching and learning should be required to address the “data privacy and security” crosscut. If IES is seeking to support advanced development R&D, then the crosscuts, particularly the “Data modernization,” “Open, fair, and transparent research,” and “Data privacy and security,” should be more than “strongly recommended as areas to consider.” While they do not need to function as separate priority focus areas, they are necessary to ensure safe, effective, accessible outcomes, products, and capabilities. We also believe a specific addition to the inclusion of the SEER principles in the crosscuts is essential for any research.

As noted in the National Academies [report](#) *The Future of Education Research at IES: Advancing an Equity-Oriented Science*, “Recognizing that racial, ethnic, and economic inequality in education have always been present, and armed with new evidence that these divides have sharpened during the pandemic, it is more important than ever that IES prioritize research that advances equity.” This charge should extend to efforts undertaken by S2S. IES should ensure it supports efforts that target changing instructional practice.

**(a) Are these areas already adequately covered by existing funding mechanisms? If not, why not?**

The U.S. devotes few and declining resources to R&D in education—a staggeringly low 0.4 percent of the U.S. Department of Education’s (ED) entire budget. Outside of a lack of federal investments, the education marketplace can be challenging for new entrants with approaches not aligned with existing market dynamics. The S2S program will help jumpstart innovations in education products and capabilities by building into the process, partnerships, and market signals early in the process that will help lead to adoption and use. In fostering and establishing an evidence base from the outset, S2S can ensure that schools can make informed decisions about the efficacy of products and capabilities, which can be a challenge in the current [environment](#), as noted in this piece from the Overdeck Family Foundation.

An aspect of S2S that may be duplicative without additional consideration is the scaling component. While at its core, S2S and the ATS programs are about “going from idea to prototype and preparing existing tools, techniques, and products with evidence of effectiveness for scaling,” IES could clarify how this differs from ED’s [Education and Innovation Research](#) (EIR) program. One way to differentiate S2S

from EIR and other ATS efforts is by focusing on supporting earlier stage development of teaching and learning innovations that are not eligible for EIR or SBIR (such as those championed by non-profit, community-based organizations) and providing the resources and environment necessary at the early stages of evidence-building and organizational development. IES could also articulate potential on-ramps from S2S to EIR grants, SBIR, and related initiatives.

A point that bears re-emphasizing — fostering and supporting efforts that may be past the prototype stage but have not reached full development or distribution as proposed on the S2S continuum, will be essential to ensuring this initiative does not replicate and duplicate other IES research efforts.

**(2) To successfully develop products and ecosystems that make a major impact on learners' education outcomes, teams will need a variety of supports. IES may require support from private industry in areas such as providing consultation and coaching to teams, convening potential partners for research and scaling.**

**(a) What would an ideal team look like to maximize the likelihood of success? For example, what role would researchers, education agencies (at the state or local level), and private companies play in the team?**

Collaboration between education agencies and community-based organizations, at the state and local levels, racially and economically diverse researchers; and industry will maximize the likelihood of success for innovative Seedlings to Scale projects. Both education agencies and community-based organizations are closest to the educational challenges of their community, so they should drive the problem-identification phase of the R&D process. Education agencies should provide high-quality, privacy-protected data to researchers and offer school districts as sites for pilot and trialing and future implementation of new tools or other innovations. Education agencies and community-based organizations can also provide valuable feedback throughout the R&D process to ensure that the innovations developed meet community needs and increase the likelihood of successful implementation. Researchers should analyze the data from education agencies and find patterns to narrow in on potential solutions.

Industry can provide capacity, expertise, and resources to prototype tools or other innovations. To dramatically improve educational outcomes for all students, education agencies, community-based organizations, researchers, and the private sector must work together cohesively and be incentivized to do so. Additional support and resources will be needed in order to make this type of collaboration happen, given the fiscal and capacity challenges facing school districts, including often not having time to implement existing technology programs with fidelity. Identifying and providing resources to participate in R&D for potential products and capabilities that might potentially help them in the future should inform any S2S efforts. Teachers, school, and district administration and leaders need to be given the time and provided the relevant incentives to commit to participating in R&D activities with fidelity over a longer period of time.

IES should build into its evaluation of the S2S program how teams assembled for this effort differ from teams assembled for other IES research projects as a way to gauge if this new effort is eliciting the

broadest range of teams possible. Maximum flexibility, while ensuring accountability, should be afforded team composition, allowing for the addition and subtraction of components as the project progresses.

As IES acknowledges, there may be a need for “support from private industry in areas such as providing consultation and coaching to teams.” ALI recommends that IES consider an approach taken by [ARPA-H](#) and its “innovation network that connects people, innovators, and institutions.” In particular, the “Customer Experience Hub” and its focus on “listening to, learning from, and building trust with communities,” could be an example of the type of entity IES should seek to replicate to support the S2S and other ATS efforts.

**(b) How can we ensure community engagement and input?**

To ensure community engagement and input, the Seedlings to Scale program should require proposals to demonstrate that they have engaged community members (which should include educators, educator leaders, families and students as well as other community leaders) in identifying the problem their innovation solves and that there will be touchpoints through the R&D process to gather and respond to input from the community. Additionally, state and/or local education agencies should be required partners in any proposal, and there should be a preference for proposals where a community-based organization – that serves or represents the educators, families, and/or students that the proposed solution is meant to help — is fully engaged in the R&D process. IES should consistently reflect during this process that the users of the innovation are centered and engaged.

**(d) Particularly in the areas of fair, open, and transparent research and data privacy and security, what kind of programming or resources would you recommend providing teams?**

Activities that could be helpful for teams include: assistance with recruitment and screening of team participants, planning events, outreach, and advertising of S2S projects, and providing technical assistance that includes tailored expertise, tools, and resources. This could include efforts to develop entrepreneurial skills, mentorship, access to relevant networks, facilities, and infrastructure. IES could consider the value of developing accelerators, learning materials, and commercialization and sustainability resources to support teams. This type of programming could provide support in the areas of open and transparent research and data privacy and security but would also be applicable to the other facets of advancing breakthrough solutions.

**(3) With a focus on developing quick-turn around, high-reward and scalable solutions, what would you propose are the core activities and/or benchmarks for success for a project in each of the phases? What examples can you provide around past successes in social science domains or specifically related to education R&D?**

Any S2S evaluation process should allow for flexibility to implement and scale these new projects. Traditional evaluation structures based on tiers of evidence or based solely on assessment outcomes could limit the intended impact of this initiative. S2S evaluations should consider broad examples and types of evidence of success. Many have observed that the current education R&D ecosystem has

limited experience in supporting the type of capabilities S2S is looking to support; IES may therefore need to invest in capacity building.

**(5) As a part of this effort, IES may seek support in establishing a technical working group (TWG) to inform the activities that will guide research teams for the S2S competition. If we were to establish a TWG related to the S2S competition, what kind of expertise would you propose is essential to a TWG in this area? Are there specific organizations or individuals that you suggest be included in the TWG?**

ALI strongly encourages IES to establish a technical working group to guide research teams for the S2S competition. This working group should include parent representatives, education professionals, experts in technology development, specialists in student achievement gains and school improvement, education and social science researchers, representatives from the National Science Foundation, including the Directorates for STEM Education and Technology, Innovation, and Partnerships, and representatives with experience at ARPA-H, ARPA-E, or DARPA.

The TWG should consist of a racially diverse group of individuals with expertise in tech transfer, commercialization, school system leadership, student privacy and cybersecurity, procurement, technology development, and innovative and equity focused approaches to education. The TWG should also consider the inclusion of education researchers who have had successes/challenges in scaling/commercialization to inform development and help ensure future success of S2S projects. The TWG should also include experts in [inclusive innovation](#).