Overview of AIMS EduData Initiative

This call for proposals (download) invites researchers and educators to propose a R&D project using data from large-scale digital learning platforms to pursue insights about mathematics teaching and learning. Successful applicants will gain access to deidentified datasets provided they comply with IRB, privacy and data use policies and procedures established by each DLP. We especially invite early career researchers, including tenure-track faculty, postdocs, graduate students, researchers within non-profit organizations, educators, district staff with research roles, and researchers located at minority serving institutions or Title I schools. In addition to providing funding, we will engage awardees in the AIMS Collaboratory network, with Learning Partners, and with each other, which will provide opportunities for awardees to grow their professional network and knowledge.

Background

In 2021, the K-12 Education Team at the Gates Foundation launched an effort called "R&D Infrastructure" to develop new research and evaluation capabilities in large existing digital learning platforms (DLPs). These capabilities were developed by teams of local education agencies, academic researchers, and digital learning providers to create research insights regarding how to improve math performance. Today, **Digital Promise** and **Learning Data Insights** are supporting a new phase of this program by opening up external researcher access to these tools and platforms starting on March 3.

In partnership with other efforts like SEERNet, the AIMS EduData initiative is part of a broader movement to increase the pace of discovery and innovation in US education. The partners and platforms in the AIMS Collaboratory have been very successful in lowering barriers to make new discoveries in education based on learning platforms in widespread use among students.

Conducting research through widely used digital learning platforms (DLPs) can accelerate research and development and make it easier to conduct replications to identify what works for whom under what conditions. We seek researchers to develop new insights about how to use these new data to enable new discoveries in math teaching and learning. These researchers contribute to the movement by expanding its capacity and skills, providing feedback to DLPs about the utility of their datasets and insights about their features, and demonstrating the affordances and value of conducting research through DLPs.

The DLPs available through AIMS have large, existing datasets that can support a variety of secondary data analysis projects. Three are available now. The fourth, OpenStax RAISE, will provide specific opportunities later in 2025 in a subsequent solicitation. To understand in greater detail what data and information will be available through these platforms, we have developed a new resource called the DLP catalog which you can access here: https://www.dlpcatalog.org/.

This Opportunity

This opportunity is open to all types of research questions and methods, including exploratory projects, correlational research, measurement, and evaluation studies. We are particularly interested to understand how innovative new features within DLPs can foster student motivation, engagement, and persistence in learning math. We are also interested in features that could help teachers save time or engage in known effective teaching and learning practices based on the data in a DLP. In addition, we will support projects involving partnerships with K-12 districts that wish to investigate how to improve the effectiveness of DLPs for their students. To conduct this research, funded researchers will gain access to deidentified datasets

provided they comply with IRB, privacy, and data use policies and procedures established by each DLP in accordance with applicable state and federal laws and regulations.

In our experience, there is a learning curve for researchers entering collaborations with DLPs and gaining familiarity with their data. As such, we encourage applicants to think of these grants as opportunities to explore what is feasible with these DLPs, potentially laying the groundwork for subsequent further grant proposals to this program or other funders. We also welcome partnerships of educators and researchers who have already done the feasibility work to understand to indicate their readiness to begin research.

Our long term vision is for the AIMS EduData initiative to grow into a robust community of researchers and educators working in partnership with DLPs to advance math education. We also intend to reduce commonly-encountered barriers to conducting DLP research through re-usable infrastructure and open science practices. As such, we anticipate opening new calls for proposals at roughly six month intervals.

Description of Digital Learning Platforms and Priority Research Topics

DLP Research Dataset Provider	Description	Priority Topics of Interest
Khan Academy	A nonprofit organization providing free online instructional resources, will enable research using an anonymized dataset featuring item-level performance on approximately 150 skills in the 6th grade math course.	• Detecting and overcoming struggle • Optimizing learning paths for improved efficiency • Understanding transfer of learning to new topics • Predicting rates of acquisition and forgetting over time • Content analytics
Curriculum Associates	A provider of K-12 adaptive assessments and personalized instruction, will provide opportunities for researchers to answer questions using de-identified data from the i-Ready suite of assessments and instruction.	• Research investigating the relationships between product features or implementation practices of i-Ready Personalized Instruction and student motivation, engagement, and persistence. • Research addressing striving learners (e.g., those students placed below the chronological grade level). • Developing measures of engagement/ persistence based on product features, usage, or implementation practices.
University of Florida Lastinger Center for Learning	Enables research with student data from MathNation, an online middle and high school mathematics curriculum, along with teacher data from the Math Matrix Micro-Credential, an asynchronous, competency-based online professional learning system for K-12 mathematics educators.	• Research investigating and identifying salient patterns of student engagement across curriculum activities. • Research investigating student conceptions of mathematics content. • Research investigating relationships between student engagement and learning outcomes. • Research investigating and identifying salient patterns of teacher engagement across course

		features, activities, and time. ● Research investigating teacher conceptions of course content. ● Research investigating relationships between teacher engagement and learning across teacher characteristics.
OpenStax RAISE Algebra I Curriculum	An innovative curriculum designed to improve Algebra 1 teaching and student learning. Will support research with teaching and learning data from OpenStax's RAISE Algebra curriculum and additional survey responses on psychosocial constructs.	Research opportunities with OpenStax will be released in fall 2025.

Description of Grant Opportunity and Expectations

This solicitation offers small grants of $10,000-$50,000. We will consider three types of proposals:

- Requests for $10,000 *planning grants*, which would allow **up to three months** to secure a district partner and develop a detailed research proposal. We anticipate that these grants could lead to requests for grant funding of up to $250,000. Provisionally, decisions about follow-on funding will be made in late summer/early fall 2025. We anticipate making up to 6 awards of this type. A *planning grant* is the right choice when the research is contingent on relationships that are yet to be worked out or other uncertainties or contingencies that require a planning period.

- Proposals for *small grant research projects* of $10,000 to $50,000 for **up to one year**. These projects should seek to address research questions and produce findings, without requiring time consuming steps like establishing new partnerships or acquiring data sets beyond those available via AIMS. We anticipate making up to 6 awards of this type. A *small grant research project* is the right choice when the proposer is ready to make concrete progress on a research question as soon as funding and data become available.

- Proposals that communicate the *capability and readiness of a partnership* among a school district and researchers to apply for a large grant in order to undertake important and innovative research for up to $250,000. Such a partnership can use this proposal to present their concept and specific details of their research plan (e.g., whether they would need a district-specific DLP dataset, how they would match individual students in the DLP dataset with district data), understanding that further elaboration in a to-be-determined format will be necessary before consideration for funding. **This option is only available for projects involving Khan Academy and Curriculum Associates data**. Applicants intending to pursue this option should contact the AIMS EduData team for further guidance at aimsedudata@digitalpromise.org.

Earliest starting date: Jun 1, 2025

Successful applicants will be expected to achieve the following outcomes:

- By the end of the planning period, **planning grant recipients** will be able to present a detailed research proposal along with securing letters of commitment from a school district and any other partners to be involved in the research.

- By the end of the award, **research grant recipients** should have completed a research project and be able to present their findings to the AIMS Collaboratory (provisionally at the late 2025 convening). They will also submit a final report describing the research activities, methods used, findings, and implications for the DLP and for future research (including what further proposals are being contemplated, if applicable). If research results in new discoveries, recipients should write up their findings and make them publicly available, ideally in a peer-reviewed journal.
- End-of-award criteria for a $250,000 submission (i.e., for applicants who opt to waive the planning grant) will be specified when the submitting team is later asked to elaborate their research plan.
- All grantees are expected to:
    - Participate in virtual community convenings to build relationships and share learning.
    - Prepare and present a poster at a Gates Foundation event (travel to the event will be supported by the Gates Foundation).
    - Distribute research results publicly, ideally using open science approaches that include pre-registration of studies, openly licensed and reproducible analytical code, derivative data sharing, and other techniques where feasible and appropriate.

Proposal guidance

Proposals should be 3-4 pages long, including the abstract, but not including CVs and references. The proposal should not exceed 2000 words. Those seeking planning grants should describe the research project which they wish to undertake with a district partner, and the planning questions that they need to resolve in order to do so. Those indicating readiness for a $250,000 award (**for Khan Academy and Curriculum Associates data only**) should seek to convince reviewers that their significance, research questions, partnership capability, and resources merit further consideration. Applicants intending to seek this level of funding should contact the AIMS EduData team for further guidance at aimsedudata@digitalpromise.org.

Abstract / summary - provide a brief summary of your proposed research project, summarizing the elements described below.

Significance - describe how your proposed project might contribute insights about ways to improve students' math achievement and/or to establish the relevance and usefulness of digital learning platforms as research infrastructure. Why is this project important? How does your project fit with the goals of the DLP? If you are seeking a planning grant, describe what your criteria for selecting partner(s) would be and how this partnership would enable you to achieve your research goals.

If effective, this section will enable a proposal reviewer to know why the research is important for the improvement of mathematics teaching and learning and how it fits the goals of the DLP and, for planning grants, how it could benefit the district partner.

Research plan - What research questions will you address, and what do you hope to learn more broadly? Describe what types of learner outcomes you wish to address, the types of data from the DLP that you will use and analysis you plan to conduct, and how these methods will enable you to address your research questions. How does your research leverage the specific data provided by the DLP?

Describe any barriers you might encounter, and what steps you might take to overcome those barriers. Because some of the work will involve discovering what is possible and not possible with the available data, you can describe the initial feasibility questions you will explore and possible adjustments you will make depending on what you learn. Provide an estimated timeline for your project.

Plans should describe approaches to reproducibility and dissemination of results, ideally using open science methods consistent with the Gates Foundation Open Access Policy.

For planning grants, this section will focus on an intended research plan and how you will refine both the research plan and your partnerships using the planning funds.

A proposal reviewer will have a clear understanding of the research you seek to do and how you will do it, including how you will resolve issues of feasibility and/or develop necessary partnerships (for a planning grant). For consideration at the $250,000 level, explain what you have already done to establish feasibility and readiness.

Career (Partnership) growth - How will participation in the AIMS EduData initiative contribute to your career growth? (Planning grants might also use this section to discuss the growth of the partnership). What demonstrated skills and knowledge could you apply to this project? What new skills or knowledge do you hope to gain? How might belonging to the AIMS Collaboratory and this cohort of researchers open up new possibilities for your career?

A proposal reviewer will be able to discern if you are capable of doing this research and will learn how it will advance your career (or partnership) in important ways. For consideration at the $250,000 level, describe the maturity of the partnership, including readiness to execute MOUs, Data Sharing Agreements, etc. as necessary to move forward.

Resources - Describe the personnel, consultants, travel, equipment, facilities and other resources you would need to conduct your project successfully and demonstrate that you have access to these resources through existing means or through use of grant funds. Explain what systems and procedures you would use to ensure secure data transfer and storage. State how you will comply with data security and human subjects research requirements and execute data sharing agreements.

A proposal reviewer will be able to have confidence that you will have what you need to do the research.

Budget (outside the 2000 word limit)
Provide a budget using the template described below.

Note that acceptable use of funds includes:

- Researcher and/or educator time, including course buy outs or summer salary
- Consulting fees or a stipend for a senior researcher for mentorship and guidance on the research, and/or a research assistant or postdoc for support.
- Up to 2 professional conferences relevant to the research project.
- Equipment and computational resources, (including devices, internet access, privacy-compliant analytical applications, computing power, and storage)
- IRB review and legal support for data sharing agreements
- Institutional overhead up to a maximum of 15% per requirements established by the Gates Foundation

You can include additional narrative outside the 2000 word limit if necessary to further justify your budget (beyond the explanation in the Resources section).

What to Submit
Your submission should include:

- An abstract or summary of your project and narrative addressing the topics above, not exceeding 2000 words (including the abstract)
- Citations
- Resume or CVs for the PI and any other key staff
- Those seeking consideration for the $250,000 level MUST have a letter of agreement from a district.
- For consideration for other levels, letter(s) of commitment are optional and would be from others who will support the applicant in doing the work. If a letter is submitted, the letter MUST have a specific commitment to an amount of time and a type of support or partnership that will be provided.

- Budget in the template provided, along with any additional justification. Download a copy of the template and save your version with the file name convention PI LAST NAME_BUDGET.XLS.

Eligibility Criteria

This opportunity is open to any U.S.-based researcher, whether in a non-profit organization, a for-profit organization, or government agency. These may include individuals submitting on their own behalf (if applying for a planning grant), individuals working for an institution of higher education, a school district, research organization (e.g. a nonprofit) or U.S.-based small business or consultancy. Prior to award, researchers must establish their ability to complete necessary IRB, MOUs, Data Sharing Agreements and to comply with data security requirements.

We are especially interested in receiving proposals from the following types of proposers: graduate students and early career professionals, educators with research roles, such as those working in district research offices, and researchers located at minority serving institutions or Title I school districts.

Individuals may not submit more than one application.

Evaluation Criteria

Proposals will be assessed on four main criteria:

- Significance, explaining the value of the research and including why the chosen DLP (and proposed partnership, for planning grants) is a good fit for realizing that value.
- Research Plan, including both the strength of the plan, but also awareness of feasibility and contingencies you will need to resolve as you go. For planning grants, the proposal describes how the team will arrive at a strong plan and a strong partnership that can conduct the plan.
- Career or Growth, including both how you are positioned to do this research or planning and how the funds will enable growth of your career or growth of a valuable partnership.
- Resources, reasonable and appropriate use of resources available to you both from this grant and in your context.

An FAQ will be available at http://aimsedudata.org. We will also offer office hours to respond to questions about the RFP.