



Request for Information for Advanced Education Research & Development Programs
Draft Program Description: Program A

Improving Writing: Developing the Requisite Habits, Skills and Strategies

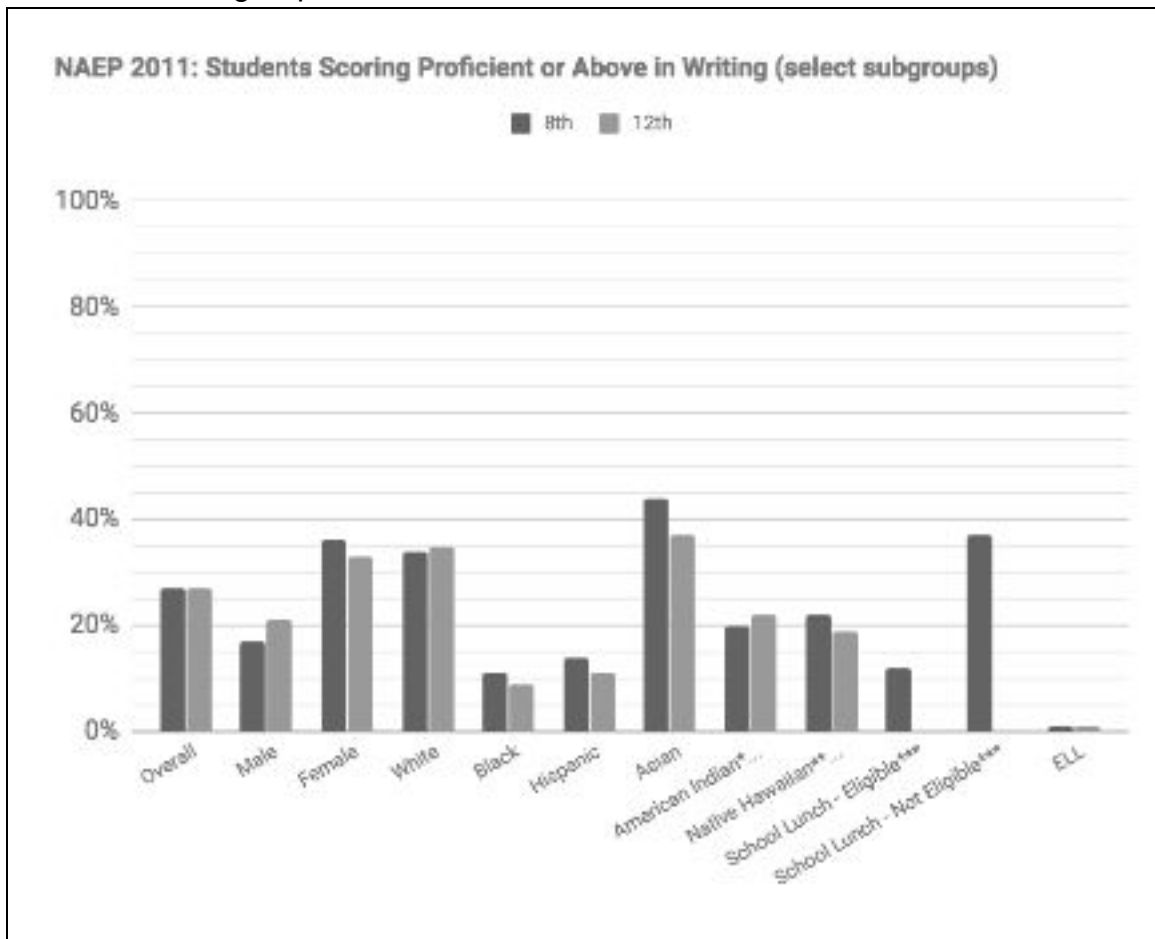
This document is part of the Request for Information for Advanced Education Research & Development Programs announced by the Chan Zuckerberg Initiative and the Bill & Melinda Gates Foundation. Full details on this RFI, including submission information, can be found at www.chanzuckerberg.com/ and k12education.gatesfoundation.org/

We are requesting information for innovative strategies to help address the above challenge within the US context (solutions from non-US contexts with applicability in the US are also welcome).

On the following pages, we are providing a concept description for the writing program. This is, indeed, a *draft* description - because we intend, through this RFI, to refine this program idea, or add to it. We expect it will change, perhaps dramatically, based on your input.

Problem

Student success in college and the workplace is highly dependent on the ability to communicate and express ideas through effective writing skills. The skills connected to writing - evaluation of arguments and evidence, critical and creative thinking about solutions and sources, identifying support for a key idea or process, clear and evocative argument-making - are frequently cited as 21st century skills in high demand by employers. Yet, the majority of high school graduates are not prepared for the demands of postsecondary and workplace writing. The latest NAEP writing assessment reveals that the overwhelming majority of U.S. students do not meet writing proficiency standards. This gap is particularly pronounced across racial, gender, and socio-economic groups.



* Subgroup is reported as "American Indian / Alaska Native", abbreviated for space

** Subgroup is reported as "Native Hawaiian / Other Pacific Islander", abbreviated for space

*** Subgroups are reported as "Eligibility for National School Lunch Program (NSLP)", abbreviated for space

Note: data unavailable for some Grade 12 subgroups

Source: <https://www.nationsreportcard.gov/>

A lack of proficiency in writing negatively impacts college and career readiness. Also, American companies spend as much as an estimated \$3.1 billion annually for writing remediation.¹

¹ The College Board's [2004 Report by the National Commission On Writing](#).

There are several identified factors that impact writing proficiency. Existing time and workload constraints prevent students from getting sufficient practice and feedback on their writing to develop proficiency. While auto-scoring of writing assignments holds promise, the current grading burden of writing assignments keeps many teachers from assigning sufficient writing practice. Most middle and high school English and social studies teachers have student loads of 90-150 students per day, which create disincentives for frequent graded writing assignments. And teachers, especially those in schools serving large percentages of students eligible for free and reduced lunch, frequently cite writing instruction as an area where they need a moderate or high level of additional professional learning.²

A lack of high-quality writing assessments is another factor that impacts the quality of writing instruction and creates a barrier to improvement. The field has yet to determine how to assess writing in meaningful, comparable, reliable, and cost-effective ways. Most high school and college entrance assessments call for highly formulaic writing, or assess writing through multiple choice questions if at all.³ Similarly, writing/composition research has not identified evidence-based indicators of writing skill development along the K-16 continuum. While a collection of evidence-based writing practices has been rigorously evaluated⁴, additional research and development is needed to identify specific indicators of writing proficiency that predict later academic and career success; develop effective diagnostics to identify struggling writers before high school; identify the highest-leverage intervention points and methods; and determine how to assess writing progress in meaningful, comparable, reliable, and cost-effective ways.

Some of the areas we believe require more exploration include, but are not limited to:

Comprehensive writing solutions grounded in evidence - Proficiency in writing requires mastery of a spectrum of skills encompassing narrative, descriptive, expository, and/or persuasive writing models. Can we create tools and teaching supports that use evidence-based approaches for different writing models and that exceed the capabilities of 1:1 human writing tutors, especially for student subgroups with the lowest rates of proficiency outlined in the NAEP report?

New proficiency metrics - Educators at all levels would benefit from better evidence and measures of student progress and proficiency in writing. How might consistent indicators be established? Can we use technology to support new, valid, efficient, and reliable writing performance measures that are helpful for writing coaching?

Educator tools and supports - Effective writing instruction requires time and resource

² *ibid.*

³ Doorey, Nancy and Polikoff, Morgan. Thomas B. Fordham Institute, 2016, [Evaluating the Content and Quality of Next Generation Assessments](#).

⁴ See What Works Clearinghouse, 2012; Fong et al, 2015; SRI, 2016; Graham, Steve, and Dolores Perin, 2007, "Writing Next-Effective strategies to improve writing of adolescents in middle and high schools."

intensive feedback. Can we create tools for educators to effectively assess writing skills? Can these tools efficiently identify and measure progress on evidence-based suggestions for student support, while freeing educators to provide more intensive instruction and support for students?

Peer-to-peer collaboration and feedback - Writing is designed to express new ideas and to communicate with others. Can we create measurably effective tools that allow students to share their work with other students, receive feedback, connect with educators or other experts, and work collaboratively to improve writing in an efficient way?

Non-academic correlates - Developing writing proficiency requires more than academic achievement. How can mindset, executive function, identity, and other social and emotional dimensions contribute to developing writing proficiency? Can we develop evidence-based interventions for both students and educators that enable simultaneous progress on all these dimensions, while protecting student privacy?

Continuous improvement - Educational practices (with and without technology to enable them) are too often static. Can we develop systematic, continuous improvement cycles that use data to optimize the effectiveness of writing practices and tools for individual students and their teachers?

Assessing potential for impact

We will use the input from this RFI in part to inform the design of a measurement framework for a potential R&D program focused on dramatically improving writing achievement. Some of the target measures we may include are described below. However, we are also interested in new ideas for innovative approaches to measuring the potential efficacy and scalability of proposed projects. Please submit those as part of your response.

- Tools, practices, and associated teacher supports that enable every student to achieve grade-appropriate proficiency (9th - 12th grade) in writing skills including students in the most at-risk groups. Tools and practices should meet or exceed the capabilities of the best 1:1 tutors.
- Enhanced precision in measurement of how students develop proficiency at the level of specific knowledge components or sub-standards for writing.
- Demonstration of measurable impact on promoting positive student mindsets and motivation around writing and the associated cognitive and creative processes.
- Significant reduction in teacher work time to provide high quality feedback on writing samples.
- Easy integration of solutions into standard learning environments.
- Affordable cost to implement, below current market pricing for existing solutions and attainable at a variety of per student funding levels.
- Speed, precision and ease of use of feedback and guidance on remediation approaches for teachers.
- Models for peer collaboration that build social competencies and contribute

measurably to motivation, engagement and learning in writing, and which are highly scalable, reducing both costs and teacher workload.

The goal is not to replace the classroom teacher, but rather to provide teachers with new integrated tools (including those involving peers working collaboratively) and supports (including well-designed professional development) to improve their ability to assess student performance and provide rapid and targeted feedback and remediation.

Request for Information

We are requesting information about the current state-of-the-art approaches in the topic areas below. and bold ideas for what is possible in 10 to 20 years in creating effective tools and strategies for improving writing skills for every student as described previously. Submissions should address one or more areas:

Potential Topic Areas

- Overall approaches to writing - Build out a clear synthesis of (ideally evidence-based) approaches to writing, in a way that can underpin other interventions (technology-enhanced, teacher-led, peer-engaged, etc.)
- Sentence construction support - A key supporting skill to argument construction is the ability to construct complex and integrated sentences, with both technology-enhanced and human support.
- Support for writing planning - Efficient, technology-enhanced approaches to guide the planning of writing projects, for both teachers and students.
- Intelligent tutoring systems for writing - Support processes (including teacher involvement) to develop narrative, descriptive, expository, and/or persuasive writing models that meet or exceed the impact of 1:1 human tutors.
- Artificial Intelligence - Writing-focused AI that can provide analytics and feedback to teachers and students for context, syntax, sentiment or other analytics to improve writing skills.
- Performance-based assessments - Approaches that provide valid and reliable evidence of writing capability and motivation and attitudes towards writing.
- Guided peer feedback/tutoring - Evidence-based approaches to efficient and effective collaboration.
- “Learning Engineered” professional development - Professional development and support for writing instruction that is grounded in evidence-based principles of human learning and motivation.
- Writing mindset and motivation - Developing and measuring positive mindsets and motivation around writing capabilities.
- Privacy – Identification of possible privacy implications and strategies for ensuring the privacy and security of student information.