Reading Reimagined

A New Inclusive Research & Development Initiative

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Executive Summary

At Reading Reimagined, we envision an American education system in which all students are equipped with the knowledge, skills, and beliefs necessary to be proficient readers, thus enabling them to advocate for themselves, their families, and their communities as they lead lives of limitless opportunity. Is it possible to eradicate illiteracy as a country? We believe we can do it by **unlocking the great reader in every child.**

Learning to read is a complicated undertaking, involving many different processes and skills. This includes decoding, vocabulary knowledge, inferencing, and much more. An existing research base provides important evidence for how students become strong readers, but too often that research is not translated into instructional materials. Moreover, important gaps remain in our understanding of how to best support students, especially our priority students, who have yet to achieve reading proficiency.

Despite significant effort and investment over the last decade, the American reading crisis is getting worse, not better. Currently, only one-third of American children demonstrate proficiency in reading. Our education system has fallen even further short for Black, Latino, and Native American students and students of all races experiencing poverty. **It doesn't have to be this way.**

We believe it is possible to eradicate illiteracy as a country by unlocking the great reader in every child.

We believe the challenges facing American literacy classrooms are myriad and complex, yet solvable. Based on our research and experience, we believe it is most urgent and critical to address a foundational barrier that impacts both students and educators alike: a lack of comprehensive, research-based instructional materials designed specifically for the students our system has most neglected. Conceived as a program under AERDF, the Advanced Education Research & Development Fund, Reading Reimagined is a multi-year inclusive research and development (R&D) program that seeks to address this multifaceted challenge. Our two main efforts comprise of (1) funding R&D that fills gaps in the research base around how Black, Latino, and Native American students and students experiencing poverty—our priority students—become excellent readers and (2) developing practical, comprehensive, research-based solutions that significantly improve how our priority students experience reading and literacy instruction.

At the heart of our inclusive R&D process is the intention to design plans with our priority students and communities as well as educators, researchers, and product developers. Only through guidance and feedback from those using our materials—students, caregivers, and educators—will we create practical tools and resources that cultivate our students' many assets and meet their needs.

In late 2021, Reading Reimagined launched this inclusive R&D program, developed in collaboration with practitioners and leading researchers and acting on a plan to accelerate reading success for our priority students in grades three through eight. We will initially fund research on foundational literacy skills with a focus on leveraging the unique strengths of a student's cultural identity and fostering the beliefs and social-emotional skills that most impact students' reading success, including motivation and self-efficacy. Over time, this plan will evolve to include additional research questions related to comprehension and assessment.

As a result of our R&D efforts, we will produce pre-kindergarten through grade 8 literacy solutions–including published research and instructional tools–that incorporate our findings, create an integrated instructional experience for educators and students alike, and affirm and leverage the identities of our priority students. By creating these solutions, we endeavor to significantly improve how students access reading skills and dramatically increase our students' reading ability and agency in their lives.

Our Vision

Universal reading proficiency is absolutely critical for both individuals and communities. Confident, fluent reading enables individuals to access and use knowledge throughout their lives that will deepen their critical thinking, expand their career choices, allow them to participate in our democracy, and give them the ability to advocate for themselves, their families, and their communities.

At Reading Reimagined, we envision an American education system in which:

- All students are confident, fluent, and analytical readers who believe in the value of reading for pleasure and personal growth, sharing ideas and engaging with others, and taking action within their communities and beyond.

- All students regularly read texts that are worthy of their time and attention, connect to their lives, and expand their knowledge and understanding of the world.

- Our priority students[1] experience a learning environment that affirms and empowers them and helps them to identify and leverage all of their assets (e.g., multilingualism) for reading and writing in English.

- All students have a coherent literacy learning experience in which they receive the support they need connected to what they are learning, whether they are learning with the whole class, in a small group, or independently.

- Assessments are not isolated from learning; assessments serve multiple purposes, are integrated with other tools, and empower teachers and students to take clear action.

- Teachers have a simple way to access a wide range of tools to support all of their students that are aligned to students' diverse assets and needs.

- Parents and caregivers are empowered and engaged as partners in their children's literacy development, receiving regular updates on their reading progress and resources for supporting their reading life at home.

We envision an American education system in which we have **eradicated illiteracy.**

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1 Our priority students are Black, Latino, and Native American students and students of all races experiencing poverty—and, within those groups, students with dyslexia and multilingual learners, including students who speak regional English dialects.

What We Know About How Students Learn To Read

Learning to read is a complex process. Decades of research provide important insight into the skills, knowledge, and beliefs that students must possess to become proficient readers—but there is much more to learn about the mechanisms that drive proficient reading and what effective reading instruction looks like for Black, Latino, and Native American students as well as students experiencing poverty.

Proficient reading, at its most fundamental level, involves the interaction of word recognition and language comprehension[2], as captured in Gough and Tunmer's (1986) Simple View of Reading.

Figure 1. The Simple View of Reading

| Word Recognition | X | Language Comprehension | = | Reading Comprehension |
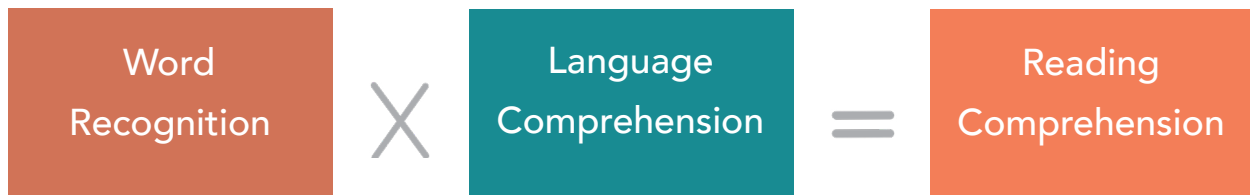
Successful word recognition involves several foundational literacy skills[3] (e.g., Foorman et al., 2016), including:

- Print concepts – the knowledge of how printed text operates, including knowing how books are organized and that one word on the page corresponds to one spoken word

- Alphabet knowledge – the knowledge of connections between individual letter forms, names, and sounds

- Phonemic awareness – the knowledge that spoken words are made up of packages of individual phonemes–the smallest unit of sound in oral language–and the ability to recognize and manipulate these phonemes

- Knowledge of sound-spelling correspondences – the ability to match letters and letter combinations to the sounds they spell and use that knowledge to read and spell words

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2 We define "language comprehension" as "the ability to extract and construct literal and inferred meaning from linguistic discourse represented in speech" (Hoover & Tunmer, 2021). We distinguish this from "reading comprehension," defined as "the ability to extract and construct literal and inferred meaning from linguistic discourse represented in print" (Hoover & Tunmer, 2021), which therefore also involves word recognition abilities. We use "comprehension" to encompass both of these processes.

3 We define "foundational literacy skills" as the skills that enable children to achieve automatic, accurate word recognition and read texts with sufficient accuracy and fluency (following Foorman et al., 2016). These skills include print concepts, alphabet knowledge, phonemic awareness, sound-spelling knowledge, decoding skills, morphological awareness, and fluency. We define "word recognition" as any method of recognizing a word. Estimates suggest that proficient readers can automatically and accurately recognize approximately 30,000 to 70,000 words. We define "decoding" as recognizing an unfamiliar word using information about pronunciations and spelling correspondences. Decoding is the most efficient and effective strategy for recognizing an unknown word (Ehri, 2020).

Successful language comprehension involves several elements (e.g., Hoover & Tumner, 2021; Kintsch, 2019), including:

• Linguistic knowledge – the knowledge of sounds, words, phrases, and sentences, as well as the relationships among them

• Background knowledge[4] – the relevant content and context one brings to a text, including knowledge of events, facts, and procedures

• Inferencing skills and strategies – the ability to use strategies to support readers in understanding texts

Recent research suggests some skills bridge the two categories (e.g., Duke & Cartwright, 2021; Perfetti & Stafura, 2014), including:

• Morphology – the knowledge of morphemes, the smallest units of meaning in words (e.g., prefixes, suffixes)

• Vocabulary – the knowledge of words and their meanings

• Fluency – the ability to read text with appropriate speed, accuracy, and expression

Research suggests that additional elements of students' experiences in school are critical to their success in word recognition, language comprehension, and, ultimately, reading comprehension. These elements include beliefs that influence student motivation to engage in learning, as well as social-emotional skills that enable students to progress towards their goals—all of which are impacted by classroom culture and practices. Within these categories—and of particular importance to our work—unique facets of cultural and racial identity play critical roles in the reading classroom. Beliefs and social-emotional skills that may be particularly important to reading success include:

• Motivation – a person's curiosity, involvement, and enjoyment in a task

• Self-efficacy – a person's belief that they can and will be successful at a given task

• Identity, including cultural and racial identity and identity as a reader – how a person understands and perceives themselves and their abilities generally as a member of one or more cultures and as a reader

• Executive function – mental processes including using working memory, maintaining focused attention, persisting at tasks, and planning ahead

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4 We define "knowledge" using the definition provided by Smith et al. (2021): "Knowledge can be classified according to its specificity; background knowledge comprises all of the world knowledge that the reader brings to the task of reading. This can include episodic (events), declarative (facts), and procedural (how-to) knowledge as well as related vocabulary (Kintsch, 1998). A subset of background knowledge–domain knowledge–refers to knowledge of a specific and defined field (Alexander & Jetton, 2000)."

The Current State of Reading in America

Unfortunately, the American education system today does not ensure all students will learn to read proficiently. Currently, only one-third of American children read at grade level, according to the National Assessment of Educational Progress, or NAEP (NAEP, 2021). As students progress through school, the system does worse, producing declining results between fourth and eighth grade (See Figure 2). Despite significant effort and investment over the last decade, literacy rates have not improved; in fact, they have gotten worse (NAEP, 2021).

Figure 2. Declining rates from fourth through eighth grade students.

(NAEP, 2021)

18%

15%

2015

2019

In 2015, 18% of Black fourth graders read at a proficient level (2021).

Four years later... only 15% of Black eighth graders were reading at a proficient level (2021).

The system has struggled the most to serve: Black, Latino, and Native American students; students of all races experiencing poverty; students with dyslexia; and multilingual learners, including students who speak regional English dialects. In eighth grade, an unacceptably low percentage of students in these groups are reading proficiently: 1 in 5 Hispanic and Native American students; 1 in 7 Black students; 1 in 10 students receiving special education services; and 1 in 25 students classified as English Language Learners (NAEP, 2021).

Ineffective reading instruction in the elementary and middle grades has long-term negative outcomes. For example, according to a report from the Annie E. Casey Foundation, a third of Black and Latino students experiencing poverty who are not proficient readers in third grade ultimately fail to graduate from high school (Hernandez, 2012).

Despite significant effort and investment, critical—yet solvable—challenges remain in our country's approach to teaching reading. Students and educators alike experience the impact of a multitude of challenges, ranging from inadequate teacher preparation to inequitable funding for schools and lack of critical human and other resources. After conducting extensive research, interviewing educators and researchers, and evaluating our own experiences as practitioners, we zeroed in on a foundational challenge that we believe must be urgently addressed: a lack of comprehensive, research-based instructional materials designed specifically for the students our system has most neglected (i.e., the students in our priority groups). We believe significantly better instructional materials will enable students and educators to go much further faster in literacy development, while systemic progress is made in other critical areas impacting learning – we see it as a "both-and".

As we examined this foundational challenge around instructional materials, we identified two categories of issues: (1) a history of omitting research findings from instructional materials and their implementation and (2) major gaps in the research base which leads to guesswork in product design and implementation.

In the first category, we have some clear research on how children learn to read, but we have not yet incorporated those findings into comprehensive, integrated instructional materials, nor have we applied them to the way the materials are implemented. This manifests itself in several ways, including:

- Insufficient incorporation of existing research findings regarding how kids learn to read and how to support their literacy development. There is a research base that can inform instructional design (see "What We Know About Students Learn to Read"), but too often, instructional materials and training do not reflect key findings from the research.

Student Perspective: Kara's Experience Today

Kara is an eighth grader who lives in Louisiana. She has never felt particularly successful in reading, but tries her best to keep her challenges to herself. Her beginning-of-the-year reading assessment reported that she reads at a first grade level, though this information was only shared with Kara's reading teacher, Mr. W, not with Kara herself. The assessment report Mr. W receives does not provide information about specific skill gaps or potential interventions, so he is not quite sure what to do to help Kara. A few weeks later, Kara does not finish a writing assignment that asks her to respond to a reading passage, so Mr. W asks her to stay after class. Mr. W asks Kara to read the passage aloud, but she can only correctly identify a few words in the first sentence, which Kara finds embarrassing. Mr. W realizes that Kara's biggest challenge is word recognition, but he has never received any training in how to support students in improving their decoding skills, and the school does not offer any intervention programs to help either. Mr. W provides Kara individual attention whenever he can, offering some help with blending and providing other ad hoc tips he thinks might help. He also offers to tutor Kara over the summer. Kara appreciates that Mr. W cares about her, and she feels slightly more optimistic about her ability to improve her reading skills in the future, but she does not pass the eighth grade end-of-year state reading test.

- Lack of integration with findings from the field of social-emotional development research. In many cases, materials that reflect some elements of literacy research often do not incorporate research findings related to students' social-emotional development (see "What We Know About How Students Learn to Read").

- Isolated, disconnected products, despite research suggesting the power of comprehensive, integrated approaches. Literacy products often have an isolated focus. For example, assessments that are not linked to any curriculum or a curriculum that provides Tier 2 instruction but not Tier 1. In addition, the approaches used in the home, classroom, and intervention settings are disconnected. There are few tools to facilitate useful information sharing with families and caregivers.

In the second category, the existing research base does not provide sufficient or clear answers needed to guide the design of products and their implementation. These challenges include:

- Meaningful gaps in our understanding of how to best leverage the assets and address the needs of individual students in our priority groups. Reading and literacy research often considers approaches for the "average" student (often focusing on dominant identities), rather than identifying effective approaches for specific populations.

- A lack of clarity about how social-emotional development and students' identities can be leveraged in the literacy classroom specifically. While there is foundational research in critical areas of social emotional learning and student identity generally, how those areas interact and how to use this information to best support a student's success with reading is less clear.

- Critical gaps regarding how children learn to read, including research that provides sufficiently practical findings. For example, a large body of research demonstrates that children need explicit, systematic phonics instruction, but we do not know what is the most efficient, effective approach for teaching older learners who have not yet become automatic, accurate word readers. Moreover, we do not know how to do this in ways that explicitly leverage students' cultural and linguistic assets.

Teacher Perspective: Mrs. H's Experience Today

Mrs. H teaches first grade at an elementary school in California. Most of her students are multilingual learners, and a few of her students arrived in this country within the last year. She uses five different assessments to identify her students' needs, some of which are mandated by the district and some of which were selected by Mrs. H and her grade-level partner. Only two of the five assessments are directly connected to her curricula. The district has suggested the use of three separate phonics programs but only provided training on one and offered no guidance on how to integrate the three programs. Mrs. H's school requires her to use the workshop model for teaching reading and writing. She worries about how to develop her students' vocabulary and writing mechanics, but hasn't received much training in how to do either. She is also required to teach a separate English Language Development block, utilizing another curriculum. Her students who perform at the lowest levels, according to one of her assessments, receive intervention from a reading specialist, who utilizes a separate intervention curriculum. Mrs. H and the reading specialist rarely have time to compare notes and strategies to support individual students. A few students also receive reading tutoring from volunteers, via a program that utilizes its own curriculum and assessments. Mrs. H has little time to collaborate with the tutoring program director. By the end of the year, the district-mandated assessment says that most students are reading at grade level. But when they go onto future grades, their performance on different mandated assessments is significantly lower, much to Mrs. H's chagrin.

Our Plan for Inclusive R&D

Reading Reimagined is a multi-year inclusive research and development (R&D) program under AERDF[5]. We will take on the reading instruction challenge by funding R&D cycles that tackle critical, unanswered questions in reading. Our goal is to rapidly translate existing and new research findings directly into groundbreaking, integrated tools for elementary and middle school students in our priority communities in ways that address the challenges outlined earlier. We recognize that the challenges we seek to address operate in a broader context; through our work, we hope to make a unique contribution that leverages our experience as practitioners and addresses a foundational challenge around comprehensive and research-based materials designed specifically for and with our priority students and communities.

Our inclusive R&D work will investigate research questions that are crucial for our priority students' success in reading, focusing on the goal of developing greater clarity around how to systematically improve their reading outcomes. Our inclusive R&D process will include conducting research, prototyping new tools that apply new and existing research findings, and engaging in ongoing evaluation and learning. Importantly, throughout this inclusive R&D process, we will seek guidance and feedback from our priority students, their families and communities, and the educators who serve them. We believe the only way to design tools and resources for our priority students is to design with them through an inclusive R&D process (see next section for more details on our inclusive R&D process).

Ultimately, this R&D work will produce pre-kindergarten through grade eight literacy solutions—including published research, tools, resources, and an openly licensed curriculum, that:

- Incorporate existing and new research findings

- Develop and improve word recognition, fluency, and comprehension

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5 The Advanced Education Research & Development Fund (AERDF) is a national nonprofit initiative that pursues breakthrough outcomes in student learning, well-being, and opportunity. At the heart of AERDF is its Inclusive R&D model, where each multi-year program run by a visionary program director brings together diverse teams of educators, researchers, and developers to co-create new, practical solutions to real-world problems. Beginning with a powerful hypothesis, each program builds on existing evidence and learning science to translate fundamental insights into more useful practices, approaches, and tools for public school educators.

- Address each student's experience, including a student's beliefs, social-emotional skills, executive functioning, sense of belonging, self-efficacy, motivation, and their cultural identity and identity as a reader

- Create an integrated instructional experience for students, teachers, and caregivers, including core instruction, intervention, assessment, and reporting

- Meet the needs of and affirm our priority students

As a result of our inclusive R&D efforts and new solutions development, we hope to achieve a range of positive short-term and long-term outcomes for our priority students and the country as a whole—since designing for our priority students will benefit all students. In the short term, we hope that all students who use our materials and resources become proficient readers who believe strongly in themselves as learners and readers. In the long term, our goal is to contribute to eradicating illiteracy in America, thereby improving life outcomes for millions of children and unlocking the potential to create a better world that does not exist today.

An Inclusive R&D Process

In our R&D work, we will pursue a process that is inclusive so that our research findings and tools are practical, usable, and capable of supporting our priority students. Traditional R&D is often siloed into separate and sequential stages of discovery, development, and adoption that can take a decade or more. Additionally, R&D too often privileges the expertise held by academic researchers over practitioners and communities. By contrast, inclusive R&D engages students, families, educators, researchers, and tool developers, valuing and prioritizing all groups' expertise and roles. While leveraging the collective knowledge base from past R&D, our commitment is to help create new models for more inclusive R&D moving forward. This approach also pursues shorter cycles of innovation with clear expectations for learning and progress.

Thus, our R&D approach is oriented first and foremost toward our students and their families and caregivers. We will work closely with students, families, and caregivers who represent our priority groups–from early concept to launch–so that their guidance ensures our findings and resources leverage their unique assets and address their specific needs.

We believe this inclusive R&D approach is critical to ensuring our tools and resources support successful reading development for our Black, Latino, and Native American students.

In addition, throughout the R&D process, we will engage teachers with deep experience supporting literacy learning with our priority students. They will be part of an advisory body, will prototype processes, and will participate in feedback loops. Our R&D work will only achieve its intended impact if the tools we create are taken up by teachers at a broad scale—and involving teachers from start to finish is critical to ensuring materials are useful to and usable by teachers.

We believe this inclusive R&D approach is critical to ensuring our tools and resources support successful reading development for our Black, Latino, and Native American students as well as all students experiencing poverty who have not traditionally been at the center of system and tool design historically.

What We Plan to Investigate through Inclusive R&D: Building on Existing Research to Answer Unanswered Questions

We believe inclusive R&D should build on learning that already exists and contribute where needed. Thus, to kick off this project, we worked with leading researchers and practitioners to gain a deeper understanding of what the research community knows and does not know about key components of the literacy development process for our priority students. Leveraging several research scans, we found the research base concerning foundational literacy skills in younger learners to be the strongest.

Additionally, through these reviews, we identified three focus areas with the potential for deeper investigation : 1) foundational literacy skills development for older students, 2) comprehension development, and 3) beliefs and social-emotional skill development specific to reading (including the classroom culture and practices that influence this development). Our research reviews identified these key findings across those three areas on which future research can build:

There are three focus areas... foundational skills development for older students, comprehension development, and beliefs and social-emotional skill development (including the classroom culture and practices that influence this development)

1. *Foundational Literacy Skills: Developing Word Recognition and Fluency in Older Students*

- When students receive ineffective or insufficient foundational literacy skills instruction in their early years— preschool and kindergarten through second grade—they rarely receive the support they need in third grade and beyond. When they do receive support with word recognition, it is usually better suited to younger students, is often inefficient and disconnected from their core instruction, and does not attend to—or may exacerbate—the negative beliefs students may have developed after years of struggling to read (Liben & Liben, 2021).

- When children in the middle grades are reading below a threshold of adequate decoding, they are unlikely to comprehend proficiently. Children who read below this decoding threshold have been shown to experience almost no growth in reading comprehension (Wang et al., 2019).

- It is never too late to intervene and support students who are struggling to read. For example, adolescents are particularly well primed for support, given the neuropsychological maturation occurring during this period (Immordino-Yang et al., 2021).

- Strong phonemic awareness is essential to enabling effective word recognition (Shaywitz et al., 2004, Torgesen et al., 2001).

- Systematic phonics programs (i.e., programs that follow a clear scope and sequence, in which skills and concepts are taught in a logical order) maximize the number of students achieving proficient word recognition (National Reading Panel, 2000).

- Reading intervention programs often address phonology (pronunciation), but too often do not adequately address orthography (spelling) and morphology (word structure—e.g., suffixes), despite the fact that proficient readers are skilled across all three elements (Liben & Liben, 2021).

- Multisyllabic word reading is key to older students' ability to read grade-level texts (Kearns, 2015; Nagy & Anderson, 1984).

It is never too late to intervene and support students who are struggling to read.

- Students in many grade levels can benefit from engaging in oral reading fluency instruction and practice (Kuhn and Stahl, 2003; O'Connor, Swanson, and Geraghty, 2010; Paige, 2011).

- Meta-analyses of reading intervention studies find that the most successful programs for children in grades three through eight possess instructional characteristics such as: individualized, data-driven instruction, a focus on multisyllabic word decoding, and the integration of multiple components of reading by integrating decoding instruction into contextualized application in a wide range of texts (Donegan & Wanzek, 2021; Scammacca et al., 2015).

2. Developing Comprehension

- Reading comprehension requires a reader to coordinate a complex set of cognitive, linguistic, and text-specific processes as well as executive functioning skills. How and what we teach has measurable impacts on students (Connor et al., 2014).

- Important determinants of students' comprehension include vocabulary, access to relevant knowledge, and complexity of reading materials (e.g., Alexander et al., 1994; Cervetti et al., 2016).

- Vocabulary knowledge is highly predictive of reading comprehension–even years later (Lepola et al., 2016; Lervåg et al., 2018; Roth et al., 2002)--highlighting the importance of building children's knowledge of words as they grow as readers.

- Knowledge impacts students' comprehension, and we know that students come to school with varying amounts of knowledge on particular topics (Moll et al., 1992). As such, engaging students in a knowledge-rich curriculum can support their growing knowledge base.

Culturally responsive practices... can improve students' self-efficacy and bridge students' home and school identities.

- Top-performing schools ensure all students, including multilingual learners and students with individualized education plans, have maximum exposure to the same, knowledge-building curriculum (Neuman & Kaefer, 2018; Vaughn et al., 2017).

- Children who experience success in reading are more motivated to read more texts, thereby building more knowledge and skills than their peers, and experiencing even more reading success. In other words, in reading, the "rich get richer." This is referred to as the "Matthew effect" (Stanovich, 1986).

- Text-processing skills, such as inference making, influence a reader's ability to make sense of a text and uniquely contribute to comprehension growth over time (Ahmed et al., 2016).

- Students need to be taught different strategies for reading print and digital text (Immordino-Yang et al., 2021; Wolf, 2018).

3. Attending to Beliefs and Social-Emotional Skills

- Research and experience demonstrate that key elements of students' experiences in school affect their academic success, including their reading success. These variables can be categorized into two broad buckets: (1) beliefs that shape students' motivation to engage in learning behaviors and (2) cognitive, social, and emotional skills that enable students to make progress toward goals and engage successfully with others (Student Experience Research Network, unpublished, 2017).

- The research base on reading development suggests that certain beliefs and skills are especially critical to reading success. These include self-efficacy (a person's belief in how well they can do something); identity (how a person understands and perceives themselves and their abilities); and executive function, which includes maintaining focused attention, persisting at tasks, thinking flexibly, and planning ahead (Berg et al., 2017; Harvard GSE, 2021; Immordino-Yang et al., 2021).

- While there is strong evidence for what comprises a productive social-emotional learning environment, researchers have not yet integrated investigations into reading development and social-emotional growth (Immordino-Yang et al., 2021) which could be particularly powerful for improving our priority students' reading.

- Higher self-reported self-efficacy in reading is associated with better reading skills, such as word reading (Carroll & Fox, 2017).

- Students' beliefs, including self-efficacy, are malleable and can be improved. Improvement requires instructional strategies and learning environments that honor and support students' self-efficacy as readers and their identities as cultural community members (Immordino-Yang et al., 2021).

- Culturally responsive practices, which incorporate students' cultural backgrounds, can improve students' self-efficacy and bridge students' home and school identities (Hammond, 2014; Immordino-Yang et al., 2021; Ladson-Billings, 1994), and can help students to become better readers (Immordino-Yang et al., 2021).

- There are periods of risk and opportunity in a person's childhood in which literacy skills, beliefs, and social-emotional skills can be optimally supported (e.g., infancy, early childhood, and adolescence). However, the precise timing of those periods varies from person to person (Immordino-Yang et al., 2021).

Further Reading
Our partners– the Center for Affective Neuroscience, Development, Learning and Education (CANDLE) at the University of Southern California; The Institute for Education Policy at Johns Hopkins University; and Reading Done Right–conducted extensive scans of existing research to help us produce the summaries included in this paper and the information that is informing our inclusive R&D work. Their more extensive research summaries and works cited can be accessed below. To see their annotated bibliographies please email us at ReadingReimaginedInfo@aerdf.org.

- Foundational Literacy Skills: Improving Foundational Reading for Older Students (Reading Done Right, David and Meredith Liben)

- Developing Comprehension: Works Cited (Institute for Education Policy, Johns Hopkins University)

- Attending to Beliefs and Social Emotional Skills: Becoming a Reader: What We Know and What We Need to Know about Literacy and Reading Self-Efficacy among Black, Brown, and Indigenous Low-SES Youth (The Center for Affective Neuroscience, Development, Learning and Education [CANDLE], University of Southern California)

Where We Will Begin

Through our planning process, we sought to identify R&D topics in which there are promising yet incomplete findings, topics in which findings are not consistently integrated across research areas, and—most importantly—topics where addressing these research gaps would make a significant difference in improving outcomes for our priority students. Of the three focus areas identified earlier, **we are beginning with the intersection of two focus areas: foundational literacy skills and social-emotional development for students in grades three through eight.** We selected this integrated topic for several reasons, including: (1) research demonstrates that foundational literacy skills, such as word recognition and fluency, are essential for literacy development, (2) we identified key research needs in how to best support word recognition and fluency development for older students, and (3) we know there is a lack of integration between the foundational skills field and the social-emotional development field.

In early 2022, we launched our first R&D cycle. During this cycle, we will fund research to identify the most common reasons why older students struggle to read, which will then pave the way for further research into how best to support students' specific literacy needs. Also during this cycle, we are opening a **request for proposals** to investigate how to help older students develop word recognition and fluency, leveraging their cultural and linguistic identities and assets. In this request for proposals we are interested in understanding:

- What are the skills that are most important for our priority students in grades three through eight to become proficient readers?

- What is the best order and/or grouping of skills, and why? Do those skills and/or their order vary by age, skill attainment, and/or students' neurodiverse, cultural and/or linguistic assets and needs (e.g., students with dyslexia, students learning English as a new language, students who speak regional English dialects)?

- What are the best instructional practices for teaching the necessary literacy skills to students in grades three through eight that will lead to rapid improvement in word recognition and fluency while increasing their confidence as readers?

- In what ways do those strategies vary by age, skill attainment, and/or students' individual characteristics?

More specifically, we anticipate funding investigations of innovative strategies that we believe hold promise for efficiently and effectively improving word recognition and fluency for our priority students while supporting older learners' unique social-emotional needs. These strategies may include novel combinations or orders of teaching skills, innovative teaching practices, and/or an accelerated pace, such as:

> ### *Student Perspective: It's Never Too Late to Learn to Read*
>
> From an early age, Donovan found that reading never came easily to him. His mother fought to get him the support he needed, but it was always an uphill battle. Finally, in eighth grade, his mother learned about a great reading tutor named Diane, and his grandmother pulled money from her savings to pay for tutoring. Diane taught him the sounds letters and combinations of letters make—and Donovan wondered why he had never been taught this before. For the first time in his life, Donovan thought, maybe I'll be able to learn how to read. With hard work and Diane's support, Donovan slowly but surely made progress. He graduated high school, went onto college, and became a teacher. Today, he is a school principal who is committed to ensuring all children get the support they need to become successful readers.

- Leveraging learner's home languages and/or regional language variations to teach foundational literacy skills, while affirming and sustaining learner's linguistic knowledge.

- Explicitly developing and implementing practices that address our priority students' experiences with learning to read, focusing on how to leverage and support students' unique beliefs, social-emotional skills, and executive functioning along a rapid trajectory of foundational literacy skills learning.

Student Perspective: Our Vision for Kara

When Kara arrives in Mr. W's eighth grade class, he and his colleagues are rolling out a new comprehensive English language arts curriculum that includes support for students reading below grade level. Mr. W begins by administering a reading assessment that easily pinpoints Kara's strengths and areas of growth. The scoring report identifies specific gaps for Mr. W to remedy and provides links to intervention tools Mr. W can use to address those specific gaps—both in small groups and via online activities Kara can complete on her own. Kara and her parents are also able to view a family-friendly version of the assessment report, which includes suggestions for activities to complete together at home. Since Kara's most critical gaps are in word recognition, she receives evidence-based support tools that rapidly improve her abilities in this area. When Kara participates in small-group instruction and independent work online, she notices that the activities make her feel supported, not embarrassed. Over the course of the first three months of school, Kara's word recognition and fluency skills quickly improve. From that point on, she is better able to engage with the texts her class is reading and she feels much more confident in her abilities as a reader.

- Building upon previous learning and bridging gaps between reading and literacy research and research on the student experience within the literacy classroom (e.g., social-emotional learning, identity, motivation, engagement, cognitive science, and child and adolescent psychology) to identify and create strategies that better serve students in grades three through eight as they become automatic, accurate, and fluent word readers.

- Concurrently teaching single- and multisyllabic word recognition (through phonics, phonemic awareness, morphological awareness, and syllabication) and knowledge-building content with appropriate content-aligned texts.

In later R&D phases, we will expand our focus to other components of literacy development based on what we learn in the first phase of work. We also may investigate the diagnostic tools that are best able to capture students' reading knowledge.

We plan to develop new tools and resources that connect findings across research areas, with the ultimate goal of creating a coherent instructional experience for students and teachers.

As a result of our inclusive R&D efforts across literacy components, we plan to develop new tools and resources that connect findings across research areas, with the ultimate goal of creating a coherent instructional experience for

students and teachers (see "Perspective" boxes for more details on our vision). For example, we might develop a more efficient foundational skills scope and sequence for older students or intervention materials that engage and empower students in third through eighth grade. Producing tools like these, which can only be achieved through inclusive R&D, is critical to achieving our goal of improving our students' reading proficiency and affirming their identities as readers, learners, and members of a thriving community.

Teacher Perspective: Our Vision for Mrs. H
Mrs. H and her colleagues now use an integrated set of tools to teach reading to her first graders. She logs onto one online portal to access lesson plans for foundational literacy skills, reading comprehension, and writing; assessments that align to the curriculum; intervention lessons that she and the reading specialist can use; and tools for communicating with her students' caregivers. When she gets the results from assessments, she can easily find lesson plans and activities that align with the needs identified in the assessment. When she and her intervention teacher pull lessons for some of her readers with the lowest scores, she is happy to find resources that incorporate research-based practices to help build her students' self-efficacy. When she teaches a unit on penguins, she is thrilled to find resources to help her scaffold students' knowledge, especially since each student comes in with different knowledge relevant to understanding penguins and their habitats. When she teaches a unit on community helpers, she is excited to find materials that incorporate research-based practices that affirm her multilingual learners' identities as readers and speakers of multiple languages. She is happy to see that her intervention teacher has access to parallel materials for each of these units, so her students in intervention are doing work aligned with the unit she is teaching the whole class.

How to Get Involved

We are eager to connect with you! Here are a few ways we are currently looking for support and partnership:

- **Apply to and share our Request for Proposals.** If you are interested in conducting the research described in this paper on foundational literacy skills in grades three through eight, please consider submitting a concept note or sharing the opportunity with others who may be interested in applying. You can view our current Request for Proposals and submission windows on our Reading Reimagined website.

- **Join our email list to learn about future opportunities.** As part of our inclusive R&D process, we plan to develop multiple opportunities for community involvement through R&D activities, publication of findings and results, and opportunities to pilot and give feedback on solutions development. Please join our email list to receive information about these opportunities and how to get involved as they arise.

- **Reach out with questions, feedback, and/or ideas anytime!** The more we collaborate and are in dialogue with partners committed to the same collective vision, the more possibility there is for progress for our students. Please reach out anytime with thoughts, feedback, and questions to ReadingReimaginedInfo@aerdf.org.

Appendices

Appendix A. Methodology

In order to develop our inclusive R&D plan, we engaged in an in-depth research and planning process. We started with an initial set of hypotheses, given our own practical experience in classrooms and instructional leadership positions. Throughout 2021, we vetted our hypotheses with dozens of educators, leaders, and researchers across multiple fields, including reading instruction, neuroscience, and child development. We conducted an internal research scan and then commissioned deep-dive research in the three areas that emerged as the most relevant to our efforts: developing word recognition and fluency in older students, developing comprehension, and supporting beliefs and social-emotional skills. The deep-dive researchers themselves conducted extensive scans of the relevant research and produced summaries that helped us refine our priorities and focus areas. We then solicited another round of feedback from our partners—a process we will continue on an ongoing basis.

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