

Project Narrative (Early-Phase)

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Introduction

Amid immense global change, the United States is witnessing the proliferation of misinformation and erosion of trust in democratic institutions (Ognyanova et al., 2020; Ballard, 2023). It has become increasingly difficult for people of all ages to tell fact from fiction, driven in part by growing partisanship, the bifurcation of news media and its consumption along party lines, and the spread of mis-disinformation that has accelerated as a result of artificial intelligence (Goldstein et al., 2023; Iyengar & Krupenkin, 2018; Svolik, 2019). These trends highlight the need for public schools to help all learners develop both reading comprehension and social and emotional learning (SEL) skills and, in particular, critical thinking and civic efficacy. These skills are integral to students' academic performance across disciplines and their readiness to participate in the workforce and democratic society more broadly (Aspen Institute, 2019; Shanahan & Shanahan, 2008). Despite the clear need, educators currently have limited options when it comes to interventions that integrate reading comprehension and SEL skills at high school levels (Jones et al., 2022).

To meet this need, the American Institutes for Research[®] (AIR[®]) and Thinking Habitats[®] are pleased to submit our proposed Education Innovation and Research (EIR) early-phase project, **Thinking Pro: Accelerating Social, Emotional, and Academic Development in High School English Language Arts (ELA) Classes**. This project addresses both **Absolute Priority 1** (Demonstrates a Rationale) and **Absolute Priority 4** (Field-Initiated Innovations—Meeting Student Social, Emotional, and Academic Needs). Thinking Pro's curriculum incorporates practices for social and emotional development that are aligned with the science of learning and development literature (Darling-Hammond et al., 2020) and the recommendations in two What Works Clearinghouse (WWC) practice guides, *Improving Adolescent Literacy* (Kamil et al., 2008) and *Providing Reading Interventions for Students in Grades 4–9* (Vaughn et al., 2022). This is important to note because the intervention will serve many students who read below a 10th-grade reading level.

The four objectives of this early-phase EIR project are to (1) develop new curricular resources to supplement the current version of the curriculum; (2) refine Thinking Pro through two research and development (R&D) cycles; (3) test Thinking Pro for impact; and (4) analyze, report, and disseminate findings about Thinking Pro. During the pilot study, we will partner with teachers in 20 schools to further develop and refine Thinking Pro. Following the pilot study, we will conduct an impact evaluation of Thinking Pro in 44 schools, with 66 teachers (33 Thinking Pro/33 control) and roughly 8,492 students (4,246 Thinking Pro/4,246 control).

Thinking Pro **began as a field-initiated request made by a rural high school principal** for support in building adolescents' critical thinking and reading comprehension skills and Thinking Habitat's desire to promote civic efficacy. In 2019 and 2020, Thinking Habitats partnered with rural schools to secure proof-of-concept funding from the U.S. Department of Agriculture's Small Business Innovation Research (SBIR) Phase I and II grants (Awards 2019-00463 and 2020-06672) to develop and test the usability and feasibility of Thinking Pro.

AIR and Thinking Habitats are seeking this early-phase EIR grant to develop new curricular resources based on early feedback gathered from teachers in 2019 and 2020 and **test whether the curriculum may be widely, efficiently, and effectively implemented in new populations and contexts by studying the curriculum in urban rather than rural schools (see J1 in Appendix J)**. Effective strategies for supporting underserved high school students are critical, especially because these students carry the burden of learning loss from the COVID-19 pandemic and have limited time for remediation. With early-phase EIR funding, Thinking Pro will be **unlike any other existing curriculum** designed for 10th-grade ELA students in at least five ways: Thinking Pro is a student-centric innovation that integrates evidence-based SEL and ELA instructional strategies; it uses authentic local, regional, and national news media; it adapts to each student's learning pace and ability level; it expands learning time without the need for broadband; and it is more cost-effective than existing curricula (see J2 in Appendix J).

A. Significance

A1. A Project to Address Disparities in Social, Emotional, and Academic

Outcomes

School systems across the country are struggling to provide students with opportunities to grow as readers, critical thinkers, and engaged citizens (Breakstone et al., 2021; McGrew et al., 2018; National Center for Education Statistics [NCES], 2022; Schulz et al., 2018; Wanzek et al., 2015). In 2022, 69% of eighth-grade students scored below proficient in reading on the National Assessment of Educational Progress (NAEP; National Center for Education Statistics [NCES], 2022). According to the NAEP proficiency levels, reading at or below basic levels means that students tend to comprehend text literally but not leverage critical thinking skills to engage the text at a deeper level (NCES, n.d.). Nationally, only 39% of eighth-grade teachers report that they put “quite a bit” or “a lot of emphasis” on deductive reasoning—a key component to critical thinking (Bouygues, 2022). This finding suggests that teachers may lack instructional resources and training on how to support the development of adolescents’ critical thinking skills or that they may be unsure of how to integrate the development of these skills into their existing curricula.

Reading comprehension and critical thinking go hand in hand with strengthening students’ self-efficacy to engage with challenging, real-world material and topics. The health of our democracy depends upon literate, critical thinkers who also believe in their abilities to contribute to society. Unfortunately, there are huge disparities in the opportunities to develop these skills and beliefs. Students from underserved communities report lower levels of civic efficacy beliefs compared to their more privileged peers (Schulz et al., 2018; Sohl & Arensmeier, 2015). Lower levels of efficacy are associated with lower levels of motivation and perseverance related to continued learning (Hattie, 2012; Vansteenkiste et al., 2006) as well as engagement in civic opportunities (Beaumont, 2010; Hoskins et al., 2016).

Without the opportunities to develop reading comprehension, critical thinking, and civic

efficacy skills, students are less likely to graduate from high school (McFarland et al., 2020), more likely to face barriers that prevent them from enrolling in postsecondary educational opportunities or training programs that lead to sustaining employment, and less likely to believe that they have the ability to do anything about it. These outcomes not only perpetuate inequities already experienced by those living in underserved communities (Carnavale & Strohl, 2013) but also challenge our nation’s ability to function as a democracy where citizens engage in meaningful and productive ways. The most powerful lever available for improving student learning opportunities and outcomes is improving the quality of teaching that students experience. Longitudinal research consistently shows that teachers play a key role in improving students’ academic and social and emotional outcomes, which have implications for students’ life trajectories (Chamberlain, 2013; Chetty et al., 2014; Gershenson, 2016; Kraft, 2019; Rivkin et al., 2005). Unfortunately, teachers across the country have reported **inadequate supports for integrating academic and SEL instruction**, along with **insufficient professional learning opportunities** related to these approaches (Brackett et al., 2019; Hamilton & Doss, 2020), and a **need for more challenging, engaging, and relevant instructional materials** to promote civic-related outcomes (Hamilton et al., 2020). Meanwhile, teachers face greater variability in student engagement and learning needs than they did prior to the pandemic (Dorn et al., 2021). Differentiating instruction was already a pain point for many teachers before the pandemic, and now that the pandemic has widened gaps between the highest and lowest performing students, differentiated instruction has become even more challenging and necessary. Secondary teachers in particular require new and innovative approaches to meet diverse student needs, given that they teach on average 75–100 students, which includes multiple sections of 23–25 students (Taie & Goldring, 2020).

Growing evidence from the science of teaching and learning points to the inextricability of academic, social, and emotional learning (Darling-Hammond et al., 2020) and the need for instructional resources to support educators in simultaneously promoting these different aspects of development (Johnson & Wiener, 2017). This project features an innovation that uses

evidence-based strategies to address challenges high school teachers face in providing students with equitable access to academic, social, and emotional learning opportunities in ELA in ways that exemplify **Absolute Priority 4**. Such integrated approaches are especially valuable at the high school level, where there are relatively few stand-alone SEL interventions and where scheduling constraints make stand-alone SEL instruction challenging (Yeager, 2017).

A2. A Promising Approach to Address Social, Emotional, and Academic Needs

The Thinking Pro curriculum consists of **five evidence-based strategies derived from the science of teaching and learning and WWC practice guides**: providing explicit instruction, using challenging texts, engaging in text-based discussions, using adaptive learning experiences to differentiate instruction, and integrating SEL in ELA classes. In addition, Thinking Pro’s teacher supports integrate evidence-based features of effective professional development to train teachers to deliver effective ELA instruction and provide teachers with ongoing and individualized feedback on implementation (see J14 in Appendix J).

Evidence-based strategies. Each Thinking Pro lesson begins with a teacher-facilitated discussion that challenges students to think deeply about local events and how they are connected to students’ lives. Following each class discussion, teachers project Thinking Pro’s content slides to deliver **explicit instructional strategies for reading comprehension and critical thinking**. Teachers use Thinking Pro’s instructional guides to model how to extract, categorize, and analyze information from a body of text. Modeling is one practice that improves students’ reading comprehension and critical thinking skills, even at the high school level (Vaughn et al., 2022; Wineburg et al., 2022). Providing explicit instruction for reading comprehension and critical thinking strategies can improve student outcomes (Bråten et al., 2016; Kuhn & Pease, 2008; Vaughn et al., 2022).

Thinking Pro uses **challenging (or stretch) texts**, which is a recommended strategy for increasing reading comprehension and critical thinking. A recent WWC practice guide,

*Providing Reading Interventions for Students in Grades 4–9*¹ (Vaughn et al., 2022), for example, recommends that teachers introduce all students to stretch texts on topics of interest and structure instruction to engage students intellectually. According to the practice guide, news sources can serve as challenging text.

With Thinking Pro, teachers facilitate **engaging text-based discussions** that support students in comprehending challenging texts at a high level by integrating new strategies with their own background knowledge and perceptions and their peers’ ideas. Such discussions can be powerful in the development of reading (Goldman et al., 2016) and critical thinking (Bråten et al., 2016) skills. Nearly 40 years of empirical research offers support to show that text-based discussions in which students collaborate with each other have the potential to move students beyond basic comprehension and toward mastery-level reading (Applebee et al., 2003; Murphy et al., 2018; Nystrand et al., 1997; Soter et al., 2008). Well-implemented text-based discussions engage students in the process of collectively building high-level comprehension; in doing so, students use the text they have read, their own background knowledge and perceptions, and the ideas of their peers as sources of meaning.

Thinking Pro’s suite of 20 interactive videos creates **adaptive learning experiences that differentiate instruction** by using informational text to model and assess students’ reading comprehension and critical thinking skills. The videos adjust to students’ ability levels and learning pace (see J14 in Appendix J for more information). Adaptive programs like Thinking Pro are effective for improving students’ reading comprehension (e.g., Haymon & Wilson, 2020; Salinger et al., 2021; Slavin et al., 2008) and critical thinking (e.g., Yang et al., 2013) because they expand learning time, provide students real-time feedback, and enable teachers to gain insights into students’ strengths and opportunities for further accelerating growth through differentiated instruction (Sutter et al., 2019).

Thinking Pro’s instructional routines and materials **integrate SEL into core instruction**

¹ The recommendations from this practice guide are relevant because the intervention will serve many students who read below a 10th-grade level.

by encouraging students to consider the effects of their own and others' actions, which is associated with improved self-awareness and social perspective-taking (Schlund, 2019). Thinking Pro's student-led, collaborative problem-solving capstone project requires students to draw upon local news media to identify a civic issue in their community, collect and analyze information related to the issue, and develop a solution to address it. Students draw upon a "local resource" tab on the Thinking Pro platform, which includes local and regional online newspapers, a localized Google news search console, and a link to the newspaper archive via their state library. Through this experience, students develop and demonstrate these social and emotional skills, analyze and solve complex problems, evaluate information from multiple sources, think critically, participate in civic engagement, and demonstrate civic efficacy. These SEL skills map onto two core SEL competencies—responsible decision making and self-awareness—from the Collaborative for Academic, Social, and Emotional Learning (CASEL, n.d.) framework. Integrating SEL into core instruction is a whole-child approach to improving outcomes (Aspen Institute, 2019; McTigue & Rimm-Kauffman, 2011), and the use of activities that include authentic community engagement and the taking of responsibility for addressing societal problems promotes civic efficacy (Lee et al., 2021; Pfister et al., 2022).

Teacher supports. To ensure that teachers are prepared to effectively engage students using Thinking Pro, each teacher attends a 6-hour summer training facilitated by Thinking Pro prior to implementing the curriculum. This training is an orientation to the intervention's content, pedagogy, and instructional resources. During the 12-week implementation, each teacher is paired with an instructional coach to engage in three 40-minute virtual coaching sessions. Prior to each meeting, coaches review teachers' video-recorded lessons and reflection prompts on the Thinking Pro platform and examine students' performance on the videos' mini-assessment and assignments to guide the coaching session discussions (see J14 in Appendix J). Teachers also can choose to participate in a virtual community of practice to discuss their experiences, share resources, and receive additional supports from Thinking Pro coaches. A large body of causal evidence supports a strong, positive effect of instructional coaching on improving teachers'

instructional practices and student achievement (see Kraft et al., 2018, for a meta-analysis).

A3. A Project That Provides an Alternative to Existing Strategies

Far too few evidence-based high school reading programs are available (Vaughn et al., 2022), and even fewer programs integrate social and emotional and reading comprehension skills. Many existing reading interventions (e.g., *READ 180*, *Voyager Passport*, *Xtreme Reading*) focus on improving reading comprehension. Commonly used interventions provide students with standardized portfolios of reading texts at different Lexile/reading levels. Assumptions about generic interest and relevance dictate text selection, and portfolios often lack diversity, preventing many students from finding a cultural connection (Lerner, 2016). Rarely do these interventions emphasize higher order reading skills (Shanahan & Shanahan, 2008) or introduce stretch text that would enhance students' critical thinking skills.

Some existing programs, such as Reading Apprenticeship and Star Reading, do provide supports for student-selected texts and critical thinking, although without a clear connection to SEL or an emphasis on local news and community engagement. Additionally, programs such as Civic Online Reasoning and Newsela provide some evidence of the effectiveness of promoting aspects of critical thinking by incorporating news media into ELA instruction. Civic Online Reasoning uses curated news media and instructional videos to teach students how to evaluate the credibility of digital sources. In fewer than six 1-hour Civic Online Reasoning lessons, high school students grew significantly in their ability to determine whether digital sources were fact or fiction (Breakstone & McGrew, 2022). Newsela's 12-week curriculum for elementary, middle, and high school students abridges current and past national news articles at five different Lexile levels with supplemental comprehension questions and assessments. Newsela has shown effectiveness in improving elementary students' reading achievement (WestEd, n.d.).

We can expect even-more-positive effects from Thinking Pro compared to these more expensive, existing strategies. Thinking Pro addresses limitations of existing strategies by incorporating more evidence-based strategies while removing technology barriers. Thinking Pro uses the five evidence-based instructional strategies described earlier to empower students to

understand and evaluate authentic news articles while developing their reading comprehension and SEL skills in ELA classes. Thinking Pro enables students to use authentic, real-world text. No Lexile levels. No abridged text. No assumptions about interest or relevance. Rather, Thinking Pro's student-centric approach to text selection, paired with teachers' explicit instruction and facilitated text-based discussions, validates the importance of issues in students' local communities, increases students' capacity to comprehend and think critically about those issues, and invites students to use their voice as they apply their skills to generate solutions to address the issues. In addition, it also requires teachers to develop a **community inventory** to create more authentic community-based discussions about current and local events; builds students' skills to engage in **collaborative discussions and problem solving**; and **reduces technological barriers** that often prevent students in underserved communities from accessing web-based interventions. Thinking Pro does not require a constant, reliable, high-speed internet connection as many other programs do. Students can complete Thinking Pro's adaptive, interactive explainer videos and mini-assessments without internet connectivity. Once students can access the internet, the system automatically syncs to the server version, and students are then able to upload their work and receive feedback. This technology **expands learning time** to accelerate learning without contributing to tracking or remedial courses. Finally, Thinking Pro is **a more affordable alternative to other interventions**, which is a critical consideration for underresourced schools (see J2 in Appendix J for cost comparisons to *READ 180* and Newsela, the most widely used alternatives).

Thinking Pro's early pilot from the SBIR grants implemented in rural areas has yielded promising results. Teachers reported that Thinking Pro was usable and feasible and increased student engagement, especially for those reading below grade level. Of the 825 students reached through the pilot, 85% achieved proficient or above on the critical thinking and reading strategy videos' mini-assessments. Approximately 75% of students agreed or strongly agreed to these statements on a survey administered at the end of the curriculum: Thinking Pro empowered me with thinking tools relevant for decision making, challenged my thinking and learning, required

me to work hard on assignments, and helped me be more mindful of how I engage with the news. These early findings provide promising evidence regarding Thinking Pro’s effects associated with improving reading comprehension, critical thinking, and civic efficacy.

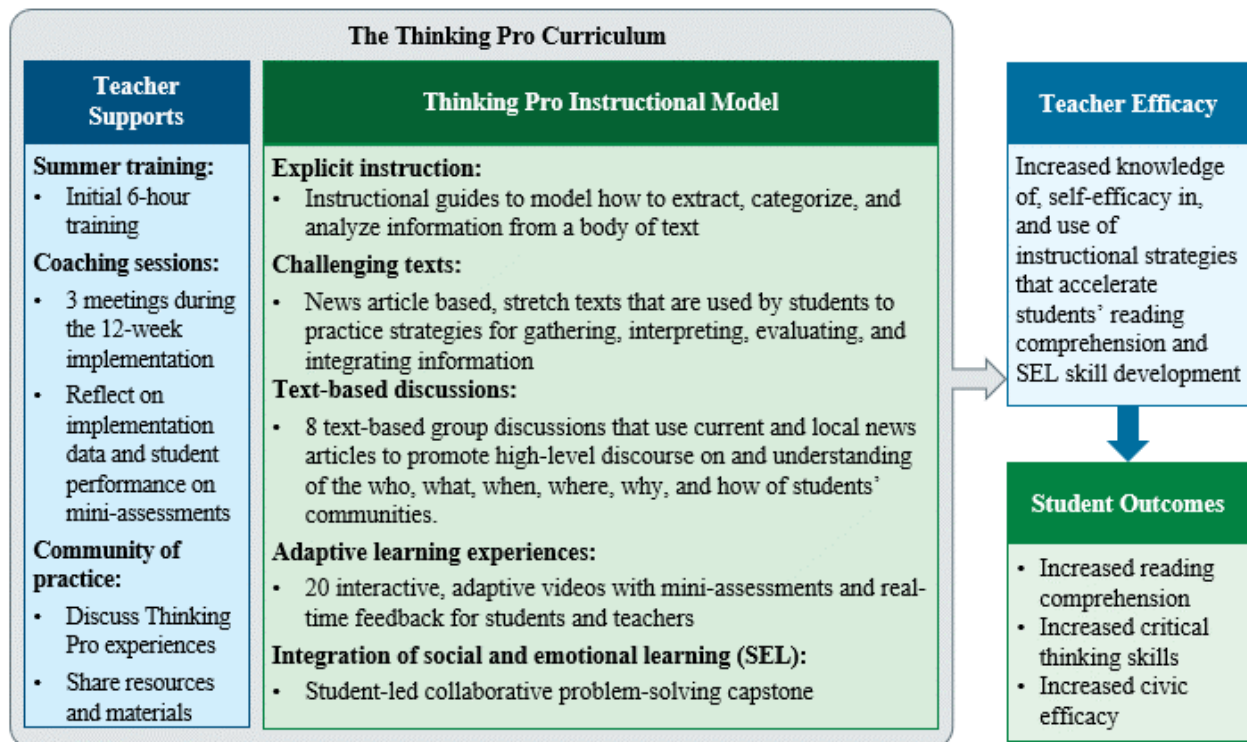
Although Thinking Pro’s 12-week intervention period is short, other strategies noted earlier (e.g., Newsela, Civic Online Reasoning) have produced positive outcomes in the same amount of time or less. Thinking Pro is likely to deliver a more meaningful change in student outcomes because it uses more evidence-based strategies than existing interventions to strengthen more skills that are transferrable to other academic subjects and to students’ lives outside of the classroom, giving students many opportunities to use the strategies they learn through Thinking Pro in their everyday lives. Thinking Pro also reaches 10th-grade students at a pivotal developmental moment, when academic and social interventions can be particularly effective in interrupting downward academic trajectories (Yeager & Walton, 2011). Moreover, by allowing students to select their own texts and supporting them in critically evaluating issues in their own communities, Thinking Pro taps into key values for adolescents—autonomy and social justice—which is an effective way of motivating engagement and change (Bryan et al., 2019).

B. Quality of the Project Design

B1. Clearly Articulated Conceptual Framework Underlying the Proposed Project

The proposed research is supported by a clearly articulated conceptual framework, as depicted in Exhibit 1 and Appendix G and elaborated in Section A2.

Exhibit 1. Conceptual Framework Underlying Thinking Pro and the Proposed Project



Thinking Pro's conceptual framework integrates two core intervention components: (1) **teacher supports**, including a summer training, ongoing coaching sessions, and a community of practice, and (2) its **evidence-based instructional model** that consists of explicit instruction, use of challenging texts and text-based discussions, adaptive learning experiences to differentiate instruction, and integrated SEL experiences through the student-led capstone. Thinking Pro's conceptual framework posits that implementing these core intervention components will (a) increase teachers' knowledge of, self-efficacy in, and use of instructional strategies that accelerate reading comprehension, critical thinking, and civic efficacy and (b) increase 10th-grade students' reading comprehension, critical thinking, and civic efficacy. Thinking Habitats will continue to develop and refine Thinking Pro's core components to achieve the intended outcomes.

B2. Clearly Specified and Measurable Goals, Objectives, and Outcomes

This project's primary goal is to examine the extent to which Thinking Pro **accelerates students' reading comprehension, critical thinking, and civic efficacy in underserved urban**

high schools. To achieve this goal, the project has four objectives: (1) develop new curricular resources to supplement the current version of the curriculum; (2) refine Thinking Pro through two R&D cycles; (3) test Thinking Pro for impact; and (4) analyze, report, and disseminate findings about Thinking Pro. Each objective has clear, measurable outcomes, as shown in Exhibit 2. See J4–J5 in Appendix J for a complete timeline and a management plan aligned to these objectives.

Exhibit 2. Strategies, Outcomes, and Measures for Key Project Objectives

Strategies	Outcomes	Project output measures
Objective 1: Develop new curricular resources to supplement the current version of the curriculum (January 2024–July 2026)		
Strategy 1.1. Create Thinking Pro curricular resources for teachers and coaches to use in urban settings.	Thinking Pro adapts and develops additional resources (e.g., stretch-text and text-based discussion guides and playbooks for teachers and coaches).	Measure 1.1. At least 95% of teachers at the pilot schools agree that Thinking Pro is feasible to implement and would support their students’ needs.
Objective 2: Refine Thinking Pro through two R&D cycles (January 2024–July 2026)		
Strategy 2.1. Conduct a two-cohort pilot study of Thinking Pro (20 high schools).	Successful implementation of Thinking Pro by coaches and teachers at pilot high schools.	Measure 2.1. Fidelity rubric applied to all fidelity data during the pilot studies. All fidelity metrics are met at the 20 pilot schools, and 95% of pilot study students report that Thinking Pro is easy to use.
Strategy 2.2. Collect, analyze, and regularly share and discuss implementation feedback with Thinking Habitats.	Implementation data are summarized and shared, when available, during standing biweekly AIR/Thinking Habitats meetings.	Measure 2.2. All AIR/Thinking Habitats meeting notes summarize feedback from study participants, when data are available.
Strategy 2.3. Refine Thinking Pro.	Thinking Pro is regularly revised, based on pilot data.	Measure 2.3. Two interim memos summarize revisions to Thinking Pro based on pilot data.
Objective 3: Test Thinking Pro for impact (January 2025–December 2026)		
Strategy 3.1. Identify an additional 44 high schools to participate in an impact study.	School leaders and teachers agree to participate in the impact study.	Measure 3.1. School or district signatures are collected on the project memorandum of understanding to secure 44 high schools for the randomized controlled trial.
Strategy 3.2. Randomly assign schools within districts or consortia to treatment and control conditions.	Treatment and control schools have baseline equivalence in key student, teacher, and school characteristics.	Measure 3.2. The number of schools in each group is documented in a random assignment memorandum.
Strategy 3.3. Implement the Thinking Pro intervention in all treatment high schools.	Thinking Pro is implemented with a high degree of fidelity in at least 20 high schools.	Measure 3.3. All fidelity indicators in the fidelity matrix meet adequate thresholds of fidelity based on thresholds for low (60%), moderate (60%-80%), and high (80%+) fidelity levels that reflect participation/completion in each of the core components.

Strategies	Outcomes	Project output measures
Objective 4: Analyze, report, and disseminate findings about Thinking Pro (January 2027–April 2028)		
Strategy 4.1. Assess the impact of Thinking Pro on teachers and student outcomes.	Data on outcomes are collected and analyzed as planned.	Measure 3.4. An impact memo is produced, and impact findings meet What Works Clearinghouse standards without reservations.
Strategy 4.2. Publish information about the Thinking Pro intervention and lessons learned.	Teachers and state and local leaders are aware of Thinking Pro.	Measure 4.1. At least two infographics are produced and two conference presentations are given after Thinking Pro refinements.
Strategy 4.3. Share Thinking Pro broadly.	Teachers and state and local leaders interested in improving students' reading comprehension, critical thinking, and civic efficacy learn about Thinking Pro.	Measure 4.2. Representatives from state and/or local education agencies attend a virtual event to learn about Thinking Pro.

Note. AIR = American Institutes for Research; R&D = research and development

Thinking Pro Development and Refinement Through Two R&D Cycles (Objectives 1 and 2). Thinking Habitats will develop additional curricular resources and teacher supports based on the SBIR-funded pilot studies and the WWC practice guides. Teachers who participated in the SBIR-funded pilot studies recommended ways to improve Thinking Pro. Specifically, teachers requested additional instructional resources (e.g., video recordings of teacher-facilitated text-based discussions, improved assignment instructions and rubrics, additional instructional resources, a space on the Thinking Pro platform to store students' portfolios of work). In addition to responding to teachers' input for improving the teacher- and student-facing Thinking Pro resources, Thinking Habitats recognizes a need to develop coaching protocols and supports to ensure that future Thinking Pro coaches deliver high-quality instructional coaching to teachers.

To be more aligned with the recommendations in the WWC practice guides, Thinking Habitats will identify or develop examples of additional stretch texts to account for student interest and varying reading comprehension levels. Thinking Habitats also will expand its teacher guidance on how to select text for rich text-based discussions and how to facilitate those discussions. To further support teachers and coaches, Thinking Habitats will develop a teacher playbook to increase fidelity of implementation and a coach playbook for instructional coaching supports to systematically scaffold teachers' growth opportunities. These resources will be instrumental to future scale-up efforts for the impact evaluation and beyond.

AIR will conduct a two-cohort pilot study (with 10 schools in each cohort) to monitor Thinking Pro’s implementation and gather formative data. During the execution of Strategies 1–3, the project team will routinely use data to identify lessons learned and either make immediate improvements or plan improvements for the next cohort.

Testing Thinking Pro for Impact (Objective 3). The project will provide rigorous evidence about the impact of Thinking Pro on instruction and student ELA achievement, critical thinking, and civic efficacy. Based on a randomized controlled trial (RCT) with a large sample from multiple study sites, the evaluation will generate evidence on the impact of Thinking Pro that has not yet been tested with a rigorous study. The proposed study sites are currently using a variety of ELA curricula that will constitute the business-as-usual comparison condition for the study. Three of the business-as-usual curricula—Reading Apprenticeship, Readworks, and STAR Reading—support personalized instruction using a variety of literary and informational texts, but without an explicit focus on news media or SEL. A fourth, Newsela, is more closely aligned with Thinking Pro’s approach but lacks the emphasis on engagement with news that is directly relevant to students’ local community contexts. Moreover, although Newsela offers SEL-focused lessons, it does not directly integrate SEL into ELA instruction. Finally, the teacher coaching, the emphasis on explicit instruction, and the student collaborative problem-solving activity distinguish Thinking Pro from other programs.

Analyzing, Reporting, and Disseminating Findings (Objective 4). AIR, in partnership with Thinking Habitats, will develop publications and infographics, engage in direct outreach, and deliver presentations to disseminate the findings. (See J6 in Appendix J for details.)

B3. Appropriate Project Design for Addressing the Needs of the Target

Population

This study’s target population consists of 10th-grade teachers and students in urban schools, specifically those serving at least 30% of students who are eligible for free or reduced-price lunch and/or at least 25% of students from marginalized racial/ethnic groups.

In preparation for this grant competition, AIR and Thinking Habitats met with state

education agencies, association representatives, district staff, and teachers across the Midwest. In the resulting conversations, these representatives shared that the following features of the intervention will be most helpful in offering an innovation to help to better address the needs of the students they serve: (a) Thinking Pro’s instructional resources for text-based discussions that support teachers in engaging students in relevant, timely local issues; (b) the empowerment of students to analyze text and think critically about local issues; and (c) the fact that Thinking Pro is a turnkey solution with enough variability (i.e., in topics and pace of instruction) to adapt to local contexts.

See Appendix C for **letters of support** from **2 Ohio districts** (Toledo Public Schools and Springfield Local Schools) and a regional education service agency that delivers professional development to **12 districts in Wayne County, Michigan** that serve the study’s target population as defined in Section B3. Wayne County is the most populous county in Michigan and the 18th most populous county in the nation. These letters describe the writers’ plans to support recruitment, implementation, and dissemination efforts. Upon award of the grant, additional meetings with key district staff will take place to better understand the extent to which Thinking Pro augments the ELA curricula and planned professional development opportunities.

C. Quality of Project Personnel

The AIR and Thinking Habitats team has the necessary expertise in project and task leadership; SEL and ELA teaching, learning, and measurement; program implementation and improvement; and research methods (see Appendix B for résumés and J7 in Appendix J for the project’s organizational chart). Consistent with AIR’s commitment to advancing standards for diversity, equity, and inclusion within our project staff and activities, our team represents a diverse group of individuals with experience working with urban communities. AIR is proud of its tradition of maintaining work environments and producing resources and information that support the value of diversity and nourish respect for the dignity of each individual. On this and other projects, AIR will not discriminate against anyone, including members of groups that have

been traditionally underrepresented based on race, color, national origin, sex, age, disability, religion, pregnancy, veteran status, or any other basis prohibited by law in their corporate employment and hiring practices (see Section 1.1 of the AIR Personnel Manual).

The project team will draw upon AIR’s institutional knowledge and expertise gained from having successfully led or served as the evaluator for 29 EIR grants and 19 Investing in Innovation (i3) grants from 2010 to 2022.

██████████, *principal investigator*, has more than 26 years’ experience leading and conducting education research and evaluation—along with expertise in measuring complex academic, social, emotional, and civic outcomes—and will lead the project. Drawing upon experience as project director on an EIR Early-Phase evaluation of work-based dual enrollment high school STEM courses, ██████████, *project director*, will oversee the coordination of all tasks and activities and monitor the project budget and deliverables to ensure that the project is on time and on budget. ██████████, *R&D evaluation lead*, will lead the research and development cycles, drawing on his 7 years of previous experience as the director of technology and R&D for the University of Chicago. ██████████ will serve as the *impact evaluation lead*. He will oversee data collection, random assignment, and outcome analyses, as he did for the Institute of Education Sciences–funded Comprehensive Literacy Program Evaluation. ██████████, *advisor*, will offer guidance and provide input throughout the course of the project and will support ██████████ ██████████ is a chief scientist for literacy research at AIR and an expert on interventions for struggling adolescent readers and teacher professional knowledge of reading instruction. ██████████, a principal researcher, will provide quality assurance reviews related to the design plan, the project’s measurement development, recruitment, random assignment, analyses, and reporting.

Thinking Habitats, our partner for this work, will lead the development and implementation team. ██████████, *co-principal investigator*, will be responsible for effective, on-time implementation of Thinking Pro, including intervention design and refinement, supporting school recruitment, and coordination with the AIR R&D evaluation team

and participating schools. [REDACTED] has 20 years of experience in curriculum development. [REDACTED], *lead developer*, will support the development and refinement of Thinking Pro and the development of dissemination products and their delivery. [REDACTED] has more than 9 years of federally funded R&D experience. [REDACTED], *lead coach*, will support the development and refinement of the coaching manuals, protocols, and other tools to ensure that the coaching is implemented with fidelity. [REDACTED] a former K–12 educator and instructional coach, will lead the teacher trainings, oversee coaching support, and manage the community of practice.

D. Quality of the Management Plan

D1. A Management Plan With Clearly Defined Responsibilities, Timelines, and Milestones

To meet each of the project’s four objectives, we propose the following management plan. AIR will serve as prime and Thinking Habitats will serve as a key partner in carrying out the proposed project. AIR will provide the overall project management necessary for a project of this scope. AIR has the infrastructure and capacity to manage large-scale, multiyear grants and has a history of managing projects so that they remain on time and within budget and produce high-quality deliverables. Thinking Habitats will lead the Development and Design team and will be responsible for facilitating the design, optimization, and implementation of the intervention. In addition to providing the overall management of the grant, AIR’s R&D Evaluation team will meet regularly with Thinking Habitats to provide formative feedback and periodic assessment of progress toward outcomes. AIR’s Impact Evaluation team will conduct the impact study. AIR has no financial interest in the outcome of the evaluation and Thinking Habitats will own the intervention materials. Our management structure allows our team to create and maintain firewalls between staff responsible for implementation and those responsible for collecting, analyzing, and reporting the impact data. The firewall will protect the independence of the impact evaluation from parties with a potential vested interest in the results.

(See J5 and J8 in Appendix J for the management plan, meeting frequency, and data sources to inform feedback.)

E. Quality of the Project Evaluation

AIR will conduct a mixed methods experimental evaluation of Thinking Pro to address the extent to which Thinking Pro impacts student and teacher outcomes. The evaluation will consist of a two-cohort pilot study and an impact evaluation. In Section E1, we describe the impact evaluation. In Section E2, we describe how the pilot study will inform Thinking Habitats’ revisions to the curriculum and coaching supports prior to the impact evaluation. See Exhibit 3 for the research questions (RQs) that we will address and J9 in Appendix J for the evaluation timeline.

Exhibit 3. Research Questions, Measures, and Sample for Thinking Pro

Research questions (RQs)	Measure	Sample (Year)
RQ1: To what extent do teachers and students perceive Thinking Pro to be usable, feasible, and acceptable?	Teacher perceptions and practices survey Teacher interview protocol Student perception survey	10 pilot teachers (2024–25) 938 students (2024–25) 10 pilot teachers (2025–26) 938 students (2025–26)
RQ2: What are the barriers to and facilitators of Thinking Pro’s implementation?	Teacher interview protocol Student perception survey	10 pilot teachers (2024–25) 938 students (2024–25) 10 pilot teachers (2025–26) 938 students (2025–26)
RQ3: To what degree is Thinking Pro implemented with fidelity?	Fidelity of implementation rubric	10 pilot teachers (2024–25) 10 pilot teachers (2025–26) 33 treatment teachers (2026–27)
RQ4: To what extent do teachers report gains in knowledge, self-efficacy, and use of instructional strategies as a result of Thinking Pro’s training, resources, and coaching support?	Teacher perceptions and practices survey	10 pilot teachers (2024–25) 10 pilot teachers (2025–26) 33 treatment teachers and 33 control teachers (2026–27)
RQ5: What is the relationship between participation in classrooms using Thinking Pro and changes in students’ critical thinking and civic efficacy?	College and Career Readiness Assessment Plus (CCRA+) Civic efficacy survey	1,876 students from a total of 20 pilot teachers’ classrooms (2024–26)
RQ6: What is the impact of Thinking Pro on student outcomes, including English language arts (ELA) achievement, critical thinking, and civic efficacy? RQ7: To what extent do changes in teachers’ knowledge, self-efficacy, and use of instructional strategies mediate the impact of Thinking Pro on students’ reading comprehension and social and	State ELA assessment CCRA+ Civic efficacy survey	8,492 students (4,246 treatment/4,246 control; 2026–27)

Research questions (RQs)	Measure	Sample (Year)
emotional learning outcomes? RQ8: How does the impact of Thinking Pro vary for different groups of students?		

E1. Methods to Generate Evidence That Meets WWC Standards Without Reservations

AIR will conduct an impact evaluation, with random assignment of schools conducted within districts or consortia, that will meet WWC evidence standards without reservations. Recruitment efforts will target schools in urban school districts in Michigan and Ohio that meet the definition of underserved as described in Section B3. Using districts as blocks will ensure that the treatment and control groups are equivalent on unobservable characteristics that vary at the local level, both related to implementation of Thinking Pro and related to other school conditions that may interact with implementation.

In the summer before the 2026–27 school year, AIR will randomly assign half of the schools in each district or consortium to receive Thinking Pro (treatment) and the remaining half to continue with business as usual (control). Grade 10 ELA teachers in treatment schools will receive all Thinking Pro supports; Grade 10 ELA teachers in control schools will continue to teach their existing ELA curricula. This research design will yield causal estimates of programmatic impact on teacher and student outcomes.

The main threat to internal validity for this design is potential selection bias resulting from sample attrition; because the intervention is assigned at the school level and the study team will be able to control who receives supports, we do not expect contamination across groups. Based on the low attrition rates found in similar urban districts in a multistate, school-level RCT (Barr et al., 2015), we expect attrition to be low enough that the study will meet WWC standards without reservations during the 2026–27 school year. We will offer control schools Thinking Pro for free if they want it after the study is completed, but only if they participate in the full length of the study, which provides an incentive for control schools to continue engaging with the study even if they preferred to receive the treatment earlier. If there is no differential attrition, more

than 50% of schools can drop out of the sample without causing the study to fail to meet WWC standards, even under the conservative attrition boundary; if treatment schools are 8 percentage points more likely (or less likely) to drop out of the sample than control schools, 30% of schools can drop out without causing the study to fail to meet WWC standards, assuming that the optimistic attrition boundary is used. Because participation in Thinking Pro is unlikely to induce attrition on its own, we expect that the optimistic boundary will be appropriate.

To meet WWC standards without reservations, we will test baseline equivalence of the analytic sample on school- and student-level demographic characteristics and student reading achievement data obtained prior to the intervention. Establishing equivalence on students' prior academic performance, gender, race/ethnicity, and socioeconomic status is particularly important because it is a key requirement for WWC review if attrition is high. Final impact estimates will control for baseline characteristics (including any baseline differences) to improve precision of the impact estimates.

Sample. We will recruit six districts or consortia to participate, including Toledo Public Schools, Springfield Local Schools, Detroit Public Schools, and those in the greater Detroit metropolitan area, with a goal of obtaining a sample of 44 schools. We will assign half of the schools to the treatment, resulting in 22 schools implementing Thinking Pro and 22 schools continuing with business as usual. We anticipate that the impact study sample will include 66 teachers (33 Thinking Pro treatment/33 control, with half of study schools expected to have one participating teacher and half expected to have two participating teachers, to reflect varying school sizes across urban districts) and roughly 8,492 students (4,246 Thinking Pro treatment/4,246 control, based on the average number of students per grade in high schools in the states in which recruiting is taking place). We designed the impact to detect an effect size of 0.20 standard deviations for continuous outcome measures (see J11–J13 in Appendix J for additional details about the power calculations and impact analyses). These impacts are similar in size to those observed in an earlier impact evaluation of professional development designed to help humanities teachers integrate civics education in their classes. The study, conducted in 60 high

schools across eight metropolitan areas in the United States, found effects in the 0.14–0.23 standard deviation range for civics education measures after implementing the intervention for a minimum of 6 weeks (Barr et al., 2015). A recent meta-analysis of rigorous studies examining effects of reading programs on outcomes for secondary students, including standardized tests, demonstrated effect sizes ranging from 0.07 to 0.42 standard deviations (Baye et al., 2019).

Measures for Testing Thinking Pro’s Impact. WWC standards require that outcome measures demonstrate face validity, are reliable, are collected in the same way across conditions, and are not overlapped with the intervention. All proposed measures for the Thinking Pro evaluation meet these requirements (see J10 in Appendix J).

State ELA Assessment. The primary outcome of interest will be students’ scores on their states’ ELA exams, which we will use to measure student reading comprehension. AIR will gather students’ Grade 8 and Grade 10 ELA scores. The Grade 8 scores will serve as baseline and Grade 10 scores as outcome. These exams have well-understood and policy-relevant scoring benchmarks that can be used to assess students’ performance in reading. Scores will be expressed as *z*-scores based on the statewide mean and standard deviation for their respective grade, state, and year.

College and Career Readiness Assessment Plus (CCRA+) Measuring Critical Thinking. Teachers will administer the 30-minute online CCRA+ measure at the beginning of the school year and after implementation of Thinking Pro. The assessment consists of 25 selected-response items that measure students’ critical thinking skills as they read passages from informational text (including news sources). The internal consistency for the selected-response test is 0.82 (Council for Aid to Education, 2022). Correlations between this assessment and other measures of critical thinking range from 0.73 to 0.93 (Council for Aid to Education, 2015). The assessment was used in a prior i3 grant with high school students (ICF, 2020).

Civic Efficacy Survey. In an exploratory analysis, the study team will estimate the impacts of Thinking Pro on students’ civic efficacy using three previously validated survey items (Syvertsen et al., 2015). The items are (a) “I can make a positive difference in my community”;

(b) “Even though I am a teenager, there are ways for me to get involved in my community”; and (c) “I can use what I know to solve real-life problems in my community.” Students respond to each item on a 5-point Likert scale from *strongly disagree* to *strongly agree*. The reliability of this scale was estimated at 0.84. We will add these items to the end of the CCRA+ measure to reduce the administration burden on teachers.

In addition to these student outcome measures, AIR will develop and administer an electronic *teacher perceptions and practices survey* to treatment and control teachers prior to the treatment teachers participating in the Thinking Pro training and 1 week after the treatment teachers complete their implementation of the curriculum. The survey will measure teachers’ knowledge, self-efficacy, and use of relevant instructional strategies for accelerating reading comprehension and critical thinking skills as well as creating opportunities for students to develop civic efficacy.

Fidelity of Implementation Rubric. AIR will develop a rubric to measure the extent to which Thinking Pro is implemented with fidelity. We will base the rubric on Durlak and DuPre’s (2008) three components of fidelity—dosage, quality, and participant responsiveness—for each of Thinking Pro’s core components (Thinking Pro’s teacher supports and instructional model). This measure will help determine to what extent teachers’ instructional practices in ELA classrooms, students’ use of Thinking Pro’s suite of 20 interactive videos, and teacher supports (i.e., training, coaching, and CoP) are delivered and experienced as intended.

AIR will develop implementation measures and associated thresholds for Thinking Pro’s core components to assess implementation fidelity. Based on a review of RCTs that produce the intended impacts (Durlak & Dupre, 2008), the initial proposed thresholds for low (< 60%), moderate (60%–80%), and high (80%+) fidelity levels are based on the percentage of participants who participate in all core components. The data sources to be used to measure fidelity include (a) three video observations that Thinking Pro coaches collect during the 12-week intervention (teacher instruction), (b) usage data from interactive videos (student experiences), and (c) teachers’ perceptions and practices survey (teacher supports). Project

documentation records are commonly used metrics for assessing implementation fidelity (Mowbray et al., 2003), and the proposed thresholds meet the criteria for high fidelity as defined by a review of the implementation literature (Hill & Erickson, 2019) and permit further exploration of productive adaptations to inform continued program improvement (Quinn & Kim, 2017).

Impact Analyses (RQs 6–8). The impact analyses will focus on three outcomes of interest: ELA achievement, as measured by state standardized tests; critical thinking skills, as measured by the CCRA+; and the civic efficacy survey. Controlling for baseline characteristics such as pretest scores and student demographics using the full randomized sample of 10th-grade students, we will regress each outcome on an indicator for whether a student is enrolled in a school assigned to receive Thinking Pro, to estimate the effect of Thinking Pro on the respective outcomes. This will be an intent-to-treat analysis that does not distinguish whether students assigned to receive Thinking Pro actually did so.

To the extent that sample sizes allow, we will repeat this estimation among populations of interest for various outcomes—for instance, examining the effects on ELA achievement by baseline proficiency level, by race/ethnicity, and by eligibility for free or reduced-price lunch. Although these estimations will likely be underpowered, the analysis will shed light on Thinking Pro’s effectiveness in providing high-quality instruction to students from underserved populations.

E2. Methods That Provide Performance Feedback and Periodic Assessment of Progress

Prior to the impact evaluation, AIR will conduct a two-cohort pilot study during the 2024–25 and 2025–26 school years. The pilot study will address **RQs 1–5** (see Exhibit 3). AIR and Thinking Pro will discuss the actionable findings during continuous improvement meetings (see J8 in Appendix J for these meetings’ configurations, frequencies, participants, and data sources).

We anticipate the pilot study sample to include 20 teachers and 1,876 students. AIR will use five outcome measures and a *fidelity of implementation rubric* to support Thinking Pro’s further development and refinement. AIR will adapt surveys and protocols from similar

implementation studies and case studies (Dretzke et al., 2015; Stuart et al., 2011). The survey and interview protocol will cover topics related to the usability, feasibility, and acceptability of Thinking Pro’s suite of 20 interactive videos; evidence-based instructional practices; and teacher supports. Specifically, 6 weeks into the curriculum, each teacher cohort will administer a 10-item electronic *student perception survey*. AIR will conduct two rounds of 30-minute *teacher interviews* (once at the 6-week mark and one after the completion of the curriculum) with the 20 participating teachers. AIR also will administer the *teacher perceptions and practices survey* described earlier. Finally, AIR will examine the degree to which students’ scores change from pre- to postimplementation on the *CCRA+* and the *civic efficacy survey*. We will use these data as early, independent measures of whether students’ exposure to Thinking Pro is associated with improvements in student outcomes.

E3. Clear Articulation of Components, Mediators, Outcomes, and Thresholds

The design of the proposed evaluation is informed by clearly articulated key program components, mediators, and outcomes, as depicted in the conceptual framework presented in Exhibit 1. As the conceptual framework shows, Thinking Pro includes two key components, each with multiple subcomponents. The first key component is **teacher supports**, which includes three subcomponents: (a) an initial 6-hour training, (b) three coaching sessions over the course of the 12-week implementation period, and (c) a community of practice. Together, these components are theorized to improve teachers’ efficacy (i.e., knowledge, self-efficacy, and use of relevant instructional strategies), which in turn will improve students’ reading comprehension and SEL outcomes (See Appendix J13 for details about mediation analyses). The second key component is the **Thinking Pro instructional model**, which includes five subcomponents: (a) explicit instruction, (b) challenging texts, (c) text-based discussions, (d) adaptive learning experiences, and (e) integration of reading comprehension and SEL.

For the proposed evaluation, we have specified initial measurable thresholds for acceptable implementation for both the Thinking Pro instructional model and associated teacher supports; we will use these thresholds to address RQ3 about the fidelity of implementation of the

Thinking Pro program. Thresholds for the Thinking Pro instructional model are specified in Section E1, in the description of the fidelity rubric. We will work with Thinking Habitats and draw on the implementation data from the pilot cohorts to finalize the fidelity thresholds and apply them to the impact cohort. For the teacher supports components, acceptable implementation requires the following: (a) Thinking Pro implements the summer training and feedback activities for at least 90% of treatment teachers; (b) at least 90% of all treatment teachers complete the summer training, including all the required feedback activities; (c) Thinking Pro implements three coaching sessions per teacher; and (d) at least 85% of teachers participate in the community of practice.

The AIR team will assess teacher efficacy through the teacher perceptions and practices survey, which will include measures of teachers' knowledge of, self-efficacy in, and use of instructional strategies that accelerate students' reading comprehension and SEL skills. As described in Section E1, we will assess student outcomes using validated measures of reading comprehension and SEL skills.

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